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Standards

Irish Standard  
I.S. EN 62740:2015

## Root cause analysis (RCA)

**I.S. EN 62740:2015**

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*This document is based on:*

EN 62740:2015

*Published:*

2015-04-03

*This document was published under the authority of the NSAI and comes into effect on:*

2015-04-21

ICS number:

NOTE: If blank see CEN/CENELEC cover page

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EUROPEAN STANDARD

**EN 62740**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2015

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ICS 03.120.01

English Version

**Root cause analysis (RCA)  
(IEC 62740:2015)**

Analyse de cause initiale (RCA)  
(IEC 62740:2015)

Ursachenanalyse  
(IEC 62740:2015)

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Europäisches Komitee für Elektrotechnische Normung

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## Foreword

The text of document 56/1590/FDIS, future edition 1 of IEC 62740, prepared by IEC/TC 56 "Dependability" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62740:2015.

The following dates are fixed:

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IEC 60300-1	NOTE	Harmonized as EN 60300-1.
IEC 61025	NOTE	Harmonized as EN 61025.
IEC 61649	NOTE	Harmonized as EN 61649.
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IEC 62508:2010	NOTE	Harmonized as EN 62508:2010 (not modified).
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## Annex ZA (normative)

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050 Series	-	International Electrotechnical Vocabulary (IEV)	-	-

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**IEC 62740**

Edition 1.0 2015-02

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**



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**Root cause analysis (RCA)**

**Analyse de cause initiale (RCA)**





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**IEC 62740**

Edition 1.0 2015-02

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**



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**Root cause analysis (RCA)**

**Analyse de cause initiale (RCA)**

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ELECTROTECHNICAL  
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ICS 03.120.01

ISBN 978-2-8322-2246-1

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## CONTENTS

FOREWORD .....	6
INTRODUCTION .....	8
1 Scope .....	9
2 Normative references .....	9
3 Terms, definitions and abbreviations .....	9
3.1 Terms and definitions .....	9
3.2 Abbreviations .....	12
4 RCA – Overview .....	12
5 The RCA process .....	13
5.1 Overview .....	13
5.2 Initiation .....	14
5.3 Establishing facts .....	15
5.4 Analysis .....	17
5.4.1 Description .....	17
5.4.2 The analysis team .....	18
5.5 Validation .....	19
5.6 Presentation of results .....	19
6 Selection of techniques for analysing causes .....	20
6.1 General .....	20
6.2 Selection of analysis techniques .....	20
6.3 Useful tools to assist RCA .....	21
Annex A (informative) Summary and criteria of commonly used RCA techniques .....	22
A.1 General .....	22
A.2 RCA techniques .....	22
A.3 Criteria .....	23
Annex B (informative) RCA models .....	26
B.1 General .....	26
B.2 Barrier analysis .....	26
B.2.1 Overview .....	26
B.2.2 Strengths and limitations .....	27
B.3 Reason's model (Swiss cheese model) .....	27
B.3.1 Overview .....	27
B.3.2 Strengths and limitations .....	28
B.4 Systems models .....	28
B.5 Systems theoretic accident model and processes (STAMP) .....	29
B.5.1 Overview .....	29
B.5.2 Strengths and limitations .....	29
Annex C (informative) Detailed description of RCA techniques .....	30
C.1 General .....	30
C.2 Events and causal factors (ECF) charting .....	30
C.2.1 Overview .....	30
C.2.2 Process .....	31
C.2.3 Strengths and limitations .....	31
C.3 Multilinear events sequencing (MES) and sequentially timed events plotting (STEP) .....	32

C.3.1	Overview .....	32
C.3.2	Process .....	32
C.3.3	Strengths and limitations .....	33
C.4	The ‘why’ method .....	35
C.4.1	Overview .....	35
C.4.2	Process .....	36
C.4.3	Strengths and limitations .....	36
C.5	Causes tree method (CTM) .....	36
C.5.1	Overview .....	36
C.5.2	Process .....	39
C.5.3	Strengths and limitations .....	39
C.6	Why-because analysis (WBA) .....	39
C.6.1	Overview .....	39
C.6.2	Process .....	42
C.6.3	Strengths and limitations .....	42
C.7	Fault tree and success tree method .....	42
C.7.1	Overview .....	42
C.7.2	Process .....	43
C.7.3	Strengths and limitations .....	44
C.8	Fishbone or Ishikawa diagram .....	44
C.8.1	Overview .....	44
C.8.2	Process .....	45
C.8.3	Strengths and limitations .....	46
C.9	Safety through organizational learning (SOL) .....	46
C.9.1	Overview .....	46
C.9.2	Process .....	46
C.9.3	Strengths and limitations .....	47
C.10	Management oversight and risk tree (MORT) .....	48
C.10.1	Overview .....	48
C.10.2	Process .....	48
C.10.3	Strengths and limitations .....	48
C.11	AcciMaps .....	49
C.11.1	Overview .....	49
C.11.2	Process .....	49
C.11.3	Strengths and limitations .....	51
C.12	Tripod Beta .....	51
C.12.1	Overview .....	51
C.12.2	Process .....	52
C.12.3	Strengths and limitations .....	52
C.13	Causal analysis using STAMP (CAST) .....	53
C.13.1	Overview .....	53
C.13.2	Process .....	56
C.13.3	Strengths and limitations .....	57
Annex D (informative)	Useful tools to assist root cause analysis (RCA) .....	58
D.1	General .....	58
D.2	Data mining and clustering techniques .....	58
D.2.1	Overview .....	58
D.2.2	Example 1 .....	58
D.2.3	Example 2 .....	58

D.2.4	Example 3 .....	59
Annex E (informative)	Analysis of human performance .....	60
E.1	General.....	60
E.2	Analysis of human failure .....	60
E.3	Technique for retrospective and predictive analysis of cognitive errors (TRACEr).....	61
E.3.1	Overview .....	61
E.3.2	Process .....	62
E.4	Human factors analysis and classification scheme (HFACS) .....	63
E.4.1	Overview .....	63
E.4.2	Process .....	63
Bibliography	.....	66
Figure 1	– RCA process .....	14
Figure B.1	– Broken, ineffective and missing barriers causing the focus event .....	26
Figure C.1	– Example of an ECF chart.....	31
Figure C.2	– Data in an event building block .....	32
Figure C.3	– Example of a time-actor matrix .....	34
Figure C.4	– Example of a why tree .....	35
Figure C.5	– Symbols and links used in CTM .....	37
Figure C.6	– Example of a cause tree .....	38
Figure C.7	– Example of a WBG .....	41
Figure C.8	– Example of a fault tree during the analysis .....	43
Figure C.9	– Example of a Fishbone diagram.....	45
Figure C.10	– Example of a MORT diagram .....	48
Figure C.11	– Example of an AcciMap .....	50
Figure C.12	– Example of a Tripod Beta tree diagram .....	52
Figure C.13	– Control structure for the water supply in a small town in Canada .....	55
Figure C.14	– Example CAST causal analysis for the local Department of health .....	56
Figure C.15	– Example CAST causal analysis for the local public utility operations management.....	56
Figure E.1	– Example of an TRACEr model [25].....	61
Figure E.2	– Generation of internal error modes .....	62
Figure E.3	– Level 1: Unsafe acts .....	64
Figure E.4	– Level 2: Preconditions .....	64
Figure E.5	– Level 3: Supervision Issues .....	65
Figure E.6	– Level 4: Organizational Issues .....	65
Table 1	– Steps to RCA .....	13
Table A.1	– Brief description of RCA techniques .....	22
Table A.2	– Summary of RCA technique criteria.....	23
Table A.3	– Attributes of the generic RCA techniques .....	25
Table B.1	– Examples of barriers .....	27
Table B.2	– Example of the barrier analysis worksheet .....	27
Table C.1	– Direct and indirect causal factors .....	47

Table E.1 – External error modes.....	63
Table E.2 – Psychological error mechanisms .....	63

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**ROOT CAUSE ANALYSIS (RCA)**
**FOREWORD**

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

FDIS	Report on voting
56/1590/FDIS	56/1608/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 stability 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

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## INTRODUCTION

Root cause analysis (RCA) refers to any systematic process that identifies factors that contributed to a particular event of interest (focus event). RCA is performed with the understanding that events are addressed by understanding the root causes, rather than the immediately obvious symptoms. RCA aims to reveal root causes so that either the likelihood of them occurring, or their impact if they do occur, can be changed.

An important distinction to make is that RCA is used to analyse a focus event that has occurred and therefore analyses the past (a posteriori). However, knowledge of the root causes of past events can lead to actions that generate improvements in the future.

This International Standard is intended to reflect current good practices in the conduct of RCA. This standard is general in nature, so that it may give guidance across many industries and situations. There may be industry specific standards in existence that establish preferred methodologies for particular applications. If these standards are in harmony with this publication, the industry standards will generally be sufficient.

This standard is a generic standard and does not explicitly address safety or accident investigation although the methods described in this standard may be used for this purpose.



## ROOT CAUSE ANALYSIS (RCA)

### 1 Scope

This International Standard describes the basic principles of root cause analysis (RCA) and specifies the steps that a process for RCA should include.

This standard identifies a number of attributes for RCA techniques which assist with the selection of an appropriate technique. It describes each RCA technique and its relative strengths and weaknesses.

RCA is used to analyse the root causes of focus events with both positive and negative outcomes, but it is most commonly used for the analysis of failures and incidents. Causes for such events can be varied in nature, including design processes and techniques, organizational characteristics, human aspects and external events. RCA can be used for investigating the causes of non-conformances in quality (and other) management systems as well as for failure analysis, for example in maintenance or equipment testing.

RCA is used to analyse focus events that have occurred, therefore this standard only covers a posteriori analyses. It is recognized that some of the RCA techniques with adaptation can be used proactively in the design and development of items and for causal analysis during risk assessment; however, this standard focuses on the analysis of events which have occurred.

The intent of this standard is to describe a process for performing RCA and to explain the techniques for identifying root causes. These techniques are not designed to assign responsibility or liability, which is outside the scope of this standard.

### 2 Normative references

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

IEC 60050 (all parts), *International Electrotechnical Vocabulary*

### 3 Terms, definitions and abbreviations

For the purposes of this document, the definitions given in IEC 60050-192, as well as the following, apply.

#### 3.1 Terms and definitions

##### 3.1.1

##### **cause**

circumstance or set of circumstances that leads to failure or success

Note 1 to entry: A cause may originate during specification, design, manufacture, installation, operation or maintenance.

[SOURCE: IEC 60050-192:2014, 192-03-11 modified – addition of the words “circumstance or” and “or success” in the term]

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