Cybersecurity for Increasingly Complex Manufacturing Environments

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APMA's Industry 4.0 | Committee Objectives

- The APMA's **Industry 4.0** committee aims to support the Canadian automotive manufacturing sector's adoption of all specific aspects of I-4.0, from the **Internet of Things**, **Cloud Computing**, **Additive Manufacturing**, **Big Data/Analytics**, **Simulation**, **Mixed Reality**, **and Advanced Robots**, knowing that **Industry 5.0** (Cyber physical cognitive systems) is **less than a decade away.**
- Similar to the APMA's cybersecurity committee, embracing Industry 4.0 will make Canadian automotive suppliers both more competitive and efficient.

Digital Manufacturing

Industry 4.0 is ready to reshape the automotive industry. From smaller equipment to a more dynamic supply chain. It is transforming the traditional process of production. According to a recent report by Capgemini the automotive sector is the most enthusiastic industry for setting up smart factories.

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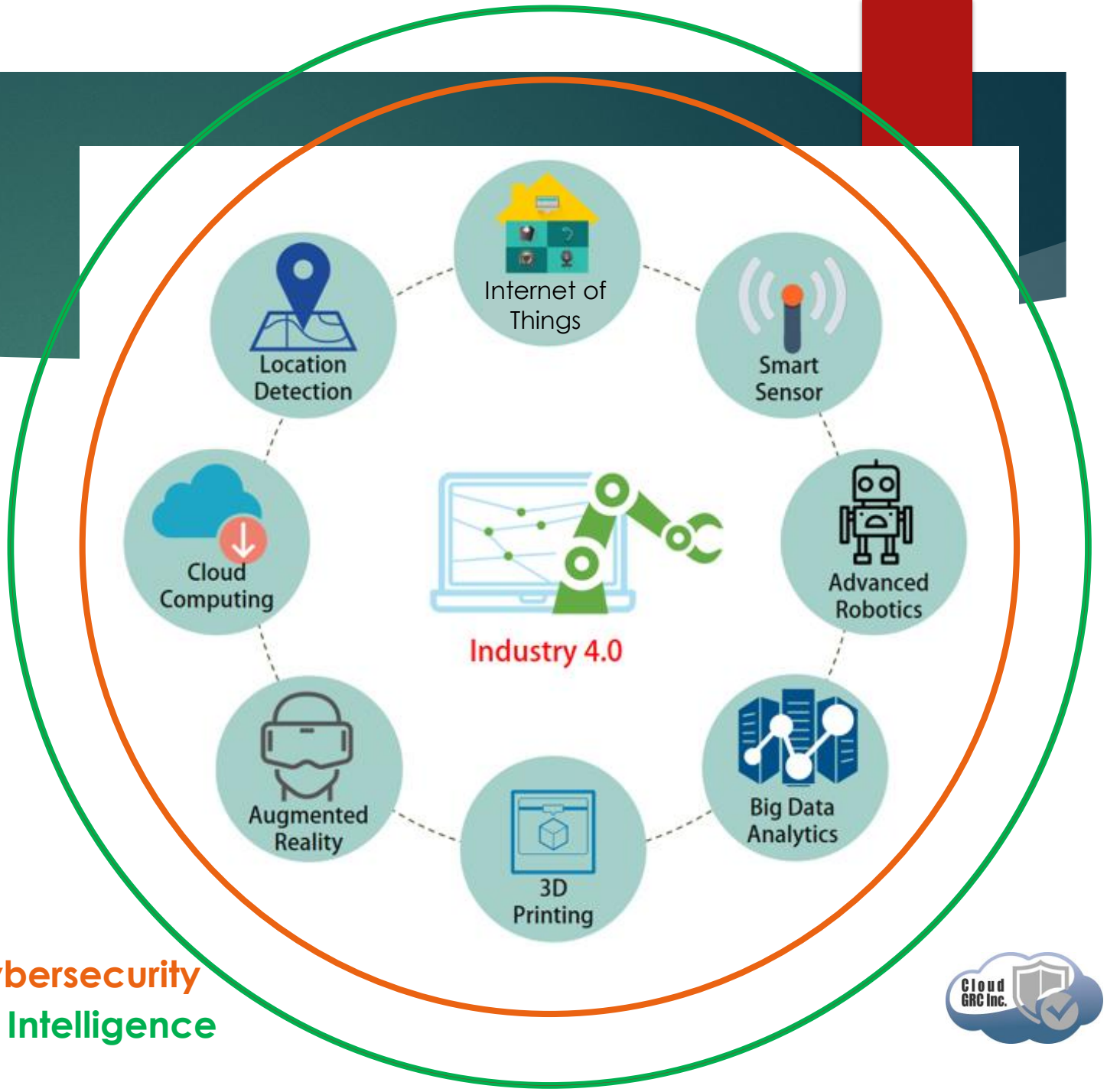
What is Industry 4.0



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Cybersecurity

Artificial Intelligence

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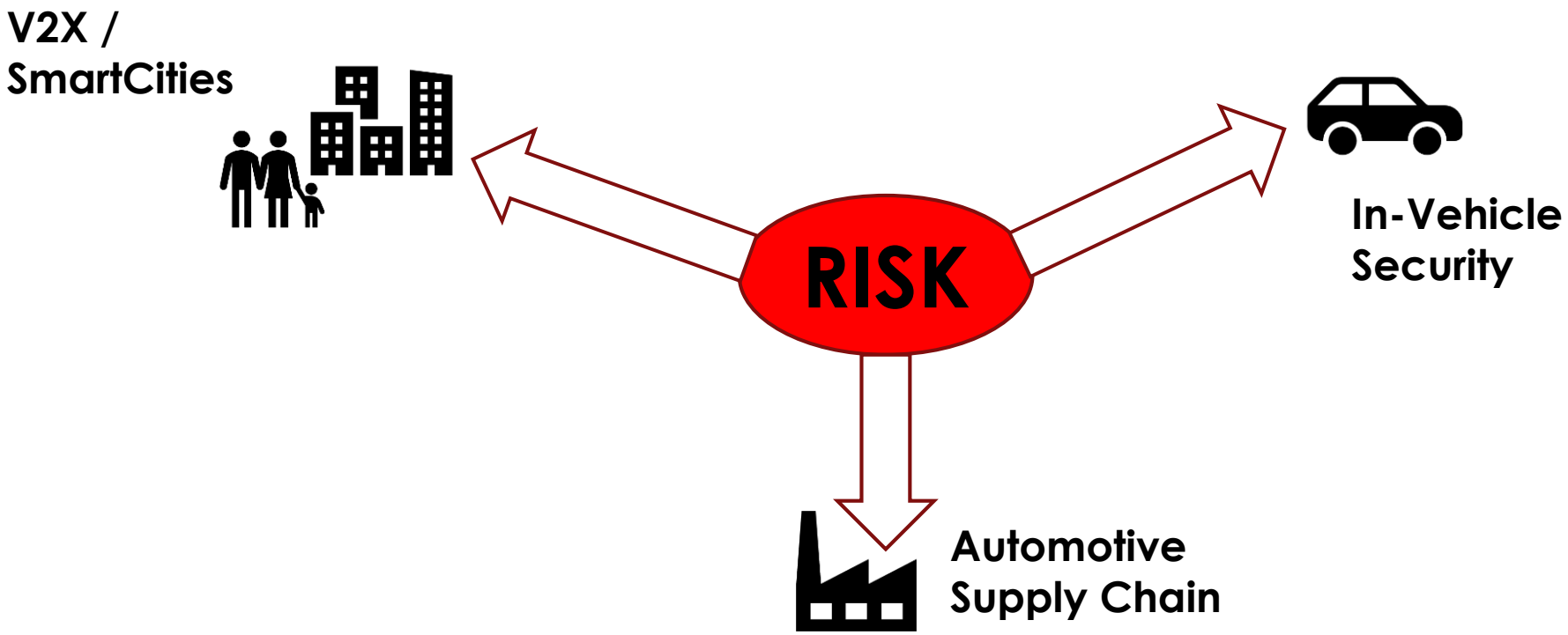
CloudGRC CAV Cyber Initiative



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Is Manufacturing Ready for Cybersecurity?

Source: https://www.oemmagazine.org/

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APMA's CyberKit 1.0

Release Date: November 2019

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An Effective Cyber Governance Program

Establish	Establish a Cyber Governance Strategy
Implement	Implement a Risk Management Framework
Develop	Develop Cyber Security Policies & Procedures
Protect	Protect the Data
Ensure	Ensure 3rd Party Cyber Security Validation
Establish	Establish a Cyber Security Awareness Program
Ensure	Ensure Compliance & Auditing
Measure	Measure Key Cyber Governance Metrics

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Establish a Cyber Governance Strategy

Purpose
Securing the business through Innovative Cyber Security

Vision

- Business-Centric
- Innovate
- Protect Org Data
- Protect Customer Data

Capability RoadMap

- Business Enablement
- Technical Control
- Operational Excellence
- Risk Management
- Talent Management

Information Systems Framework e.g. NIST CSF

- Identify
- Protect
- Detect
- Respond
- Recover

Core Investments

- Identity Management
- Data Protection
- Cloud First
- Automation
- AI-based Threat Management
- Device Integrity

Operating Objectives

- Risk & Compliance
- User Experience
- Resilience
- Financial Accountability
- Security Hygiene
- Coverage
- Effective Communication
- Talent Management

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Implement a Risk Management Framework

- Aligning Risk Appetite & Strategy
- Enhancing Risk Response Decisions
- Reducing Operational Surprises & Losses
- Identifying & Managing Multiple and Cross-Enterprise Risks
- Seizing Opportunities
- Improving Deployment of Capital

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ISO 21434 Vehicle Security Standard

APPLICABLE TO **ROAD-VEHICLES AND THEIR COMPONENTS AND SYSTEMS**

GOAL OF **REASONABLY SECURE** VEHICLES AND SYSTEMS

AUTOMAKERS AND SUPPLIERS CAN USE TO SHOW **"DUE DILIGENCE"**

FOCUS ON **AUTOMOTIVE CYBERSECURITY ENGINEERING**

BASED ON **CURRENT STATE-OF-THE-ART** FOR CYBERSECURITY ENGINEERING

RISK-ORIENTED APPROACH

MANAGEMENT ACTIVITIES FOR CYBERSECURITY

CYBERSECURITY ACTIVITIES/PROCESSES FOR **ALL PHASES OF VEHICLE LIFECYCLE**

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Supplier Risk Assessment Program

- Validation of Compliance with standards
- ISO 21434, PCI DSS, SOC I, SOC II, ISO 27001/2, NIST CSF

Cloud (SaaS) Apps Risk Assessment

Ensure 3rd Party Cyber Security Validation

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"Cybersecurity involves **People, Technology, & Process**"

Establish a Cyber Security Awareness Program

Change the Mindset

Partner with ALL Stakeholders

- Board of Directors
- Management
- Cyber Security SMEs
- All Employees

Targeted Topics

- Passwords
- Internet Usage
- Social Engineering
- Phishing
- Malware
- Social Media
- Sensitive Data
- Cyber Security Policies

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Ensure Compliance & Auditing

Establish a Cyber Security Compliance Program

Cyber Security Compliance Policy

Cyber Security Compliance Process

Auditors

Internal

External

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Benefits of an Effective Cyber Governance Program

- Ensures Security of Information Assets
- Cataloging & Classifying Assets
- Provides a Framework for Cyber Security
- Codifies the Desired Security Level
- Provides a Mechanism to Assess Risk
- Helps Mitigate Risk
- Ensures Business Operations & Success

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Thankyou

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