



SCION FOR CRITICAL WEB PLATFORMS - ENSURING AVAILABILITY IN TIMES OF EMERGENCIES

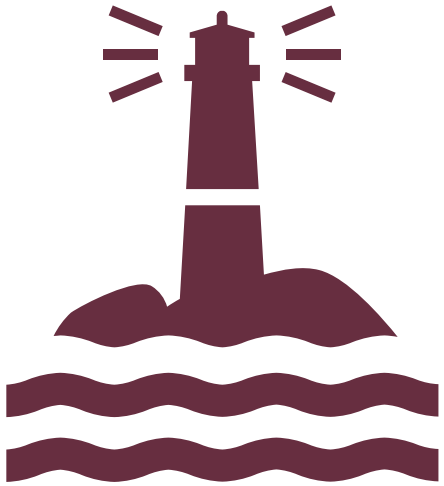
SCION DAY 2025

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Association of Swiss Electricity Companies (VSE AES)

Purpose & Vision



VSE is the recognized umbrella organization of the Swiss electricity industry.

VSE bundles the **common interests** and **expertise** of its members and asserts its positions in politics, business and society.

It is committed to **security of supply**, climate neutrality and **energy efficiency** in Switzerland.

The SSUN sponsors and designers



swissgrid



EKT:

■ BKW

Litecom



ALPIQ

CKW.

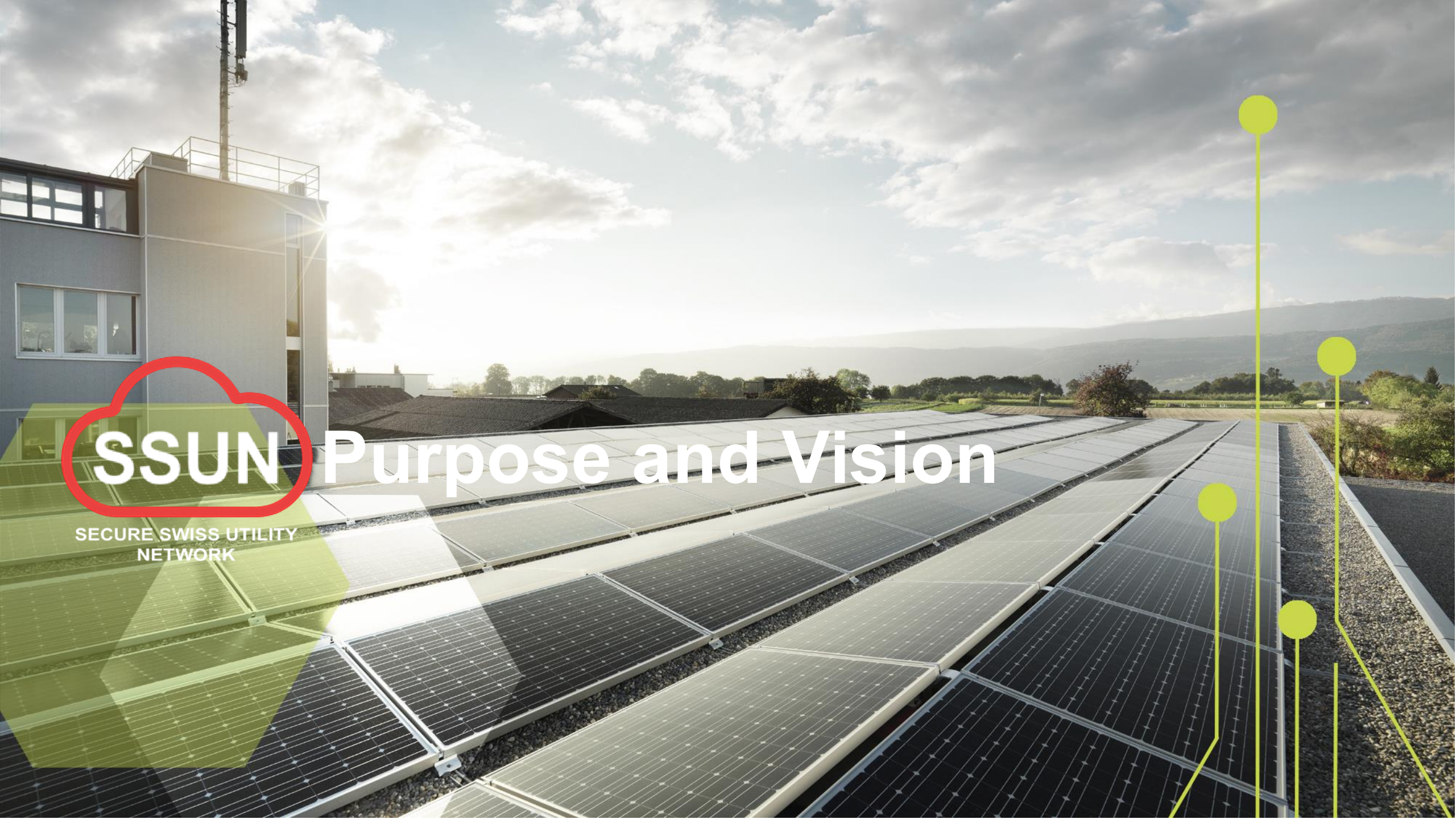


esolva

Fundamentals and professional exchange

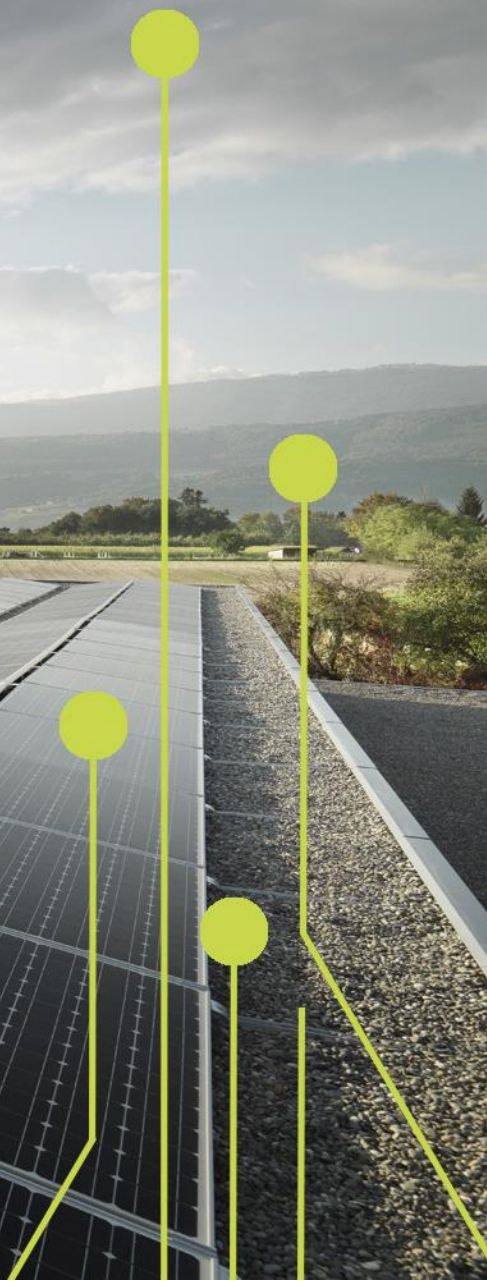


cyberlink



SECURE SWISS UTILITY
NETWORK

Purpose and Vision



Cybercriminals

More and more brazen state and non-state actors - ever larger attack surfaces



Worldwide damage caused by cybercrime

~8 trillion USD 2023*

~10.5 trillion USD expected in 2025*

Switzerland

>CHF 5 billion**

4 million PV systems taken over!

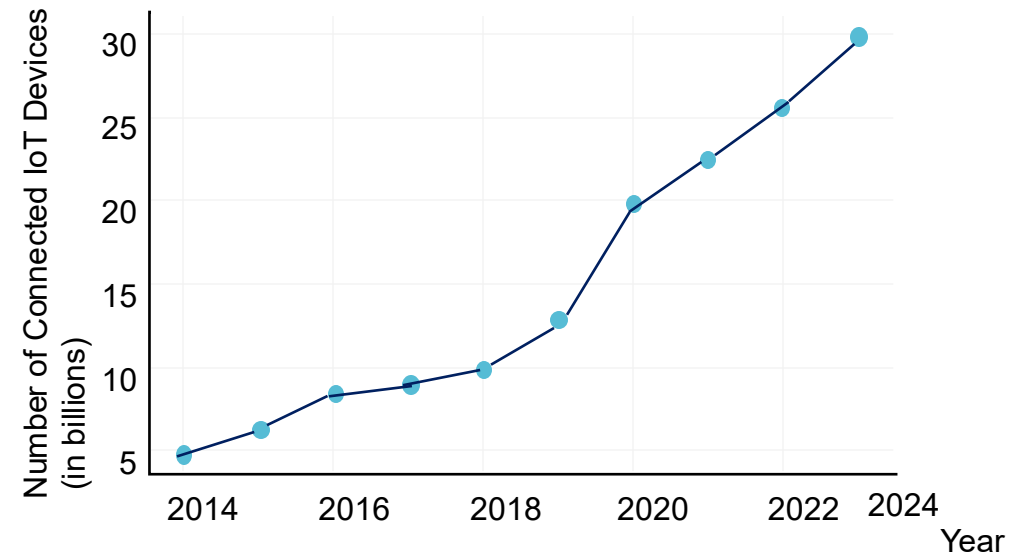
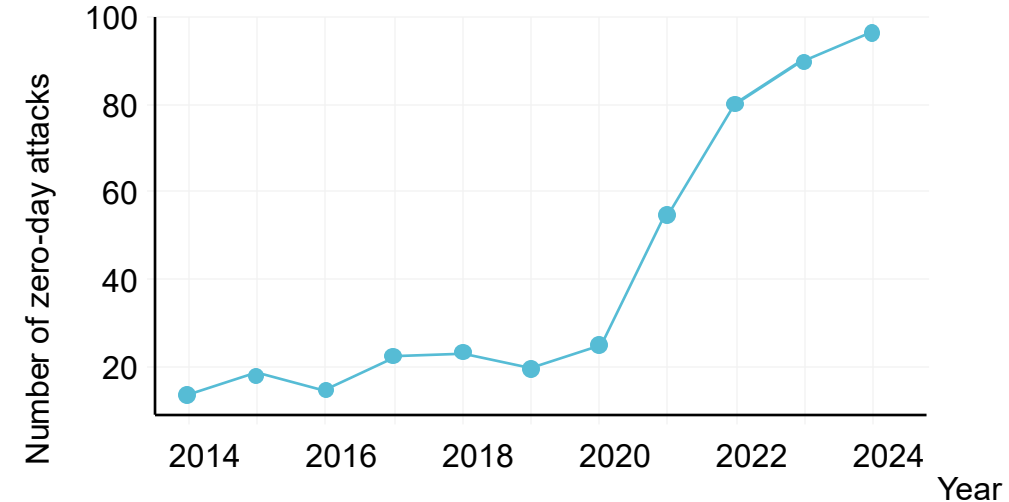
* Cybersecurity Ventures

** Zurich Insurance



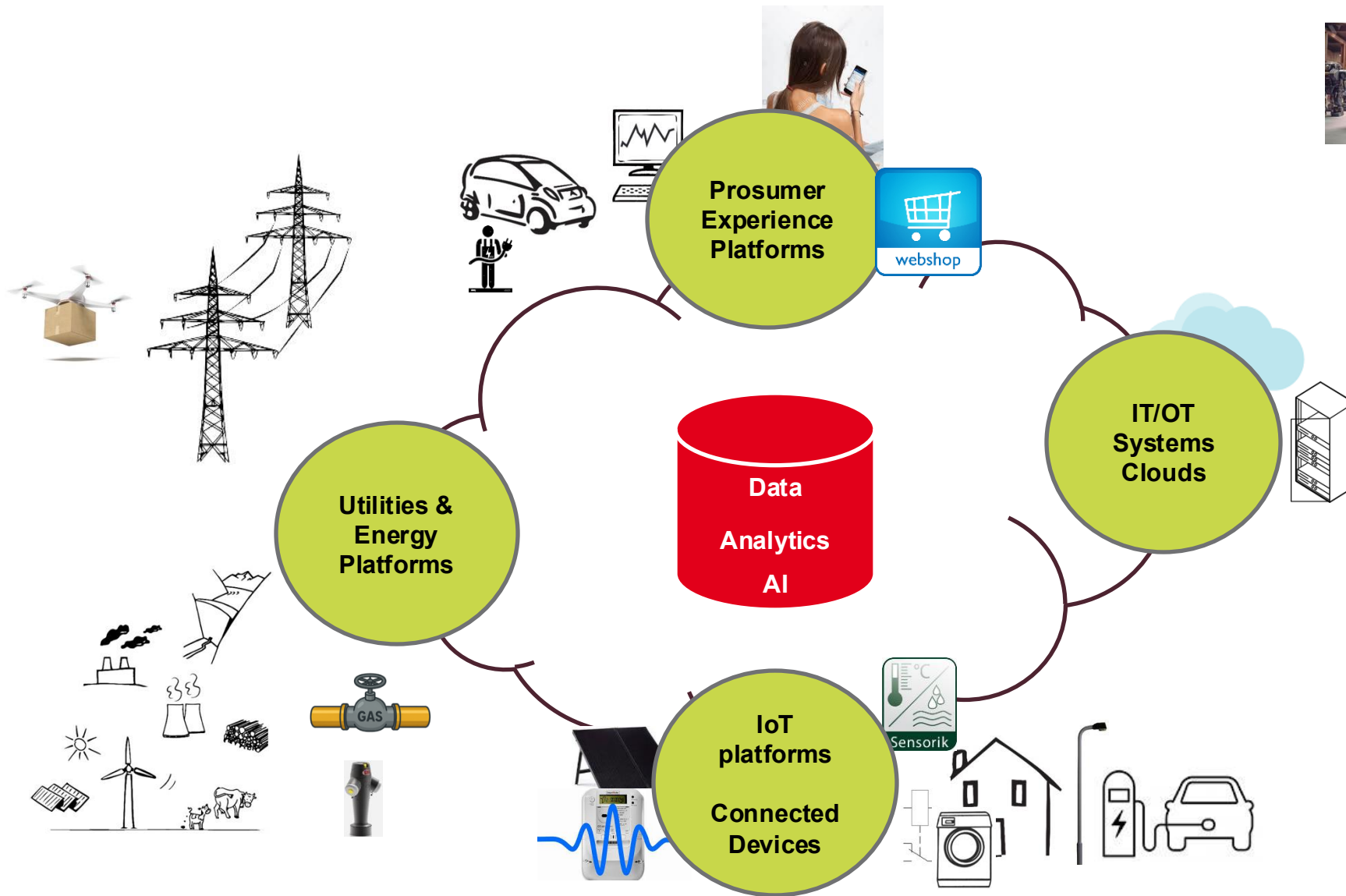
SSUN is an answer to a worsening threat landscape

- ▶ Security of supply is a top priority
- ▶ Cybercrime and cyberwar is a rapidly growing risk
- ▶ Ongoing improvement of ICT resilience is necessary
- ▶ Systemically important infrastructures are visible and vulnerable on the internet
- ▶ Resilience and data sovereignty are insufficient, partly due to the worsening threat situation



Complex digital critical infrastructure

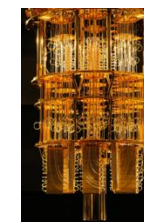
Visible and vulnerable to increasingly powerful tools – growing IoT risk



Robots



Agentic AI



Quantum Computing



What are the objectives and benefits of SSUN?

- ▶ Increasing ICT resilience and thus security of supply in the context of escalating cyber threats
- ▶ Resilient infrastructure because systems and communications in the supply ecosystem (electricity, gas, water, waste disposal, etc.) are invisible from the outside
- ▶ Trusted space for the supply ecosystem
- ▶ Digital sovereignty
- ▶ Scalability and future-proofing
- ▶ Regulatory compliance (SSUN contributes to meeting the Swiss minimum ICT standard, NIS2, etc.)

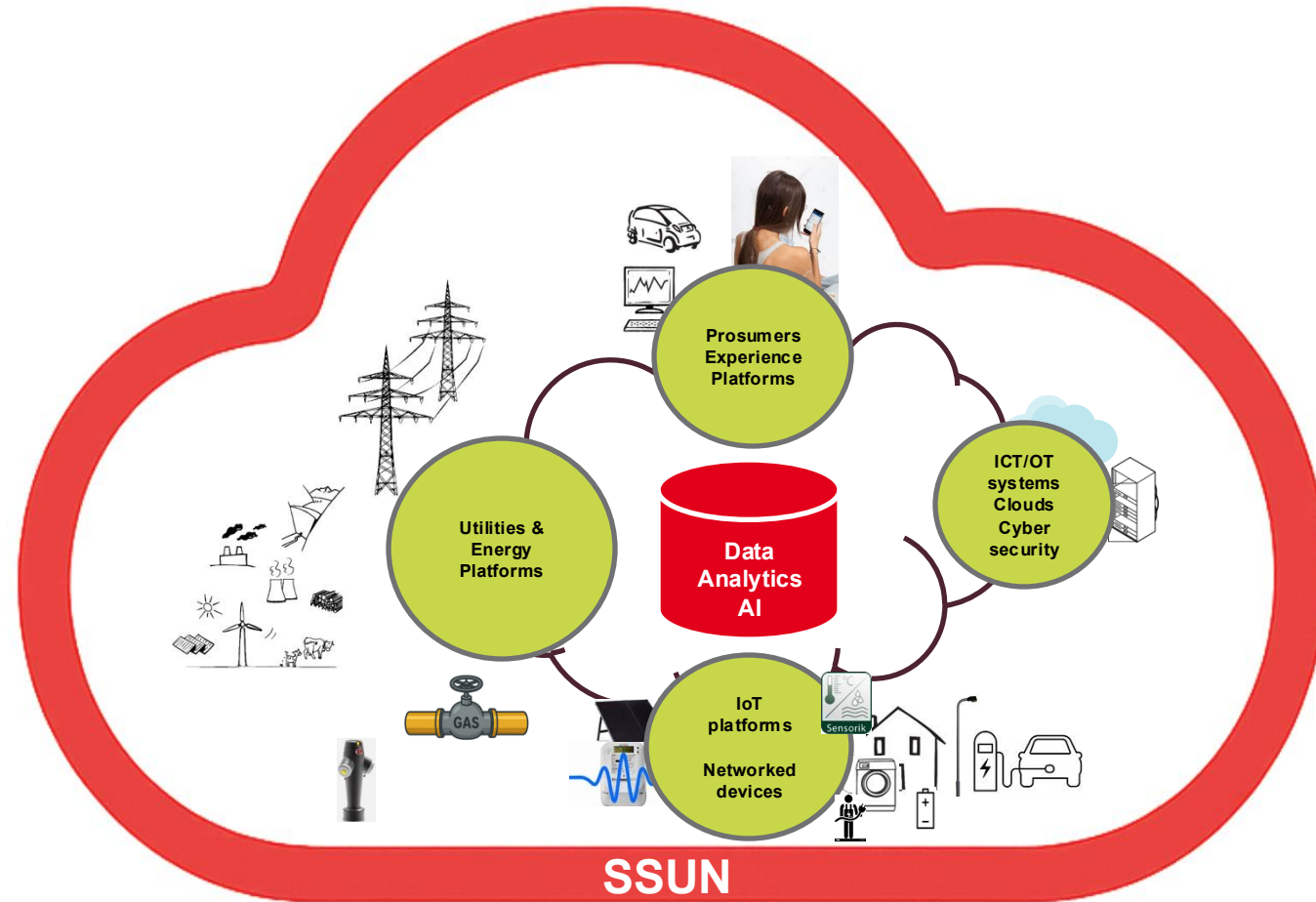


What you can't see, you can't attack.

99.9% reduction in the attack surface against DDoS, intrusion, and other attacks.

What is the SSUN?

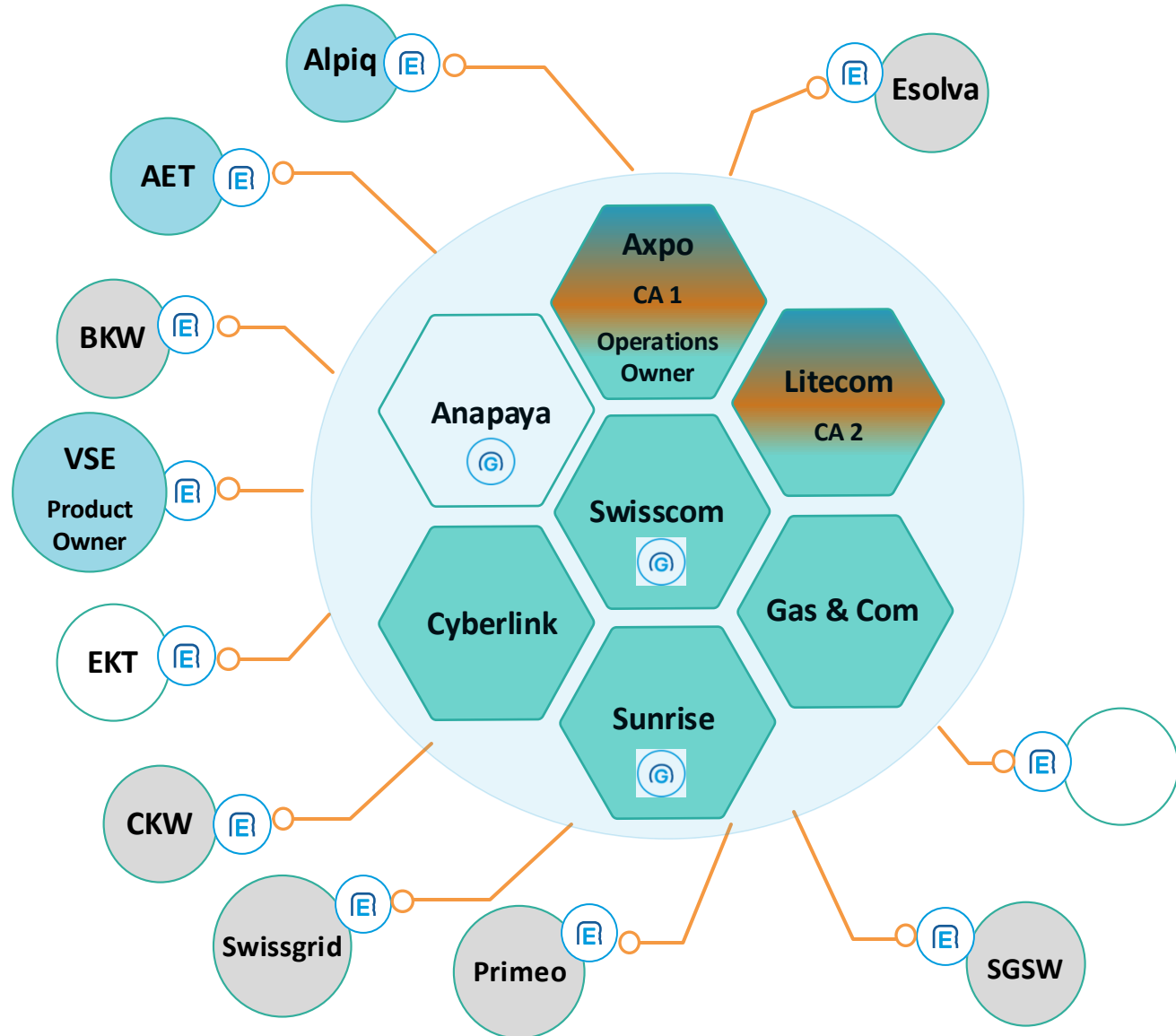
- ▶ Community-based SCION isolation domain ("semi-private")
- ▶ Semi-private, highly secure communication network
- ▶ Central trust framework with industry PKI
- ▶ Governance by the industry
- ▶ **A protective shield for systemically important supply areas**
- ▶ **First line of defense**





How it's built and who is
running it

How the SSUN is built and managed – governance & roles

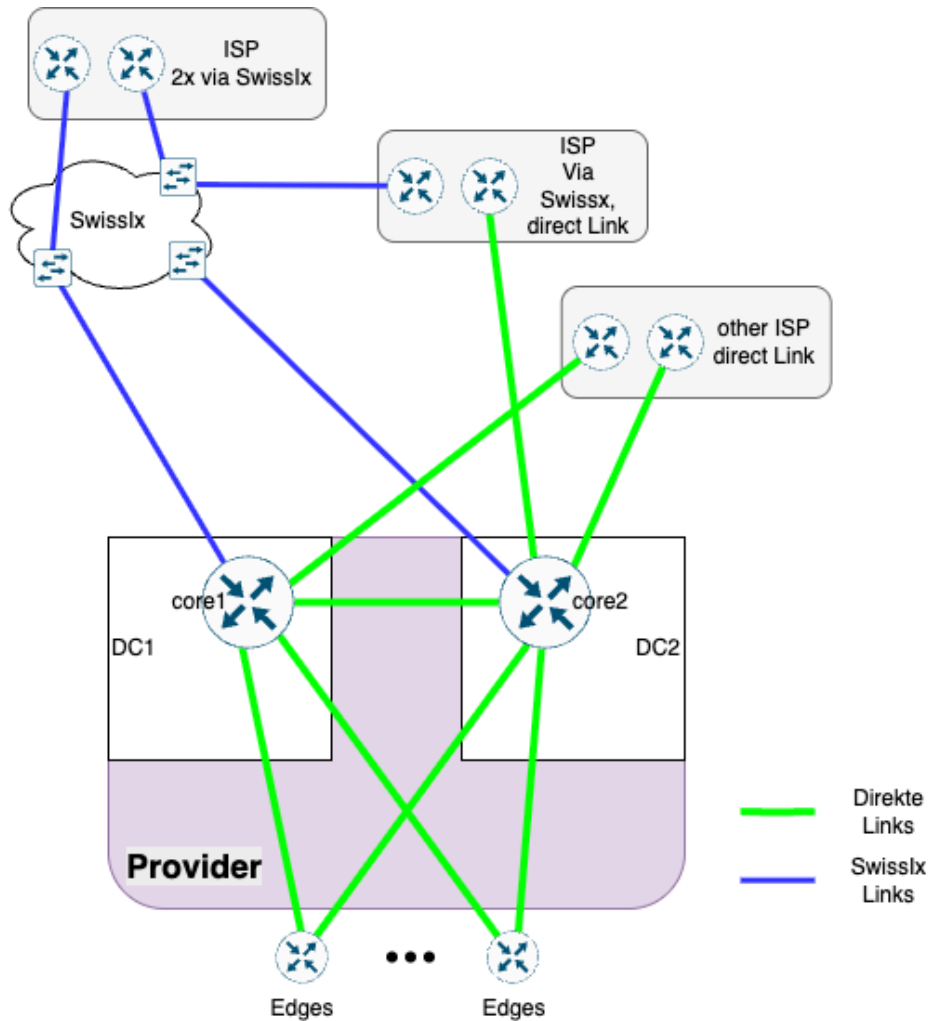


Roles

-  Contributing Sponsor/Prospect
-  Member
-  Voting member
SSUN Governing Body
-  Issuer of the SSUN certificate
-  Main ISP (Cores)
-  Anapaya SCION EDGE Router
-  EDGE access
-  Anapaya GATE

CA: Certificate Authority (certificate issuing authority)
ISP: Internet Service Provider
(Swisscom, Sunrise, Litecom, Cyberlink, Gas&Com)

SSUN cores and peerings for ensuring high availability



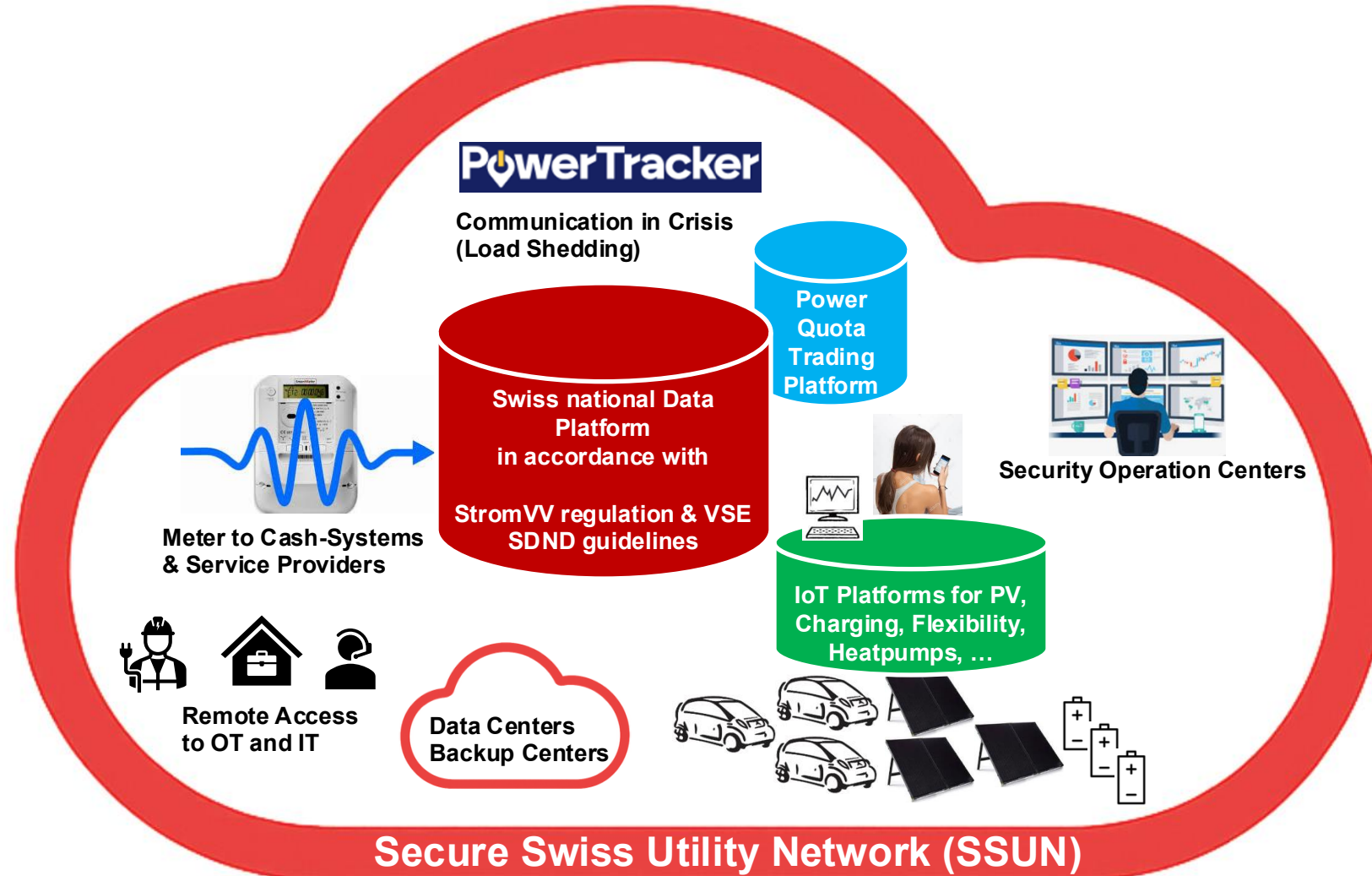
- ▶ Between core ASes there must be at least **2 geographically redundant connections** that span multiple data centers.
- ▶ The data centers have to follow at least **tier 3 data center** standards. While the certification is not mandatory, the standard has to be followed.
- ▶ SCION/SSUN core inter AS connectivity (core to core) and other devices/services offered for SCION are adequately physically protected with **>=72h power autonomy**.
- ▶ The network services have to have **high availability** (e.g. Gate).
- ▶ Minimum bandwidth for peerings: **10 Gbit/s**

Some priority use cases for SSUN



Some priority use cases for the SSUN

SCION Isolation Domain SSUN



**what you can't see,
you can't attack.**



Critical Web Platform Protection and ensuring availability

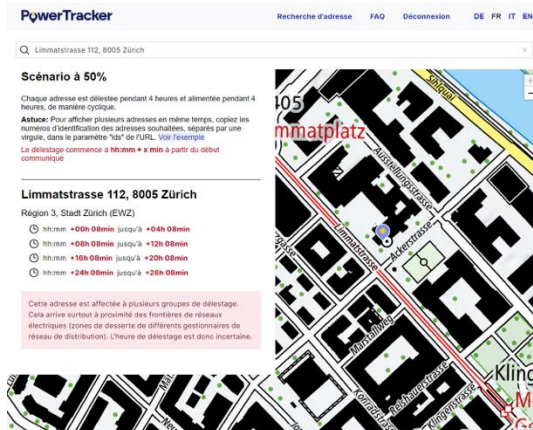
PowerTracker offers views for 3 stakeholder groups: Crisis planners, the general public, and distribution system operators

Information and data view



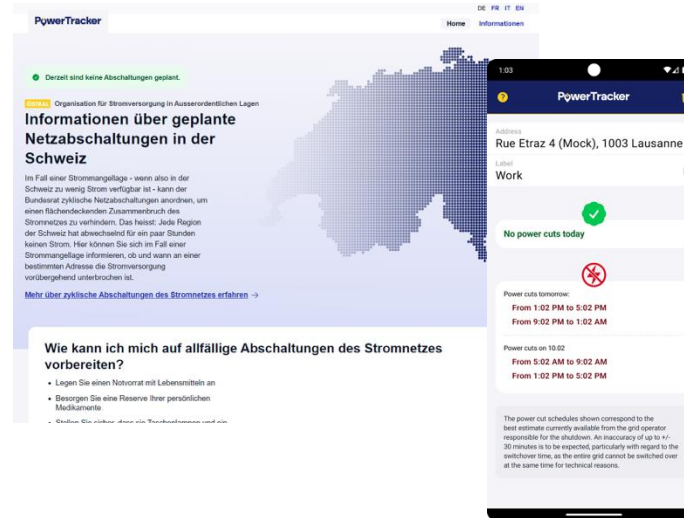
Web application for crisis planners

Cantonal management teams and other crisis planners can prepare themselves. **Data** is made available in **advance**.
(Confidential access)



Website & App for the public

Citizens can find out where and when there will be no electricity and receive useful behavioral advice. Building-specific data is **only** published in an emergency.

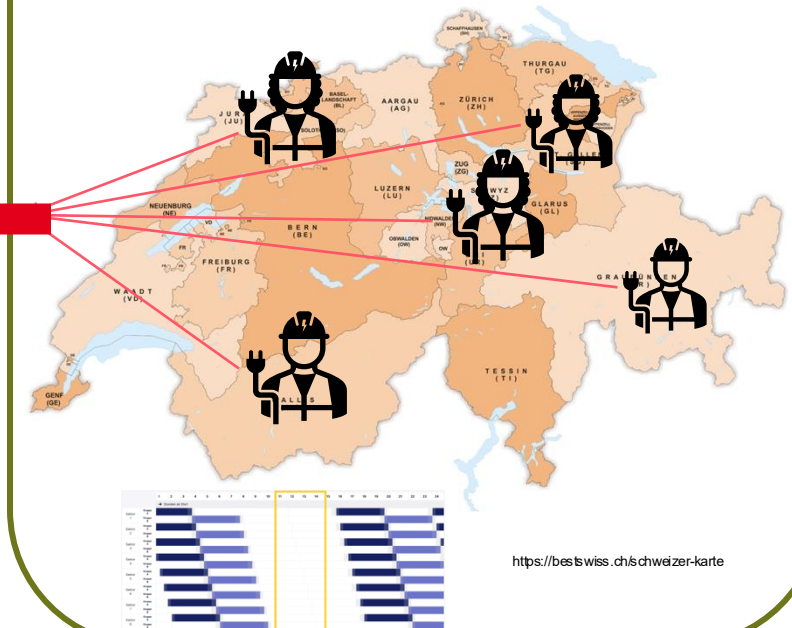


Data upload (shutdown plans)

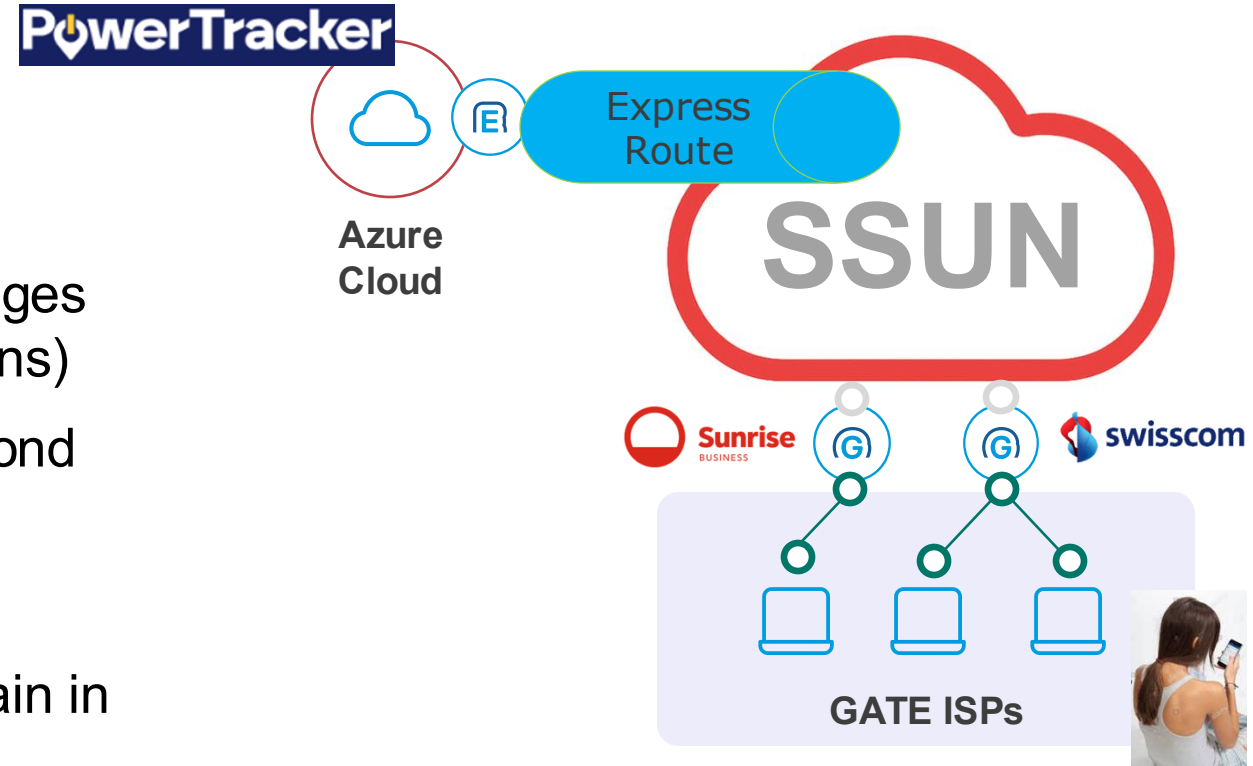


Web application for distribution system operators (DSO)

This is where the DSOs upload their shutdown plans, which form the basis for the other views.



- ▶ Public app for several million participants
- ▶ Normally in hot standby mode
- ▶ Critical in the event of power shortages during load shedding (grid shutdowns)
- ▶ Peaks of up to 700 queries per second expected
- ▶ PoC in Swiss Public Isolation Domain in spring 2025
- ▶ Now moving to SSUN in Q4 2025

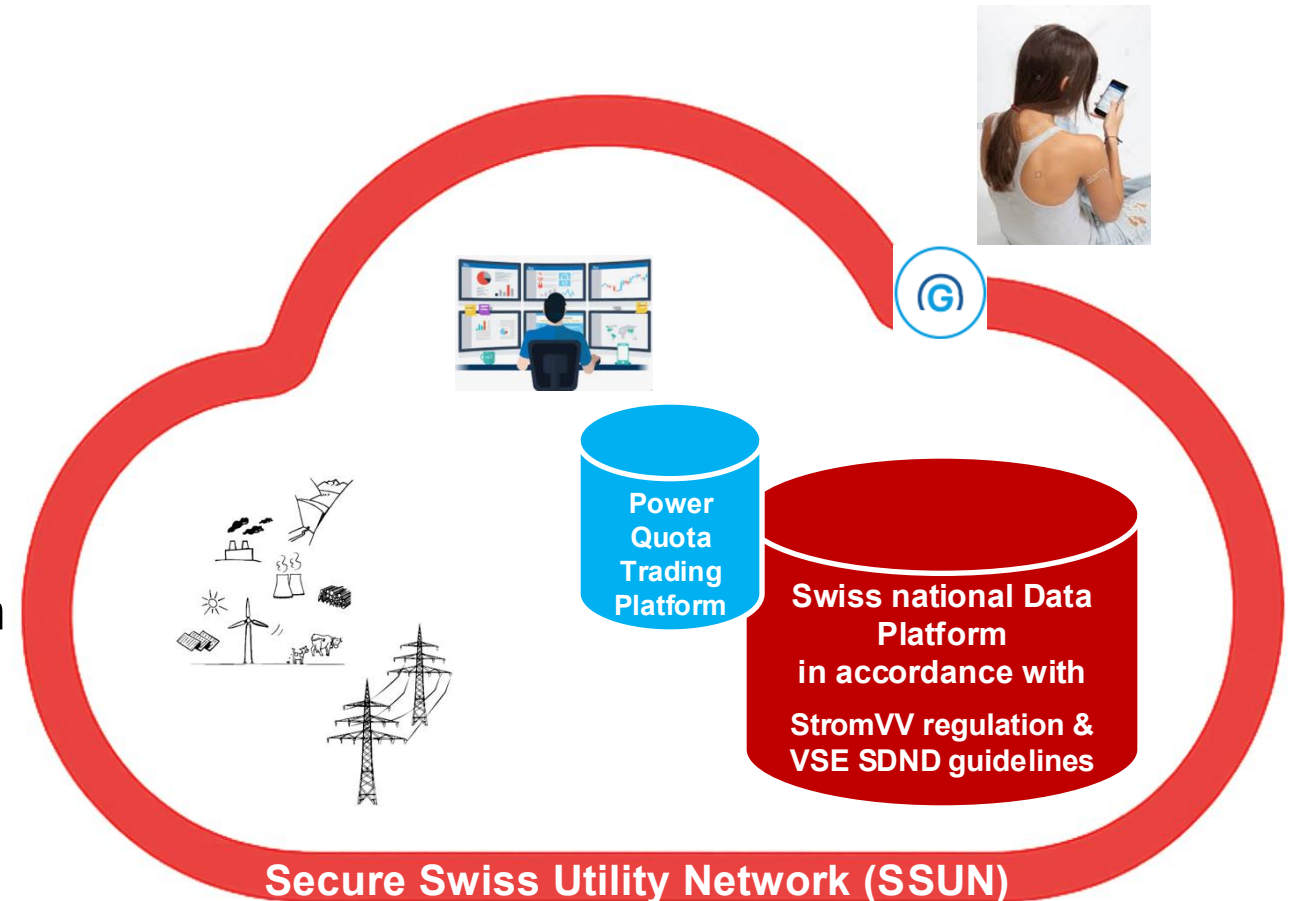


Roadmap

- ▶ 2030: Data traffic with the national data platform completely within SSUN in accordance with VSE SDND and SDAT guidelines

Recommendations

- ▶ Cybersecurity requires a joint approach
- ▶ Protect your systems and platforms in SSUN
- ▶ Prepare for secure data exchange with the national data platform
- ▶ Use the SSUN fast track as soon as possible



The Secure Swiss Utility Network (SSUN) is an exclusive, controlled communications network for the energy and utilities industry – developed by the industry, for the industry, based on SCION.

Your access



Come under the digital protective shield!

www.strom.ch/ssun
ssun@strom.ch

