AS 11770.1—2003
ISO/IEC 11770-1:1996

Australian Standard™

Information technology—Security techniques—Key management

Part 1: Framework

Standards Australia

This Australian Standard was prepared by Committee IT-012, Information Systems, Security and Identification Technology. It was approved on behalf of the Council of Standards Australia on 4 March 2003 and published on 31 March 2003.

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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. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian, rather than an Australian/New Zealand Standard.

This Standard is identical with, and has been reproduced, from ISO/IEC 11770-1:1996, *Information technology—Security techniques—Key management,* Part 1: *Framework.*

The objective of this Standard is to define the basic concepts, services and characteristics of the mechanisms of key management while describing specific requirements and a framework for the management of keying material during its life cycle.

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

As this Standard is reproduced from an international standard, the following applies:

(a) Its number appears on the cover and title page while the international standard number appears only on the cover.

(b) In the source text 'this part of ISO/IEC 11770-1' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS	
7498	Information processing systems—Open Systems Interconnection—Basic reference model	2777	Information processing systems—Open Systems Interconnection—Basic reference model
7498-2	Part 2: Security architecture	2777.2	Part 2: Security architecture

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AUSTRALIAN STANDARD

Information technology — Security techniques — Key management —

Part 1:
Framework

1 Scope

This part of ISO/IEC 11770:

1. identifies the objective of key management;
2. describes a general model on which key management mechanisms are based;
3. defines the basic concepts of key management common to all the parts of this multi-part standard;
4. defines key management services;
5. identifies the characteristics of key management mechanisms;
6. specifies requirements for the management of keying material during its life cycle; and
7. describes a framework for the management of keying material during its life cycle.

This framework defines a general model of key management that is independent of the use of any particular cryptographic algorithm. However, certain key distribution mechanisms may depend on particular algorithm properties, for example, properties of asymmetric algorithms.

Specific key management mechanisms are addressed by other parts of ISO/IEC 11770. Symmetric mechanisms are addressed in part 2 (ISO/IEC 11770-2, *Information technology — Security techniques — Key management — Part 2: Mechanisms using symmetric techniques*). Asymmetric mechanisms are addressed in part 3 (ISO/IEC 11770-3, *Information technology — Security techniques — Key management — Part 3: Mechanisms using asymmetric techniques*). This part of ISO/IEC 11770 contains the material required for a basic understanding of parts 2 and 3. Examples of the use of key management mechanisms are included in ISO 8732 and ISO 11166. If non-repudiation is required for key management, ISO/IEC 13888 should be used.

This part of ISO/IEC 11770 addresses both the automated and manual aspects of key management, including outlines of data elements and sequences of operations that are used to obtain key management services. However it does not specify details of protocol exchanges that may be needed.

As with other security services, key management can only be provided within the context of a defined security policy. The definition of security policies is outside the scope of this multi-part standard.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 11770. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 11770 are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards

ISO 7498-2: 1989, *Information processing systems — Open Systems Interconnection — Basic Reference Model — Part 2: Security Architecture*.

ISO/IEC 9798-1: 1991, *Information technology — Security techniques — Entity authentication mechanisms — Part 1: General model*.

ISO/IEC 10181-1: 1996, *Information technology — Open Systems Interconnection — Security frameworks for open systems: Overview*.

3 Definitions

The following terms are used as defined in ISO 7498-2:

data integrity

data origin authentication

digital signature

The following term is used as defined in ISO/IEC 9798-1:

entity authentication

The following terms are used as defined in ISO/IEC 10181-1:

security authority

security domain

trusted third party (TTP)