The role of standards in Open Source Software Development

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OpenWallet FOUNDATION

The OWF is a consortium of companies and non-profit organisations collaborating to drive global adoption of open, secure and interoperable digital wallet solutions.

The OWF aims to set best practices for digital wallet technology through collaboration on standards-based OSS components that issuers, wallet providers and relying parties can use to bootstrap implementations that preserve user choice, security and privacy.

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Open Source is Great

- … in giving people free of charge access to building blocks and letting them contribute to the evolution of the code.
- Cost sharing through joint open development …
- … also fosters development of competitive products (commodity vs competitive edge)

Open Source results in interoperability. Well, ...

Interoperability

“Interoperability is a characteristic of a product or system to work with other products or systems.”*
“Interoperability implies exchanges between independently implemented products or systems.”

*https://en.wikipedia.org/wiki/Interoperability

Open Source might result in Compatibility

- If anyone uses the same implementation
- Example: Hyperledger Anoncreds
- But what about:
  - Different architectures?
  - Different programming languages?
  - Different operating systems?
  - Different hardware?

Interoperability requires Standards

- **A standard is a** specification of protocols and data formats to be used in exchanges between systems to solve a certain technical task.
- Standards ensure interoperability between different building blocks, e.g. created in different programming languages.
- Examples:
  - Internet Protocol (IP), HTTPS, OpenID Connect
  - JWTs (one family of specs), >100 independent implementations*
- An implementation can be tested to comply with a certain standard.

* according to https://jwt.io/libraries

Standards are good for Open Source

- Choice & Competition: multiple interoperable but different implementations
- Reduced lock-in risk: independent implementations
- Expertise: open source projects can leverage expertise built into standards
- Stability: Changes governed by independent standards community, not a single implementation project

How OWF fosters use of standards in code projects

- First of all: We are open to all kinds of standards (no king maker!)
- Liaisons with SDOs:
  - Established: EMVCo, Fido Alliance and OpenID Foundation
  - Working on: ISO, W3C, IETF
- One elected SDO representative in OWF Board
- Community Meetings (Special Interest Groups and Task Forces)

Community Meetings

Name	Type	Approval Date	Short Description
Architecture	SIG	Apr 05, 2023	Focused on conversations related to the architecture of digital wallet engines.
Credential Format Comparison	SIG	May 31, 2023	Maintain information about available credential formats for the benefit of OWF projects and the wider community.
Digital Wallets and Agents Overviews	SIG	Sep 20, 2023	Further develop and maintain the Digital Wallet Overview and create a similar overview for digital identity agents/SDKs. These overviews should provide transparency of the characteristics of wallets and agents in order to allow for comparison and effective decision making on which wallet is applicable for your use case.
Safe Wallet	SIG	Sep 20, 2023	Create, distribute and promote a set of material that will become the de-facto way to determine how "safe" the new breed of digital wallets is, and be able to compare them effectively. This will increase the visibility of the solutions to correlation and profiling issues that could be introduced with digital wallet deployments.
OID4VC Due Diligence	Task Force	May 31, 2023	Investigate the specifications belonging to the OID4VC family thoroughly, check the existing implementations, and start the preliminary work for potentially creating/hosting a reference implementation or a framework that can be used by a wider community for application implementations

And Open Source is good for Standards!

- Adoption: Open Source lowers entry barrier for developers to adopt standards, people tend to pick what is easily available
- Contributions: Open source developers are open to contribute and pretty ambitious, makes them good partners/contributors to evolve a spec
- Competition: Availability of high quality implementations of different standards allows developers to compare, competition helps to evolve and consolidate standards

Current OWF Projects

Project Name	Short Description	
sd-jwt-python	A Python implementation of the **Selective Disclosure for JWTs** (SD-JWT) specification.	SD-JWT
sd-jwt-kotlin	A Kotlin implementation of the **Selective Disclosure for JWTs** (SD-JWT) specification.	SD-JWT
Farmworker Wallet OS	Low code components for the Mendix platform that can be used to create digital wallets.	DIDComm
VC-API	An implementation of the **VC API draft standard** in REST including issuance, and verification	VC API, W3C VC
Wallet Framework .NET	Multiprotocol wallet framework enabling implementations of OpenID4VC and SD-JWT VC, in accordance to the European Identity Wallet initiative's objectives.	DIDComm, OID4VC, SD-JWT
Identity Credential	Android libraries and reference applications for working with real-world identity.	ISO 18013-5/7, ISO 23220
sd-jwt-js	A JavaScript implementation of the **Selective Disclosure for JWTs** (SD-JWT) specification.	SD-JWT
sd-jwt-rust	A Rust implementation of the **Selective Disclosure for JWTs** (SD-JWT) specification.	SD-JWT
sd-jwt-dotnet	A .NET implementation of the **Selective Disclosure for JWTs** (SD-JWT) specification.	SD-JWT
Credo	W3C VCs with Data Integrity Proofs, DIF Presentation Exchange, OpenID4VC, and SD-JWT integration.	DIDComm, OID4VC, SD-JWT, W3C VC
Multiformat VCs for iOS	Pure Swift package for creating Verifiable Credentials (VCs) in multiple formats	JWT VC, SD-JWT VC
Bifold	Full wallet engine in React Native	see Credo

Thank you.

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