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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 7826-2012

Replacing GB/T 7826-1987

**Analysis techniques for system reliability -- Procedure for
failure mode and effects analysis (FMEA)**

系统可靠性分析技术 失效模式和影响分析 (FMEA) 程序
(English Translation)

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard replaces GB/T 7826-1987 "system reliability analysis techniques for failure mode and effects analysis (FMEA) program." the main changes compared to 7826-1987 standard and GB/T are.

--- Normative references added to the IEC standard reference;

--- Increase term portion of the product, failure,, severity and other eight terms redefined and description;

--- Introduction of the concept of severity level of severity of the impact of the failure mode grading;

--- Increase conceptual design FMEA table, emphasizing the planning work sheets, detailed

work exemplar head, full optional package remarks column Contents containing lists flowchart analysis;

Failure Mode Effect --- given severity (S), failure mode of occurrence (O), failure mode can detect the degree of (D) and estimation methods Risk Priority Number (RPN) formula;

--- Add "other considerations" section explains how to consider in the analysis of common cause failures, human factors, software defect, system failure Consequences;

--- Enriched the "Applications" chapter, elaborated the importance and flexibility of the FMEA; also describes other points Analytical methods (such as fault tree analysis, Faulttreeanalysis, FTA) relations, pointing out its deficiencies and shortcomings;

--- Increase the informative Appendix A and Appendix B.

This standard is identical with IEC 60812:2006 "System Reliability Analysis Technology failure mode and effects analysis program." the standard proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This standard by the National Electrical and Electronic Product Reliability and Maintainability Standardization Technical Committee (SAC/TC24) centralized.

This standard was drafted. Ministry of Information Industry Institute of Electronics and fifth.

1 Scope

This standard describes the failure mode and effects analysis (FMEA) and failure modes, effects and criticality analysis (FailureModes, Effects andCriticalityAnalysis, FMECA) program, and to make the application of the program to achieve various goals to provide guidance in the following areas.

--- Provide procedural steps were necessary for the analysis;

--- Determine the appropriate terms, assumptions, measures and failure mode harmfulness;

--- Determine the basic principles;

--- Provide the necessary forms in the form of examples.

Given FMECA FMEA is an extension for all qualitative analysis of FMEA, apply to FMECA.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 2900.13-2008 Electrotechnical terminology credibility and quality of service (IEC

60050-191:1990, IDT) GB/T 7829-2012 Fault Tree Analysis (FTA) programs (IEC 61025Ed.2.2006, IDT) IEC 60300-3-1:2003 Dependability management Part III Chapter I. Analysis techniques Application Guide methodological guide (Dependabilitymanagement-Part 3-1. Applicationguide-Analysisistechniquesfordependability-Guideonmethodology) IEC 61078 technical reliability block diagram analysis credible analysis (Analysisistechniquesfordependability-Reli-abilityblockdiagrammethod)

3 Terms and Definitions

The following terms and definitions apply to this document.

Product item

To complete the intended function and any separate consideration of parts, components, devices, functional unit, equipment, subsystem or system.

Note 1: The product can be hardware, software, or any combination of these, in special cases also including humans.

Note 2: a product may refer to sub-sample of the overall product or products.

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To complete the intended function of the process can also be defined as products, and process FMEA or FMECA. Often, the hardware FMEA does not consider people and their interaction with the hardware/software, and process FMEA typically include human behavior.

Failure

Termination functional capabilities of the product to implement the provisions.