



Secure software development training

As the automotive industry continues its trajectory toward more software-centric and connected solutions, cyber threats are increasing in frequency and severity. With cybersecurity as an essential part of design and development, mastering secure C and C++ coding is no longer optional — it's essential.

Our comprehensive course equips participants with a strong understanding of the intersection between cybersecurity and software by linking the critical foundations of software engineering with industry-specific cybersecurity insights. Exercises and examples are used within the presentation to enhance this understanding and provide a big picture view of C and C++ specific vulnerabilities, attack patterns and mitigations under an automotive lens.

Training topics

- Overview, background and need for automotive cybersecurity
- The essential software engineering foundation
 - Software development life cycle
 - Principles and best practices for architectural design and unit design
 - Best practices for architectural analysis
- The cybersecurity foundation
 - Secure coding
 - Cryptography
 - Secure boot and other hardware-specific functions
 - Secure operating systems
 - Access control
 - Intrusion, detection and protection systems
 - Secure software updates
- Cybersecurity deep dive
 - C and C++ specific vulnerabilities, attacks and mitigations
 - Automotive-specific vulnerabilities, attacks and mitigations
 - Anatomy of an attack and attack flow
 - Defense in depth
- Ensuring security
 - Verification and validation
 - Penetration testing
 - Continuous cybersecurity activities

Target audience

- Software developers
- Automotive cybersecurity engineers

Why choose kVA by UL Solutions?

kVA by UL Solutions is a technical and management consulting group focused on functional safety and the ISO 26262 standard, automotive cybersecurity, autonomy safety, ISO 21448:2022 and UL 4600. Our safety consultants apply safety principles and processes from leading industry standards and other methodologies to the practice of vehicle product development.

Automotive leaders turn to kVA by UL Solutions for training, consulting and safety expertise. Our in-depth understanding of both the theoretical and the practical aspects of functional safety and cybersecurity helps our clients build safer, more efficient products.

kVA by UL Solutions' experienced trainers understand the engineering processes and analyses required to successfully implement functional safety. Product development engineers, safety assurance personnel, quality and reliability professionals, and their managers attend our training events.

For more information, email: kvasales@ul.com or visit kvausa.com.