

Dissertação de Mestrado em Engenharia Informática (2019/2020)

Title : Authentication and Identity Management for the EPOS Project.

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Description

Some partners of the European Plate Observatory System (EPOS <https://www.epos-ip.org>) project are currently using the Unity federated Identity management system to manage the authentication and authorization of European Research Scientists, the main users. This system federates identity providers such as from the EGI (<https://www.egi.eu/>) Check-in identity proxy service. EGI Check-in (<https://www.egi.eu/wpcontent/uploads/2017/09/Check-in.pdf>) provides an interoperable AAI solution that can be used as a service for third parties. In particular such services permit single sign-on to services through eduGAIN and other identity providers, such as Google, Facebook, LinkedIn or ORCID.

However it is desirable to extend such identity provider proxies to be able to use physical tokens and virtual tokens. Example of physical are the Yubikey Cryptographic Tokens that support the U2F authentication standard and Smart Cards such as Electronic Identity Cards that make use of National Public Key Infrastructures. An example of virtual tokens that make use of two factor authentication mechanisms and plugins is the Portuguese Chave Móvel Digital (see <https://www.autenticacao.gov.pt/>). It is also necessary to manage a users multiple digital identities, such as a user who logs in via a Google or Orcid identity token as well as using EduGain and design services that enable accounting information that is required by European wide (and national) Research Infrastructures such as the EPOS -ERIC and the Portuguese Collaboratory for Geosciences (C4G).

The objectives of this thesis are to study identity providers and identity management in the context of the EPOS project and the study and design of an identity solution that enables authentication to (EPOS WP10) web portals via Token and Virtual token Authentication. The project begins with a the survey of the state of the art of authentication in Web Portals before the design and implementation of an authentication and identity management solution using for example tokens such as Yubikey and the Portuguese *Chave Móvel* in order to access the Portuguese and European EPOS and Geosciences Portals.

Work Plan

- 1 Literature and State of the Art Review
- 2 Study of the characteristics, algorithms and architectures to be used.
- 3 Implementation, Testing and Evaluation of the proposed solution
- 4 Publication of the results
- 5 Writing of the Dissertation.