Vehicle Supply Chain Cybersecurity in Canada

AJ Khan, CEO


ajkhan@cyberstrategiez.com


+1(289)936-9894

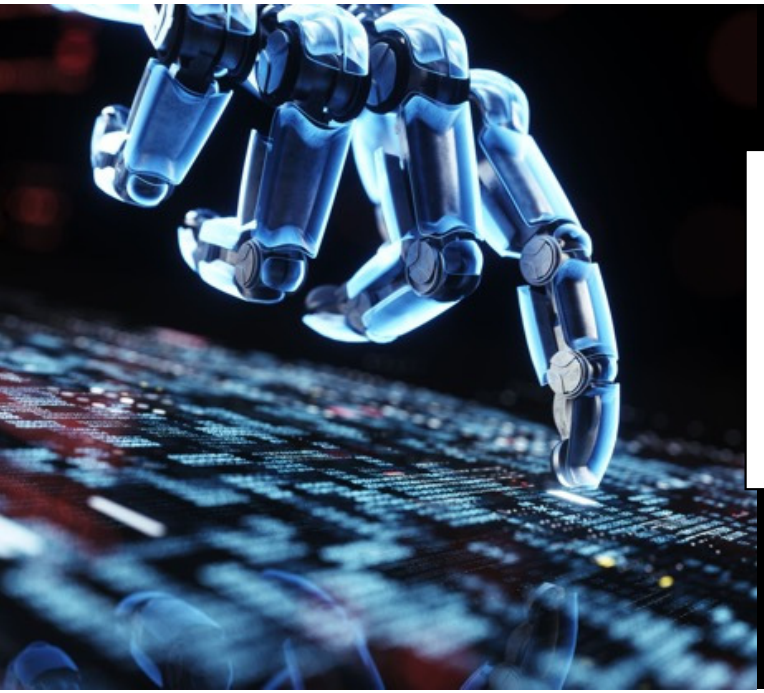
https://vehiqilla.com/

AJ KHAN

- 20+ years of experience in Cybersecurity and associated fields
- Cybersecurity innovation
- Involved in automotive cybersecurity since 2017
- Co-Chair APMA CSC 2019 – 2021
- Founded Vehiqilla in June 2020
- President Global Syndicate for Mobility Cybersecurity
- Contributor

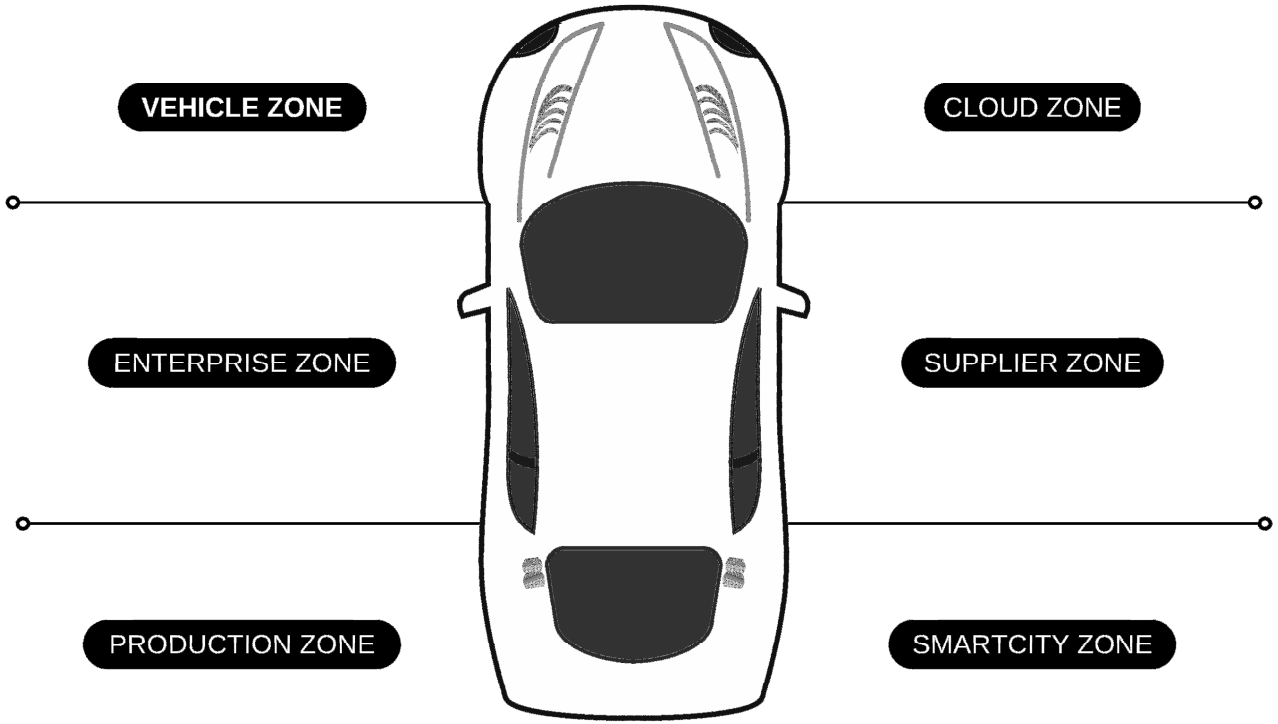
https://vehiqilla.com/

CYBER SECURITY
A GLOBAL CHALLENGE FOR AUTOMOTIVE INDUSTRY



Greater Cyber Threats in Industry 4.0	Difference in IT and Automotive Cyber security	Vehicle Supply Chain Cyber security

https://vehiqilla.com/

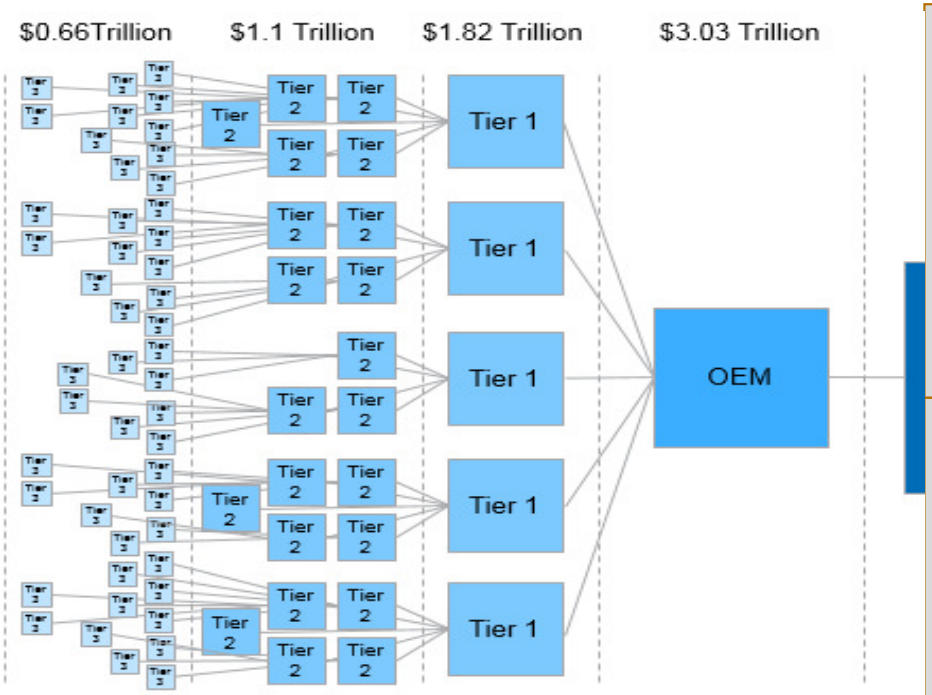


https://vehiqilla.com/

VEHICLE SUPPLY CHAIN CYBER SECURITY

C-SCRM as applied to Vehicle Supply Chain

Current State of Cyber Security in Canadian Supply Chain Network



https://vehiqilla.com/

Global Automotive Cyber Security Standard and Regulations

Automotive Software Supply Chain Cybersecurity

C-SCRM AS APPLIED TO VEHICLE SUPPLY CHAIN

- Incident Management
- Supplier Business Continuity Planning (BCP)
- Manufacturing and Test Resilience
- Product Resilience

https://vehiqilla.com/

MC1

VEHICLE C-SCRM IN CANADA

Canadian automotive sector is aware of the security challenges faced by these organizations with new cyber threats emerging

Implementing a holistic C-SCRM Program will enable the necessary controls to be put in place to mitigate the risks posed from these new threats

https://vehiqilla.com/

Slide 7

MC1 Translation needed

Morrigan Coady, 2022-03-21

ISO 21434, UN R155, R156 & VEHICLE SUPPLY CHAIN CYBER SECURITY

- Clause 5 “Organizational Cybersecurity Management” defines the cybersecurity management for the organization and specification of the organizational cybersecurity policies, rules, and processes
- Clause 7 “Distributed Cybersecurity activities” applies if responsibilities for cybersecurity activities for an item or component are distributed

- R155 states that auditors validate that vehicle manufacturers have made every effort to “Collect and verify the information required under this Regulation through the supply chain so as to demonstrate that supplier-related risks are identified and are managed”
- R156 specifically asks suppliers to provide enough information to ensure that specific validation checks outlined in the regulation can be caried out for any software updates going out to the vehicle.

https://vehiqilla.com/

AUTOMOTIVE SOFTWARE SUPPLY CHAIN CYBERSECURITY

Cyber Risks

- Millions of lines of code in a modern vehicle from many different suppliers
- Over-The-Air (OTA) patch updates have become standard practice in the industry

Solutions

- Requirement of Software Bill of Materials (SBOM)
- Real-time Cyber Monitoring of the Vehicle & the data flowing into the Cloud

https://vehiqilla.com/

KEY CHALLENGES

- Limited understanding of Business enablers for Cyber security
- Lack of Implementation of Global Automotive Cybersecurity Standards & Frameworks
- Lack of Automotive Cyber Security SMEs
- Lack of Cyber Supplier Chain Risk Management (C-SCRM)
- Collaboration & Information Sharing for Cyber security initiatives

https://vehiqilla.com/

RECOMMENDATIONS FOR THE INDUSTRY

Development of Automotive Cyber Security SMEs

Industry-wide Cyber Security Information Sharing

- Canadian Center for Cyber Security
- Automotive Information Sharing & Analysis Center (Auto-ISAC)
- Canadian Cyber Threat Exchange (CCTX)

https://vehiqilla.com/

C-SCRM RECOMMENDATIONS FOR THE AUTOMOTIVE ORG

Automotive Cyber Security Governance Best Practices

- Ensure Cyber Security is part of the organization's mission statement
- Ensure a Chief Information Security Officer (CISO) is responsible for cyber risk management in the organization
- Ensure that a Cyber Security Management System (CSMS) has been implemented in the organization
- Ensure that the organization is compliant with relevant cyber standards and regulations, including ISO 21434 and UNECE WP.29 R155 & R156
- Ensure that "Security by Design" is implemented in the organization

https://vehiqilla.com/

C-SCRM RECOMMENDATIONS FOR THE AUTOMOTIVE ORG

Cyber Security Culture & Mindset

- Build a culture of cyber security in the organization by incentivizing a proactive approach towards cyber security in the workforce
- Ensure that “Security by Design” is implemented in the organization
- Ensure that “Secure Software Development” best practices are followed in the organization

https://vehiqilla.com/

C-SCRM RECOMMENDATIONS FOR THE AUTOMOTIVE ORG

Cyber Supply Chain Risk Management (C-SCRM) Program

- Ensure that the C-SCRM is an integral part of an organization risk management strategy
- Ownership of C-SCRM
- High-level C-SCRM policy that clearly highlights the organization Vehicle Supply Chain Cyber security requirements
- Stakeholders (e.g., Legal, Business, HR, Finance, Enterprise IT, Operations Technology, Program Management, Product Development, Risk Management, Acquisition/procurement, supply chain logistics, etc.)

https://vehiqilla.com/

C-SCRM RECOMMENDATIONS FOR THE AUTOMOTIVE ORG

C-SCRM & Supplier On-boarding

- Cyber security is built into the contractual obligations
- Any finalized supplier is onboarded to the organization's C-SCRM framework
- Supplier Interface Agreements for cyber security are executed with all suppliers

https://vehiqilla.com/

C-SCRM RECOMMENDATIONS FOR THE AUTOMOTIVE ORG

Supplier Cyber Security Risk Assessments

- Supplier Cyber Security Risk Assessment are carried out
  - at the time of onboarding
  - on periodic basis
- Define a minimum set of baseline information security controls that any supplier to the organization must meet once it is onboarded to the organization's C-SCRM framework.

https://vehiqilla.com/

C-SCRM RECOMMENDATIONS FOR THE AUTOMOTIVE ORG

Cyber Security Incident Management

- Hacking incidents, pandemics, natural disasters, etc.
- Cyber Incident Management Program

https://vehiqilla.com/

VEHICLE C-SCRM ASSESSMENT TOOLS

Focus should be on 6 Categories

- Organization Cyber Security
- Standards & Frameworks
- Cyber Supply Chain Risk Management (C-SCRM)
- Product Cyber Security
- Incident Management
- Cyber Security Culture

https://vehiqilla.com/

VEHICLE C-SCRM BENEFITS

- Helps manufacturers know the Cyber Security profile of the supplier
- Enable better product decision making for the manufacturers
- Suppliers can enhance their cyber credibility with the manufacturers
- Greater visibility into the strength and weakness of the supplier organization cyber profile
- Increases motivation for the suppliers
- Help identifies and analyze security requirements

https://vehiqilla.com/

THANK YOU

ajkhan@cyberstrategiez.com

+1(289)936-9894

4510 Rhodes Drive, Suite 510,
Windsor, ON N8W 5K5

https://vehiqilla.com/