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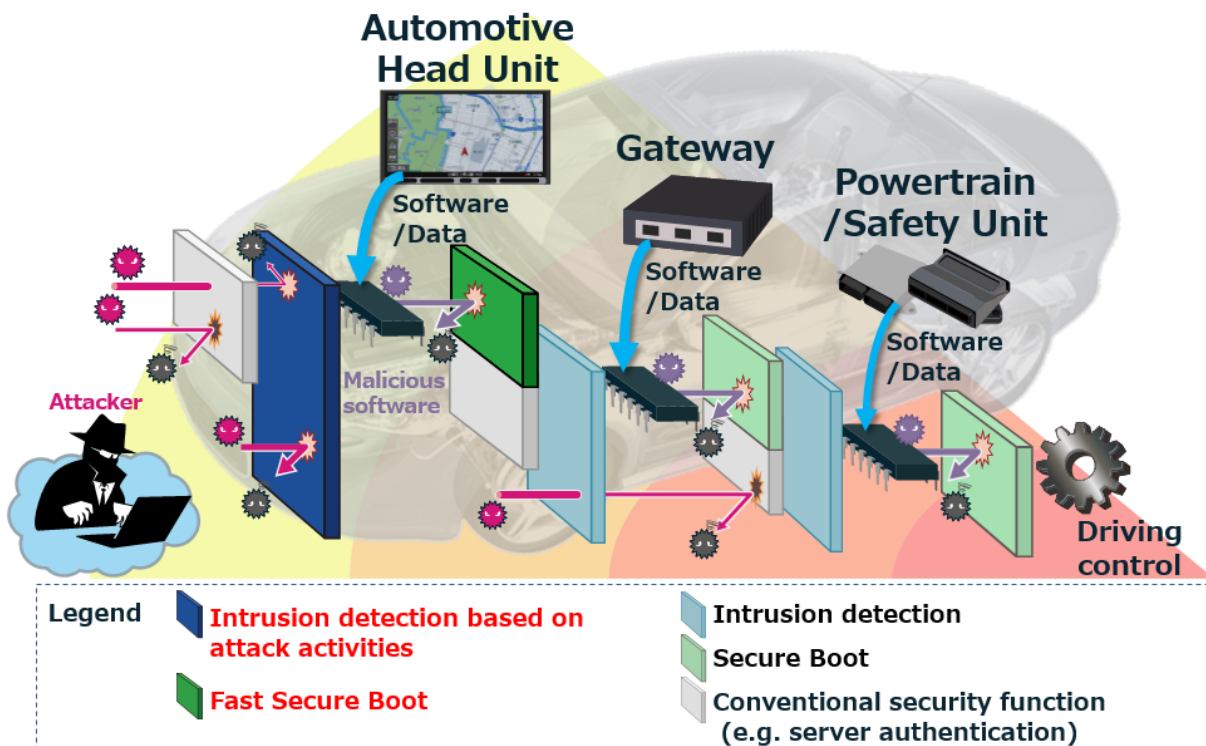
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## Mitsubishi Electric Develops Cyber Defense Technology for Connected Cars

*Multi-layered defense expected to strengthen safety and security for connected cars*

**TOKYO, January 22, 2019** – [Mitsubishi Electric Corporation](http://www.mitsubishi-electric.com) (TOKYO: 6503) announced today that it has developed a multi-layered defense technology that protects connected vehicles from cyber attacks by strengthening their head unit’s defense capabilities. The technology will help realize more secure vehicle systems in line with the increasing popularity of vehicles that are equipped for connection to external networks.



**Multi-layered Defense Technology for Connected Cars**

Vehicles with communication functions provide connections to the internet and/or mobile devices such as smartphones. The importance of cyber security is increasing because these vehicles are vulnerable to cyber attacks and even malicious remote control in extreme cases. Mitsubishi Electric's new multi-layered defense technology prevents cyber attacks through a variety of robust security features, including an intrusion detection system without high-load processing and a secure-boot technology that quickly verifies software integrity during the boot process.

### **Key Features**

- Detects cyber attacks targeting the control of the vehicle and the automotive head unit. The developed technology reduces load processing by focusing on attack activities.
- The new technology requires less than 10% of the time for a normal boot-up sequence compared with conventional technology. The developed Fast Secure Boot technology enables faster and more secure boots that verify the integrity of the vehicle's software embedded in the automotive head unit.
- Mitsubishi Electric's new multi-layered defense technology achieves robust security of the vehicle by strengthening the security functions of the automotive head unit, the vehicle's main link with the internet. The developed technology is adapted from multi-layered defense technology originally developed for critical infrastructure, such as systems for electric power, natural gas, water, chemicals and petroleum, for vehicle systems while requiring only limited machine resources.

### **Details**

- Intrusion detection based on attack activities  
Conventional attack detection must inspect packets to identify specific attack commands, which requires high-load processing. Mitsubishi Electric developed a new cyber-attack detection technology for general IT systems that identifies attack activities. The technology has now been applied to automotive device to enable the detection of advanced cyber attacks without requiring high-load processing.
- Fast Secure Boot  
The Secure Boot security feature enables the integrity of software to be verified during the boot process. A conventional secure boot has the disadvantage of requiring a relatively long time for processing because all software must be loaded and verified. To solve this problem, Mitsubishi Electric reduced the amount of data requiring verification by focusing on the essential parts of the software. As a result, the new technology requires less than 10% of the time for a normal boot-up sequence.

### **Patents**

Pending patents for the technologies announced in this news release number one in Japan and four outside of Japan. Completed patents for the technologies announced in this news release number three in Japan.

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**About Mitsubishi Electric Corporation**

With nearly 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,444.4 billion yen (in accordance with IFRS; US\$ 41.9 billion\*) in the fiscal year ended March 31, 2018. For more information visit:

[www.MitsubishiElectric.com](http://www.MitsubishiElectric.com)

\*At an exchange rate of 106 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2018