



Powered by Zero Trust

S2X Integrated ITS Security Solutions





As Connectivity Expands, Security Standards Must Evolve.

C-ITS is evolving beyond the connection between vehicles and road infrastructure into an intelligent transportation ecosystem where a wide range of entities—including Traffic Management Centers (TMCs), cloud environments, service platforms, mobile devices, robots and drones, and AI systems—are seamlessly connected.

As the number of connected entities and the volume of data flows continue to grow, security must go beyond traditional network protection. It requires a framework that continuously verifies who is connecting, what data is being exchanged, and which resources they are authorized to access.

Traditional V2X security has relied on PKI-based authentication and digital signatures to verify the identity of message senders and ensure the integrity and trustworthiness of data.

Building on this proven trust framework, SAESOL TECH extends security beyond message authentication to the network access layer.

Trust the Message. Verify the Connection.

S2X delivers an integrated ITS security solution spanning certificate-based trust infrastructure, V2X message security, Zero Trust Network Access, and comprehensive testing and validation.



S2X ZeroLink

Zero Trust Network Access that securely connects only what's needed — from people to drones, robots, and AI.



S2X Core

A software component for OBUs and RSUs that ensures ITS message integrity and trust through digital signing and verification.



S2X CMS

An integrated PKI service for secure certificate issuance and management across trusted networks.



S2X RoadSigner

A signing solution for traffic and environmental data generated by the TMC



End-to-End Security for Connected ITS

S2X protects the entire ITS ecosystem with integrated security spanning authentication, message trust, Zero Trust access, data protection, and quantum-ready security. From trusted identities to secure connections, S2X builds end-to-end trust across Connected ITS.

01 Authentication & Trust Framework

S2X CORE

IEEE 1609.2-compatible security software component for ITS Stations, including OBUs and RSUs, supporting V2X message signing, verification, and certificate management.

S2X CMS

PKI Server for authenticating and authorizing V2X entities and messages.

S2X Mobile

Network V2X Security for mobile devices, including those used by e-bikes and e-scooters.

02 Zero Trust Access

S2X ZeroLink

Zero Trust Network Access that securely connects only what's needed — from people to drones, robots, and AI.

05 Extended Security Solutions

S2X V2G

Security platform for EV charging infrastructure

S2X Aegislink

Hardware-based security solution for protecting critical data in drones and unmanned mobility systems

03 Validation & Simulation

S2X Tester 2.0

Plugin-based test automation platform

S2X Probe

V2X Fuzzing Test System.

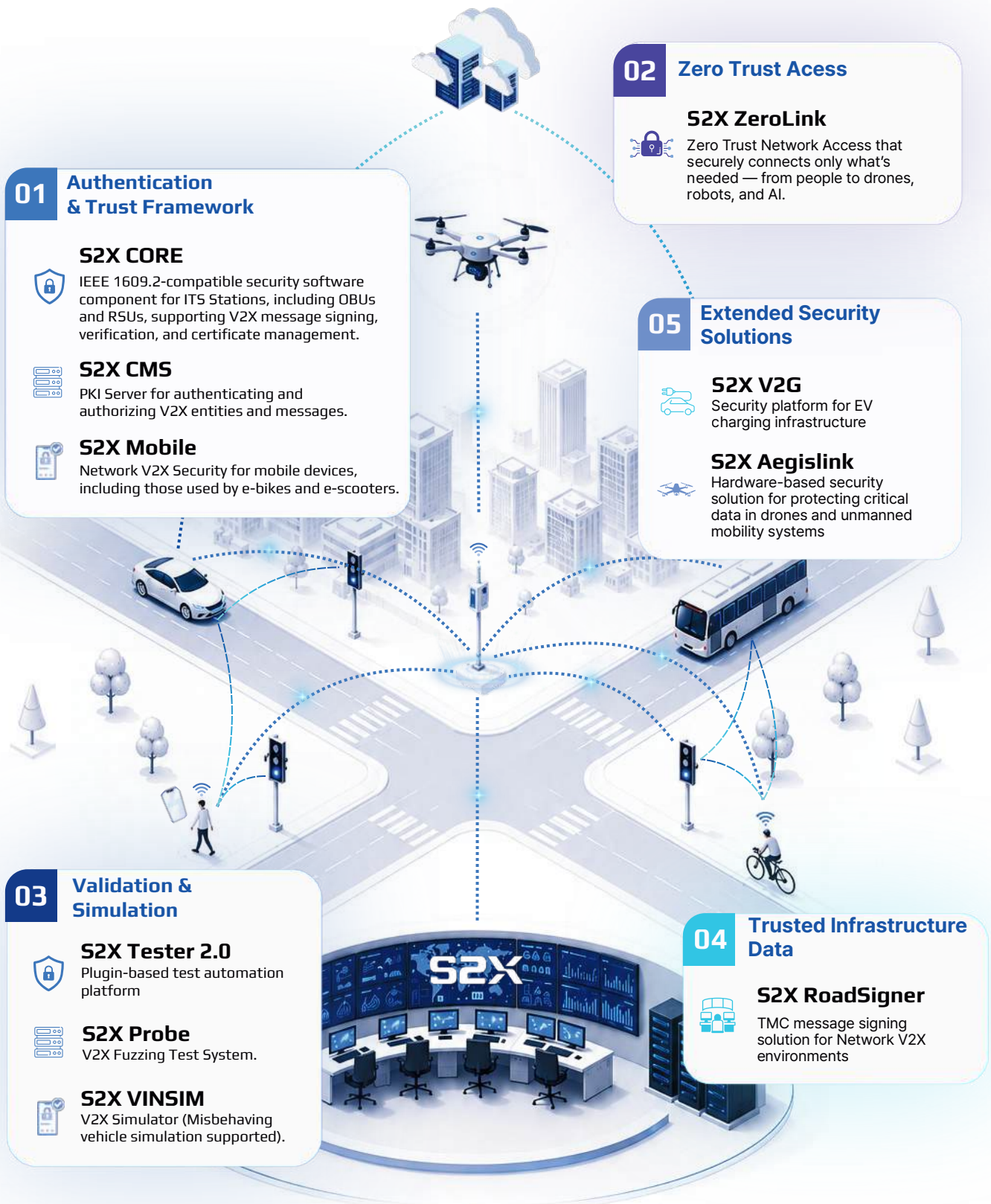
S2X VINSIM

V2X Simulator (Misbehaving vehicle simulation supported).

04 Trusted Infrastructure Data

S2X RoadSigner

TMC message signing solution for Network V2X environments



S2X ZeroLink



Product Overview

S2X ZeroLink is a Zero Trust Network Access (ZTNA) solution that extends secure authentication and encrypted connectivity into a Zero Trust-based access control framework.

It supports a wide range of endpoints beyond users and PCs—including IoT/OT devices, robots, and drones—and integrates identity verification, access control, encrypted connectivity, auditing, and post-access monitoring within a single platform.

Key Features



Identity-Based Authentication

User and device identification and authentication, with account authentication and MFA integration



Policy-Based Access Control

Group- and role-based access control with support for Default Deny, SDP, and microsegmentation



Secure Encrypted Connectivity

Secure network connectivity tailored to diverse environments, including Direct, NAT Relay, and VPN Gateway



Centralized Policy Management & Monitoring

Centralized management of identities, access policies, and connection status, with auditing and logging of access and policy changes

S2X CMS (PKI Service)

Product Overview

S2X CMS is a scalable certificate management system designed to securely issue and manage large volumes of digital certificates across diverse mobility environments, including V2X, EV charging and payment, and drone security authentication.

By providing a trusted foundation for secure communication, S2X CMS enables a safer and more reliable future mobility ecosystem.



Key Features



Support for diverse device credential validation methods, including Canonical ID and ISO 21177



Issuance of IEEE 1609.2-2022-compliant certificates, including Enrollment and Authorization Certificates

Global Trust Registrations & Achievements

- Listed on the Production CTL of the North American SCMS Manager
- Registered on China's TRCL (Root CA Trust List)
- Registered at ECTL Level 0 in Europe, with partial compliance with ECTL Level 1 requirements

S2X Core (for TCU, T-BOX, RSU)

Product Overview

S2X Core is a PKI-based security software solution that protects the trust and integrity of V2X messages exchanged between vehicles and transportation infrastructure.

It securely manages V2X device certificates and verifies the authenticity of message senders and data through digital signing and verification.

S2X Core supports a wide range of communication environments, including C-V2X and WAVE, as well as major global V2X standards.



Key Features



High-Speed Signing & Verification

Enables real-time V2X message signing and verification



Global Standards & High Compatibility

Supports IEEE 1609.2/3/4, SAE J2945/1, C-V2X, WAVE, and HSM integration



Privacy Protection

Manages pseudonym certificates for secure and privacy-preserving V2X



MBD / MBR

Verifies message authenticity and supports misbehavior detection and reporting.



S2X Tester 2.0

Product Overview

S2X Tester 2.0 is a plugin-based test automation platform that supports the entire testing workflow—from Test Plan design and equipment control to test execution, result analysis, and report generation—within a single environment.

Its flexible architecture enables seamless application across a wide range of industries, including V2X, drones, defense, communications, and embedded systems.

Key Features



Proven Test Core

Built on OpenTAP®
Supported by Keysight
for reliable testing and broad ecosystem compatibility.



Flexible Scalability

Easily extend DUTs, instruments, and test functions through plugins



Efficient Test Planning

Structure complex scenarios with reusable Test Steps and hierarchical Test Plans



Automated Reporting

Automatically manage results and logs, with HTML reports, video, and screen capture support

S2X Mobile

Product Overview

A software module that securely integrates mobile and other IP-based devices used by diverse road users into the Network V2X security and authentication framework.



Key Features



VRU Device Support

Supports message signing and verification for devices used by Vulnerable Road Users (VRUs), including personal mobility devices, motorcycles, and pedestrians



Multi-Platform Support

Supports iOS, Android, and Linux



High-Speed Signature Verification

Processes over 300 digital signature verifications per second



S2X RoadSigner

Product Overview

A solution that ensures message-level trust for traffic and roadside environment data generated by the TMC—whether delivered directly to vehicles via RSUs or transmitted over IP networks to OEMs, navigation systems, and other service platforms.

Key Features

SAE J2735 Message Signing

Supports digital signing of SAE J2735 messages in compliance with IEEE 1609.2

Virtual RSU Support

Supports signing on behalf of the TMC or using unique keys assigned to individual Virtual RSUs

High-Performance Message Processing

Processes more than 1,800 message signatures per second

Flexible Scale-Out Architecture

Enables infrastructure expansion based on system load

Platform-Agnostic Deployment

Supports flexible deployment through Docker-based virtualization or on-premises environments

BUILT ON TRUST.

SECURING
TODAY.
ENABLING
TOMORROW.

Ready for What's Next.

SAESOL TECH delivers proven security today and continues to innovate for a safer, smarter, and more connected tomorrow.



Global Trust

Recognized trust across North America, Europe, and China.

- ✓ **Recognized Trust**
 - Production CTL (North America)
 - ECTL (Europe)
 - TRCL (China)
- ✓ **Certification in Progress**
 - WebTrust Accredited
 - GovRAMP
 - CCMS(Level 0)



Standards Leadership

Built on global standards for seamless interoperability.

- ✓ IEEE 1609.2
- ✓ SAE J2735 / J2945
- ✓ ISO 21177
- ✓ C-V2X / WAVE



Zero Trust Security

Identity- and policy-driven protection for every connection.

- ✓ Access only what's needed
- ✓ From people to AI
- ✓ Secure connectivity across diverse environments



Future-Ready Security

Innovating for the next generation of mobility.

- ✓ Post-Quantum Cryptography (PQC) ready
- ✓ Hardware Security Module (HSM) integration
- ✓ Continuous innovation for evolving threats

A Global Player for Mobility Innovation



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