Automotive Cybersecurity: Solutions for ISO/SAE 21434, UNECE WP.29

Partner with the right companies to automate cybersecurity requirement verification and make vehicles more secure

The automotive industry is undergoing cybersecurity standardization and regulation that enforces consistent testing to provide work products to auditors. ISO/SAE 21434 is a cybersecurity standard that integrates high-quality safety and security measures and provides a standard framework to implement a Cybersecurity Management System (CSMS). UNECE WP.29 cybersecurity regulation requires carmakers to prove to auditors they have an appropriate Cybersecurity Management System (CSMS) in place to sell vehicles in countries following this new standard.

To effectively deliver work products for these standards within that CSMS, automotive companies must be able to configure efficient automated requirement verification testing to ensure mitigations for threats are appropriately implemented per the cybersecurity design. Automakers and their suppliers must be able to prove to auditors they have successfully implemented these mitigations.

To achieve these goals, Block Harbor has partnered with Keysight Technologies to deliver a platform for automated cybersecurity requirement verification. Using Keysight’s Automotive Cybersecurity Penetration Testing Platform (SA8710A) as a test execution environment, the solution manages and orchestrates automated cybersecurity requirement verification tests. This provides insight into the latest status of verification test results through exportable reports.

Block Harbor and Keysight’s solutions deliver unparalleled capabilities for complete vehicle cybersecurity testing coverage and automation – easing the task of keeping vehicles safe and secure. These solutions were built to align with ISO/SAE 21434 and UNECE WP.29 and tailored to the latest vehicle cybersecurity challenges.

• Automated HIL cybersecurity requirement verification for ISO/SAE 21434 adherence and UNECE WP.29 compliance.
• Manage and execute tests across multiple labs for global cybersecurity testing.
• Perform continuous testing for real-time insight into the status of cybersecurity requirements.
When it comes to an increasingly agile software vehicle ecosystem with a changing threat landscape, this solution automates requirement verification testing for real-time insight into the cybersecurity of their vehicles. This insight can be exported and easily shared with auditors. Block Harbor and Keysight add consistency and reliability to achieve your cybersecurity testing needs.

### Adding Consistency and Value to Your Cybersecurity Test Needs

<table>
<thead>
<tr>
<th>Supports the implementation and enforcement of company-wide security standards</th>
<th>Covers all relevant interfaces, from hardware connectivity to the application layer</th>
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| • **Consistency** in penetration testing across all R&D teams, both In-house and subcontractors.  
  • Baseline tests to detect a large and growing number of vulnerabilities and mitigations. | • Cellular, Wi-Fi, Bluetooth, USB, CAN, automotive Ethernet, and more. |

<table>
<thead>
<tr>
<th>Subscription to updates from our threat database to maintain relevant regression testing</th>
<th>Documented workflow and results</th>
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<tr>
<td>• Find out if there is a security risk <strong>before</strong> a car is attacked in public or dangerous conditions.</td>
<td>• <strong>Traceability</strong> and reporting for regulatory audits.</td>
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<th>Repeatability of tests (regression testing)</th>
<th>Seamless integration into your enterprise platform</th>
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| • Faster validation of software bugfixes.  
  • Earlier detection of requirement non-conformance. | • The framework is open for integration of any proprietary tests or testing setups.  
  • Release management of subcomponents up to complete cars. |

![Figure 1. Image of an example vehicle cybersecurity lab automated testing setup.](image)
System Components

<table>
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<tr>
<th>Model/Series Number</th>
<th>Description</th>
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<tr>
<td>SA8710A</td>
<td>Keysight Automotive Cybersecurity Penetration Testing Platform</td>
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Keysight Solutions Partner Program

Keysight and its Solutions Partners work together to help customers meet their unique challenges, in design, manufacturing, installation or support. To learn more about the program, our partners and solutions go to www.keysight.com/find/solutionspartner.

Block Harbor was established in 2014 in Detroit to build great solutions in automotive cybersecurity to keep vehicles safe. BH operates two vehicle cybersecurity labs in the Detroit area providing the following services:

Cybersecurity Assessments
- Threat Analysis and Risk Assessment (TARA)
- Vehicle, System, and Component Penetration Testing

Managed Cybersecurity Services
- 24/7/365 Security Operation Center
- Fuzzing-as-a-Service
- Verification/Validation-as-a-Service

Cybersecurity Consulting
- ISO/SAE 21434 & WP.29 Consulting
- Red team exercises

Headquarters: https://blockharbor.io

Learn more at: www.keysight.com

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