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Change History				
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CEN18800046	30/08/2026	CEN188V1.001	all	document creation

Senior Test Engineer – Component Tests HIL (Function and Safety Tests)

HIL 部件测试高级测试工程师（功能测试与安全测试）

Working place: Tianjin

Recruiting number:1

Role overview

As a Senior Test Engineer for component tests on Hardware-in-the-Loop (HIL) systems, you will take end-to-end responsibility for HIL testing of electronic control units for battery electric and plug-in hybrid vehicles, covering both function tests and safety tests. You will define the overall test strategy and test plans, derive test cases from requirements, set up and maintain the HIL test environment, personally execute tests, analyze results and author professional English test reports. Working closely with system design, software, requirement and functional safety teams, you will drive issue resolution and ensure that all test activities comply with OEM specifications and automotive industry standards such as ISO 26262.

Key Responsibilities

- Develop the overall HIL test strategy and detailed test plans for function and safety tests of ECUs and HV components, based on requirements, functional specifications and the design verification plan (DVP).
- Define and design test cases and test specifications, including automated test sequences for function tests and fault-injection-based safety tests.
- Set up, configure and maintain HIL test environments (real-time simulation, restbus simulation, break-out boxes, sensor and actuator emulation) and keep the test systems ready for operation.
- Personally execute HIL component tests according to the test plan, covering function tests (input/output behavior, network communication, diagnostics) and safety tests (fault injection, ASIL-relevant failure modes).
- Analyze test results and measured data, identify failures and deviations, perform first-level root cause analysis and track issues together with development teams until closure.
- Author, review and release English test reports and test documentation that are precise, traceable and compliant with OEM requirements.
- Ensure all test activities comply with relevant standards such as ISO 26262 and customer-specific test guidelines; support audits and assessments.
- Provide technical guidance and mentorship to junior test engineers, and drive continuous improvement of test processes, methods, automation and tooling.

Qualifications & Requirements

Education

- Bachelor's degree or Master's degree in Electrical Engineering, Automotive Engineering, Mechatronics or a related field.
- Excellent fresh graduates with English as a working language are also welcome.

Professional Experience

- 4+ years of professional engineering experience in HIL or component testing of automotive ECUs, ideally for battery electric or plug-in hybrid vehicles; the ability to personally execute hands-on tests is mandatory; OEM or Tier 1 supplier background preferred.
- Proven track record covering the full test process - test plan creation, test definition, test execution, results and failure analysis and English test report writing - across the development lifecycle up to series production.
- Willing and able to travel for test campaigns on specific road sections and at test sites in the surrounding regions.

Technical & Tool Proficiency

- In-depth knowledge of HIL testing methodology and environments (e.g., dSPACE, NI, Vector VT System), including real-time simulation and restbus simulation.
- Strong understanding of function and safety testing of ECUs, including fault injection and verification of ASIL-relevant safety mechanisms according to ISO 26262.
- Solid programming skills (e.g., CAPL, C/C++, Python, MATLAB/Simulink) for developing automated test cases and test sequences.
- Good understanding of automotive communication and diagnostics (CAN, CAN FD, LIN, Ethernet, UDS) as required for component testing.
- Proficiency in test and measurement tools such as CANoe, CANalyzer, oscilloscopes and data loggers.
- Experience with test management and bug tracking tools (e.g., Polarion, DOORS, JIRA) and with handling large volumes of measurement data.

Language Proficiency

- Native proficiency in Chinese.
- Good command of written English is mandatory: able to read English technical documents and standards and to independently create English test reports; fluent spoken English is a plus but not a hard requirement.
- German language skills are a strong plus.

Core Competencies

- Strong analytical and systems thinking ability to structure complex test scopes and analyze failures.
- Structured working style, highly detail-oriented with strict standards for design quality and technical accuracy.
- Excellent communication and coordination skills to collaborate effectively with development teams, customers and suppliers.
- Proactive problem-solving mindset, able to independently identify test gaps and technical bottlenecks and drive resolution.
- Highly motivated, fast learner with an open mindset, able to manage multiple priorities in a fast-paced environment.

We are looking forward to your application! Please send us your complete application file in English mentioning your earliest possible entry date by e-mail to: careers@cenergy.asia

工作地点: 天津

招聘人数: 1 人

岗位概述

作为 HIL 部件测试高级测试工程师，你将全面负责纯电动及插电混动汽车电子控制单元的 HIL 测试端到端工作，同时涵盖功能测试与安全测试。你将制定整体测试策略与测试计划，将需求转化为测试用例，搭建并维护 HIL 测试环境，亲自执行测试，分析结果并撰写专业的英文测试报告。你将与系统设计、软件、需求及功能安全团队紧密协作，推动问题解决，确保所有测试活动符合主机厂技术规范及 ISO 26262 等汽车行业标准。

主要工作职责

- 基于需求、功能规范与设计验证计划（DVP），制定 ECU 及高压零部件功能测试与安全测试的整体 HIL 测试策略与详细测试计划。
- 定义并设计测试用例与测试规范，包括用于功能测试的自动化测试序列及基于故障注入的安全测试。
- 搭建、配置并维护 HIL 测试环境（实时仿真、剩余总线仿真、断路盒、传感器与执行器信号模拟），保障测试系统随时可用。
- 亲自执行 HIL 部件测试，覆盖功能测试（输入输出行为、网络通信、诊断）与安全测试（故障注入、ASIL 相关失效模式）。
- 分析测试结果与测量数据，识别故障与偏差，开展第一层根本原因分析，并与开发团队跟踪问题直至闭环。
- 编写、评审并发布准确、可追溯、符合主机厂要求的英文测试报告与测试文档。
- 确保所有测试活动符合 ISO 26262 等相关标准及客户专属测试指南；支持审核与评估。
- 为初级测试工程师提供技术指导与带教，推动测试流程、方法、自动化与工具链的持续改进。

任职资格与要求

教育背景

- 电气工程、汽车工程、机电一体化或相关专业本科及以上学历。
- 能将英语作为工作语言的优秀应届毕业生也可投递。

专业经验

- 4 年以上汽车 ECU HIL 或部件测试领域工程经验，有纯电动或插电混动车型经验者优先；必须能够亲自开展动手测试；有主机厂或一级供应商背景优先。
- 具备覆盖测试全流程的成熟项目经验——测试计划制定、测试定义、测试执行、结果与失效分析及英文测试报告编写，贯穿开发周期直至量产。
- 愿意并能够接受周边区域特定路段及试验场地的测试出差安排。

专业技能与工具能力

- 深入掌握 HIL 测试方法论与测试环境（如 dSPACE、NI、Vector VT System），包括实时仿真与剩余总线仿真。
- 深入理解 ECU 功能与安全测试方法，包括故障注入及按 ISO 26262 验证 ASIL 相关安全机制。
- 扎实的编程能力（如 CAPL、C/C++、Python、MATLAB/Simulink），能够独立开发自动化测试用例与测试序列。
- 较好地理解汽车通信与诊断（CAN、CAN FD、LIN、以太网、UDS），满足部件测试需要。

- 熟练使用 CANoe、CANalyzer、示波器、数据记录仪等测试测量工具。
- 有 Polarion、DOORS、JIRA 等测试管理与缺陷跟踪工具经验，具备海量测量数据处理经验。

语言能力

- 中文母语水平，听说读写流利。
- 必须具备良好的英语读写能力：能够阅读英文技术文档与标准，并独立撰写英文测试报告；英语口语流利为加分项，不作硬性要求。
- 具备德语能力者优先。

核心胜任力

- 优秀的分析与系统思维能力，能够组织复杂的测试范围并开展失效分析。
- 工作方式结构化，注重细节，对设计质量与技术准确性有严格标准。
- 出色的沟通协调能力，可高效对接开发团队、客户与供应商。
- 积极主动的问题解决思维，能独立识别测试覆盖缺口与技术瓶颈并推动解决。
- 自驱力强，学习速度快，心态开放，能在快节奏环境中管理多项优先级任务。

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careers@cenergy.asia