



**Information technology—Security
techniques—Information security
management—Monitoring,
measurement, analysis and evaluation**

STANDARDS
Australia



AS ISO/IEC 27004:2018

This Australian Standard ® was prepared by IT-012, Information Systems, Security and Identification Technology. It was approved on behalf of the Council of Standards Australia on 18 December 2017.

This Standard was published on 22 February 2018.

The following are represented on Committee IT-012:

- Australian Information Industry Association
- Australian Payment Network
- Department of Defence (Australian Government)
- Department of Finance (Australian Government)
- Office of the Commissioner for Privacy and Data Protection, Vic.
- Certification Interests Australia

This Standard was issued in draft form for comment as DR AS ISO/IEC 27004:2017.

Keeping Standards up-to-date

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:

www.standards.org.au

www.saiglobal.com (sales and distribution)

ISBN 978 1 76035 976 8



Information technology—Security techniques—Information security management—Monitoring, measurement, analysis and evaluation

First published as AS ISO/IEC 27004:2018.

COPYRIGHT

© ISO/IEC 2018 — All rights reserved
© Standards Australia Limited 2018

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Cth).

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia.

Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee IT-012, Information Systems, Security and Identification Technology.

The objective of this Standard is to provide guidelines intended to assist organizations in evaluating the information security performance and the effectiveness of an information security management system in order to fulfil the requirements of ISO/IEC 27001:2013, Clause 9.1. This Standard establishes—

- (a) the monitoring and measurement of information security performance;
- (b) the monitoring and measurement of the effectiveness of an information security management system (ISMS) including its processes and controls; and
- (c) the analysis and evaluation of the results of monitoring and measurement.

This Standard is identical with, and has been reproduced from, ISO/IEC 27004:2016 *Information technology — Security techniques — Information security management — Monitoring, measurement, analysis and evaluation*.

As this document has been reproduced from an International Standard, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms 'normative' and 'informative' are used in Standards to define the application of the appendices or annexes to which they apply. A 'normative' appendix or annex is an integral part of a Standard, whereas an 'informative' appendix or annex is only for information and guidance.

Contents

Preface	ii
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Structure and overview	1
5 Rationale	2
5.1 The need for measurement	2
5.2 Fulfilling the ISO/IEC 27001 requirements	2
5.3 Validity of results	3
5.4 Benefits	3
6 Characteristics	4
6.1 General	4
6.2 What to monitor	4
6.3 What to measure	5
6.4 When to monitor, measure, analyse and evaluate	6
6.5 Who will monitor, measure, analyse and evaluate	6
7 Types of measures	7
7.1 General	7
7.2 Performance measures	7
7.3 Effectiveness measures	8
8 Processes	9
8.1 General	9
8.2 Identify information needs	10
8.3 Create and maintain measures	11
8.3.1 General	11
8.3.2 Identify current security practices that can support information needs	11
8.3.3 Develop and update measures	12
8.3.4 Document measures and prioritize for implementation	13
8.3.5 Keep management informed and engaged	13
8.4 Establish procedures	14
8.5 Monitor and measure	14
8.6 Analyse results	15
8.7 Evaluate information security performance and ISMS effectiveness	15
8.8 Review and improve monitoring, measurement, analysis and evaluation processes	15
8.9 Retain and communicate documented information	15
Annex A (informative) An information security measurement model	17
Annex B (informative) Measurement construct examples	19
Annex C (informative) An example of free-text form measurement construction	57
Bibliography	58

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, Subcommittee SC 27, *IT Security techniques*.

This second edition of ISO/IEC 27004 cancels and replaces the first edition (ISO/IEC 27004:2009), which has been technically revised.

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

A total restructuring of the document because it has a new purpose – to provide guidance on ISO/IEC 27001:2013, 9.1 – which, at the time of the previous edition, did not exist.

The concepts and processes have been modified and expanded. However, the theoretical foundation (ISO/IEC 15939) remains the same and several of the examples given in the previous edition are preserved, albeit updated.

Introduction

This document is intended to assist organizations to evaluate the information security performance and the effectiveness of an information security management system in order to fulfil the requirements of ISO/IEC 27001:2013, 9.1: monitoring, measurement, analysis and evaluation.

The results of monitoring and measurement of an information security management system (ISMS) can be supportive of decisions relating to ISMS governance, management, operational effectiveness and continual improvement.

As with other ISO/IEC 27000 documents, this document should be considered, interpreted and adapted to suit each organization's specific situation. The concepts and approaches are intended to be broadly applicable but the particular measures that any particular organization requires depend on contextual factors (such as its size, sector, maturity, information security risks, compliance obligations and management style) that vary widely in practice.

This document is recommended for organizations implementing an ISMS that meets the requirements of ISO/IEC 27001. However, it does not establish any new requirements for ISMS which conform to ISO/IEC 27001 or impose any obligations upon organizations to observe the guidelines presented.

Australian Standard[®]

Information technology—Security techniques—Information security management—Monitoring, measurement, analysis and evaluation

1 Scope

This document provides guidelines intended to assist organizations in evaluating the information security performance and the effectiveness of an information security management system in order to fulfil the requirements of ISO/IEC 27001:2013, 9.1. It establishes:

- a) the monitoring and measurement of information security performance;
- b) the monitoring and measurement of the effectiveness of an information security management system (ISMS) including its processes and controls;
- c) the analysis and evaluation of the results of monitoring and measurement.

This document is applicable to all types and sizes of organizations.

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.

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 27000 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>

4 Structure and overview

This document is structured as follows:

- a) Rationale ([Clause 5](#));
- b) Characteristics ([Clause 6](#));
- c) Types of measures ([Clause 7](#));
- d) Processes ([Clause 8](#)).

The ordering of these clauses is intended to aid understanding and map to ISO/IEC 27001:2013, 9.1 requirements, as is illustrated in [Figure 1](#).

Starting with the information needed to fulfil that requirement, referred to as information needs, the organization determines the measures that it will use to fulfil those information needs. The process of monitoring and measurement produces data which is then analysed. The results of analysis are evaluated in fulfilment of the organization's information needs.

In addition, [Annex A](#) describes a measurement model for information security, including the relationship between the components of the measurement model and the requirements of ISO/IEC 27001:2013, 9.1.