

Australian Standard<sup>®</sup>

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



This Australian Standard® was prepared by Committee QR-005, Dependability. It was approved on behalf of the Council of Standards Australia on 16 June 2008. This Standard was published on 28 July 2008.

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  - Australian Nuclear Science & Technology Organisation
  - Australian Organisation for Quality
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- 

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## PREFACE

This Standard was prepared by the Standards Australia Committee QR-005, Dependability.

The objective of this Standard is to provide guidance on the procedure for Failure Mode and Effects Analysis (FMEA) and Failure Mode, Effects and Criticality Analysis (FMECA) and give guidance on their applications, including the basic principles, procedural steps, terms, assumptions, criticality measures and failure modes, with examples. It is suitable for use in conjunction with the AS IEC 60300 series of dependability management Standards.

This Standard is identical with, and has been reproduced from IEC 60812 Ed. 2.0 (2006), *Analysis techniques for system reliability—Procedure for failure mode and effects analysis (FMEA)*, which is part of a suite of Standards developed by the IEC Technical Committee IEC/TC 56, Dependability.

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## STANDARDS AUSTRALIA

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**1 Scope**

This International Standard describes Failure Mode and Effects Analysis (FMEA) and Failure Mode, Effects and Criticality Analysis (FMECA), and gives guidance as to how they may be applied to achieve various objectives by

- providing the procedural steps necessary to perform an analysis;
- identifying appropriate terms, assumptions, criticality measures, failure modes;
- defining basic principles;
- providing examples of the necessary worksheets or other tabular forms.

All the general qualitative considerations presented for FMEA will apply to FMECA, since the latter is an extension of the other.

**2 Normative references**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

References to international standards that are struck through in this clause are replaced by references to Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is identified as such.

~~IEC 60300-3-1:2003, *Dependability management — Part 3-1: Application guide — Analysis techniques for dependability — Guide on methodology*~~

AS IEC 60300.3.1—2003: *Dependability management, Part 3-1: Application guide – Analysis techniques for dependability – Guide on methodology*

~~IEC 61025, *Fault tree analysis (FTA)*~~

AS IEC 61025, *Fault tree analysis (FTA)*

~~IEC 61078, *Analysis techniques for dependability — Reliability block diagram method*~~

AS IEC 61078, *Analysis techniques for dependability—Reliability block diagram method*

**3 Terms and definitions**

For the purposes of this document, the following definitions apply.