SCION Association

New association for a secure and stable Internet, made at ETH Zurich

The SCION Association aims to establish SCION technology as an alternative to the current Internet standard. SCION is an acronym for "Scalability, Control, and Isolation on Next-Generation Networks," and it was developed by computer scientists at ETH Zurich. SCION provides a new, secure, high-performance, and stable Internet protocol.

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In many respects, today's Internet does not live up to the requirements of a modern, information-based world. Internet-based communications are too easily hijacked by attackers, and the path that data packets take within the current Internet architecture is neither controllable nor transparent. Previous attempts to fix these fundamental problems were largely predicated on fine-tuning the systems currently in place; however, these attempts have had only limited success.

The global digital economy demands a secure, high-performing, and stable Internet – and SCION delivers it. The SCION protocol guarantees that data flows along the most efficient and most trustworthy routes, and it can operate side-by-side with today's Internet infrastructure. In contrast to the existing Internet, the sender can select the desired data pathways and thereby exercise complete control over the data flow.

The new SCION protocol was developed by a team of computer science researchers that includes the Network Security Group at ETH Zurich, led by Prof. Adrian Perrig, as well as a community of open-source software developers from industry and academia.

"SCION represents a quantum leap forward in terms of network security, particularly in communication availability. Every aspect of SCION is designed for security," explains Professor Perrig.

Of key importance to the financial sector

The Swiss National Bank (SNB), the SIX Group (a financial infrastructure provider) and the telecom companies Swisscom, Sunrise, and SWITCH have recently come together to establish the SCION-based Secure Swiss Finance Network (SSFN). Today, the SSFN provides a novel, safe and secure method for financial institutions to access systemically important financial sector infrastructures in Switzerland, such as the SIC interbank electronic payment system and the SECOM securities settlement system. By 2024, SSFN will fully replace the legacy network Finance IPNet and will allow the participating institutions to exchange data among each other securely and reliably.

"Improving cyber security is a key priority for the SNB and the Swiss financial center. Against this backdrop, the SNB has recently helped launch the Secure Swiss Finance Network (SSFN), a resilient, secure, and flexible communications network building on SCION technology. The

SSFN enables financial market participants to communicate both with critical financial market infrastructures and among each other in a highly secure manner. These new capabilities significantly strengthen the security of the entire Swiss financial system against cyber threats that emanate from the Internet," says Andréa Maechler, Member of the Governing Board of the Swiss National Bank.

Fostering a collaborative ecosystem

The SCION Association is a non-profit association of institutions working towards a more secure, high performing, and resilient Internet. It nurtures a collaborative ecosystem of participants, with companies of all sizes, open-source contributors, and the research community to steer SCION toward achieving its full potential. The Association is tasked to promote further development and implementation of the technology, to standardize it, to institute certification criteria, to perform certification services, and to provide practical training in SCION and its technology. In addition, the SCION Association promotes industry collaboration and supports an open-source community of implementers. Commercial implementation, however, is left to the companies in the SCION ecosystem.

Uli Sigg, an entrepreneur and former Swiss diplomat, is supporting the SCION Association as a founding member, together with ETH Zurich, the SNB, and the SIX Group. They are committed to supporting the Association through the provision of resources, expertise, and funding.

Developed at ETH Zurich

"SCION is one of the most prominent and innovative projects in the Internet architecture space. ETH Zurich is proud that it was created within our academic ecosystem. We are convinced that it has the potential for global adoption, as it offers a more secure and stable Internet structure. Thanks to geofencing, for example, it can be ensured that data traffic never leaves a trusted route. That is why we are among the founding members of the SCION Association", says Prof. Vanessa Wood, Vice President for Knowledge Transfer and Corporate Relations at ETH Zurich.

In addition to Prof. Vanessa Wood, Dr. Andréa Maechler, and Uli Sigg, the Association board is complemented by Prof. Reto Francioni, Chairman of the Board of Directors of Swiss International Airlines and former Chairman of Deutsche Börse AG, and Dr. Thomas Wellauer, Chairman of the Board of SIX Group. The Association is further supported by an Advisory Board with top-level, global experts and executives, chaired by Professor Perrig.

Headquartered in Lucerne, Switzerland, the SCION Association will be in a prime position to rely on a growing technology and start-up community, a business-friendly environment, and access to resources and funding opportunities. "The Canton of Lucerne warmly welcomes ETH and the SCION Association and will do its utmost to support the development of the SCION ecosystem", explains Fabian Peter, member of the cantonal government and Director of Economic Affairs.

Uli Sigg adds: "After a decade of research and development at ETH Zurich, the SCION community in Switzerland has built a magnificent technology and infrastructure that is ready

to launch. As a passionate Swiss, my contribution serves as an initial impulse to enable SCION to provide the highly available communication infrastructure that our global society needs so urgently."

Global support and collaboration

According to Patrick Naef, the SCION Association's CEO, "the purpose of the Association is to promote open source and open standards that allow anyone to succeed, making SCION accessible to everyone. It supports its members and the ecosystem globally by providing a platform for collaboration, know-how sharing, certification, and training that ensure implementations stay interoperable."

The Association is currently looking to welcome additional members from around the globe to join its mission. Swiss national research and education network SWITCH, Eraneos (formerly AWK Group), DIDAS, Otto-von-Guericke-University Magdeburg and the ETH Foundation have already joined. Interested parties can learn more about the Association and apply to join at scion.org. Apart from the Swiss financial industry, Switzerland's government, defence sector, and healthcare system are also evaluating the adoption of SCION technology for their own use cases.

About ETH Zurich
ETH Zurich is a leading university in Switzerland known for its cutting-edge research and innovative approach to education and teaching. Focused on science and technology, ETH Zurich and its Computer Science programme consistently rank among the top universities in the world. The Network Security Group at ETH Zurich, led by Professor Adrian Perrig, invented the SCION Internet Architecture.

About the Swiss National Bank
The Swiss National Bank (SNB) conducts the country's monetary policy as an independent central bank. The SNB acts in accordance with the interests of the country as a whole. Its primary mandate is to ensure price stability, while taking due account of overall economic developments.
As part of its mandate, the SNB is in charge of the Swiss Interbank Clearing (SIC) payment system, which uses central bank money to process payments for financial institutions in a final and irrevocable manner. Given its systemically important role for the financial system, the SIC must be able to operate in a secure, safe and resilient data communication network. To this end, the SNB and SIX launched last year the Secure Swiss Finance Network (SSFN).

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Links to further information:
SCION Association: scion.org
Press kit: scion.org/press