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Certified Embedded Professional Security

Agenda VectorAcademy

Delivery Format:	The certification program includes E-Learning content with integrated step-by-step configurations and exercises as well as remote sessions. It concludes with a final exam (theoretical & practical).
Duration:	18 weeks (~10 hours per week)
Target Group:	Project leaders, AUTOSAR ECU developers and integrators.
Prerequisites:	Solid software development knowledge in AUTOSAR (> 2 years of practical experience). **Recommendation**: Prior participation in Certified Embedded Associate AUTOSAR Classic.
Goal:	Acquire expert knowledge in the field of automotive Cybersecurity in Vector's MICROSAR Classic solution. Award of the certificate "Certified Embedded Professional".

1. **Basics of Security**
   - Security goals
   - Security principles
   - Security vs. crypto
   - Crypto stack in AUTOSAR

2. **Use Case 1: Secure Onboard Communication**
   - Introduction to SecOC
   - Integration of SecOC and FvM into BSW
   - Key provisioning
   - Simulation & testing with CANoe

3. **Use Case 2: Secure Diagnostics**
   - Introduction to secure diagnostics
   - Introduction into certificate management
   - Integration into BSW (Dcm)
   - Simulation & testing with CANoe

4. **Use Case 3: Intrusion Detection**
   - Introduction to Idsm
   - Integration into BSW
   - Simulation & testing with CANoe

5. **Use Case 4: Intrusion Prevention**
   - Introduction to intrusion prevention
   - Creating and understanding firewall rules
   - Simulation & testing with CANoe

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6. **Use Case 5: Secure Data Storage**
   - Introduction into secure data storage (Secure zone/ Hsm)
   - Integration into BSW
   - Key provisioning
   - Simulation & testing with CANoe

7. **Use Case 6: Ethernet based Secure Communication**
   - Introduction into ethernet based secure communication protocol
   - Integration into BSW (TLS)
   - Simulation & testing with CANoe

8. **VECTOR**
   - Communication channels to Vector

Schedule:

