

INTERNATIONAL STANDARD

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

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ANALYSIS TECHNIQUES FOR SYSTEM RELIABILITY – PROCEDURE FOR FAILURE MODE AND EFFECTS ANALYSIS (FMEA)

FOREWORD

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International Standard IEC 60812 has been prepared by IEC technical committee 56: Dependability.

This second edition cancels and replaces the first edition published in 1985 and constitutes a technical revision.

The main changes from the previous edition are as follows:

- introduction of the failure modes effects and criticality concepts;
- inclusion of the methods used widely in the automotive industry;
- added references and relationships to other failure modes analysis methods;
- added examples;
- provided guidance of advantages and disadvantages of different FMEA methods.

The text of this standard is based on the following documents:

FDIS	Report on voting
56/1072/FDIS	56/1091/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

ANALYSIS TECHNIQUES FOR SYSTEM RELIABILITY – PROCEDURE FOR FAILURE MODE AND EFFECTS ANALYSIS (FMEA)

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.

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)*

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