# SCION
## ASSOCIATION

Creating a safe,
connected world.

# ANNUAL
# REPORT
## 2024

www.scion.org

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**SCION**
ASSOCIATION

# GROWING THE SCION
# MOVEMENT TOGETHER

Dear Members,
Partners, and
Stakeholders,

2024 was a year of growth for the SCION movement and for the SCION Association. In an increasingly multipolar world, the path security and reliability offered by SCION are fundamental to address the needs of critical infrastructure ecosystems as more and more systems rely on always available connectivity. The increased interest in SCION was evident at the SCION Day 2024, our largest event to date which saw record attendance and participation.

The SCION Association turned two years old as it continued to nurture the SCION ecosystem together with its members, which included 6 new joiners. Besides that, we are immensely grateful to our founding members ETH Zürich, the Swiss National Bank, SIX Group and Dr. Uli Sigg. Thanks to their continued support, we are able to grow the Association and the SCION movement.

We are also proud to highlight the successes of our members, with notable examples including SSFN completing its migration to SCION, and SNB adopting SCION for home-office use. These real-world installations and deployments demonstrate the benefits and value

that SCION brings to organizations.

In addition to our Standardization and Implementation Committees, we have launched new Marketing and Adoption Committees that are working on increasing adoption of SCION in new geographies and sectors. These committees are instrumental in driving deployment through collaboration between our members and the wider SCION ecosystem. Thanks to a newly launched website and new messaging and marketing materials, we are in a stronger position to communicate the benefits of SCION internationally.

We also remain committed to investing in the fundamental maintenance and evolution of the SCION technology. This includes advancing the SCION specifications through the IETF, improving the performance and usability of the open source implementation maintained by the Association, and ensuring that SCION remains at the forefront of networking technology.

In the future, we look forward to seeing increased adoption in various sectors and geographies, welcoming more vendors, ISPs, and users in the ecosystems.

Thank you for your continued support and commitment to a safer and more reliable Internet.

Prof. Lothar Thiele
Chairman of the Board of Directors

# MEMBERSHIP

We started 2024 with a new tiered membership model that allows members to choose the degree of their involvement and therefore their financial contribution to the Association. For the first time, we also offered our members heavily discounted sponsorship opportunities at our community events.

This made membership in the Association more compelling and helped us to welcome 6 new members in the Adopter category. Notably, we welcomed our first user member - Zürcher Kantonalbank - which has been engaged in SCION research from the early days and is also part of the SSFN, along with our first international member - Mysten Labs - who builds high-performance blockchain infrastructure with SCION. We also welcomed Axpo Systems, Cyberlink, Swisscom, and Sunrise who are key SCION ISPs in Switzerland.

The SCION ecosystem has been growing thanks to the activities and initiatives of our members. Worthy mentions are the Swiss National Bank's home office use case, the emerging Secure EFTPOS Network that secures credit card terminals, together with many other initiatives. We are especially grateful to our founding members ETH Zurich, Swiss National Bank, SIX, Dr. Uli Sigg for their continued support and trust in the Association and looking ahead, we remain committed to welcoming more members as the ecosystem grows.

## SUPPORTER MEMBERS

| | | | |
|---|---|---|---|
| SCHWEIZERISCHE NATIONALBANK / BANQUE NATIONALE SUISSE / BANCA NAZIONALE SVIZZERA / BANCA NAZIUNALA SVIZRA / SWISS NATIONAL BANK | ETH zürich | Dr. Uli Sigg — Private individual | SIX |

## ADOPTER MEMBERS

| | | | | |
|---|---|---|---|---|
| SWITCH | DIDAS | eraneos | ETH Foundation | axpo |
| Otto von Guericke Universität Magdeburg | ANAPAYA | libC TECHNOLOGIES | Swiss Finance + Technology Association | cyberlink |
| MystenLabs | Sunrise BUSINESS | swisscom | Switch | Zürcher Kantonalbank |

# SCION SPECIFICATIONS AND THE IETF

The SCION Association defines and maintains the SCION technical specifications and represents the SCION community at standards development organizations such as the Internet Engineering Task Force (IETF). Technical specifications are fundamental in order to ensure interoperability between implementations (e.g. commercial and open source), to keep the market open to new vendors and implementors, and to ensure interoperability.

The core SCION specifications are developed by the Technical Committee (TC) for Standardization, who during 2024 continued to work together with the Association's team on documenting the core SCION protocol specification as deployed today. The committee is comprised of 10 individuals from the SCION community and met two times during the year to discuss this work. Through guidance of the committee, the Association represents the SCION community at the IETF/IRTF.

## STANDARDIZATION COMMITTEE

**NICOLA RUSTIGNOLI**
Chair, SCION Association

**FRITZ STEINMANN**
SIX Group

**ROGER LAPUH**
Extreme Networks

**WILLIAM BOYE**
Swiss National Bank

**SAMUEL HITZ**
Anapaya

**JUAN GARCIA PARDO**
ETH Zurich

**MIKAEL HOLMBERG**
Extreme Networks

**SIMON LEINEN**
Switch

**JONAS BEHRING**
Swisscom

**KEVIN MEYNELL**
SCION Association

# ISE SUBMISSIONS

The Association has been engaging with various IETF working groups and IRTF research groups since its creation in 2022. Since SCION is already deployed and was initially developed outside of the IETF by our members ETH Zurich and Anapaya Systems, the committee decided to first document the current protocol specification as it stood. This resulted in the submission of three Internet Drafts specifying the PKI, control plane and data plane components to the IETF ISE (Independent Submission Editor) stream. This stream does not involve going through the IETF consensus process and does not produce standards.

During 2024, the drafts have been advancing through the review process towards becoming RFCs, receiving valuable feedback from Internet experts. The Association's team has been improving the drafts while addressing the feedback received, and it is anticipated these will progress to review by the Internet Engineering Steering Group (IESG) during 2025; the final stage before publication as an RFC.

# THE CORE SCION SPECIFICATION

◆ **SCION PKI**
https://datatracker.ietf.org/doc/draft-dekater-scion-pki/

Specifies the Public Key Infrastructure (PKI) that handles the cryptographic keys used by the Control Plane for its authentication processes. It is the foundation of the SCION trust model based on Isolation Domains.

◆ **SCION CONTROL PLANE**
https://datatracker.ietf.org/doc/draft-dekater-scion-controlplane/

Specifies the Control Plane that performs inter-domain routing by discovering and securely disseminating path information between ASes.

◆ **SCION DATA PLANE**
https://datatracker.ietf.org/doc/draft-dekater-scion-dataplane/

Specifies how secure packet forwarding is carried out between SCION-enabled ASes over paths selected by endpoints.

# FUTURE WORK

The current ISE specifications represent a starting point documenting how SCION works today. In the long term, it will be necessary to refer to these specifications and the lessons learned to evolve the protocol to further improve interoperability with existing protocols. This is why discussions continue with the IRTF PANRG (Path-aware networking Research Group) and other working groups, with the goal of using this work as a basis for future standardization work in the IETF. To continue discussions, two new Internet Drafts were also started in 2024:

◆ **SCION DEPLOYMENT ISSUES**
https://datatracker.ietf.org/doc/draft-meynell-panrg-scion-deployment/

Documents how to deploy a SCION network, the lessons learned, and how to configure path-aware policies.

◆ **SCION RESEARCH QUESTIONS**
https://datatracker.ietf.org/doc/draft-meynell-panrg-scion-research-questions/

This covers various aspects of path-aware networking that are not currently part of the core specification of SCION, but which may be incorporated at a later stage. It is also a starting point for discussions around long-term protocol evolution.

SCION at IETF 120 Vancouver

# OPEN SOURCE

The SCION Association and its staff develop, maintain and host the repository of the SCION open source implementation, fostering a community of contributors. The availability of an open source implementation is a fundamental pillar of the Association's activities as it promotes interoperability by providing a reference implementation against which other implementations can be tested, provides a code base that can be implemented into vendor products, improves security by opening the code base to public scrutiny, and accelerates development by sharing efforts across a community of contributors. It also provides a free alternative to proprietary implementations, and it is especially popular among the research community that keeps innovating around SCION.

The Technical Committee (TC) for Implementation coordinates the development process of the open source implementation and is responsible for approving the officially published versions. It is composed of representatives of the SCION Association, Anapaya, ETH Zürich and other community contributors, and meets approximately twice a year to discuss progress, roadmap and priorities. Another role is to contribute to the SCION technical specifications and it closely liaises with TC Standardization.

In 2024 the Technical Committee Implementation welcomed two new members, Jordi Subirà from ETH Zürich and Markus Legner from Mysten Labs, and saw the departure of Matthias Frei from the SCION Association. Contributors have also been holding a bi-weekly meeting to discuss and coordinate ongoing work.

## IMPLEMENTATION COMMITTEE



**JEAN-CHRISTOPHE HUGLY**
SCION Association



**MARC FREI**
ETH Zurich



**DOMINIK ROOS**
Anapaya



**JORDI SUBIRA NIETO**
ETH Zurich



**MARKUS LEGNER**
Mysten Labs



**FRANCOIS WIRZ**
ETH Zurich



**LUKAS VOGEL**
Anapaya

The TC Implementation receives advice from the Association's Advisory Board and leadership on the strategic goals of the open source implementation. Through 2024, the focus was on two main areas: providing a solid, operationally viable core implementation, while allowing innovation through modularity. Development work revolved around improving the control plane communication protocols, extending the beaconing policy configuration, and providing packages for OpenWRT. We also started measuring and improving the SCION router performance, while refactoring the code to further improve performance and modularity.

This work is still in progress and will continue in 2025. It is supported by the NLnet Foundation's NGI Zero program assists Next Generation Internet initiatives with funding from the European Commission.





Demo at SCION Day 2024 from our member OvGu Magdeburg

While the Association actively supports development with its staff, we are grateful to all our contributors, especially from our members ETH Zurich and Anapaya who continue contributing to the repositories.

# COMMUNITY & ADOPTION

The SCION Association undertakes outreach to raise awareness of the SCION technology, to identify markets and potential users, opening new opportunities for its members. The goal is to encourage adoption in various sectors and geographies, while building the necessary ecosystem of service providers and vendors to support its deployment.

In early 2024, the Adoption committee was established to help identify markets and territories where SCION is beneficial, and to identify which sectors should be prioritised. The committee is comprised of representatives of the SCION Association and its members and met three times. Additional aims are to share market knowledge and contacts amongst members of the SCION Association, to develop cost models and governance best practices, and to advise on product and service certification.

A market analysis was conducted to identify key sectors and their stakeholders. Experts in various sectors were interviewed to understand their needs, current infrastructure, and future requirements. This enabled business models and focused marketing materials to be developed which can be used to encourage the wider adoption of SCION.

Key sectors include critical infrastructure ecosystems, finance, power utilities, aviation, defence, time distribution and gaming. SCION is well established in Switzerland where it has been adopted by the financial and healthcare sectors, and based on this Swiss success story, the Association decided to pursue finance and other industries starting with Northern Europe.

Other activities included a survey of the SCION Association membership about their certification requirements (for devices, software, services, and training providers), and an analysis of the changing regulatory landscape (e.g. with the advent of NIS2 and the EU Cybersecurity Act) to understand where SCION can help.



SCION Association at SWINOG

The SCION Association also raised awareness in a number of global community events during the year. We attended telecom events in order to create the necessary awareness among ISPs to expand the global availability of SCION. This included NANOG 90, APRICOT 2024, RIPE 88 & 89, DKNOG 14, SwiNOG 39, DENOG 16 and MENOG 24, Swiss Telecommunication Summit. We also represented SCION at finance and industry specific events to raise awareness among potential users and this included the Swiss Cyber Security Days, the Open Source in Finance Forum London, the Point Zero Forum 2024, Project Liberty Summit 2024, and Anapaya's partner event.

Spreading the word about SCION is a joint effort and we therefore often collaborate with our members and committees to attend events. We thank our members for their collaboration.

## ADOPTION COMMITTEE

**CORNELIUS DORN**
SIX Group

**PATRICK BOLLHALDER**
Anapaya

**DAVID HAUSHEER**
OVGU Magdeburg

**NICOLA RUSTIGNOLI**
SCION Association

**FRITZ STEINMANN**
SIX Group

**URS FISCHER**
HIN

**ANDREAS QUADT**
Eraneos

**KEVIN MEYNELL**
Chair, SCION Association

**STEPHAN ULRICH**
Cyberlink

**CHRISTIAN ETTER**
Sunrise Business

# NEW PARTNERSHIPS

In 2024 we joined the Fintech Open Source Foundation as an Associate member. This organization is a directed fund of the Linux Foundation working on open source in the finance industry. We also started receiving support for the open source development from the NLnet Foundation. These partnerships will strengthen our ability to raise awareness about SCION in the finance industry and promote open source maturity.

# COMMUNICATION AND BRANDING

The year 2024 continued to build on the strategic foundations set in the previous year, with our communication and marketing efforts primarily focused on further increasing brand awareness and expanding the SCION ecosystem. Our objectives were clearly aligned with nurturing our existing membership base whilst attracting new members to the SCION Association.

We began the year with a dynamic overhaul of our digital presence, enhancing the SCION Association's website to improve user engagement and accessibility. This revamp was critical in positioning our platform as the central hub for information, updates, and community interaction concerning SCION technology.

## 2024 WEBSITE METRICS

### 9.3K+ users
+70.60% vs 2023

### 15K sessions
+48.25% vs 2023

### 5K organic visitors
+50% vs 2023
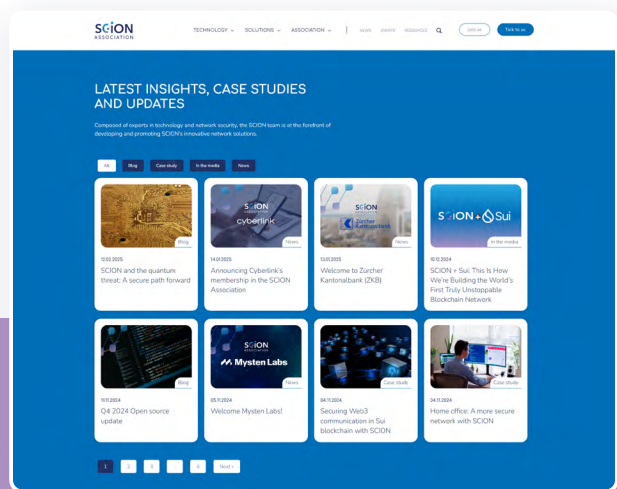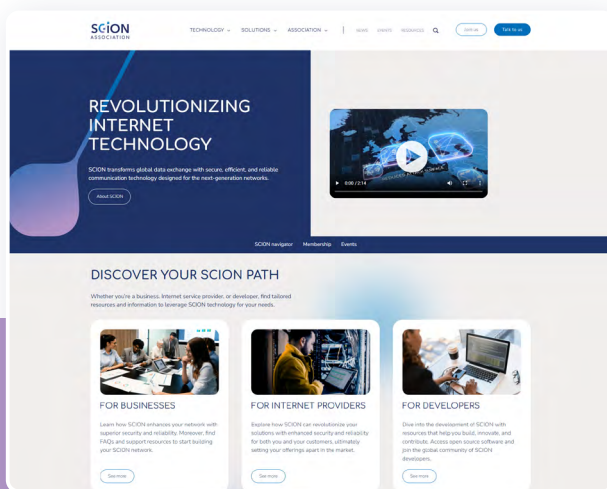


Throughout the year, we also introduced new content marketing, including a 3D video that brought SCION technology to life in a visually engaging format. This video helps demystify complex technical concepts and showcases real-world applications of SCION technology, contributing significantly to our promotional efforts.

# SCION DAY 2024

**270+**
onsite attendees

**150+**
online participants

A highlight of the year was SCION Day 2024, held on 20 October 2024 at ETH Zurich and online.

This flagship event attracted 270+ onsite attendees, and 150+ online participants, playing a pivotal role in strengthening our community ties and bolstering SCION adoption rates. The day was packed with insightful discussions. On stage, we had the Bank for International Settlements (BIS) with innovative SCION use cases, as well as the European Central Bank. Networking opportunities also resonated well with our audience.

## 1.3K LinkedIn followers
+49% vs 2023

## 44% open rate
SCION newsletter

## 5.8% click rate
SCION newsletter

In parallel to these initiatives, we launched the Marketing Committee where we coordinate and align marketing and communication activities around SCION technology together with our members. Our goal is to ensure consistent messaging around the SCION technology as well as align on communications activities to raise awareness on SCION.

Looking forward to 2025, we are committed to further enhancing our messaging and refining our event strategies in collaboration with our members and partners. We will continue to invest in our website and online channels, striving to extend the reach and impact of SCION technology to a broader, global audience. Our efforts remain dedicated to not only growing the SCION Association but also to ensuring the SCION ecosystem thrives as a beacon of innovation and security in the digital world.

# MARKETING COMMITTEE

### IVONNE CANO HÄLG
Anapaya

### JÜRG SCHNEIDER
Six Group

### PATRICIA MEYRE
Axpo Systems

### JULIA TRUNKWALTER
Sunrise Business

### CÉLINE MAYER
Cyberlink

### KATARINA GARIC
Chair, SCION Association

# CORPORATE GOVERNANCE

## GOVERNANCE STRUCTURE

The SCION Association was established in 2022 in accordance with the provisions of the Swiss Civil Code and is registered in the city of Luzern, Switzerland. Our offices are located in the Schlössli Schönegg which is currently undergoing major reconstruction. We are very grateful to our Founding member Uli Sigg for facilitating our stay in this historic castle.

The main bodies of the Association are the General Assembly of its members, the Association Board, the Executive Management (Geschäftsleitung), the Advisory Board, and the four Committees.

## GENERAL ASSEMBLY OF MEMBERS

The General Assembly of Members is the supreme body of the Association. Its main tasks are to elect and dismiss the members of the Association Board, to approve the annual financial statements, and to adopt and amend the bylaws of the Association.

There are two categories of members: "Founding members" and "Regular members". Due to their supporting role in the initial phase of the Association, Founding members have the right to appoint one Association Board member or one Association Board observer each and to dismiss them at any time. Any preferential rights of Founding members will cease to exist by August 2025, but due to its central role in pursuing the SCION project and founding the Association, ETH Zurich is exempt from any restrictions going forward.

### The Founding members are:

Uli Sigg as a private individual, the Swiss National Bank SNB, the Swiss Stock Exchange SIX and ETH Zürich. Regular members at the beginning of the reporting year were the ETH Foundation, Digital Identity & Data Sovereignty Association (DIDAS), SWITCH, Eraneos Switzerland AG, Otto-von-Guerick-Universität Magdeburg, libC Technologies SA, Swiss Finance + Technology, and Anapaya Systems AG. During the reporting year we welcomed six new members: Axpo Systems, Cyberlink, Mysten Labs, Sunrise, Swisscom, and Zürcher Kantonalbank ZKB.

# ASSOCIATION BOARD OF DIRECTORS

The Board of Directors consist of a minimum of three and a maximum of seven members. Elections for members of the Board of Directors are held every three years by the General Assembly for a term of three years. The Board of Directors elects its Chairman and a Vice-Chairman from among its members.

The Board of Directors is responsible for the overall management of the Association and for issuing the necessary directives. The responsibilities include determining the organization of the Association, determining the Association's membership fee, appointing members of the Association, and appointing and supervising the persons entrusted with the management (CEOs).

At the end of the reporting year, the Board of Directors consists of the following members:

Lothar Thiele (Chairman), Uli Sigg (Vice Chairman), Vanessa Wood, Reto Francioni, Thomas Wellauer, Thomas Moser (Observer), and Andréa Maechler (Observer). We are honoured that ETH appointed Andréa Maechler as Honorary Councillor during the ETH Day in November 2024 for her great commitment to promoting technology transfer from research to the economy.

**PROF. DR. LOTHAR THIELE**
Chairman of the SCION Association BoD

**PROF. DR. RETO FRANCIONI**
Chairman of the BoD of UBS Europe

**DR. ULI SIGG**
Private individual

**DR. THOMAS WELLAUER**
Chairman of the BoD of SIX Group

**PROF. DR. VANESSA WOOD**
ETH Zurich

**DR. THOMAS MOSER**
Observer from the Swiss National Bank

**ANDRÉA MAECHLER**
Observer from the BIS

# EXECUTIVE BOARD (GESCHÄFTSLEITUNG)

The members of the Executive Board are appointed and dismissed by the Board of Directors. The Executive Board is responsible for the administration of the Association's financial resources including the accounting, and for managing the employees of the Association and providing the necessary directions.

At the end of the reporting year, the Executive Board consisted of Nicola Rustignoli and Luzius Cameron as co-CEOs.

The SCION Association team consisted of 5 staff (4.1 FTE counting part time) by the end of 2024. This included:

Luzius Cameron - Co-CEO and General Secretary

Nicola Rustignoli - Co-CEO and Technical Engineer

Matthias Frei - Software Developer (left at the end of June, 2024)

Katarina Garic - Marketing & Communications

Jean-Christophe Hugly - Software Developer

Kevin Meynell - Program and Community Manager

Ekaterina Titkova - Software Engineer (as of January 2025)

Roman Scharkov - Software Engineer (as of January 2025)

**NICOLA RUSTIGNOLI**
Co-CEO

**LUZIUS CAMERON**
Co-CEO

**KATARINA GARIC**
Communications & Marketing Manager

**JEAN-CHRISTOPHE HUGLY**
Software Engineer

**KEVIN MEYNELL**
Community Engagement Manager

**KATYA TITKOVA**
Software Engineer

**ROMAN SCHARKOV**
Software Engineer

# ADVISORY BOARD

The Board of Directors may appoint one or more Advisory Boards, which do not have to be committees of the Board of Directors itself. The overall purpose of the Advisory Board is to provide external expertise and strategic advice to the Board of Directors and any other bodies of the Association on specific matters so that the Association may successfully execute its vision in the medium and long term.

At the end of the reporting year, the Advisory Board consists of Adrian Perrig (Chairman), Burkhard Balz, Mike Dargan, Jos Dijsselhof, Martin Jetter, Mariam Kaynia, Markus Nispel, Hauke Stars, Peter Thüring, Klaas Wierenga, and Hui Zhang. In November of 2024, Jos Dijsselhof stepped down as CEO of SIX; in February 2025 he was replaced on the Advisory Board by Cornelius Dorn.

**BURKHARD BALZ**
Member of the Executive Board at Deutsche Bundesbank

**JOS DIJSSELHOF**
CEO SIX Group

**MARTIN JETTER**
Chairman of the Supervisory Board at Deutsche Börse

**MARIAM KAYNIA**
Director of Architecture, Strategy and Analytics at Telefónica Germany

**MARTIN BOSSHARDT**
CEO Anapaya

**MARKUS NISPEL**
CTO EMEA at Extreme Networks

**ADRIAN PERRIG**
Professor at ETH Zurich and Chairman of the Advisory Board

**HAUKE STARS**
Member of the Executive Board / CDO at Volkswagen Group

**PETER THÜRING**
Head IT at Swiss National Bank

**KLAAS WIERENGA**
Chief Information & Technology Officer at GÉANT

**HUI ZHANG**
Chief Scientist and Chairman of the Board of Conviva

**MIKE DARGAN**
Group Chief Operations and Technology Officer at UBS

## COMMITTEES

The Board of Directors may appoint one or more Committees, which do not have to be committees of the Board of Directors itself. There are currently four Committees:

- Implementation - overseeing the open source SCION project;

- Standardization - overseeing the evolution of the SCION protocol and managing the overall direction of the SCION specifications;

- Adoption - providing expertise on matters relating to SCION deployment;

- Marketing - coordinating and ensuring alignment of marketing and communication activities around the SCION technology.

# FINANCIAL STATEMENTS

The full report with the financial statements will be released after our Annual General Meeting on May 8, 2025.

# OUTLOOK

Looking ahead, SCION will continue to grow its footprint from early adopters toward broader international adoption. Based on our existing success, we aim to further support the expansion of the SCION ecosystem.

We will be supporting this process in two ways: we will continue focusing on the technology, overseeing its evolution to make sure it produces true benefits and value across the ecosystem. We will therefore continue investing in standardization and open-source. In addition, we will increase our efforts in the area of adoption, investing in marketing, community and outreach, events, and establishing new member-lead committees.

In closing, we extend our sincere gratitude to all our members, partners, and supporters of SCION. Your contributions and commitment are instrumental to our success, and together, we will continue advancing a secure and reliable Internet.

## Thank you

The SCION Association Team

# CONNECT WITH US

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6003 Luzern
Switzerland

www.scion.org

www.linkedin.com/company/scion-association/

www.github.com/scionproto

www.youtube.com/@scioninternet