AIET

自动化系统可靠性与工程验证白皮书

White Paper on Reliability and Engineering Verification of Automation Systems

Research White Paper / AIET Research Publication

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AIET

Association of Intelligent Engineering and Technology

摘要
Executive Summary

讨论自动化系统从方案设计到现场运行的可靠性验证路径，关注稳定性、异常处置、人机协作和长期维护。

A review of reliability verification pathways for automation systems from solution design to on-site operation, with attention to stability, exception handling, human-machine collaboration, and maintenance.

关键观察
Key Observations

- 重点讨论自动化系统在复杂工况下的可靠性验证、运行稳定性与风险识别。
  Discusses reliability verification, operational stability, and risk identification for automation systems under complex conditions.
- 强调从需求、设计、测试、部署到运维的全流程工程验证闭环。
  Emphasizes a full engineering validation loop from requirements and design to testing, deployment, and operation.
- 为自动化成果的专业评审和持续改进提供结构化判断维度。
  Provides structured assessment dimensions for professional review and continuous improvement of automation outcomes.

发布定位
Publication Positioning

本白皮书不以客户案例或商业实施结果作为论证基础，而是以协会研究方向、公开行业议题、专业评审要求及工程应用共性问题为主要分析对象，形成可公开归档和引用的研究型文件。

This white paper does not rely on customer-specific cases or commercial implementation claims. It is based on Association research priorities, public industry issues, professional review requirements, and common engineering application questions, forming a research document suitable for public archiving and citation.

研究范围
Research Scope

技术方向 围绕 自动化系统,可靠性,工程验证,运维机制 等主题，梳理相关工程场景、系统能力和评审关注点。

应用边界 关注可被公开讨论的共性问题，不披露未授权机构数据、客户名称或项目敏感信息。

专业目标 为协会课题成果评审、白皮书质量审核、工程应用案例展示和会员学术交流提供参考。

方法说明
Methodological Notes

议题归纳 结合协会学术委员会关注方向，对行业公开议题和工程共性问题进行结构化归纳。

专业审阅 由相关领域专家依据技术合理性、表达严谨性、应用边界和可引用性进行内部审阅。

成果归档 发布版本作为协会研究白皮书归档文件，用于公开查阅、学术交流和后续成果引用。

使用说明

Use and Citation Notes

公开查阅

本白皮书可供研究者、会员单位、合作机构及行业专业人士用于了解协会研究方向和专业观点。

This white paper may be used by researchers, members, partner institutions, and industry professionals to understand AIET research priorities and professional views.

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