automotive
SERVICE CATALOGUE

2023

QTICS
automotive

Education

Consultancy

Expert Services

Testing and Evaluation

Inspection

Certification

Cybersecurity

R&D&I

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OUR SERVICE PORTFOLIO
BY AUTOMOTIVE SEGMENTS

EDUCATION

The automotive industry has always been one of the segments with the highest standards in terms of products, production technology processes and the qualification of staff. We provide education and training on related standards, requirements and industry specific quality assurance methodologies in the framework of open, in-house or online training courses.

EXPERT SERVICES

Owners of ideas or tasks, entrepreneurs, investors all wish to deliver the winning mix of functionality, value, and cost to meet the experience expectations of their clients. It is recommended to consider and plan the strict compliance criteria specific to the automotive sector at the earliest possible stage of the value-creation process. Our experts provide targeted and efficient support and solutions for this optimizing the costs and time to market period.

INSPECTION

It ensures that production is of high quality, products are safe and meet strict standards. Inspection procedures used in the automotive industry include visual inspection, rigorous quality control, simulation tests, functional tests, material tests and quality system audits. Based on the results, companies can identify improvements or upgrades needed in product development, manufacturing and quality assurance.

CYBERSECURITY

The pool of connected and increasingly autonomous vehicles, AGVs, AMRs, drones and directly communicating vehicles operating with remote software charging (V2X) carries great opportunities and risks in itself. We offer comprehensive consultancy, accredited evaluations and certifications.

CONSULTANCY

The automotive industry is a complex engineering activity regarding its process and technological diversity. It is recommended to consider and plan the strict compliance criteria specific to the automotive sector at the earliest possible stage of the value creation process. Our experts provide targeted and efficient support for this optimizing the costs and duration of entering the market.

TESTING EVALUATION

Whether we look at the testing of components, test field or on-site testing, we provide a wide range of conformity assessment services accredited to determine environmental, functional or safety risks (such as battery testing and EMC testing etc.). Our service portfolio includes evaluations and testing required for the transport of dangerous goods, for instance the mandatory UN 6C test (bonfire test), the categorization of vehicle pyrotechnic products into ADR classes (1.45 or 9) and cooperation with the relevant ADR authority for official approval.

CERTIFICATION

Global regions responded to the systems, processies and product categories of the automotive industry by creating standards and certification frameworks, related to for instance to the automotive cybersecurity compliance criteria or the UKCA marking of the pyrotechnic products of vehicles (safety belt pretensioner, air bag modules etc.). As a European notified body, also accredited in the United Kingdom, we ensure quality assessment, CE and UKCA product and QMS certification for our partners globally.

R&D&I

The automotive industry becomes more competitive and enables adaptation to new trends such as electric mobility or the development of autonomous vehicles. Certification serves as evidence of automotive R&D&I, demonstrating that companies are developing innovations that are safe, reliable, and compliant with environmental regulations.

ABBREVIATIONS:

ADR: „Accord européen relatif au transport international des marchandises dangereuses par route"

CE: Conformité Européenne

CoC Certificate of Conformity

EMC: Electro Magnetic Compatibility

MD: Machinery Directive

NoBo: Notified Body

RED: Radio Equipment Directive

EDUCATION

Engineering, Manufacturing Facility

EDUCATION	
ISO/IEC 27001 **ISO/IEC 27002** **ISO/IEC 27701**	**Development and certification support of Information Security Management System.** • Defines the requirements for an information security management system • Assists organizations in identifying and managing information-related risks • Provides guidance on best practices for information security **Information security, cybersecurity and privacy protection/Security techniques**
ISO/SAE 21434	**Automotive Cybersecurity & Compliance** • The ISO/SAE 21434 standard is a set of guidelines for cybersecurity in road vehicles • Services related to the territory: • Gap Analysis • Risk assessment • Consultancy • Cyber defense strategy discussion
IEC 62443	**Industrial Control System cybersecurity - ISA/IEC 62443** • IEC 62443 is an international series of standards that address cybersecurity for operational technology in automation and control systems
ISO 9001	Quality management systems
ISO 14001	Environmental management systems
ISO 31000	Risk assessment
ISO 37001	Anti-bribery management systems. Requirements with guidance for use

EDUCATION	
ISO 45001	Occupational health and safety management systems. Requirements with guidance for use
ISO 50001	Energy management systems. Requirements with guidance for use
IATF 16949	Quality management system for organizations in the automotive industry
ISO 9606-x **ISO 14732** **PED Annex I. 3.1.2**	Welders personal certification
PED Annex I. 3.1.3	NDT personal certification
2006/42/EC, 2014/30/EU, 2014/35/EU and other relevant EU legislation	Conformity assessment & CE-marking of equipment, machines, robot cells or manufacturing lines, AGV/AMV systems
2006/42/EC, EN ISO 12100	Risk assessment of machines
EN ISO 12100, EN 60204-1 and other relevant standards	Safety standards of machines (customized)
EN ISO 13849-x	The design and validation of safety related parts of control system (SRP/CS) of machines
EN ISO 10218-x, ISO/TS 15066	Conformity (CE marking) and safety of industrial (collaborative) robot systems
EU-OSH & Hungarian Safety and health legislation	Environmental, health and safety (EHS) and fire protection
2023/1230/EU	The new machine regulation
Internal auditor trainings ISO 19011, ISO 9001, ISO 14001	Guidelines for auditing management systems

EDUCATION	
TISAX	Trusted Information Security Assessment exchange
Global MMOG/LE	Global Materials Management Operations Guideline / Logistics Evaluation
PSCR	Product Safety & Conformity Representative
VDA 2	Production Process and Product Approval (PPA)
VDA 5	Measurement and Testing Processes. Suitability, Planning and Management
VDA 6.1	System Auditor
VDA 6.3	Process Auditor
VDA 6.5	Product Auditor
VDA 16	Decorative Surfaces of Accessories and Functional Part in the Exterior and Interior Areas of Automobiles
VDA 19.1	Skilled Assistant for Technical Cleanliness
VDA 19.2	Technical Cleanliness in Assembly
VDA SQE	Supplier Quality Engineer Field
ISO/IEC 330xx series - called SPICE	SPICE (Software Process Improvement and Capability Determination)
Core Tools	Automotive Core Tools (RGA / APQP, VDA 2 / PPAP, FMEA, VDA 5 / MSA, Pmk / PpK / CpK / SPC and 8D)
ISO/IEC 17020, ISO/IEC 17025 & other accreditation standards	Training on accreditation

EDUCATION	
IEC 61010 standard family	Safety requirements for electrical equipment for measurement, control, and laboratory
8D	Problem Solving in 8 Disciplines (8D)
PPAP	Production Part Approval Process (PPAP) training
EOS	Electrical Overstress
FMEA	Basic Training Harmonised AIAG-VDA FMEA
IQ-FMEA	Failure Mode and Effects Analysis
MSA	Measuring system analysis
SPC	Statistical process control
APQP	Advances Quality Planning Process and Control Plan
GDPR	General Data Protection Regulation
UNECE Cybersecurity (UN R155 and R156)	**Cybersec training for** • automotive • component level (UN R 155,156,157) UN R155 and R156 is a set of international regulations developed by the United Nations Economic Commission for Europe (UNECE) for the cybersecurity of vehicles. The regulation aims to enhance the cybersecurity of connected and automated vehicles and provide a common cybersecurity framework for the automotive industry worldwide. It covers vehicle software and systems security, personal data protection, and cybersecurity incident management

EDUCATION	
ISO/IEC 15408	**The ISO/IEC 15408 standard helps to provide an overview of secure system development** • ISO/IEC 15408, also known as Common Criteria (CC), is an international standard, that governs the security evaluation of IT products or systems • The standard defines the security requirements (SFR) and evaluation methods (EAL level) to assess the security level of information technology products and systems • CCGUIDE presents the most important parts of the standard

ISO/SAE 21434	**Automotive Cybersecurity & Compliance**
	• The ISO/SAE 21434 standard is a set of guidelines for cybersecurity in road vehicles/van/truck
	• Services related to the territory:
	  • Gap Analysis
	  • Risk assessment
	  • Pentest/vulnerability test
	  • UN R155, R156, R157

ISO 9001	**The ISO 9001 standard defines the requirements that quality management systems must meet for an organization to operate effectively and provide high-quality products or services** • ISO 9001 is one of the most well-known international standards for quality management systems • The standard defines the requirements for quality management systems, allowing organizations to improve the efficiency of their processes and the quality of their products
Radio Equipment Directive (RED)	• The Radio Equipment Directive (2014/53/EU) is an EU directive that applies to radio equipment and to certain products integrated into vehicles and a significant part of production equipment too

EDUCATION	
IEC 61010 standard family	Safety requirements for electrical equipment for measurement, control, and laboratory
UNECE Cybersecurity (UN R155 and R156)	**Cybersec training for** • automotive • component level (UN R 155,156,157) UN R155 and R156 is a set of international regulations developed by the United Nations Economic Commission for Europe (UNECE) for the cybersecurity of vehicles. The regulation aims to enhance the cybersecurity of connected and automated vehicles and provide a common cybersecurity framework for the automotive industry worldwide. It covers vehicle software and systems security, personal data protection, and cybersecurity incident management
IATF 16949	Quality management system for organizations in the automotive industry
765/2008/EC, 768/2008/EC, 2019/1020/EU and other relevant EU legislation	CE-marking of products
ISO 31000/EN ISO 12100	Risk assessment of products

CONSULTANCY

Engineering, Manufacturing Facility

CONSULTANCY	
ISO/IEC 27001 **ISO/IEC 27002**	**Development and certification support of Information Security Management System** • Defines the requirements for an information security management system • Assists organizations in identifying and managing information-related risks • Provides guidance on best practices for information security
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CONSULTANCY	
IEC 61010 standard family	Safety requirements for electrical equipment for measurement, control, and laboratory
2006/42/EC, 2014/30/EU, 2014/35/EU and other relevant EU legislation & standards	Conformity assessment & CE-marking of equipment, machines, robot cells or manufacturing lines, AGV/AMV systems
2006/42/EC, EN ISO 12100	Risk assessment of machines
IATF 16949	Quality management system for organizations in the automotive industry
EN ISO 12100, EN 60204-1 and other relevant standards	Safety of machines
EN ISO 13849-x	Design and validation of safety related parts of control syístem (SRP/CS) of machines
EN ISO 10218-x ISO/TS 15066	Conformity (CE marking) and safety of industrial (collaborative) robot systems
EU-OSH & Hungarian Safety and health legislation	Environmental, health and safety (EHS) and fire protection
2023/1230/EU	New machine regulation
ISO 9001, ISO 14001 ISO 45001 & other management system standards	Management system development, implementation and preparation for certification
ISO 9001, ISO 14001 ISO 45001 & other management system standards	Internal or 2nd party audits
ISO/IEC 17020 ISO/IEC 17025 & other accreditation standards	Preparation for accreditation

CONSULTANCY

Products, Components

CONSULTANCY	
ISO/IEC 15408	**The ISO/IEC 15408 standard helps to provide an overview of secure system development** • ISO/IEC 15408, also known as Common Criteria (CC), is an international standard, that governs the security evaluation of IT products or systems • The standard defines the security requirements (SFR) and evaluation methods (EAL level) to assess the security level of information technology products and systems • CCGUIDE presents the most important parts of the standard
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IEC 61010 standard family	Safety requirements for electrical equipment for measurement, control, and laboratory

| CONSULTANCY	
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IATF 16949	Quality management system for organizations in the automotive industry
Radio Equipment Directive (RED)	• The Radio Equipment Directive (2014/53/EU) is an EU directive that applies to radio equipment and to certain products integrated into vehicles and a significant part of production equipment too
Relevant EU legislation & standards	CE-marking of products, equipment, machines
Relevant EU standards and 2001/95/EC, 2023/988/EU	Safety of products
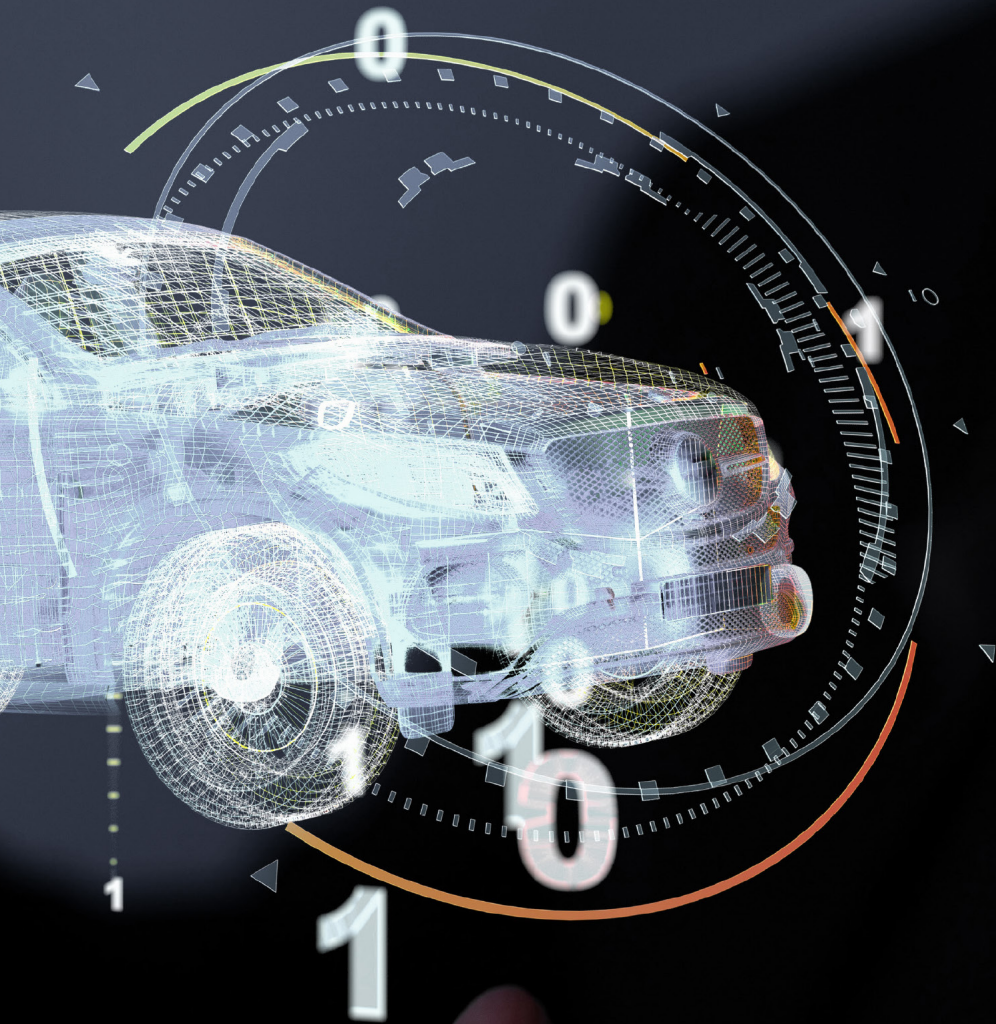
EXPERT SERVICES

Engineering, Manufacturing Facility

Engineering, Manufacturing Facility

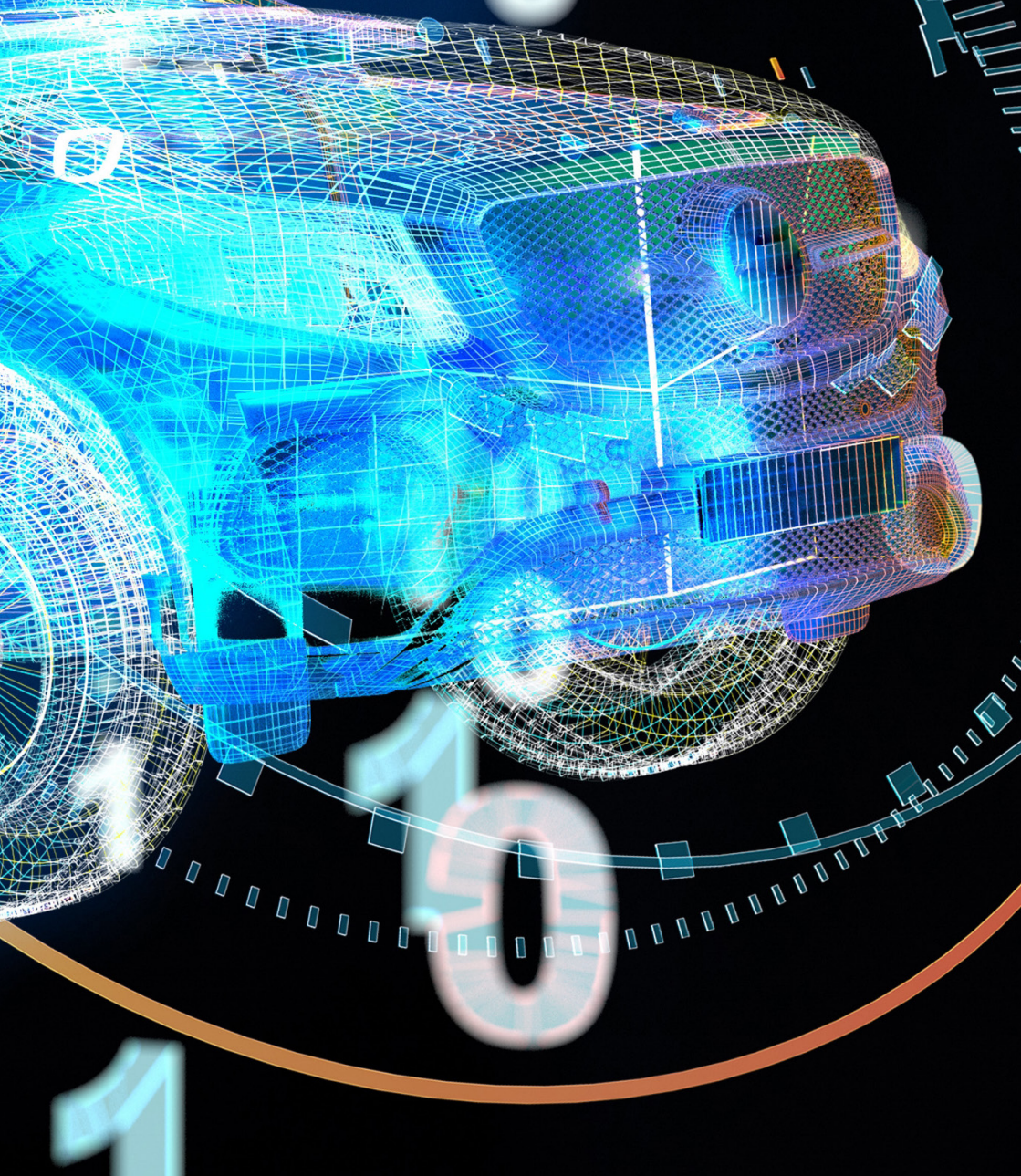| EXPERT SERVICES	
Independent Expert	• technical and environmental feasibility & bankability, due diligence • integrated 3rd Party supervision (QA+QC)
2006/42/EC, 2014/30/EU, 2014/35/EU and other relevant EU legislation	CE-marking of equipment, machines, robot cells or manufacturing lines, AGV/AMV systems
2006/42/EC, EN ISO 12100	Risk assessment of machines
EN ISO 13849-x	Validation of safety related parts of control system (SRP/CS) of machines, robot or AGV/AMV systems
EU-OSH & Hungarian Safety and health legislation	Environmental, health and safety (EHS) & Fire protection services
ISO 9001, ISO 14001, ISO 45001 & other management system standards	Gap analysis to prepare for certification
ISO/IEC 17020, ISO/IEC 17025 & other accredita-tion standards	Gap analysis to prepare for accreditation

EXPERT SERVICES

Products, Components

EXPERT SERVICES	
pre mesurement	pre measurement before the accredited testing
Relevant EU legislation & standards	CE-marking of products, equipment, machines
ISO 31000/EN ISO 12100	Risk assessment of products, equipment, machines

TESTING & EVALUATION

Engineering, Manufacturing Facility

TESTING & EVALUATION

IEC 61010 standard family	Safety requirements for electrical equipment for measurement, control, and laboratory
2006/42/EC and relevant EU harmonised standards	On-site conformity or safety tests of machines, robot and AGV/AMV systems
2006/42/EC and relevant EU harmonised standards	Usability and functional tests of machines
EN 60204-x and other relevant EU standards	On-site electrical safety tests of electrical equipment or machines

TESTING & EVALUATION

Products, Components

TESTING & EVALUATION

**IEC 61010
standard family**

Safety requirements for electrical equipment for measurement, control, and laboratory

**EN 60068-2-1
EN 60068-2-2
EN 60068-2-30
EN 60068-2-38
EN 60068-2-78
EN 60529
EN 60512-5-1
EMC
EN 62133
EN 62281**

• Environmental testing; Degrees of protection provided by enclosures
• Connectors for electronic equipment
• Non standard electrical testing - electrical testing development
• Battery testing
• EMC:
  • REA - Radiated Emission Antenna
  • CEV - Conducted Emission Voltage
  • ESD - Electrostatic Discharge

INSPECTION

Engineering, Manufacturing Facility

Machine 1
Machine 2
Machine 3

Machine 1

Machine 1		Machine 2		Machine 3	
Status	RUNNING	Status	BREAKDOWN	Status	RUNNING
Model	WOG001	Model	WOG002	Model	WOG003
Plan	350	Plan	350	Plan	350
Actual	30	Actual	127	Actual	127
Diff.	320	Diff.	223	Diff.	224

INSPECTION
EU-OSH & Hungarian Safety and health legislation and relevant standards	On-site safety inspection of equipment, machines, robot cells and manufacturing lines, AGV/AMV systems
EU-OSH & Hungarian Safety and health legislation and relevant standards	Safety inspection of work systems

CERTIFICATION

Engineering, Manufacturing Facility

CERTIFICATION	
ISO 9001 **ISO 14001** **ISO 27001** **ISO 37001** **ISO 45001** **ISO 50001**	• Management system certification
ISO 3834-2, -3, -4 **EN 15085-2** **CPR - NoBo 2102:** **EN 1090**	• Product certification • Welding Plant certification
IATF 16949	• Automotive quality management systems

CERTIFICATION

Products, Components

CERTIFICATION	
CoC	• Certificate of Conformity - Voluntary certificates of conformity (e.g. based on standards, specifications, legal regulations)
Notified Body	• CE-marking for all relevant technical fields, notified body for RED, EMC, MD, Pyro, etc.

CYBERSECURITY

Engineering, Manufacturing Facility

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CYBERSECURITY	
ISO/SAE 21434	Road vehicles — Cybersecurity engineering
ISO/IEC 27001	Information Security Management System
IEC 62443-4-1	Security for industrial automation and control systems – Part 4-1: Secure product development lifecycle requirements
Europrivacy GDPR DPMS, PPS	Audit And Certify Your Conformity In Data Protection With Europrivacy™®
TISAX	Trusted Information Security Assessment Exchange (TISAX) is an assessment and exchange mechanism for information security in the automotive industry The TISAX label confirms that a company's information security management system complies with defined security levels and allows sharing of assessment results across a designated platform
Security Operation Center (SOC)	Security Operation Center (SOC) is a centralized function within an organization employing people, processes, and technology to continuously monitor and improve an organization's security posture while preventing, detecting, analyzing, and responding to cybersecurity incidents

CYBERSECURITY

Products, Components

CYBERSECURITY	
Basic and advanced penetration testing	**Basic and advanced vulnerability testing and penetration testing of the device based on the ISO/IEC 15408 standard** • Search for security flaws in the product • Security Testing / Penetration Test
Common Criteria ISO/IEC 15408	**Common Criteria is a high-level security test where the entire life cycle of the product is analysed** • The standard defines several security levels (EAL1-EAL-4), the customer decides which level wants to comply with • ISO/IEC 15408 provides assistance to customers, suppliers, and users in comparing and evaluating the security of information technology products and systems
ISO/SAE 21434	**Automotive Cybersecurity & Compliance** • The ISO/SAE 21434 standard is a set of guidelines for cybersecurity in road vehicles • It provides a systematic approach to assess the cybersecurity posture of vehicles and associated systems, helping automotive manufacturers and suppliers build resilient and secure products
ETSI 303 645	• ETSI 303 645 is a standard dealing with consumer IOT testing • The standard is based on network communication and enables it to be tested
IEC 62443 4.2	IEC 62443-4-2 Security for industrial automation and control systems - Part 4-2: Technical security requirements for IACS components

R&D&I

**Engineering, Manufacturing Facility
Products, Components**

R&D&I

Relevant EU legislation & standards	**Virtual verification:** Concepted and corrective workplace ergonomic, collaborative human and robot systems **AI & ML:** artificial intelligence, machine learning: consultancy and evaluation of AI, ML systems solutions

QTICS Group is a dynamically growing market player of the international Testing, Inspection and Certification (TIC) sector. The Testing, Inspection and Certification industry is based on the demand for the conformity assessment of the increasingly more complex technology value creation procedures, processes, products, systems and individuals they are operated by. The member companies of the Group possess and develop European and international authorizations (accreditations, conformity assessment bodies and Notified Bodies) in order to be able to provide independent, objective, third-party complex conformity assessment serv ces in a one-stop-shop business model

Medical devices

Mobility & Drone

Energy & Industry

Consumer & IoT

QTICS automotive offers its services through the knowledge sharing of members and several Network partners

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