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## Information technology — Security techniques — Security assurance framework

### Part 2: Analysis

*Technologies de l'information — Techniques de sécurité — Assurance de la sécurité cadre*

*Partie 2: Analyses*

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## Contents

Page

Foreword .....	v
Introduction.....	vi
1 Scope.....	1
2 Normative references.....	1
3 Terms, definitions and abbreviated terms .....	1
4 A framework for the analysis of IT security assurance.....	2
5 Criteria for the analysis SACA paradigms .....	2
5.1 Availability of recognition agreements and arrangements.....	2
5.1.1 Discussion .....	2
5.1.2 Criteria .....	2
5.2 Geographical and political considerations.....	3
5.2.1 Discussion .....	3
5.2.2 Criteria .....	3
6 Criteria for the analysis of SACA schemes and SACA systems .....	3
6.1 Independence .....	3
6.1.1 Discussion .....	3
6.1.2 Criteria .....	3
6.2 Scheme competence.....	4
6.2.1 Discussion .....	4
6.2.2 Criteria .....	4
6.3 Assessment conformity.....	4
6.3.1 Discussion .....	4
6.3.2 Criteria .....	5
6.4 Support to security assurance users and providers .....	5
6.4.1 Discussion .....	5
6.4.2 Criteria .....	5
6.5 Provision of interpretations of standards and methods .....	5
6.5.1 Discussion .....	5
6.5.2 Criteria .....	5
6.6 Scheme related policies.....	6
6.6.1 Discussion .....	6
6.6.2 Criteria .....	6
6.7 SACA systems .....	6
6.7.1 Discussion .....	6
6.7.2 Criteria .....	6
6.8 Commercial considerations .....	6
6.8.1 Discussion .....	6
6.8.2 Criteria .....	7
6.9 SACA results.....	7
6.9.1 Discussion .....	7
6.9.2 Criteria .....	7
6.10 SACA Marks and symbols.....	7
6.10.1 Discussion .....	7
6.10.2 Criteria .....	7
7 Criteria for the analysis of SACA bodies .....	8
7.1 Independence .....	8
7.1.1 Discussion .....	8
7.1.2 Criteria .....	8

This is a preview of "ISO/IEC TR 15443-2:2...". Click here to purchase the full version from the ANSI store.

7.2	Accreditation .....	9
7.2.1	Discussion .....	9
7.2.2	Criteria .....	9
7.3	SACA body competence .....	9
7.3.1	Discussion .....	9
7.3.2	Criteria .....	9
7.4	Commercial considerations.....	10
7.4.1	Discussion .....	10
7.4.2	Criteria .....	10
8	Criteria for the analysis of SACA methods .....	11
8.1	General criteria for SACA methods .....	11
8.1.1	Discussion .....	11
8.1.2	Criteria .....	11
8.2	Confidence in the assurance method.....	11
8.2.1	Discussion .....	11
8.2.2	Criteria .....	11
8.3	Independent Confirmation .....	12
8.3.1	Discussion .....	12
8.3.2	Criteria .....	12
8.4	Trust Policies .....	12
8.4.1	Discussion .....	12
8.4.2	Criteria .....	13
8.5	Maturity of the assurance method .....	13
8.5.1	Discussion .....	13
8.5.2	Criteria .....	13
9	Criteria for the analysis of standards, specifications and SACA documents .....	13
9.1	The standards development organization .....	13
9.1.1	Discussion .....	13
9.1.2	Criteria .....	13
9.2	The standard or specification.....	14
9.2.1	Discussion .....	14
9.2.2	Criteria .....	14
10	Criteria for the analysis of the SACA results .....	14
10.1	Documentation produced .....	14
10.1.1	Discussion .....	14
10.1.2	Criteria .....	14
10.2	Identification of the components of the deliverable .....	15
10.2.1	Discussion .....	15
10.2.2	Criteria .....	16
10.3	Scopes and boundaries of the target of the assessment.....	16
10.3.1	Discussion .....	16
10.3.2	Criteria .....	16
10.4	Functionality of the deliverable assessed .....	16
10.4.1	Discussion .....	16
10.4.2	Criteria .....	16
10.5	Supply chain criteria .....	17
10.5.1	Discussion .....	17
10.5.2	Criteria .....	17
10.6	Analysis of the security problem .....	17
10.6.1	Discussion .....	17
10.6.2	Criteria .....	17
10.7	Lifecycle.....	17
10.7.1	Discussion .....	17
10.7.2	Criteria .....	18
10.8	Operational considerations .....	18
10.8.1	Discussion .....	18
10.8.2	Criteria .....	18

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## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

In exceptional circumstances, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide to publish a Technical Report. A Technical Report is entirely informative in nature and shall be subject to review every five years in the same manner as an International Standard.

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.

ISO/IEC TR 15443-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 27, *Security techniques*.

This second edition of ISO/IEC TR 15443-2 cancels and replaces the first edition (ISO/IEC TR 15443-2:2005) and ISO/IEC TR 15443-3:2007, which have been technically revised.

ISO/IEC TR 15443 consists of the following parts, under the general title *Information technology — Security techniques — Security assurance framework*:

- *Part 1: Introduction and concepts*
- *Part 2: Analysis*

## Introduction

This part of ISO/IEC TR 15443 is intended to be used together with ISO/IEC TR 15443-1. ISO/IEC TR 15443-1 introduced and discussed the concepts of assurance describing a model whereby the security assurance requirements for a deliverable can be satisfied through the presentation of a security case supported by security evidence that was obtained through making security assurance arguments in the development of a security assurance claim, IT security assurance arguments are verified by the application of security assurance conformity assessment methods and a Mark or symbol awarded appropriately.

ISO/IEC TR 15443-1 introduced the notion of methods for obtaining confidence in the security assurance claims made for a deliverable. This includes methods based on national or international agreed standards, specifications and methods as well as de-facto standards, specifications and methodologies which have as a characteristic a specified and systematic repeatable method for obtaining security assurance. These may be supplemented by a governing conformity assessment scheme that has responsibility for the oversight of the conformity of the application of the standard or specification and the testing method and often undertakes other duties such as awarding security assurance Marks.

By defining such a framework, this part of ISO/IEC TR 15443 guides the IT professional in the selection, and possible combination, of the assurance method(s) suitable for a given IT security product, system, or service and its specific environment.

Intended users of this part of ISO/IEC TR 15443 include those specifying security assurance cases including:

- acquirers (an individual or organization that acquires or procures a system, software product or software service from a supplier);
- developer (an individual or organization that performs development activities, including requirements analysis, design, testing and possibly integration during the software life cycle process)
- maintainer (an individual or organization that performs maintenance activities);
- supplier (an individual or organization that enters into a contract with the acquirer for the supply of a system, software product or software service under the terms of the contract);
- user (an individual or organization that uses the deliverable to perform a specific function);
- evaluator, tester or assessor (an individual or organization that performs an evaluation; an evaluator may, for example, be a testing laboratory, the quality department of a software development organization, a government organization or a user);

The objective of this part of ISO/IEC TR 15443 is to describe criteria that may be used in an analysis to support obtaining confidence in a variety of IT security assurance conformity assessment (SACA) paradigms, and to relate the described criteria to the security assurance model of ISO/IEC TR 15443-1. The emphasis is to identify criteria, often qualitative, and where possible quantitative, that can be used to support the degree of confidence that can be placed in the claims, results and Marks obtained from the associated SACA paradigms.

To provide such a framework it is necessary to characterize the criteria that can be used to assess the quality of the subject paradigm. Many of the criteria proposed in this framework rely on subjective analysis, with elements of assessment that may rely upon individual, organizational, and national norms, cultures and beliefs.