



SCION OPEN-SOURCE IMPLEMENTATION ROADMAP 2026

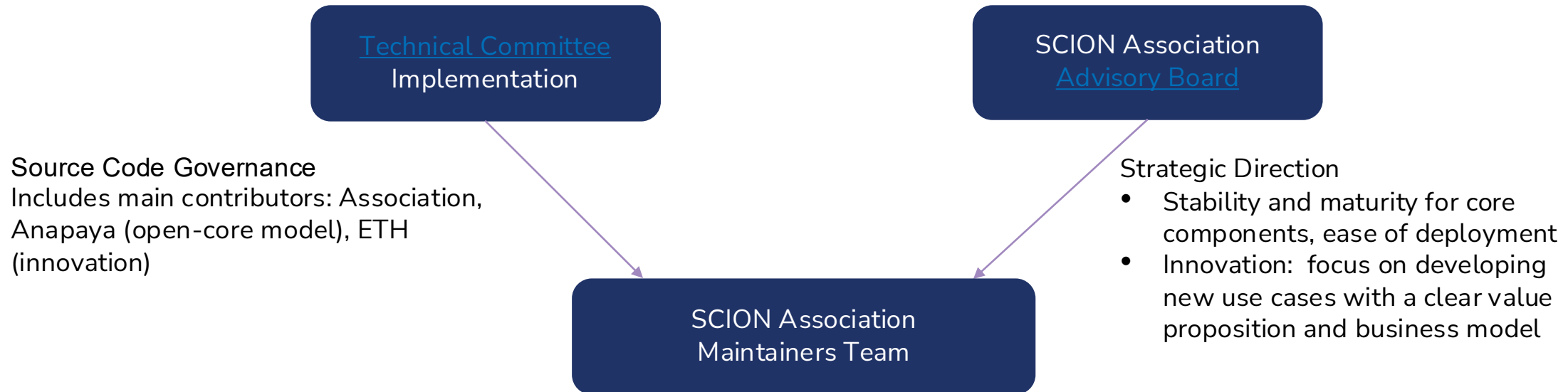
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HOW THE SCION ROADMAP WORKS

Background

The SCION open-source implementation roadmap is curated by the SCION Association maintainers team. It relies on input from the community through:



Want to influence the roadmap?

- If you can contribute directly yourself: check the [contribution guide](#) and change process
- To influence the SCION Association's contributions: become an Association member and support us!

BACKGROUND

<https://github.com/scionproto/scion>

What it is:

- Core components to run SCION infrastructure (Telco and end-used)
- Maintained by the Association since August 2022
- Main contributors: Association, Anapaya (open-core model), ETH (innovation)
- Users: Anapaya (some components shared with closed source stack), SCION Education Network, researchers,

Objectives

1. Usable reference implementation (e.g., to demonstrate technology's benefits, independently from commercial vendors)
2. Basis for additional SCION vendors (requires stability)
3. Enabler for experimentation (requires innovation)

Stability vs. innovation: the advisory board, following 2025 discussions, recommends a mix of both:

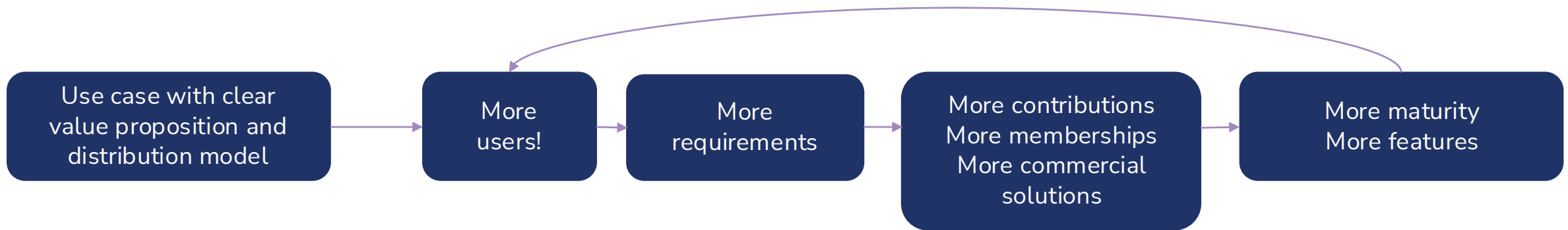
- Stability and maturity for core components, ease of deployment
- Innovation: focus on developing new use cases with a clear value proposition and business model

STATUS

SCION Association's contribution

Since its creation in late 2022, the SCION Association maintains the SCION open-source implementation and contributed towards maturity:

- Late 2022: Association established, took over maintenance from Anapaya
- 2023: documentation, testing infrastructure, removing legacy components
- 2024: operationally viable core implementation, improved distribution (SW packaging)
- 2025: high-performance router implementation (AF_XDP)



How can our small development best accelerate SCION open-source value chain?

- Mature readiness of promising use cases (critical infrastructure ecosystem), enhancing ability to demonstrate value of SCION through open source and independently from commercial implementations
- Through collaboration with potential users

USE CASES

USE CASE	VALUE PROPOSITION	USERS	CONTRIBUTORS & SPONSORS	COMPONENTS
Run SCION core infrastructure	Insurance/fallback for critical users Reference for interop / more vendors Accessible demonstrator Security thanks to open code & formal verification	• SCIERA • SCIONLab • Anapaya & telco partners (parts)	SCION Association NINet Anapaya ETH ...	Core components: Router, PKI, Control plane
Connect critical infrastructure ecosystem (e.g. SSFN)	Reliable and multi-telco connectivity Control over underlaying telco infrastructure/geofencing	? * *individual components are used in Anapaya's stack	SCION Association NINet	SCION-IP Gateway PKI
Connect applications	Attack surface reduction Geofencing Higher performance when CDN not an option	App developers?	Anapaya open-source mobile SDK	Endpoint stack Interoperability mechanisms (e.g., Happy Eyeballs)
Experimentation	Explore new use cases	depends on use case	ETH, OvGu Magdeburg, ...	Extensions (e.g, Hummingbird)

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SCION Association's contributions

High Performance router ([GitHub Project #1](#))

- Finalization of work started in 2025

Enhance configuration management & automation ([GitHub Project #5](#))

- It facilitates ease of adoption of SCION
- It can help develop a demonstration tool in the future

SCION IP Gateway: support full path policies ([GitHub Project #3](#))

- Required to demonstrate SCION's unique selling points with legacy applications (in the enterprise area)
- Reduced limitations due to Anapaya's open-source patent pledge (in progress)

Router: Improve stability and correctness ([GitHub Project #1](#))

- Including small bugfixes discovered through IETF process

2027 radar:

- Visualization of SCION paths to enable open-source based demonstrations
- Support of quantum-safe cryptography in PKI

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Community contributions

SCION-enabled applications on endpoints

- SCION SDK (Anapaya)
- Open-source compatibility & control-plane APIs (ETH)

Hummingbird Bandwidth reservations ([Hummingbird Roadmap - issue #4852](#))

Private ISDs (ETH) ([Issue #4934](#))