Mobile authentication/signing agent for Estonian eID NFC card

Estonian ID card has NFC interface since 2018, which makes it possible to use the card with mobile phones. While presence of the NFC interface makes it possible to build standalone apps (think: digidoc app for signing documents on the mobile phone) the national service infrastructure has not been in place to allow to authenticate towards online service providers via a mobile phone. This is about to change in late 2021/2022, with Web eID (web-eid), a new framework to authenticate with ID card on the web, without browser-owned and browser-implemented TLS.

You shall be implementing a MVP/POC solution, that demonstrates the viability (or describes the deficiencies) of both web-eid and NFC eID cards with capable modern handset platforms, on Android (alternatively, if the team has strong and proven capability to work on iOS platform, Apple can be targeted instead). The outcome will be a mobile application that acts as "ID-card driver" on mobile phone, emitting JWT tokens compatible with web-eid standard, and delivering them to web services for validation, much like web-eid browser extension does on desktop browsers.

It is more a learning endeavour than lines-of-code project. You have access to mentor(s) who can provide expert guidance and validate approaches during your project. Positive outcome can serve as the foundation of future mobile authentication with eID card with Estonian (and other EU countries with similar infrastructure and requirements) e-services.

Experience expected (or gained) during the project:
- Android development with Java or Kotlin
- NFC communication and UX on Android phones
- Implementation of a protocol utilizing web services and cryptography (REST/JWT)
- app-to-app and app-to-web communication capabilities of modern mobile platforms
- State of the art of mobile web authentication (FIDO2/WebAuthn)
- Working with automated delivery pipelines with Git and GitHub Actions

The code shall be open source (MIT license) on GitHub.

Contact / more information


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