**Thesis B.Sc.**

**Thesis M.Sc.**

# Cloud Based eID User Identification

## Motivation

The German government ID card supports digital identification and authentication. By using this functionality, citizens can authenticate themselves and get access to services. This automated approach for user authentication is called *eID*. eID uses a client-server infrastructure that has distinct properties specified by the BSI. Users need to possess physical hardware tokens, such as a Personalausweis or eID card that holds cryptographic key material, to use eID. Enforcing the use of a physical token decreases the number of attacks resulting in unauthorized impersonation. However, it also has drawbacks for the usability of eID. For



example, using hardware tokens requires users to have an interface to establish the connection between the token and the remaining eID infrastructure. To address this issue, this thesis should explore a method to enable the replacement of the hardware-based token with a cloud-based solution. The impact of this approach on the usability and the security model needs to be analyzed. The approach's feasibility should then be explored by developing a proof of concept that is compatible with an eID-like infrastructure.
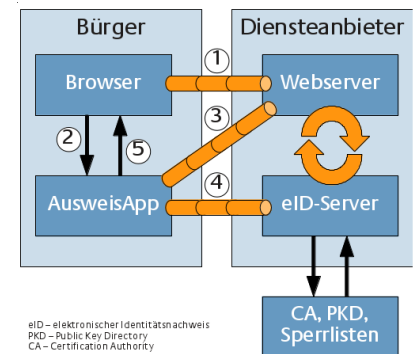
## Your Task

- Analyze the structure and characteristics of eID user identification
- Design an approach to replace physical hardware tokens in possession of users with a cloud based approach
- Implement an PoC for the proposed solution and evaluate it with different environments for storing the tokens.

## Sources

- [1] BSI - Technische Richtlinie TR-03130, https://www.bsi.bund.de/DE/Publikationen/TechnischeRichtlin 03130.html

## Contact

Stefan Genchev    genchev@net.tum.de
Lars Wüstrich     wuestrich@net.in.tum.de

http://go.tum.de/080755