MUNI
ICS

SSIs in academia person’s eyes

EGI 2023

Dominik Frantisek Bucik
Institute of Computer Science, Masaryk University, Brno

Focus: Self-Sovereign Identities

- New way to handle digital identity
  - Analogy to a physical wallet, but in digital world
  - Basic idea: Get issued a card, store it in a wallet, show the card to prove a claim
- Putting control back to the identity owner
  - Full control over sharing of the personal data
  - Easily breaks “tracking” by authority
- Three key roles
  - Issuer Holder Verifier

MUNI ICS

Project introduction

- Main goal: Analysis of usability of the SSI as a concept in a purely academic environment
  - Target - single university, without crossing the border towards government space, public space, etc.
- Secondary goals:
  - Gain technical knowledge - PoCs, get to know the tech stack
  - Explore overlaps with other areas (e-gov, national agenda, …)
- 1 year in duration
  - 4 phases
  - 1 FTE - divided to 4 people

MUNI ICS

Project progress - 1st phase

- Analysis of the technical side
  - technical components, protocols…
- Analysis of digital wallets
  - What implementations are out there, cross-comparing them
- Methodology for research and UX analysis
- Mapping use-cases
  - What can the technology be used for?

MUNI ICS

Project progress - 2nd phase

- Implementation of “issuer”
  - Perun IdM as data authority
  - Idea: use SSI originating “from” Perun IdM
    - Use-case: IdM for university, issue digital “university” card
- Analysis of usability of SSI in the academic environment
  - Based on the identified use-cases
- User “picking”, defining user needs
  - Target groups, defining use-case workflows

MUNI ICS

Project progress - 3rd phase

- Implementation of a “verifier”
  - Perun IdM as Identity consumer
  - Idea: use (external) SSI “inside” Perun IdM
    - Use-case 1 - identity vetting
    - Use-case 2 - passwordless login
- Finishing the analysis of usability
  - User testing

MUNI ICS

Project progress - 4th phase

- Improvements, bug fixing of the technical implementations
- Developing documentation for technical components
- Study of user usability of the implemented technical solutions

MUNI ICS

Focusing on the user part - case study

- Knowledge of using digital identity
- Target groups definition - students, employees, researchers
- Use-case definitions
- User testing done via 4 sample use-cases (single university env.)
  - **1) Onboarding** - install the wallet, get everything set up
  - **2) Issue a credential** - issue yourself a university card
  - **3) Present credential** - prove your university status
  - **4) Present a credential to exchange for another credential** - use university card to issue a library membership card

Outcomes

- Study participants:
  - liked the concept - interesting, fun, get the idea of increased privacy
  - found it useful - have feeling it would make things easier
  - found it beneficial - all things in one place, speedup of processes, privacy concerns
  - quite difficult to use - too many devices, wallet might be the obstacle
  - fast way of doing things - technical background, but what if process gets stuck?
- A lot of people did not know about the technology
- OK in initial understanding
- Huge increase in understanding after going through the demo
- Natural overlap with other areas (e-gov, national agenda, …)

Technical outcomes

- Focus on what DLT you will use
  - Host one vs. use existing
- Interoperable “schema” of credentials
  - So far seems missing - critical for next steps (eduPerson, voPerson, schac, …)?
- Wallet - critical for workflow
  - Re-use existing vs. implement own
  - Existing - might not work if you host your own DLT
- Standards critical
  - OpenID4VCs, DIDs, VCs, Hyperledger Foundation
  - DC4EU Project

MUNI ICS

What’s next?

- Project finalization
  - 30th of June
- Final report preparations
- Publish outcomes of the UX study as a paper
- Exploring SSI in e-infrastructures
  - Check-In
  - e-INFRA CZ
  - Life Science AAI

MUNI ICS

MUNI
ICS

Dominik Frantisek Bucik
bucik@ics.muni.cz

Institute of Computer Science, Masaryk University, Brno