



SCION

The next-generation internet



SCION, developed and researched at ETH Zürich for over a decade, is a clean-slate internet architecture with solid security and scalability properties designed to overcome the limitations of the current BGP-based Internet: full control, security, availability, and performance

HOW IT WORKS



Isolation Domains (ISD) – explicitly define hierarchical routing + trust scoping

- Define root of trust for control plane
- Transparency and control over trust roots



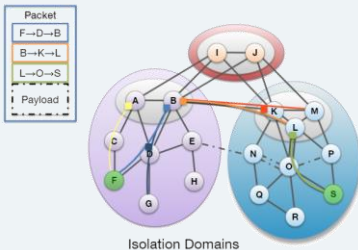
Control Plane – Routing

- Constructs and disseminates path segments
- Routing is cryptographically secured



Data plane – Packet Forwarding

- Combines path segments to E2E paths
- Data packet contains path and payload
- Forwarding is cryptographically secured
- Router forwards packet along path in header
- Stateless and efficient forwarding
- Gateway allows regular IP traffic to be forwarded over SCION



SOLUTIONS NOW



Requirement-based path selection: select how your data is transmitted based on business needs. Optimize for performance, cost, and quality.



Geo-fencing: ensure data privacy compliance by containing traffic within a trustworthy region.



Rapid failover: leverage multiple paths and instantaneously switch to another working path in case of path failure.



Secure networking: complete eradication of routing attacks; communication is possible even during large-scale DDoS.

Compatibility



Support existing systems: SD-WAN, encrypted VPN, and clouds can benefit from SCION



Guaranteed connectivity to cloud service providers without any dedicated leased lines



Partnering with various types of service providers without building any new infrastructure

WOW, WHAT`S NEXT?



Network cockpit where users can easily visualise and control their data and network paths around the globe



Highly-available sovereign infrastructure for critical communications. A necessity for the finance, government, military, healthcare, and energy sectors



Home-office solution including high-quality, lag-free video conferences and communications for the remote workforce



Guaranteed reachability and uptime for IoT devices such as merchant POS machines and other off-premise systems

Most anticipated



New network customisation and monetisation model for ISPs



New approaches for CO₂ reduction by re-directing traffic to green networks