Press Release

Vehicle immune system:
Smart control loop for detecting and blocking attacks

These days, the trend is towards connected, partially, and highly automated driving functions – calling for comprehensive security solutions. In response, ESCRYPT has developed its Intrusion Detection and Prevention Solution (IDPS) as a closed loop for detecting, analyzing, and blocking attacks.

Bochum, February 28, 2018 – Driver assistance systems that take over driving functions either partially or fully are becoming more and more commonplace. The number of digital systems is on the rise, while vehicles become more and more connected. This means an increasing number of potential points of attack for cyber hackers – and an increased risk from the security gaps that exist. Traditional defenses that protect single functions are no longer sufficient in the face of these developments. After all, the vehicles affected will be on the roads for many years to come – and therefore have to withstand many generations of hacker attacks. The answer to the problem is automotive security solutions that combine attack detection and blocking functions in a self-teaching control loop. ESCRYPT's Intrusion Detection and Prevention Solution (IDPS) follows precisely this approach, offering a cyclical, multitiered defense strategy that combines various system components.

The embedded CycurGATE firewall, for instance, immediately blocks any attack on an ECU that follows a known attack pattern. Even so, to be able to continue guarding against the constantly shifting lines of attack in the future, the firewall's rule sets (black and white lists) must be constantly updated. This is where the embedded CycurIDS attack detection software comes into its own. CycurIDS has been designed for both CAN- and

future Ethernet-based E/E architectures, and constantly monitors data traffic. It is able to detect typical attack signatures, especially anomalies in cyclical messages and misappropriation of diagnostic requests. Any anomalies logged are either saved to the vehicle for later analysis or – for a fast response – automatically saved to a cloud-based event database.

In the final step of the process, IDS data from the entire vehicle fleet is aggregated and analyzed in the backend using the big data analysis tool CycurGUARD. This software draws on its continually growing attack database to identify any acute threats in real time, and notify the cyber security team when necessary. The security team can then perform further analysis, implement the necessary countermeasures, and roll out a security update to all the vehicles in the fleet.

"Any new attack pattern is detected as soon as it affects individual vehicles, and translated directly into security measures for the entire vehicle fleet," explains ESCRYPT General Manager Dr. Thomas Wollinger. Now, more than ever, he says, automotive security needs forward-looking solutions: "We need attack detection and prevention systems that can learn and react rapidly to new and changing threats – only then will we be able to protect our highly connected vehicle fleets long term."
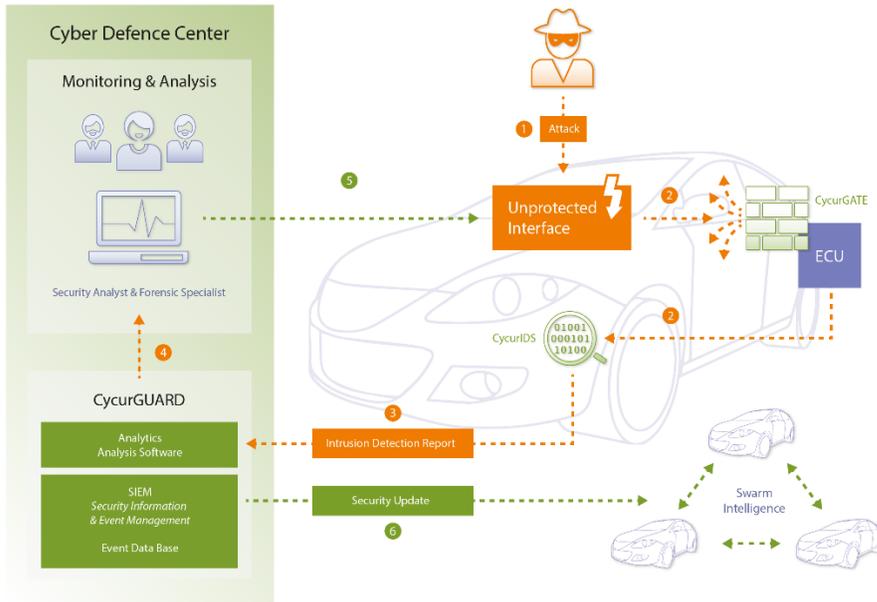
Image 1 – Overview of the Intrusion Detection and Prevention Solution (IDPS): The firewall, IDS attack detection system, security backend, and security update function join together to form a closed security loop.

Image 2 – Dr. Thomas Wollinger, ESCRYPT General Manager

ESCRYPT GmbH

Martin Delle

+49 234 43870-290

martin.delle@escrypt.com

ESCRYPT GmbH

ESCRYPT is the leading system provider of IoT security in the areas of smart mobility, smart city, and smart industry. At five German locations and in branch offices in the United Kingdom, Sweden, the United States, Canada, India, China, Korea, and Japan, our experts focus on current data security issues such as secure M2M communication, IT security in the Internet of Things, securing e-business models, and automotive, enterprise, and operational IT security. ESCRYPT supplies highly secure, worldwide valued solutions for embedded systems and accompanying IT infrastructure – solutions that have already proven themselves millions of times over in automotive series production – as well as consulting and services for enterprise security and IT-secured manufacturing in industry 4.0.

Further information online at www.escrypt.com