Press release

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Automotive security:
ESCRYPT offers vehicle protection from factory to backend

Bochum, November 27, 2018. Digital transformation in mobility calls for IT security mechanisms that provide lasting protection against unauthorized access to vehicles and legitimize the authorized exchange of data. At the Consumer Electronics Show CES 2019, which will be held in Las Vegas from January 8 to 11, automotive security provider ESCRYPT will be demonstrating how to protect the entire automotive security ecosystem. Here, the Bosch Group company offers integrated solutions covering three applications: automotive manufacturing, the connected vehicle itself, and the associated backend and mobility services.

Weaknesses cannot be tolerated when it comes to IT security for connected and automated vehicles. But such weaknesses do not just lurk in the vehicle itself. They could lead to attackers gaining access to vehicle data or cryptographic keys during manufacturing. Or cyberattacks spreading beyond the vehicle into the associated backend systems and mobility services. That’s why integrated automotive security must unite manufacturing IT security, embedded IT security, and enterprise IT security.

Automotive security starts in production

IT security for vehicles is effective only when it is an integral part of their development and manufacture. At the same time, production of vehicles and their individual components must be protected against cyberattacks and data theft. Should attackers infect the ECUs with malware during production, for instance, or gain access to their cryptographic material, the results would be disastrous.

As an automotive security specialist, ESCRYPT has in-depth expertise in IT security for connected manufacturing processes in the automotive industry. What’s more, ESCRYPT offers a security solution for the distribution and insertion of certificates and cryptographic keys during ECU production. Key material provided by automakers is distributed as needed among production sites, where it is stored on production key servers in readiness to be “injected” into the ECUs during the manufacturing process. This technique can be integrated into existing factory IT infrastructures to ensure that the ECUs can perform IT-secured data exchange in the vehicle.

Protecting the vehicle using embedded security components

In addition, various security components are required to protect vehicles in road traffic across all functional levels, depending on the degree of connectivity and automation. Starting with the processor of the individual ECU, this extends from protecting on-board communication and the E/E architecture through to specific security solutions for V2X communication and vehicle IT infrastructure.

ESCRYPT offers a comprehensive portfolio of embedded automotive security solutions that interact according to the individual security approach of each vehicle platform: HSM firmware, ASPICE-compliant cryptographic library, automotive Ethernet firewall, intrusion detection system (IDS), protection of keyless locking systems, SDK for secure V2X communication and protection of the V2X infrastructure, and solutions for secure over-the-air data transmission.

Backend service: Security for the entire vehicle life cycle

Security-specific backend services are indispensable in maintaining the IT security of vehicles over their entire life cycle, and throughout many development cycles of cyberattacks. In the Security Operations Center, cyberattacks on the vehicle fleet are aggregated, evaluated with self-learning analysis tools, forensically evaluated, and security updates are rolled out. It is also essential to protect the operating backend systems, hosting systems, and data streams for the vehicle's connected online services (e.g. for map updates) or mobility services (e.g. car sharing or ride hailing) at all times.

Demand is as high for automotive-specific security expertise as it is for traditional enterprise IT security tools. ESCRYPT offers big data analysis systems for the security backend as well as consulting and security services for vulnerability management and incident response.

"With increasingly connected manufacturing, connected vehicles on the road, and connected backend services, the automotive industry must concert its IT security measures across the board," says Dr. Uwe Müller, Head of Cyber Security Solutions at ESCRYPT. "From the development and production of vehicles and mobility services to their marketing and operation and the protection of data and know-how, in the future IT security must be embedded thoroughly in automakers' DNA."

About ESCRYPT

ESCRYPT is a leading supplier of IT security solutions in embedded systems and of consulting and services for enterprise security and IT-secured manufacturing. Millions of ESCRYPT solutions are currently in use, especially in automotive security and automotive manufacturing applications. In addition, ESCRYPT provides dedicated security services for corporate IT to the Bosch Group and its products.

ESCRYPT was acquired by the Bosch Group subsidiary ETAS GmbH in 2012 and is headquartered in Bochum, Germany. The company is active all over the world with locations in the UK, France, Sweden, the US, Canada, India, China, Korea, and Japan.

More information is available at www.escrypt.com

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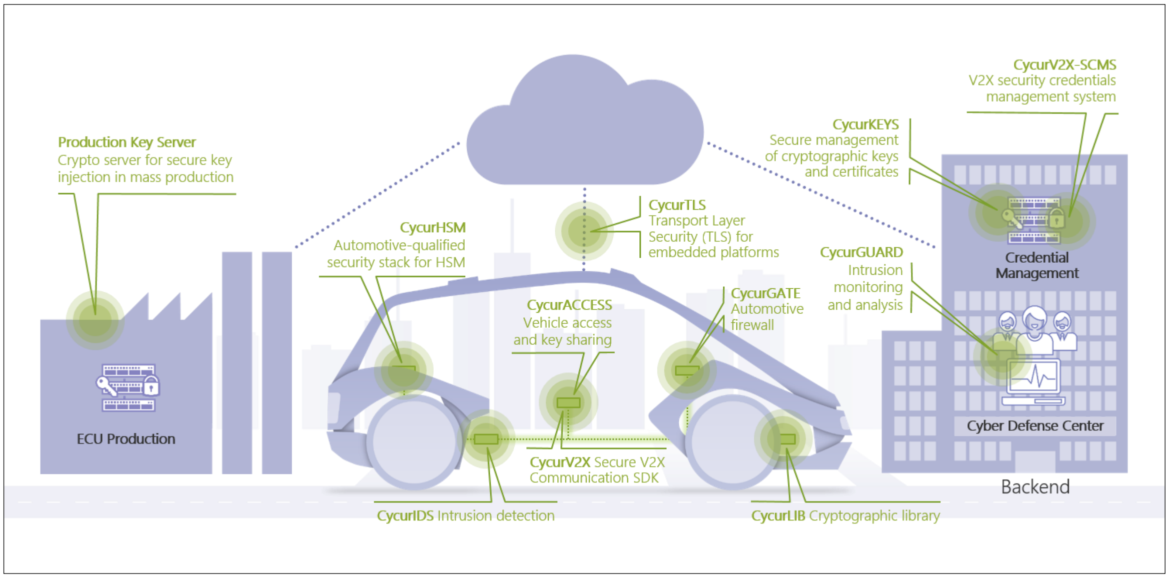
Production Key Server
Crypto server for secure key injection in mass production
ECU Production
CycurHSM
Automotive-qualified security stack for HSM
CycurTLS
Transport Layer Security (TLS) for embedded platforms
CycurACCESS
Vehicle access and key sharing
CycurGATE
Automotive firewall
CycurV2X Secure V2X Communication SDK
CycurIDS Intrusion detection
CycurLIB Cryptographic library
CycurKEYS
Secure management of cryptographic keys and certificates
CycurV2X-SCMS
V2X security credentials management system
CycurGUARD
Intrusion monitoring and analysis
Credential Management
Cyber Defense Center
Backend

Image 1: Integrated IT security for vehicles – from production to backend

Image 2: Dr. Uwe Müller, Head of Cyber Security Solutions, Bosch Group, ESCRYPT