Automotive Cybersecurity
HARMAN SHIELD

Automakers are in a race to deliver new and more exciting experiences—a race in which they are faced with challenges to meet quality demands within rigid delivery timeframes, but also opportunities to reshape the industry and to establish new business models and revenue streams.

IHS Markit estimates that by 2025 more than 620 million vehicles will feature embedded connectivity, a rapid increase from merely 208 million in early 2019, enriching the experiences of drivers and passengers alike. The changing landscape and hyper-connectivity between the car and the cloud also create cybersecurity challenges, with an ever-expanding attack surface that requires active and continuous monitoring and protection.

Modern automakers require solutions that enable them to deliver these new experiences while mitigating risks associated with system vulnerabilities, preventing data breaches, and managing threats to the systems’ integrity and safety. This solution is now taking the shape of cloud-based systems, such as Vehicle Security Operations Centers (vSOC). HARMAN SHIELD delivers the core of the vSOC functionality by monitoring the cyber posture of connected vehicles based on a myriad of data sources, such as operational telematics, instrumentation of in-vehicle cybersecurity components, and third-party data sources.

HARMAN SHIELD allows automakers and mobility service providers to drive digital expansion while managing risks, without hindering growth. As a pioneer in automotive cybersecurity and years of domain expertise, HARMAN is a trusted cybersecurity partner to vehicle manufacturers globally.

Key benefits of a Vehicle Security Operations Center (vSOC):

- Vehicle-centric and data-driven visibility of cybersecurity risks
- 24/7 security monitoring of a fleet's security posture
- Actionable cybersecurity remediation insights
- Prompt detection of cybersecurity risks
- Fleet-wide analysis providing security analysts with valuable insights effecting fleets
- Impact analysis to assess potential harm of detected vulnerabilities across mixed-make fleets
- Achieve compliance with emerging cybersecurity standards and meet regulatory requirements (SAE J3061 / ISO 21434 / WP.29)

HARMAN EXPLORATION
Making Time in the Car, Time Well spent

Mobility is more than getting from one place to another. It's about shifting from one state of being to the next. HARMAN EXPLORATION doesn't just move people from one place to another; it delivers in-vehicle experiences that put people first, so time in the car becomes time well spent.

HARMAN EXPLORATION bundles advanced technologies to deliver meaningful consumer experiences, enables OEMs to unlock new market opportunities, and empowers HARMAN to create value today while positioning our customers to thrive tomorrow.

HARMAN EXPLORATION maximizes customers’ time and quality of life in four key consumer benefits:

- Accomplishment
- Well-being
- Social Connection
- Enjoyment
Products and Services

- HARMAN SHIELD Agent: Embedded sensors supporting all common operating systems, environments, and recommended security mechanisms, pre-integrated with leading HARMAN Telematics Control Unit and Digital Cockpit platforms
- HARMAN SHIELD Cybersecurity Analytics Center (CSAC): command & control dashboard for visibility, detection, and response
- In-vehicle integration framework to support third-party detection and OEM security components
- Built-in support for leading HARMAN cloud solutions, including HARMAN Ignite Cloud Data Platform and HARMAN Software Management (OTA) Solution
- Managed Security Services across the entire value chain: SOC operators, incident response, and value-added professional services

Capability of a VSOC by HARMAN

**Collect and Detect:**
- Operating system security events
- Embedded Intrusion Detection Systems (IDS) logs
- ECU-level security-related events
- Diagnostic vehicle data
- IT systems logs and other off-board data sources

**Discover and Assess:**
- Full suite of Security Data Analytics tools (e.g. correlation, anomaly detection, etc.)
- Potential impact assessment of an event on single/multiple vehicles up to the entire fleet
- Dynamic software components scanning (no need for source code), powered by Cybellum V-RAY®, a machine learning-based technology
- Score points based on the severity of the security incident and a security overview for forensic investigation

**Investigate and Respond:**
- Forensic methods uncover vulnerabilities down to a single event on a single entity
- Per vehicle “cradle to grave” analysis capabilities
- Detailed security reports, including fleet-wide impact analysis
- Support OEM fixes in an OTA campaign
- Seamless integration with an incident management tools and event management (SIEM) systems
- Generate customized reports for all relevant stakeholders

HARMAN

More than 50 million automobiles on the road today are equipped with HARMAN audio and connected car systems. Our software services power billions of mobile devices and systems that are connected, integrated and secure across all platforms, from work and home to car and mobile. HARMAN’s latest innovations leverage Samsung’s connected lifestyle and hardware expertise, allowing automakers to create an ecosystem of unique, smart, enhanced and rich in-vehicle experiences. Together HARMAN and Samsung are architects of experience, designing the most intuitive and immersive interactions with in-vehicle technology. HARMAN is a wholly-owned subsidiary of Samsung Electronics Co., Ltd.

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