INTERNATIONAL STANDARD

ISO/IEC 29115

First edition
2013-04-01

Information technology — Security techniques — Entity authentication assurance framework

Technologies de l'information — Techniques de sécurité — Cadre d'assurance de l'authentification d'entité

Reference number
ISO/IEC 29115:2013(E)

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Published in Switzerland

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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.

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 29115 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 27, *IT Security techniques*.

A similar text is published as ITU-T Recommendation X.1254. It differs from this text in three instances: 1) 3.8: the ISO/IEC definition includes asserted identities; 2) Table 10-1: ISO/IEC includes an example for impersonation that includes use of an identity for an entity that does not exist; 3) 10.2.2.1: ISO/IEC describes SSL as an example of a protected channel.

Introduction

Many electronic transactions within or between ICT systems have security requirements which depend upon an understood or specified level of confidence in the identities of the entities involved. Such requirements may include the protection of assets and resources against unauthorized access, for which an access control mechanism might be used, and/or the enforcement of accountability by the maintenance of audit logs of relevant events, as well as for accounting and charging purposes.

This International Standard provides a framework for entity authentication assurance. Assurance within this International Standard refers to the confidence placed in all of the processes, management activities, and technologies used to establish and manage the identity of an entity for use in authentication transactions.

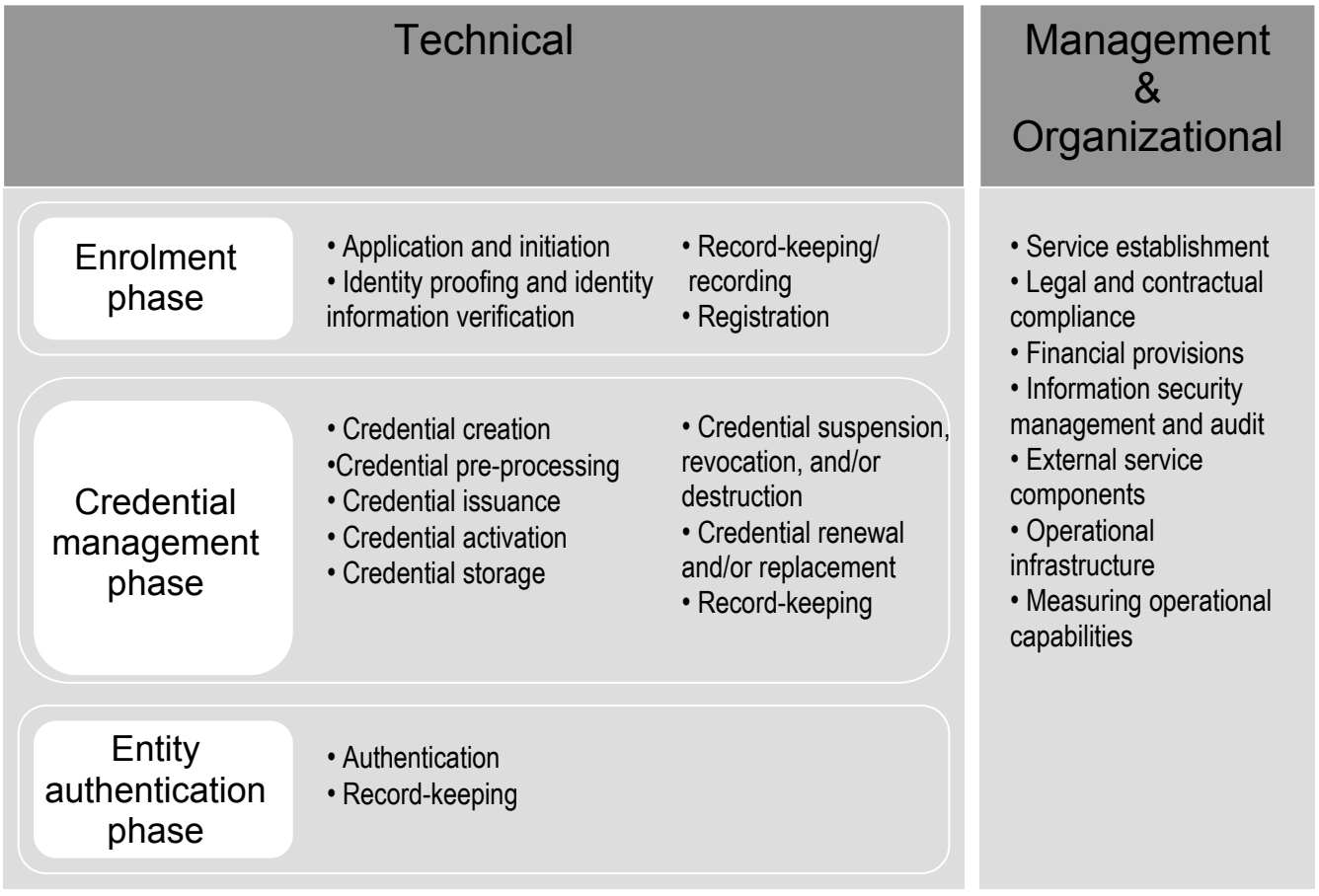

Figure 1 — Overview of the Entity Authentication Assurance Framework

Using four specified Levels of Assurance (LoAs), this International Standard provides guidance concerning control technologies, processes, and management activities, as well as assurance criteria that should be used to mitigate authentication threats in order to implement the four LoAs. It also provides guidance for the mapping of other authentication assurance schemes to the specified four levels, as well as guidance for exchanging the results of an authentication transaction. Finally, this International Standard provides informative guidance concerning the protection of personally identifiable information (PII) associated with the authentication process.

This International Standard is intended to be used principally by credential service providers (CSPs) and by others having an interest in their services (e.g., relying parties, assessors and auditors of those services). This Entity Authentication Assurance Framework (EAAF) specifies the minimum technical, management, and process requirements for four LoAs to ensure equivalence among credentials issued by various CSPs. It also provides some additional management and organizational considerations that affect entity authentication assurance, but it does not set forth specific criteria for those considerations. Relying Parties (RPs) and others may find this International Standard helpful to gain an understanding of what each LoA provides. Additionally, it may be adopted for use within a trust framework to define technical requirements for LoAs. The EAAF is intended for, but not limited to, session-based and document-centric use cases using various authentication technologies. Both direct and brokered trust scenarios are possible, within either bilateral or federated legal constellations.

Information technology — Security techniques — Entity authentication assurance framework

1 Scope

This International Standard provides a framework for managing entity authentication assurance in a given context. In particular, it:

— specifies four levels of entity authentication assurance;

— specifies criteria and guidelines for achieving each of the four levels of entity authentication assurance;

— provides guidance for mapping other authentication assurance schemes to the four LoAs;

— provides guidance for exchanging the results of authentication that are based on the four LoAs; and

— provides guidance concerning controls that should be used to mitigate authentication threats.

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.

2.1 Identical Recommendations | International Standards

None.

2.2 Paired Recommendations | International Standards

None.

2.3 Additional references

None.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
assertion
statement made by an entity without accompanying evidence of its validity

[ITU-T X.1252]

NOTE The meaning of the terms claim and assertion are generally agreed to be somewhat similar but with slightly different meanings. For the purposes of this International Standard, an assertion is considered to be a stronger statement than a claim.