

LAPT

LONDON ACADEMY OF PROFESSIONAL TRAINING

CERTIFICATE

ISO 15118 — Vehicle to Grid Communication Interface

ISO Certification Programme



LAPT — London Academy of Professional Training

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Reference TR-SMV-15118 • ISO Transport

UKPRN 10067351 • Registered in England and Wales, company 4984798

AT A GLANCE

REFERENCE	TR-SMV-15118
AWARD	Certificate
ASSESSMENT	430 marks — 258 to pass (60%)
PREREQUISITES	None
VALIDITY	Lifetime
AWARDING BODY	LAPT — London Academy of Professional Training

CURRICULUM

1 ISO 15118 Standards Overview 5 chapters · 30 classes85 marks • 1 Understanding ISO 15118: The Basics of Vehicle-to-Grid Communication — 6 classes › 1.1 Define Vehicle-to-Grid Communication and Its Importance › 1.2 Explore the Key Components of ISO 15118 Standards › 1.3 Examine the Communication Protocols Used in ISO 15118 › 1.4 Analyze the Role of Smart Charging in Electric Vehicle Integration › 1.5 Discuss the Benefits of ISO 15118 for Stakeholders › 1.6 Implement Practical Scenarios for ISO 15118 Applications • 2 Architecture and Components of ISO 15118 Systems — 6 classes › 2.1 Examine the Core Components of ISO 15118 Systems › 2.2 Identify the Key Architectural Elements in Vehicle to Grid Communication › 2.3 Analyze the Communication Interfaces Defined by ISO 15118 › 2.4 Discuss the Role of Protocols in ISO 15118 Functionality › 2.5 Explore Real-World Applications of ISO 15118 Architecture › 2.6 Evaluate Future Developments in ISO 15118 Systems Architecture • 3 Security Framework and Data Privacy in ISO 15118 — 6 classes › 3.1 Understand the Importance of Data Privacy in ISO 15118 › 3.2 Explore the Key Security Protocols in the ISO 15118 Framework › 3.3 Identify Threats to Vehicle-to-Grid Communication Security › 3.4 Evaluate Security Measures and Best Practices for ISO 15118 › 3.5 Assess the Role of Encryption in Protecting Data Privacy › 3.6 Implement a Security Framework for ISO 15118 Compliance • 4 Implementing ISO 15118 in Real-World Scenarios — 6 classes › 4.1 Analyze the Key Components of ISO 15118 Standards › 4.2 Explore Real-World Applications of Vehicle to Grid Communication › 4.3 Identify Challenges in Implementing ISO 15118 › 4.4 Design a Framework for Effective ISO 15118 Integration › 4.5 Evaluate Case Studies of Successful ISO 15118 Deployments › 4.6 Develop a Strategy for Overcoming Barriers to Adoption • 5 Future Trends and Innovations in Vehicle-to-Grid Communication — 6 classes › 5.1 Explore Emerging Trends in Vehicle-to-Grid Technologies › 5.2 Analyze the Impact of Smart Grids on Vehicle-to-Grid Communication › 5.3 Identify Innovations in Electric Vehicle Battery Management Systems › 5.4 Examine the Role of Renewable Energy in Vehicle-to-Grid Systems › 5.5 Assess the Future of Autonomous Vehicles in Grid Integration › 5.6 Develop Strategies for Implementing ISO 15118 Standards in Future Projects	
2 Performance Evaluation and Improvement 0 chapters45 marks	
3 Project Management in Smart Systems 0 chapters85 marks	
4 Stakeholder Engagement and Communication 0 chapters85 marks	

• 1 Introduction to Vehicle-to-Grid (V2G) Communication Fundamentals — 6 classes

- › 1.1 Define Vehicle-to-Grid (V2G) Communication Concepts
- › 1.2 Explore the Architecture of V2G Systems
- › 1.3 Identify Key Technologies Enabling V2G Communication
- › 1.4 Examine Standards and Protocols in V2G Communication
- › 1.5 Analyze the Benefits and Challenges of V2G Implementation
- › 1.6 Evaluate Real-World Applications of V2G Technology

• 2 Technical Standards and Protocols for V2G Communication — 6 classes

- › 2.1 Explore ISO 15118 Fundamentals and Objectives
- › 2.2 Identify Key Technical Standards for V2G Communication
- › 2.3 Analyze Protocols Used in Vehicle-to-Grid Integration
- › 2.4 Examine Security Standards in V2G Communication
- › 2.5 Compare V2G Communication Protocols with Other Standards
- › 2.6 Implement Case Studies of V2G Communication Applications

• 3 Key Technologies Enabling V2G Communication — 6 classes

- › 3.1 Understand Key Principles of Vehicle-to-Grid Communication
- › 3.2 Identify the Core Technologies Supporting V2G Interfaces
- › 3.3 Explore Communication Protocols Relevant to V2G Systems
- › 3.4 Analyze Data Security Measures in V2G Communication
- › 3.5 Evaluate the Role of Smart Grids in Enabling V2G Technologies
- › 3.6 Implement a Case Study of V2G Technology in Real-World Applications

• 4 Integration of Renewable Energy Sources in V2G Systems — 6 classes

- › 4.1 Explore Renewable Energy Sources for V2G Integration
- › 4.2 Analyze V2G Communication Protocols and Standards
- › 4.3 Evaluate the Role of Smart Grids in Renewable Energy Integration
- › 4.4 Investigate Energy Storage Solutions in V2G Systems
- › 4.5 Design a V2G System Model Utilizing Renewable Energy
- › 4.6 Implement Communication Strategies for Effective V2G Operations

• 5 Future Trends and Challenges in V2G Communication