CENSUS
Cybersecurity Engineering

CYBERSECURITY IN AUTOMOTIVE INDUSTRY

Cars have become complex, connected machines that run embedded software that controls practically every aspect of the vehicle: from braking to entertainment. As a result, they have become attractive for cybercriminals who no longer need to gain physical access to a vehicle to attack it. At the same time, compliance regulations like the UNECE R155 and ISO 21434, set requirements that aim to safeguard modern vehicles.

CENSUS offers **a complete portfolio of cybersecurity services** to assist manufacturers and suppliers (OEMs, Tier-1, and Tier-2) in overcoming the challenges of securing complex, distributed and safety-critical automotive products.

ADVISORY SERVICES

The first step towards ensuring that cyber security risk is properly managed is to develop, establish, and maintain a **Cyber Security Management System (CSMS),** following the requirements of ISO/SAE 21434. CENSUS offers a comprehensive set of Advisory Services to help you formulate your cyber security strategy and even exceed any compliance and **governance** requirements. We perform a **gap analysis** to assess your current security practices and create a **roadmap** towards **compliance** with ISO/SAE, R155, and other applicable compliance standards.

PRODUCT CYBER SECURITY SERVICES

CENSUS offers services that can help you throughout the security journey of your product, in all stages of its development lifecycle. Our goal is to help you adopt a **“shift left”** security strategy and implement security practices in the entire development lifecycle, rather than just in the end.

Exposing possible design flaws at an early stage of development to mitigate threats and risks before it is too late, is not only essential but a mandatory action. **Threat Analysis and Risk Assessment (TARA)** is a necessary step for securing an automotive product defined within ISO/SAE 21434.

To support you on this demanding journey, our Product Cyber Security Services provide essential tools required to shape a realistic and effective cyber security Strategy & Architecture for your product:

- **Security Requirements** - Definition and Verification.
- **Secure Architecture** Review and Development.
- **Secure by Design** - Review and Enhancements.
- **Threat Modeling**
- **Attack Surface** Profiling
- **CI/CD Security** Validation
- **Virtual Chief Product Security** Officer services.

ASSESSMENT SERVICES

CENSUS offers a comprehensive set of Cyber Security Assessment services tailored for automotive products. The modus operandi of our assessments is to examine in-depth the maturity of the implementation and in reference to product's security requirements / design. To efficiently achieve this, assessment activities are designed to be agile to accommodate different development models, but always maintaining a **holistic view of product's security attributes.** Some of the key activities present in our assessments are:

- Automotive Device Security Testing
- End-to-End Application Security Testing (V2V, V2I, V2X, V2C, etc.)
- Embedded System & Platform Assessment (on-chip, distributed, etc.)
- Hardware & Firmware Review
- Fuzz Testing & Source Code Auditing
- Whole Vehicle Penetration Testing

TRAINING

CENSUS offers highly specialized cyber security training courses to enable developers, architects, testers, security professionals, and anyone involved in product development, to build secure products.

Our highly intensive and interactive courses are delivered by our security experts and are based on material coming from best practices, international standards, and field experience from real-world engagements.

ABOUT CENSUS

CENSUS is an internationally acclaimed Cyber Security Services provider that stands out when it comes to securing automotive systems. Our main goal is to empower you to build secure automotive solutions that comply with all applicable standards, such as ISO/SAW 21434 and UN R.155. We believe that cyber security should act as a business enabler rather than a backpedal force.

CENSUS services are offered by a unique, **multi-disciplinary team** of **automotive security experts.** Our team includes **electronic engineers** capable of inspecting hardware and radio components at a very low, **embedded security engineers** with expertise in analyzing the security of complex automotive embedded system, complemented with a talented team of **application security experts** with extensive experience in penetration testing, reverse engineering, protocol analysis, and code auditing.

HARDWARE & RADIO LAB

Census has built and operates a Hardware & Radio Laboratory, fully equipped with specialized equipment capable of analyzing and testing automotive products. CENSUS Lab provides our engineers with capabilities for **board assembly/ disassembly** (microscope, soldering station, BGA rework tools etc.), **radio analysis** (SDR equipment, NFC/RFID/Bluetooth, LTE, 5G etc.), signal analysis (oscilloscope, logic analyzer etc.), and **interface analysis** (for JTAG, SWD, SPI, UART, I2C etc.).

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