



Keynote Address

Brian Behlendorf | Open Wallet Foundation (OWF)

Enabling a trusted digital future

Brian Behlendorf
March 6th, 2024
MOSIP Connect



OpenWallet
FOUNDATION



The Linux Foundation's goal is to create the greatest shared technology investment in history by enabling open collaboration across companies, developers and users.

We are the nonprofit organization of choice to build ecosystems that accelerate open source technology development and commercial adoption on a global scale.

 THE **LINUX** FOUNDATION

We are a global organization committed to the free exchange of data, code, and innovation

3,000+

100%

830K+

980+

\$100B

2M

Universities,
NGOs, Members
41 Countries

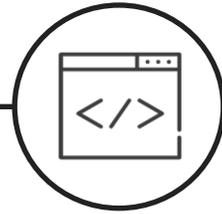
of Fortune 100
Tech & Telecom

Developers
Contributing
Code

Critical Open
Source
Projects

Shared
Value

Developers
Trained



The Linux Foundation is a critical part of modern technology

The Linux Foundation advances innovation in **open source, open hardware, standard setting, and data sharing** in a foundation of foundations structure.

The Collaboration Spectrum

Governance
Network

Open Source
Software

Open
Hardware

Community
Specifications

Industry
Standards

International
Standards



The LF is a broad scope **foundation of foundations** hosting openly developed technologies across many segments.

Security

We are securing the world's open source software supply chain



Sigstore signs Kubernetes, npm, python, and more. Scorecards are built into many build pipelines.

Networking

We are home to 8 of the top 10 open source networking projects in the world, backed by the majority of global network providers.



Support from carriers handling 70% of mobile subscribers

Cloud

We are creating a portability layer for the cloud, driving standards and developing reference tools for cloud native development.



Every relevant public cloud provider supports Kubernetes

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Automotive

Our Automotive Grade Linux platform is deployed in millions of production vehicles covering infotainment, telematics, autonomous, etc.



**Support from OEMs
Covering 50% of global
auto shipments**

Blockchain

Our open global enterprise grade blockchain technologies are driving a generational upgrade to legacy systems and markets across the globe.



**50% of the Fortune top 50
enterprise blockchain
deployments use Hyperledger**

Web

We are providing the application development framework for next generation web, mobile, serverless, and IoT applications.



**Node.js packages are
downloaded over 1 billion
times per day**

The LF is a broad scope **foundation of foundations** hosting openly developed technologies across many segments.

Energy

Software and data for transforming the world's power grids to be more secure and flexible.

LF ENERGY

Support from EU power grid operators, hardware vendors and microgrid entrepreneurs

Environment

A data and software platform that can inform and align global capital flows into climate change mitigation and resilience



OS-Climate effort unites banks, SIs, and climate accounting organizations around tools & data

Inclusion

Gates Foundation-funded project focused on an anti-fraud/KYC platform to help bank the unbanked.

 **Tazama**

Just launched!

Successful open collaboration ecosystems comes down to four core factors.

Neutrality

No one company or organization can “take it away” from the community that forms around a project.

IP Clarity

Removal of IP uncertainty enables anyone to get involved as a contributor or implement as a user.

Open Governance Do-ocracy

The most successful projects that have stood the test of time have neutral, open governance models where those who do the work make the decisions in a defined governance model.

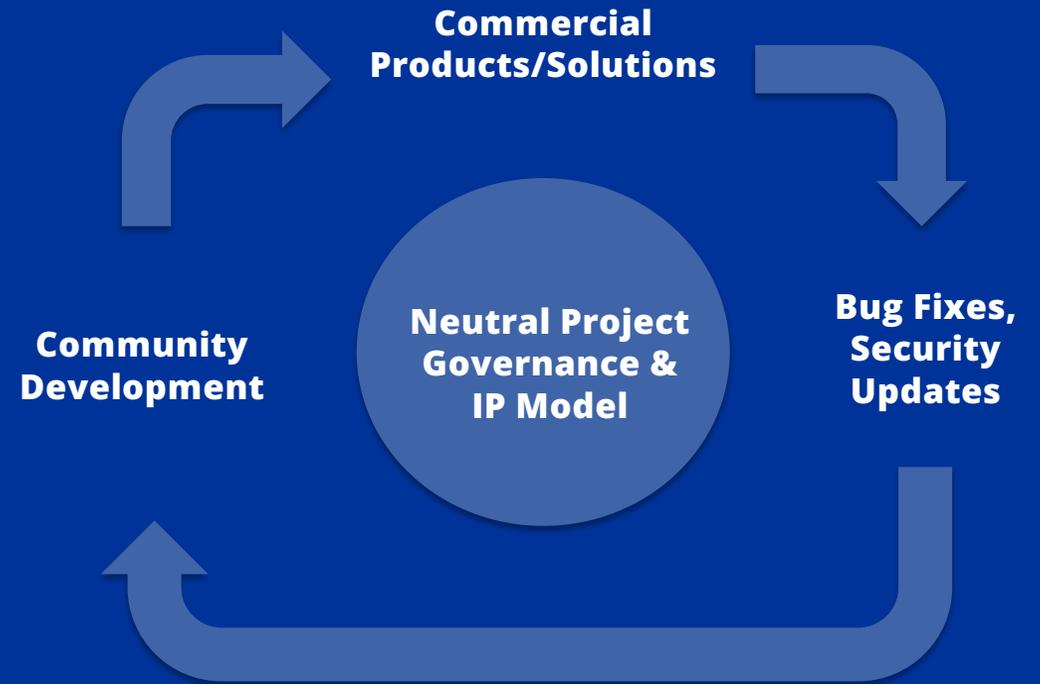
Financial Support Ecosystem

Encouraging academic, government, and commercial engagement in OSS leads to jobs, faster adoption, new contributions and features that address new use cases.

Projects support a continuous, sustainable ecosystem.

Under the LF model projects become part of a continuous, sustainable ecosystem

- Sustainable projects have a developer community
- A developer community's technology is used in commercial solutions that profit businesses
- The businesses then participate and reinvest back into the project
- The businesses then hire developers to work in the community
- NGOs and Governments can also participate as peers to commercial participants.



Commercial dependency drives a virtuous cycle of commercial and community engagement based on accepted governance and IP models

Why OpenWallet?

- Premiered Oct 2022; formal launch February 2023.
- Very clear nexus emerging between technology:
 - VC standards at the W3C and ISO reached stability.
 - COVID Credentials work led to a real focus on selective disclosure and other essential privacy work
 - COVID also led to production implementations of VCs at large scale
 - Meanwhile, other pioneering work, such as MOSIP as well as VC projects in the US, Europe and Canada, moved to production.
- ...and policy:
 - EU EIDAS creating a government mandate for wallets, and mandates OSS
 - Mobile drivers' licenses seeing widespread support
 - A clear need to support use cases for credentials, not just proof of identity

Why OpenWallet?

- But the technology landscape was very cluttered:
 - Lots of software bits and pieces, but few of them worked together
 - Many projects were too closely associated with cryptocurrencies/blockchain
 - Many pieces built for pilots were based on early specifications; lots of refactoring needed.
- And the competitive landscape very rough:
 - Wallets should not where an organization builds its core business model - like web browsers and e-mail clients, they should be general purpose. But then how do we get them built?
 - The “Big 2” phone OS companies have default wallets - with substantial usage - hindering competition and innovation.

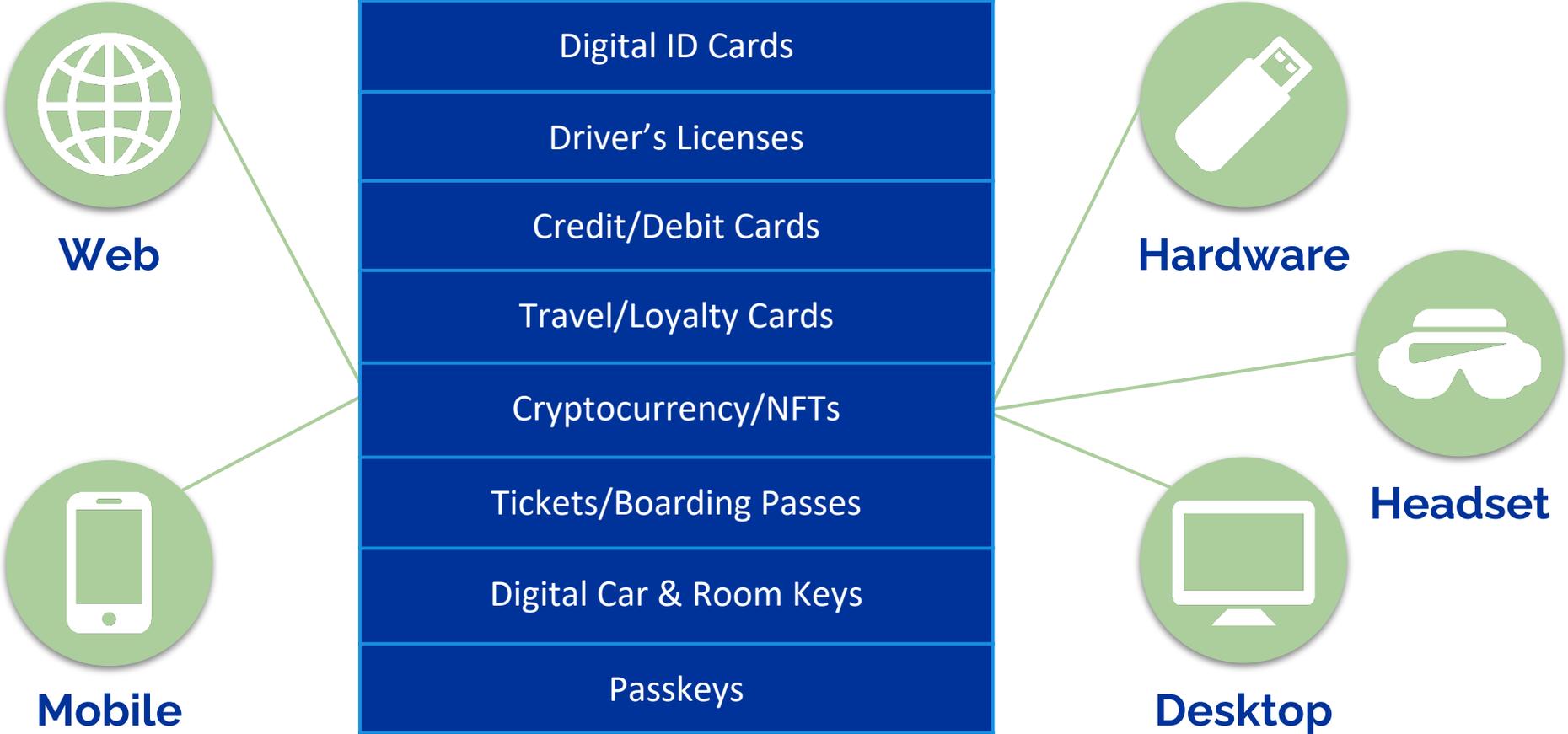
Why OpenWallet?

The open source wallet landscape needed a neutral home for OSS wallet efforts to come together, to cross-integrate, and accelerate development.

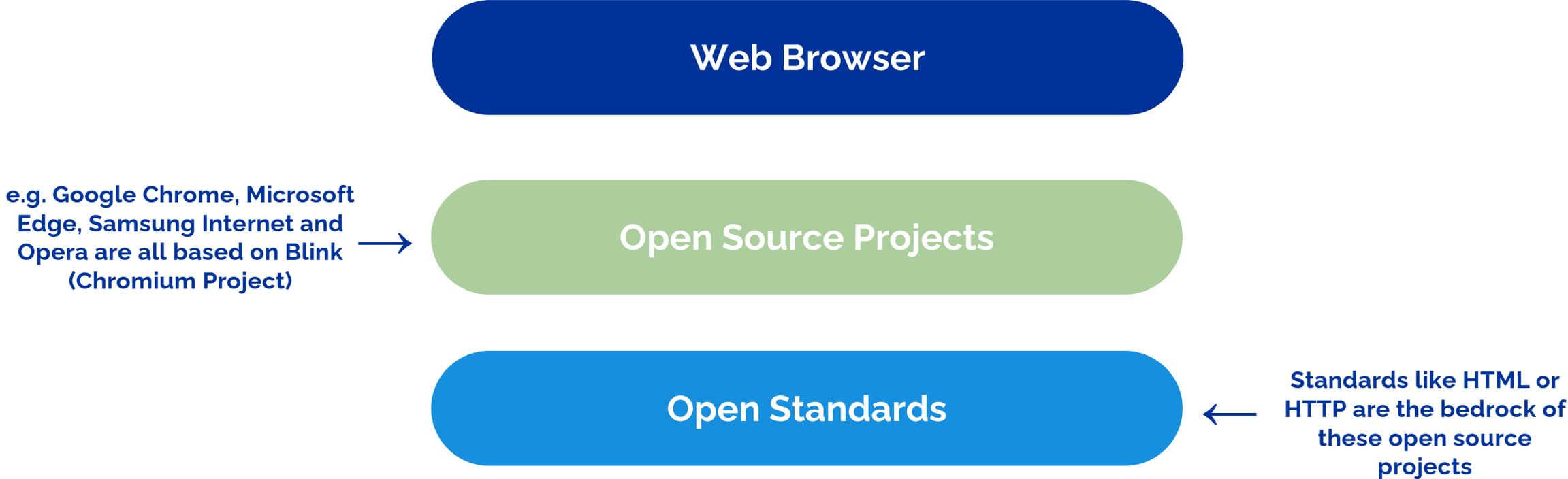
In scope: Software development of mobile and cloud-hosted wallet applications. This starts with verifiable credentials, but will extend to payments and digital assets.

Out of scope: wallet or VC standards, certification programs, consumer services or trust frameworks.

Digital Wallets serve many purposes - we will get there.



Every web browser is based on open source code



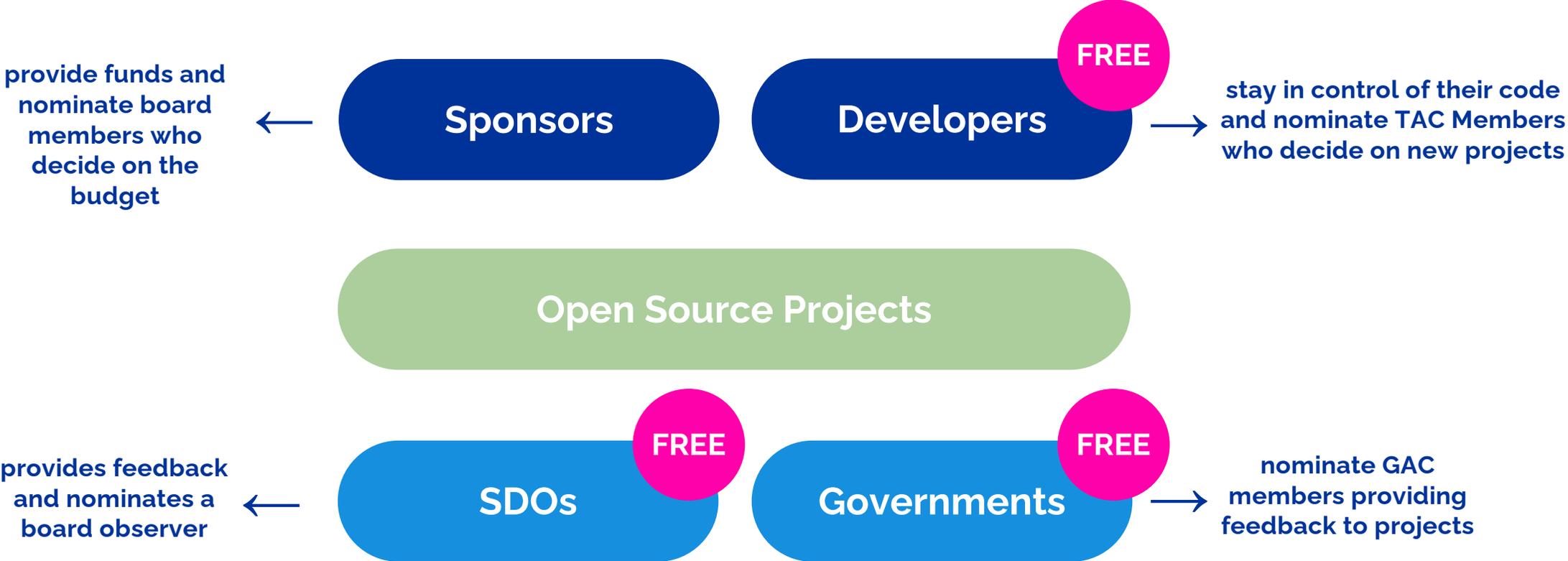
We deploy this model for digital wallets

Digital wallets may hold many credentials e.g. identity, drivers licenses, health, academic, access, crypto assets



← Most use cases require adherence to different standards and rules that differ by country

Creating a safe space for all stakeholders



Current Projects

| Project Name | Stage | Approved | Short Description |
|-------------------------|--------|--------------|--|
| sd-jwt-python | Labs | May 27, 2023 | A Python implementation of the Selective Disclosure for JWTs (SD-JWT) specification. |
| sd-jwt-kotlin | Labs | May 27, 2023 | A Kotlin implementation of the Selective Disclosure for JWTs (SD-JWT) specification. |
| Farmworker Wallet OS | Labs | Aug 9, 2023 | Low code components for the Mendix platform that can be used to create digital wallets. |
| VC-API | Labs | Sep 28, 2023 | An implementation of the VC API draft standard in REST including issuance, and verification |
| Wallet Framework .NET | Labs | Oct 5, 2023 | Multiprotocol wallet framework enabling implementations of OpenID4VC and SD-JWT VC, in accordance to the European Identity Wallet initiative's objectives. |
| Identity Credential | Labs | Oct 18, 2023 | Android libraries and reference applications for working with real-world identity. |
| sd-jwt-js | Labs | Nov 1, 2023 | A JavaScript implementation of the Selective Disclosure for JWTs (SD-JWT) specification. |
| sd-jwt-rust | Labs | Nov 15, 2023 | A Rust implementation of the Selective Disclosure for JWTs (SD-JWT) specification. |
| sd-jwt-dotnet | Labs | Nov 29, 2023 | A .NET implementation of the Selective Disclosure for JWTs (SD-JWT) specification. |
| Credo | Growth | Nov 29, 2023 | W3C VCs with Data Integrity Proofs, DIF Presentation Exchange, OpenID4VC, and SD-JWT integration. |
| Multiformat VCs for iOS | Labs | Jan 24, 2024 | Pure Swift package for creating Verifiable Credentials (VCs) in multiple formats |
| Bifold | Growth | Feb 21, 2024 | Full wallet engine in React Native |

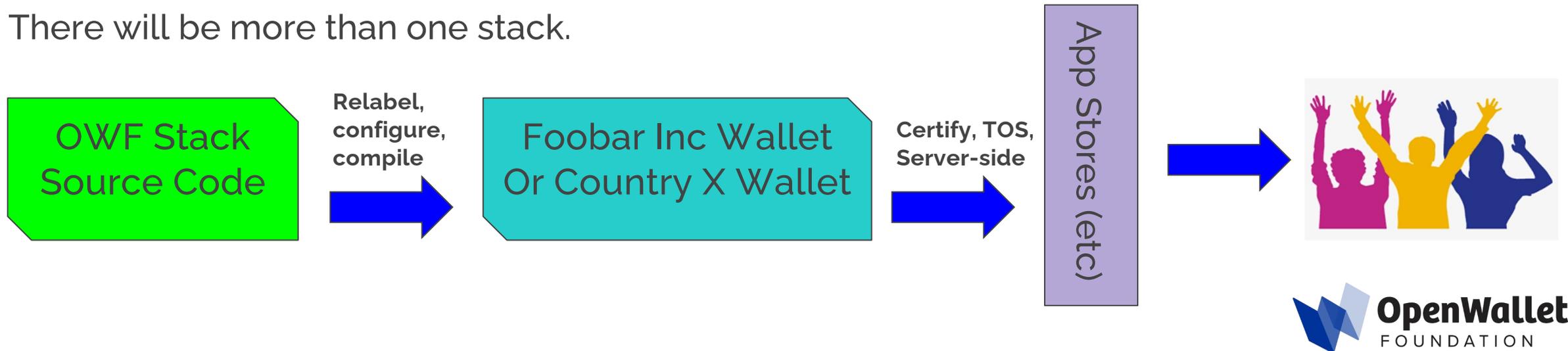
OWF “Wallet Stacks”

Starting from today’s collection of pieces, we will be moving to unified “Wallet Stacks”.

This Stack can be modified and distributed by any organization (a corporation, a government, an NGO, etc) so that it may own the “last mile” to the consumer, and thus the terms of service, supported credentials and protocols, cloud backup/custodial services, and ultimate UX.

That entity would then be responsible for shepherding their last-mile wallet through appropriate regulatory processes.

There will be more than one stack.



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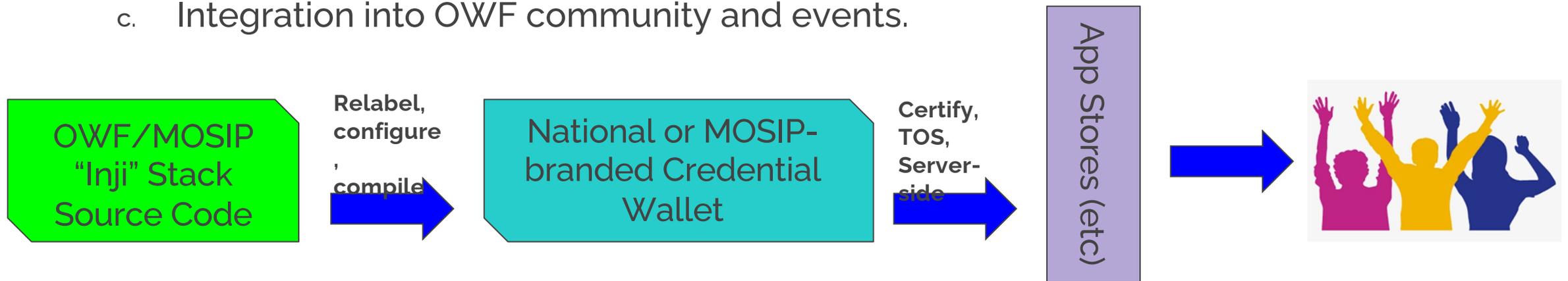


Governmental Advisory Council Participants

- To date, the Governments that have joined the OWF [Governmental Advisory Council](#) (GAC) include the United Kingdom, China, Switzerland, Sweden, Portugal, Papua New Guinea, Mexico, Bhutan, Argentina and United States.
- The GAC Government Representatives' details are available [here](#)
- If you want to learn more about the GAC, don't hesitate to get in touch with the GAC Secretariat at GAC@openwallet.foundation.

Collaboration with MOSIP

1. At the very least, we should be collaborating on common technologies. MOSIP software developers and systems integrators should feel free to consume OWF technologies.
2. Inji could also become an upstream OWF “Wallet Stack”. Benefits would include:
 - a. Greater visibility for global use cases
 - b. Greater corporate contributions based on risk reduction from Linux Foundation’s systems and history
 - c. Integration into OWF community and events.



Let's collaborate!

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