CMVP Approved Sensitive Parameter Generation and Establishment Methods:

*CMVP Validation Authority Updates to ISO/IEC 24759:2014(E)*

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INFORMATION SECURITY
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Abstract

NIST Special Publication (SP) 800-140D replaces the approved sensitive parameter generation and establishment methods requirements of ISO/IEC 19790 Annex D. As a validation authority, the Cryptographic Module Validation Program (CMVP) may supersede this Annex in its entirety. This document supersedes ISO/IEC 19790 Annex D and ISO/IEC 24759 paragraph 6.16.

Keywords

Cryptographic Module Validation Program; CMVP; FIPS 140 testing; FIPS 140-3; ISO/IEC 19790; ISO/IEC 2759; Sensitive Parameter Establishment Methods; Sensitive Parameter Generation; testing requirement; vendor evidence; vendor documentation.

Audience

This document is focused toward the vendors, testing labs, and CMVP for the purpose of addressing issues in cryptographic module testing.
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1 Scope

This document specifies the Cryptographic Module Validation Program (CMVP) modifications of the methods to be used by a Cryptographic and Security Testing Laboratory (CSTL) to demonstrate conformance. This document also specifies the modification of methods for evidence that a vendor or testing laboratory provides to demonstrate conformity. The approved sensitive security parameter generation and establishment methods specified in this document supersede those specified in ISO/IEC 19790 Annex D and ISO/IEC 24759 paragraph 6.16.

2 Normative references

This section identifies additional references to the normative references cited in ISO/IEC 19790 and ISO/IEC 24759. For dated references (e.g., ISO/IEC 19790:2012/Cor.1:2015(E)), only the edition cited applies. For undated references (e.g., ISO/IEC 19790), the latest edition of the referenced document (including any amendments) applies.

https://doi.org/10.6028/NIST.FIPS.140-3

3 Terms and definitions

The following terms and definitions supersede or are in addition to ISO/IEC 19790 and ISO/IEC 24759.

None at this time

4 Symbols and abbreviated terms

The following symbols and abbreviated terms supersede or are in addition to ISO/IEC 19790 and ISO/IEC 24759 throughout this document:

- CCCS: Canadian Centre for Cyber Security
- CMVP: Cryptographic Module Validation Program
- CSD: Computer Security Division
- CSTL: Cryptographic and Security Testing Laboratory
- FIPS: Federal Information Processing Standard
- FISMA: Federal Information Security Management/Modernization Act
5 Document organization

5.1 General

Section 6 of this document replaces the approved sensitive security parameter generation and establishment methods requirements of ISO/IEC 19790 Annex D and ISO/IEC 24759 paragraph 6.16.

5.2 Modifications

Modifications will follow a similar format to that used in ISO/IEC 24759:2014(E). For additions to test requirements, new Test Evidence (TEs) or Vendor Evidence (VEs) will be listed by increasing the “sequence_number.” Modifications can include a combination of additions using underline and deletions using strikethrough. If no changes are required, the paragraph will indicate “No change.”

6 CMVP-approved sensitive parameter generation and establishment requirements

6.1 Purpose

This document identifies CMVP-approved sensitive security parameter generation and establishment methods. It precludes the use of all other sensitive security parameter generation and establishment methods.
6.2 Sensitive security parameter generation and establishment methods

6.2.1 Transitions

Barker EB, Roginsky AL (2019) Transitioning the Use of Cryptographic Algorithms and Key Lengths. (National Institute of Standards and Technology, Gaithersburg, MD), NIST Special Publication (SP) 800-131A, Rev. 2. https://doi.org/10.6028/NIST.SP.800-131Ar2

- Sections relevant to this Annex: 1, 5, 6, 7, and 8.

6.2.2 Key Establishment Techniques

1. Key establishment techniques allowed in a FIPS-Approved mode of operation with appropriate restrictions are listed in FIPS 140-2 Implementation Guidance Section D.2.


- DSA, RSA, and ECDSA.

Note. For the purposes of the key establishment techniques, the Digital Signature Standard is only used to define the domain parameters and the (private, public) key-pair generation.


- The FIPS 140-2 IG D1-rev2 provides the rationale for including two different revisions of SP 800-56A in this Annex.


10. Dang QH (2011) *Recommendation for Existing Application-Specific Key Derivation Functions*. (National Institute of Standards and Technology, Gaithersburg, MD), NIST Special Publication (SP) 800-135, Rev. 1. https://doi.org/10.6028/NIST.SP.800-135r1


12. Chen L (2011) *Recommendation for Key-Derivation through Extraction-then-Expansion*. (National Institute of Standards and Technology, Gaithersburg, MD), NIST Special Publication (SP) 800-56C. https://doi.org/10.6028/NIST.SP.800-56C


### Document Revisions

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