



**NSAI**  
Standards

Irish Standard  
I.S. EN IEC 31010:2019

# Risk management - Risk assessment techniques

**I.S. EN IEC 31010:2019**

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## National Foreword

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EUROPEAN STANDARD

**EN IEC 31010**

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2019

ICS 03.100.01

Supersedes EN 31010:2010 and all of its amendments  
and corrigenda (if any)

English Version

## Risk management - Risk assessment techniques (IEC 31010:2019)

Management du risque - Techniques d'appréciation du  
risque  
(IEC 31010:2019)

Risikomanagement - Verfahren zur Risikobeurteilung  
(IEC 31010:2019)

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**EN IEC 31010:2019 (E)****European foreword**

The text of document 56/1837/FDIS, future edition 2 of IEC 31010, prepared by IEC/TC 56 "Dependability" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 31010:2019.

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- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-04-18
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-07-18

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|                    |      |                                 |
|--------------------|------|---------------------------------|
| IEC 62740          | NOTE | Harmonized as EN 62740          |
| IEC 60812          | NOTE | Harmonized as EN IEC 60812      |
| IEC 61882          | NOTE | Harmonized as EN 61882          |
| ISO 22000          | NOTE | Harmonized as EN ISO 22000      |
| IEC 61508 (series) | NOTE | Harmonized as EN 61508 (series) |
| IEC 61511 (series) | NOTE | Harmonized as EN 61511 (series) |
| ISO 22301          | NOTE | Harmonized as EN ISO 22301      |
| IEC 62502          | NOTE | Harmonized as EN 62502          |
| IEC 62508          | NOTE | Harmonized as EN 62508          |
| IEC 61165          | NOTE | Harmonized as EN 61165          |
| IEC 60300-3-11     | NOTE | Harmonized as EN 60300-3-11     |

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

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| <u>Publication</u> | <u>Year</u> | <u>Title</u>                  | <u>EN/HD</u> | <u>Year</u> |
|--------------------|-------------|-------------------------------|--------------|-------------|
| ISO 31000          | 2018        | Risk management_ - Guidelines | -            | -           |
| ISO Guide 73       | 2009        | Risk management_ - Vocabulary | -            | -           |

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**IEC 31010**

Edition 2.0 2019-06

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**



**Risk management – Risk assessment techniques**

**Management du risque – Techniques d'appréciation du risque**



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**IEC 31010**

Edition 2.0 2019-06

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**



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**Risk management – Risk assessment techniques**

**Management du risque – Techniques d'appréciation du risque**

INTERNATIONAL  
ELECTROTECHNICAL  
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ELECTROTECHNIQUE  
INTERNATIONALE

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## CONTENTS

|  |    |
|--|----|
| FOREWORD.....  | 6  |
| INTRODUCTION.....  | 8  |
| 1 Scope.....   | 9  |
| 2 Normative references .....                                     | 9  |
| 3 Terms and definitions .....                                    | 9  |
| 4 Core concepts .....  | 10 |
| 4.1 Uncertainty .....  | 10 |
| 4.2 Risk .....   | 11 |
| 5 Uses of risk assessment techniques .....                       | 11 |
| 6 Implementing risk assessment.....                              | 12 |
| 6.1 Plan the assessment.....                                     | 12 |
| 6.1.1 Define purpose and scope of the assessment .....           | 12 |
| 6.1.2 Understand the context.....                                | 13 |
| 6.1.3 Engage with stakeholders.....                              | 13 |
| 6.1.4 Define objectives .....                                    | 13 |
| 6.1.5 Consider human, organizational and social factors .....    | 13 |
| 6.1.6 Review criteria for decisions .....                        | 14 |
| 6.2 Manage information and develop models .....                  | 16 |
| 6.2.1 General .....  | 16 |
| 6.2.2 Collecting information .....                               | 16 |
| 6.2.3 Analysing data.....  | 16 |
| 6.2.4 Developing and applying models .....                       | 17 |
| 6.3 Apply risk assessment techniques.....                        | 18 |
| 6.3.1 Overview .....   | 18 |
| 6.3.2 Identifying risk .....                                     | 19 |
| 6.3.3 Determining sources, causes and drivers of risk .....      | 19 |
| 6.3.4 Investigating the effectiveness of existing controls.....  | 20 |
| 6.3.5 Understanding consequences, and likelihood .....           | 20 |
| 6.3.6 Analysing interactions and dependencies .....              | 22 |
| 6.3.7 Understanding measures of risk.....                        | 22 |
| 6.4 Review the analysis .....                                    | 25 |
| 6.4.1 Verifying and validating results .....                     | 25 |
| 6.4.2 Uncertainty and sensitivity analysis .....                 | 25 |
| 6.4.3 Monitoring and review.....                                 | 26 |
| 6.5 Apply results to support decisions.....                      | 26 |
| 6.5.1 Overview .....   | 26 |
| 6.5.2 Decisions about the significance of risk .....             | 27 |
| 6.5.3 Decisions that involve selecting between options.....      | 27 |
| 6.6 Record and report risk assessment process and outcomes ..... | 28 |
| 7 Selecting risk assessment techniques.....                      | 28 |
| 7.1 General.....   | 28 |
| 7.2 Selecting techniques.....                                    | 29 |
| Annex A (informative) Categorization of techniques .....         | 31 |
| A.1 Introduction to categorization of techniques .....           | 31 |
| A.2 Application of categorization of techniques .....            | 31 |
| A.3 Use of techniques during the ISO 31000 process.....          | 37 |

|  |    |
|--|----|
| Annex B (informative) Description of techniques .....  | 40 |
| B.1 Techniques for eliciting views from stakeholders and experts.....  | 40 |
| B.1.1 General .....  | 40 |
| B.1.2 Brainstorming .....  | 40 |
| B.1.3 Delphi technique.....  | 42 |
| B.1.4 Nominal group technique .....  | 43 |
| B.1.5 Structured or semi-structured interviews .....   | 44 |
| B.1.6 Surveys .....  | 45 |
| B.2 Techniques for identifying risk.....   | 46 |
| B.2.1 General .....  | 46 |
| B.2.2 Checklists, classifications and taxonomies.....  | 47 |
| B.2.3 Failure modes and effects analysis (FMEA) and failure modes, effects<br>and criticality analysis (FMECA) ..... | 49 |
| B.2.4 Hazard and operability (HAZOP) studies.....  | 50 |
| B.2.5 Scenario analysis .....  | 52 |
| B.2.6 Structured what if technique (SWIFT) .....   | 54 |
| B.3 Techniques for determining sources, causes and drivers of risk .....   | 55 |
| B.3.1 General .....  | 55 |
| B.3.2 Cindynic approach .....  | 56 |
| B.3.3 Ishikawa analysis (fishbone) method .....  | 58 |
| B.4 Techniques for analysing controls .....  | 60 |
| B.4.1 General .....  | 60 |
| B.4.2 Bow tie analysis.....  | 60 |
| B.4.3 Hazard analysis and critical control points (HACCP).....   | 62 |
| B.4.4 Layers of protection analysis (LOPA).....  | 64 |
| B.5 Techniques for understanding consequences and likelihood .....   | 66 |
| B.5.1 General .....  | 66 |
| B.5.2 Bayesian analysis.....   | 66 |
| B.5.3 Bayesian networks and influence diagrams.....  | 68 |
| B.5.4 Business impact analysis (BIA).....  | 70 |
| B.5.5 Cause-consequence analysis (CCA).....  | 72 |
| B.5.6 Event tree analysis (ETA) .....  | 74 |
| B.5.7 Fault tree analysis (FTA) .....  | 76 |
| B.5.8 Human reliability analysis (HRA).....  | 78 |
| B.5.9 Markov analysis.....   | 79 |
| B.5.10 Monte Carlo simulation .....  | 81 |
| B.5.11 Privacy impact analysis (PIA) / data protection impact analysis (DPIA).....                                   | 83 |
| B.6 Techniques for analysing dependencies and interactions .....   | 85 |
| B.6.1 Causal mapping.....  | 85 |
| B.6.2 Cross impact analysis.....   | 87 |
| B.7 Techniques that provide a measure of risk .....  | 89 |
| B.7.1 Toxicological risk assessment.....   | 89 |
| B.7.2 Value at risk (VaR) .....  | 91 |
| B.7.3 Conditional value at risk (CVaR) or expected shortfall (ES) .....  | 93 |
| B.8 Techniques for evaluating the significance of risk .....   | 94 |
| B.8.1 General .....  | 94 |
| B.8.2 As low as reasonably practicable (ALARP) and so far as is reasonably<br>practicable (SFAIRP).....              | 94 |

|                    |  |     |
|--------------------|--|-----|
| B.8.3              | Frequency-number (F-N) diagrams .....  | 96  |
| B.8.4              | Pareto charts .....  | 98  |
| B.8.5              | Reliability centred maintenance (RCM) .....  | 100 |
| B.8.6              | Risk indices .....   | 102 |
| B.9                | Techniques for selecting between options .....   | 103 |
| B.9.1              | General .....  | 103 |
| B.9.2              | Cost/benefit analysis (CBA) .....  | 104 |
| B.9.3              | Decision tree analysis .....   | 106 |
| B.9.4              | Game theory .....  | 107 |
| B.9.5              | Multi-criteria analysis (MCA) .....  | 109 |
| B.10               | Techniques for recording and reporting .....   | 111 |
| B.10.1             | General .....  | 111 |
| B.10.2             | Risk registers .....   | 112 |
| B.10.3             | Consequence/likelihood matrix (risk matrix or heat map) .....  | 113 |
| B.10.4             | S-curves .....   | 117 |
| Bibliography ..... |  | 119 |
|                    |  |     |
| Figure A.1         | – Application of techniques in the ISO 31000 risk management process [3] .....   | 37  |
| Figure B.1         | – Example Ishikawa (fishbone) diagram .....  | 59  |
| Figure B.2         | – Example of Bowtie .....  | 61  |
| Figure B.3         | – A Bayesian network showing a simplified version of a real ecological problem: modelling native fish populations in Victoria, Australia ..... | 69  |
| Figure B.4         | – Example of cause-consequence diagram .....   | 73  |
| Figure B.5         | – Example of event tree analysis .....   | 75  |
| Figure B.6         | – Example of fault tree .....  | 77  |
| Figure B.7         | – Example of Markov diagram .....  | 80  |
| Figure B.8         | – Example of dose response curve .....   | 89  |
| Figure B.9         | – Distribution of value .....  | 91  |
| Figure B.10        | – Detail of loss region VaR values .....   | 91  |
| Figure B.11        | – VaR and CVaR for possible loss portfolio .....   | 93  |
| Figure B.12        | – ALARP diagram .....  | 95  |
| Figure B.13        | – Sample F-N diagram .....   | 97  |
| Figure B.14        | – Example of a Pareto chart .....  | 98  |
| Figure B.15        | – Part example of table defining consequence scales .....  | 114 |
| Figure B.16        | – Part example of a likelihood scale .....   | 114 |
| Figure B.17        | – Example of consequence/likelihood matrix .....   | 115 |
| Figure B.18        | – Probability distribution function and cumulative distribution function .....   | 117 |
|                    |  |     |
| Table A.1          | – Characteristics of techniques .....  | 31  |
| Table A.2          | – Techniques and indicative characteristics .....  | 32  |
| Table A.3          | – Applicability of techniques to the ISO 31000 process .....   | 38  |
| Table B.1          | – Examples of basic guidewords and their generic meanings .....  | 51  |

|   |     |
|---|-----|
| Table B.2 – Table of deficits for each stakeholder .....                      | 57  |
| Table B.3 – Table of dissonances between stakeholders .....                   | 57  |
| Table B.4 – Example of Markov matrix .....                                    | 80  |
| Table B.5 – Examples of systems to which Markov analysis can be applied ..... | 81  |
| Table B.6 – An example of RCM task selection .....                            | 101 |
| Table B.7 – Example of a game matrix .....                                    | 108 |

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### RISK MANAGEMENT – RISK ASSESSMENT TECHNIQUES

#### FOREWORD

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International Standard IEC 31010 has been prepared by IEC technical committee 56: Dependability, in co-operation with ISO technical committee 262: Risk management.

It is published as a double logo standard.

This second edition cancels and replaces the first edition published in 2009. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- more detail is given on the process of planning, implementing, verifying and validating the use of the techniques;
- the number and range of application of the techniques has been increased;
- the concepts covered in ISO 31000 are no longer repeated in this standard.



The text of this International Standard is based on the following documents of IEC:

| FDIS         | Report on voting |
|--------------|------------------|
| 56/1837/FDIS | 56/1845/RVD      |

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table. In ISO, the standard has been approved by 44 P members out of 46 having cast a vote.

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

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

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- withdrawn,
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- amended.

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## INTRODUCTION

This document provides guidance on the selection and application of various techniques that can be used to help improve the way uncertainty is taken into account and to help understand risk.

The techniques are used:

- where further understanding is required about what risk exists or about a particular risk;
- within a decision where a range of options each involving risk need to be compared or optimized;
- within a risk management process leading to actions to treat risk.

The techniques are used within the risk assessment steps of identifying, analysing and evaluating risk as described in ISO 31000, and more generally whenever there is a need to understand uncertainty and its effects.

The techniques described in this document can be used in a wide range of settings, however the majority originated in the technical domain. Some techniques are similar in concept but have different names and methodologies that reflect the history of their development in different sectors. Techniques have evolved over time and continue to evolve, and many can be used in a broad range of situations outside their original application. Techniques can be adapted, combined and applied in new ways or extended to satisfy current and future needs.

This document is an introduction to selected techniques and compares their possible applications, benefits and limitations. It also provides references to sources of more detailed information.

The potential audience for this document is:

- anyone involved in assessing or managing risk;
- people who are involved in developing guidance that sets out how risk is to be assessed in specific contexts;
- people who need to make decisions where there is uncertainty including:
  - those who commission or evaluate risk assessments,
  - those who need to understand the outcomes of assessments, and
  - those who have to choose assessment techniques to meet particular needs.

Organizations that are required to conduct risk assessments for compliance or conformance purposes would benefit from using appropriate formal and standardized risk assessment techniques.

## RISK MANAGEMENT – RISK ASSESSMENT TECHNIQUES

### 1 Scope

This International Standard provides guidance on the selection and application of techniques for assessing risk in a wide range of situations. The techniques are used to assist in making decisions where there is uncertainty, to provide information about particular risks and as part of a process for managing risk. The document provides summaries of a range of techniques, with references to other documents where the techniques are described in more detail.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO Guide 73:2009, *Risk management – Vocabulary*

ISO 31000:2018, *Risk management – Guidelines*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 31000:2018, ISO Guide 73:2009 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1

##### **likelihood**

chance of something happening

Note 1 to entry: In risk management terminology, the word "likelihood" is used to refer to the chance of something happening, whether defined, measured or determined objectively or subjectively, qualitatively or quantitatively, and described using general terms or mathematically (such as a probability or a frequency over a given time period).

Note 2 to entry: The English term "likelihood" does not have a direct equivalent in some languages; instead, the equivalent of the term "probability" is often used. However, in English, "probability" is often narrowly interpreted as a mathematical term. Therefore, in risk management terminology, "likelihood" is used with the intent that it should have the same broad interpretation as the term "probability" has in many languages other than English.

[SOURCE: ISO 31000:2018, 3.7]

#### 3.2

##### **opportunity**

combination of circumstances expected to be favourable to objectives

Note 1 to entry: An opportunity is a positive situation in which gain is likely and over which one has a fair level of control.

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