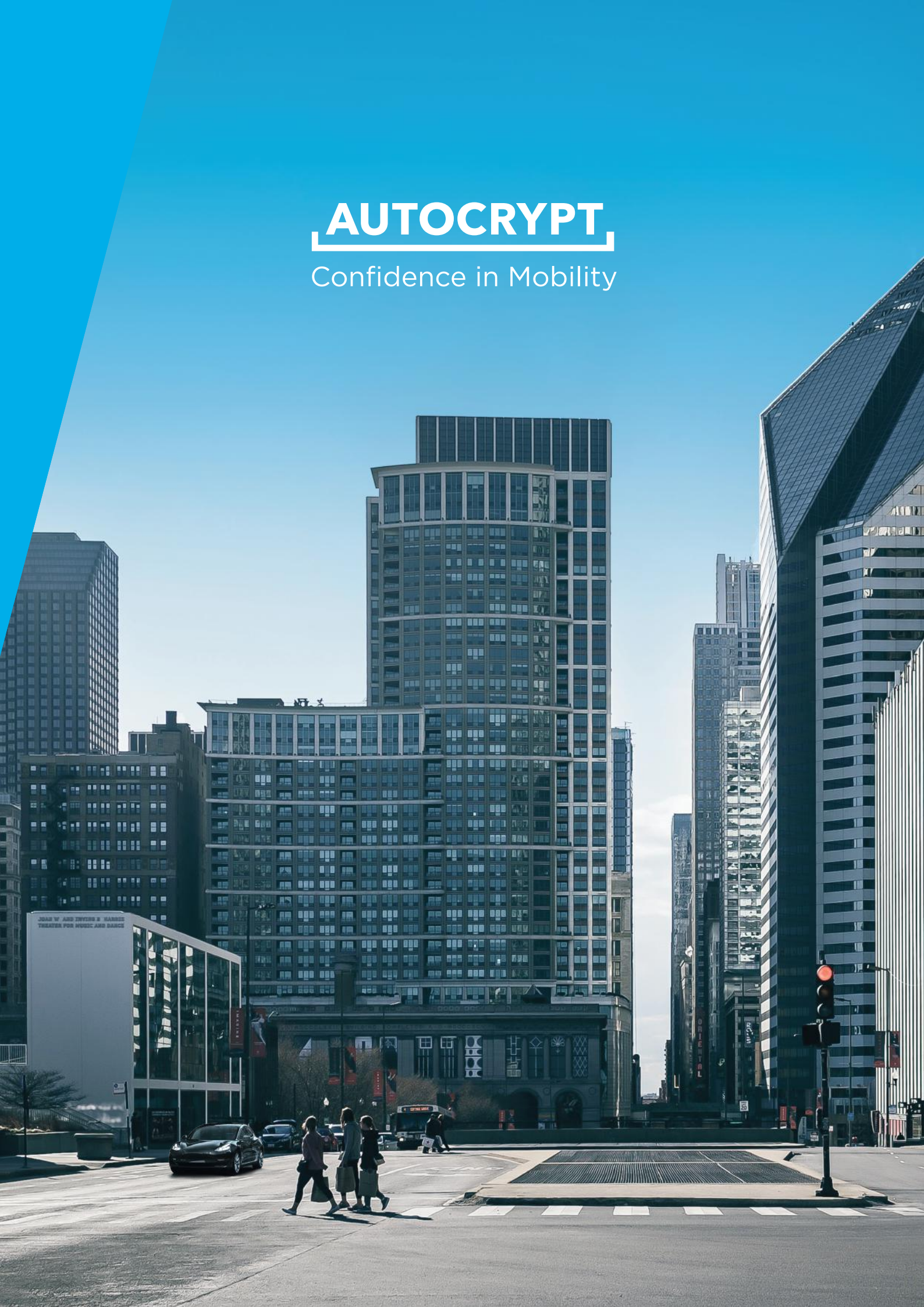
AUTOCRYPT

Confidence in Mobility



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Cars are evolving, and they're not alone. With the advent of electric, connected, and autonomous vehicles, the entire mobility ecosystem is now entering a new era. With hundreds of thousands, if not millions, of connections, there not only exists the potential of convenient transportation, but also the loss of valuable data and human lives. This is why security is crucial in mobility.

Based on decades-trusted technologies and security industry experience, AUTOCRYPT provides mobility security solutions for the evolving transportation systems of today and tomorrow. Solutions cover the entire mobility ecosystem from end to end, are compliant with global standards, and have been successfully implemented and tested in real-world testbeds and traffic systems.

Our goal is clear: to deliver on tomorrow's promises for better mobility and transportation, we need a vehicular environment that is secure for those inside and outside the vehicle. AUTOCRYPT makes that future a reality.

History

2021	- Development and integration of offensive security testing project for company H - Integration of V2X certificate system in China for company D - **Autocrypt Technologies GmbH** established in Munich, Germany - **Autocrypt North America** established in Toronto, Canada
2020	- Development of PnC security system for OEM company H's rapid charge system - Certification for C-V2X compatibility supporting C-SCMS standards by CAICT under IMT-2020(5G) - Installation and operation of Ulsan and Gwangju C-ITS project security systems
2019	- **Autocrypt Co., Ltd. established,** spinning off from Penta Security Systems Inc. - Development of Korean Expressway Corporation's V2X-SCMS implementation project
2018	- Development of ISO-15118 standard EV Plug&Charge (PnC) security solution - Development of vehicle/smartphone connection authentication security system for conglomerate S - Installation of Jeju province C-ITS security system - Design of secure authentication system for Korean Expressway Corporation's C-ITS project
2017	- Development of security solution for EV charging system - Installation and operation of Hwaseong K-City autonomous driving testbed security system - Installation and operation of Yeoju autonomous driving security system
2016	- Installation and operation of Daejeon-Sejong C-ITS security system
2015	- **Official commercial launch of AutoCrypt®, Smart Car Security Solution**
2014	- Development of Vehicle Data Management System (VDMS) for automotive big-data processing - Security verification technology development for telematics smartphone application
2013	- Developed international standard (IEEE1609.2: 2013) technology for V2X environment based on WAVE communication
2011	- Authentication and encryption enhanced solution developed for vehicle-to-smart device sync connection
2007	- Development of automotive safety diagnostic device

Member Associations

International Transport Forum · OMNIAIR CONSORTIUM · CHARIN · ITS KOREA · CARCONNECTIVITY consortium · 5GAA Automotive Association · RENESAS R-Car · MIH · CHINA SAE 中国汽车工程学会 China Society of Automotive Engineers · CAICV · IMT 2020 · ZJ INNOPARK 张江高科技园区 · Cluster Automotive

Awards

TU-Automotive AWARDS

2019 Best Auto Cybersecurity Product / Service

2020 Automotive Tech Company of the Year Finalist

2021 Automotive Cybersecurity Product of the Year Finalist

CYBERSECURITY BREAKTHROUGH AWARDS

2020 Automotive Cybersecurity Company of the Year

2021 Automotive Cybersecurity Company of the Year

apmaIAC · CYBER MOBILITY AWARDS

2020 Global Cyber Achievement Award

Forbes Asia

2021 "100 to Watch"

Global Presence

100%
Testing complete with all V2X stack companies

54
partners and customers worldwide

20+
patents filed globally

From beginning to end, AUTOCRYPT secures your mobility journey

OVERVIEW

VEHICLE SECURITY

AutoCrypt® V2X

- Comprehensive V2X security solution with fully customizable integration including Public Key Infrastructure (PKI)
- Compliant with the latest standards (CAMP IEEE 1609.2, IEEE 1609.2.1, USDOT SCMS, C-SCMS, EU CCMS), with use cases in application for automotive ECU, embedded, mobile, and virtual environments
- Verification speeds exceeding 5G requirements

AutoCrypt® IVS

- In-vehicle security solution ensures security reinforcement for ECUs, CAN Bus, and Ethernet
- Abnormal behavior / attack detection with automotive firewall and Intrusion Detection System (IDS)
- Testing and consultation available for compliance with global regulations (WP.29: R155, R166)

SECURE MOBILITY

AutoCrypt® PnC

- Secures the Plug&Charge process with mutual authentication, enabling interoperability
- Follows ISO 15118 and OCPP standards to ensure end-to-end protection from vehicle owner, OEM, Mobility Operator (MO) to Charge Point Operator (CPO)

AutoCrypt® FMS

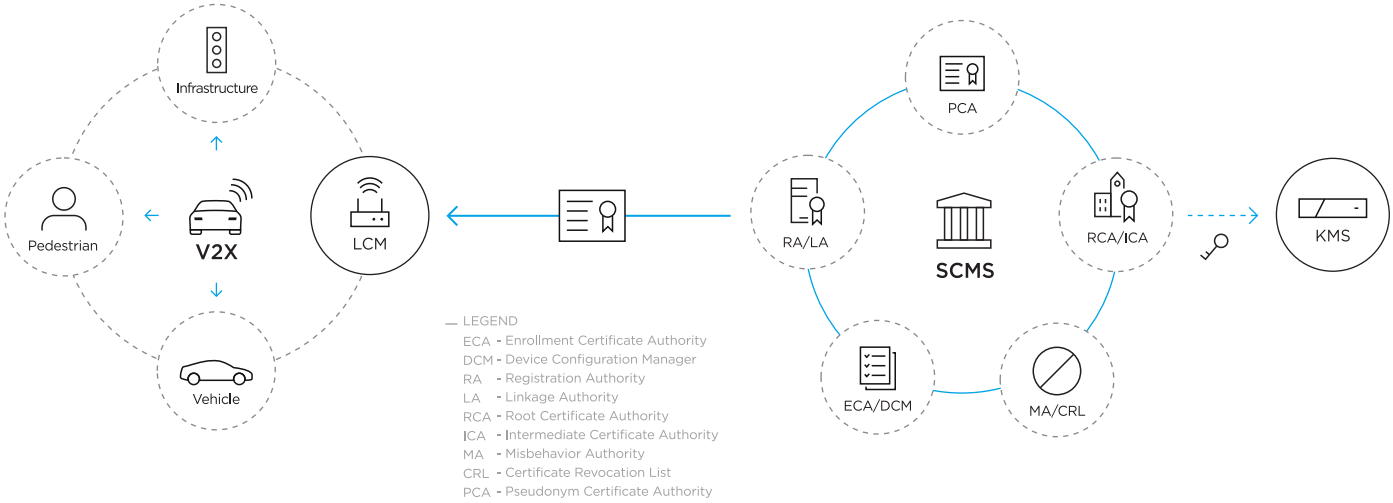
- Data received from vehicles are classified, processed, and analyzed to allow for service providers to improve existing services and pinpoint new business opportunities
- Customized platform and app development offered as fully managed service

AUTOCRYPT provides a comprehensive and customized suite of offerings for securing vehicular communications in Intelligent Transport Systems (ITS), meeting established industry standards set by the Crash Avoidance Metrics Partnership (CAMP), the U.S. Department of Transportation (USDOT), and other leading organizations.

AutoCrypt® V2X — Universally Secure V2X

AutoCrypt® V2X is an authentication and encryption system for vehicle-to-everything (V2X) communications, including vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), and vehicle-to-pedestrian (V2P) communications.

- Secures broadcast and receival of basic safety messages (BSM) and other data surrounding vehicle on-board units (OBUs) and roadside units (RSUs)
- Verification speeds exceed 5G performance requirements
- Designed according to IEEE 1609.2 communication standard for Wireless Access in Vehicular Environments (WAVE), IEEE 1609.2.1, USDOT SCMS, China-SCMS, and EU CCMS



Feature Components

• AutoCrypt® V2X-PKI — Public Key Infrastructure

The V2X-PKI component provides certificate management used to authenticate end entities such as vehicles and traffic infrastructure in Intelligent Transport Systems.

- Provides certificates for OBUs and RSUs, including enrolment certificates, identification certificates, pseudonym certificates, and application certificates
- Complies with US SCMS, EU CCMS, and Chinese CCSA

• AutoCrypt® LCM — Local Certification Management

AutoCrypt LCM allows for safe local storage and management of required certificates, encrypting and decrypting information for verification.

- Communicates with AutoCrypt V2X-PKI to safely store certificate

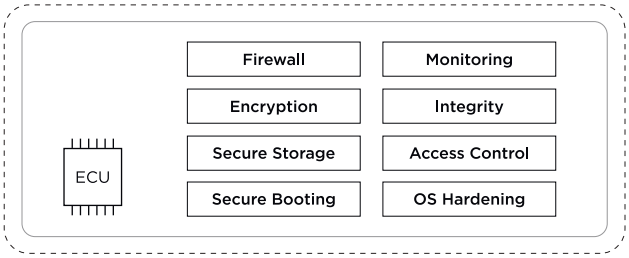
• AutoCrypt® IMS — Integrated Credential Management System

IMS allows OEMs to access and manage all regional PKI services with one integrated GUI.

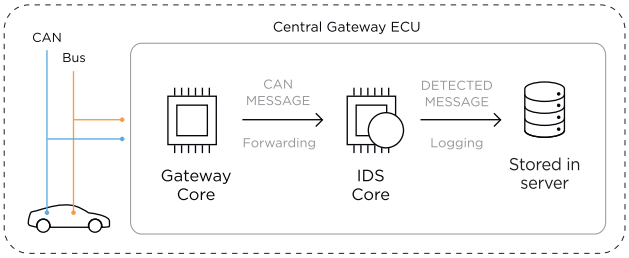
- Communicates with AutoCrypt V2X-PKI to safely store certificate
- AUTOCRYPT monitors and provides operation services, such as system test and inspection, troubleshooting, asset management, and disaster recovery.

AutoCrypt® IVS Complete In-Vehicle Systems Security

AutoCrypt® IVS protects the vehicle's internal network from both internal and external threats, providing the security modules necessary to secure communications between ECUs. IVS DRA, an integrated management system, provides in-vehicle security updates and management by downloading logs and the latest policies and rules through a remote management server.



Security reinforcement and monitoring for ECUs



Abnormal behavior / attack detection for internal and external communication networks

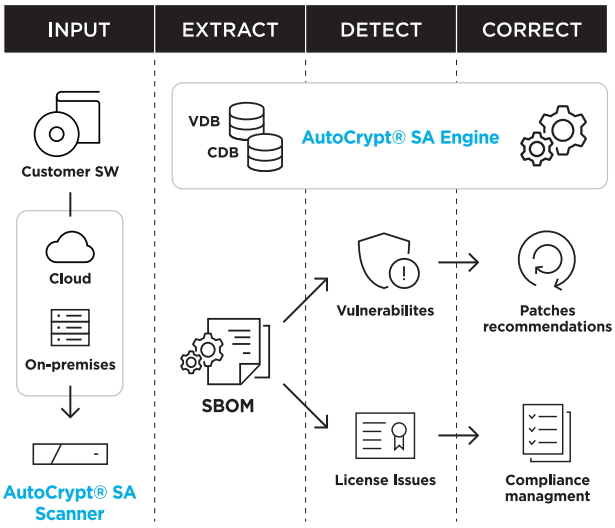
Feature Components

• vSOC Vehicle Security Operations Center

vSOC allows OEMs to manage AutoCrypt® IVS and oversee the monitoring and detection of vehicular cybersecurity threats on an easy-to-navigate GUI.

- Brings enterprise threat intelligence to the mobility environment
- Simplified overview of security analysis and incident response
- Customized based on the OEM's vehicle architecture and cybersecurity needs

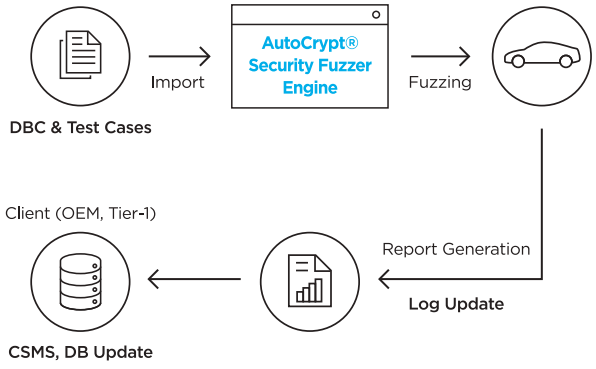
• AutoCrypt® Security Analyzer



AutoCrypt® Security Analyzer is an in-vehicle security solution that detects and manages vulnerabilities in open-source software (OSS) by accurately breaking down its components, implementable at all stages of the software development lifecycle. OEMs and software vendors can ensure zero vulnerability in their software-defined vehicles.

• AutoCrypt® Security Fuzzer

AutoCrypt® Security Fuzzer is a smart fuzz testing tool that consumes minimal time for maximum results, generating and delivering invalid and unexpected test cases into a selected program to expose its vulnerabilities. AUTOCRYPT's AI-based smart fuzzing solution runs independently in the background, reducing fuzzing time without compromising thorough detection.

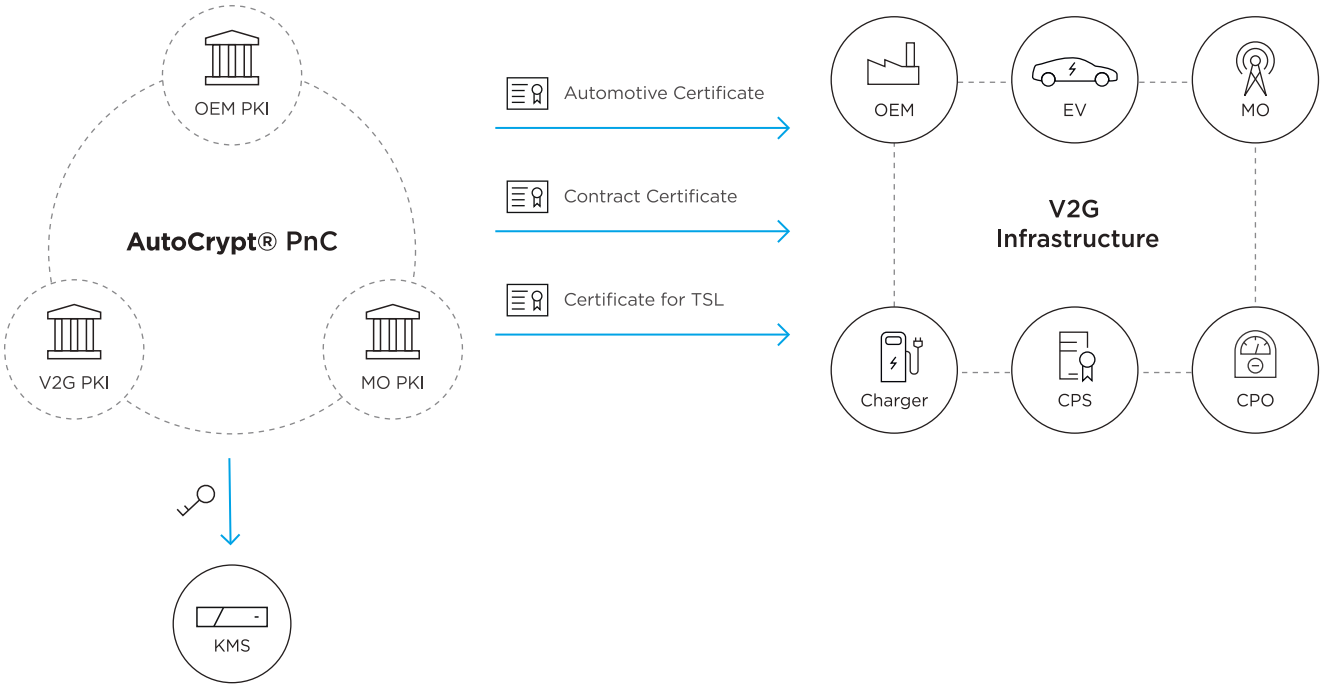


In addition to providing vehicle security, AUTOCRYPT also offers secure solutions for a wide range of services that rely on vehicular connectivity. These include electric vehicle (EV) charging services, mobility-as-a-service (MaaS) platforms, and all other forms of mobility services.

AutoCrypt® PnC Secure Plug&Charge

With the growing numbers of electric vehicles and charging equipment, AutoCrypt® PnC ensures that electric vehicle supply equipment (EVSE) and their connections remain secure. AUTOCRYPT provides the necessary PKI components to enable certificate-based authentication between manufacturers (OEMs), mobility operators (MOs), certificate provisioning system (CPS) providers, and charge point operators (CPOs). With AutoCrypt® PnC, all entities of the EV ecosystem can enjoy a seamless and secure Plug&Charge (PnC) experience.

- PnC security and PKI create robust and convenient authentication, authorization, and billing system
- In compliance with ISO 15118-2 standard for PnC charging and communications and VDE 2802-100-1
- Supports Open Charge Point Protocol (OCPP), verifying the contracts between charging station management systems (CSMS) and mobility operators



AutoCrypt® FMS Secure Fleet Management

AUTOCRYPT's secure fleet management solution covers all aspects of smart mobility infrastructure, ensuring that everything from the fleet management platform to the secure operation of the fleet is covered. The modular solution can be customized and scaled to suit the needs of mobility service operators and their customers.

Fleet Management

- Safe, convenient collection of in-vehicle data in encrypted environment with proprietary OBD-II technology and/or software
- Big data analysis and data modeling using proprietary machine-learning technology, with insights shared through correlation analysis
- Identification of abnormal driving patterns and detection of in-vehicle error signals
- Optimal routes mapped from data including traffic and signal information

Feature Highlights

Securely manage and monitor data and resources through machine learning and artificial intelligence for the best fleet operational efficiency.

MDC1_O2B
Bluetooth

AWF_OBDII
Wi-Fi

AGL_OBDII
GPS & LTE

Data collected:

- Vehicle data (battery condition, oil condition, TPMS)
- Driving data (position, speed, RPM, brake status, etc.)
- User data (age, preferences, etc.)
- V2X communication data (distance between vehicles, traffic light exchange)

Collected data allows for further development into customized solutions, allowing for a fully managed service, including development and design of applications, service operations, and comprehensive cybersecurity management.

Use cases:

- Fleet management platform
- Real-time taxi dispatch platform
- Integrated EV management platform
- Barrier-free transportation assistance system
- Social mapping application for barrier-free navigation

AutoCrypt® EQ Accessibility in Mobility

AutoCrypt® EQ is a mobility service offerings suite focusing on making mobility accessible.
We believe that providing mobility for those who need it is essential for smart cities to continue to develop.

- **Fully customizable for accessibility:** We offer a wide range of features including demand-responsive transport, accessibility mapping, and fleet management, tailoring the offering to what the client requires.
- **Accessible mobile application development:** AUTOCRYPT carefully designs, develops, and tests each mobile application for both passenger and driver to ensure seamless accessibility.
- **Proprietary OBD-II for all service vehicles:** AUTOCRYPT's OBD-II hardware ensures vehicles can securely transmit data in real-time for reporting, customized analysis, and big data modeling through machine learning.

AUTOCRYPT's fleet management solution can be customized and combined with other products and solutions to provide enhanced security measures.
With the expansion of mobility services, it is essential that security remains a priority.

AUTOCRYPT

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