



National Standards Authority of Ireland

STANDARD

I.S. CWA 14170:2004

ICS 03.160  
35.040

National Standards  
Authority of Ireland  
Dublin 9  
Ireland

Tel: (01) 807 3800  
Fax: (01) 807 3838

## SECURITY REQUIREMENTS FOR SIGNATURE

### CREATION APPLICATIONS

*This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on:*

*July 23, 2004*

NO COPYING WITHOUT NSAI  
PERMISSION EXCEPT AS  
PERMITTED BY COPYRIGHT  
LAW

© NSAI 2004

Price Code S

Údarás um Chaighdeán Náisiúnta na hÉireann



**CEN**

**CWA 14170**

**WORKSHOP**

May 2004

**AGREEMENT**

---

**ICS 03.160; 35.040**

Supersedes CWA 14170:2001

English version

## **Security requirements for signature creation applications**

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

The formal process followed by the Workshop in the development of this Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN Management Centre can be held accountable for the technical content of this CEN Workshop Agreement or possible conflicts with standards or legislation.

This CEN Workshop Agreement can in no way be held as being an official standard developed by CEN and its Members.

This CEN Workshop Agreement is publicly available as a reference document from the CEN Members National Standard Bodies.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

---

## Contents

Contents .....	2
Foreword .....	5
Introduction .....	6
1. Scope .....	7
2. References .....	8
3. Definitions .....	9
4. Abbreviations .....	11
5. Signature Creation Functional Model .....	12
5.1     Signature Creation Objectives .....	12
5.2     Model .....	12
5.3     Signature Creation Applications .....	14
5.4     Secure Signature Creation Devices .....	15
5.5     Signature Creation Application Instantiation .....	16
5.6     Control and possession of Signature Creation Systems .....	16
6. Signed Data Object Information Model .....	17
6.1     Signer's Document (SD) .....	17
6.2     Signature Attributes .....	18
6.3     Data To Be Signed (DTBS) .....	18
6.4     Data To Be Signed (Formatted) (DTBSF) .....	19
6.5     Data To Be Signed Representation (DTBSR) .....	19
6.6     Advanced Electronic Signature .....	19
6.7     Qualified Electronic Signature .....	19
6.8     Signed Data Object .....	19
6.9     Signer's Authentication Data (not shown) .....	19
7. Overall Security Requirements of the SCA .....	20
7.1     Introduction .....	20
7.2     Trusted Path .....	20
7.2.1     Basic Trusted Path Requirement .....	20
7.2.2     Requirements for Public SCA .....	20
7.2.3     Referencing the correct SD and Signature Attributes .....	20
7.3     Requirements for Distributed Signature Creation Applications .....	21
7.4     Requirements resulting from un-trusted processes and communications ports .....	21
7.5     Post signature verification of the Signed Data Object .....	22
7.6     Requirements of the DTBS .....	22
8. SD Presentation Component (SDP) .....	23
8.1     Purpose .....	23
8.2     Background .....	23
8.3     Data Content Type Requirements .....	24
8.4     SD Non-ambiguity Requirements .....	25
8.5     Requirements for Presentation Insensitive SDs .....	25
8.6     Hidden Text and Active Code Requirements .....	25
9. Signature Attribute Viewer (SAV) .....	27
10. Signer Interaction Component (SIC) .....	29
10.1     High level user interface principles .....	29
10.2     Signature Invocation .....	29
10.3     Signature process inactivity timeout .....	30
10.4     Signer Control Functions .....	30
10.5     Retrieval of Signer's Characteristics .....	30
10.6     User Interface Aspects .....	31

11. Signer's Authentication Component (SAC) .....	32
11.1 General Aspects .....	32
11.2 Obtaining the Signer's Authentication Data .....	32
11.3 Knowledge based Signer Authentication.....	33
11.4 Biometric Signer Authentication .....	33
11.5 Provision of the wrong Signer's Authentication Data.....	34
11.6 Change of Signer's Authentication Data and Reset of the Retry Counter.....	34
11.7 Signer's Authentication Data User Interface Aspects.....	34
11.8 Security Requirements for the SAC Component .....	34
12. Data To Be Signed Formatter (DTBSF) .....	37
12.1 Functions of the DTBSF component.....	37
12.2 Security Requirements for the DTBSF component .....	37
13. Data Hashing Component (DHC) .....	38
13.1 Functions of the DHC Component .....	38
13.2 Production of the DTBS Representation.....	38
13.3 Formatting of the electronic signature input.....	39
13.4 Security Requirements for the DHC Component.....	40
14. SCDev /SCA Communicator (SSC) .....	41
14.1 Interaction Sequences .....	41
14.2 Establishing the Physical Communication .....	42
14.3 Retrieval of SCDev Token Information.....	42
14.4 Selection of the SCDev functionality on a multi-application platform .....	44
14.5 Retrieval of Certificates.....	44
14.6 Selection of Signature Creation Data .....	44
14.7 Performing Signer Authentication.....	44
14.8 Digital Signature Computation .....	45
14.9 Signature Logging.....	45
14.10 Security requirements for the SSC Component.....	45
15. SCD/SCA Authenticator (SSA) .....	46
15.1 SCA - SCDev Authentication for SCA under service provider's control .....	46
15.2 Security Requirements for the SSA Component.....	47
16. SD Composer (SDC) .....	48
16.1 Security Requirements for the SDC Component .....	48
17. Signed Data Object Composer (SDOC) .....	49
18. External Interface for Input/Output .....	50
18.1 Risks to the SCA.....	50
18.2 Import of Certificates .....	50
18.3 Import of an SD and Signature Attributes .....	50
18.4 Download of SCA Components .....	50
18.5 Security Requirements for Input Control .....	51
Annex A (Informative) – General Recommendations .....	52
A.1 Operation of the Signature Creation Application .....	52
A.2 Requirement on the environment .....	53
A.3 Presentation insensitive SD .....	53
Annex B Guidance to implement a User Interface .....	54
B.1 Purpose.....	54
B.2 User interface consistency .....	54
B.3 Use of colour .....	54
B.4 Feedback .....	54
B.5 Security Breach detection.....	55
B.6 Invalid choice .....	55
B.7 Preservation of information presentation .....	55
B.8 Personalisation .....	55
B.9 Signer's Control when integrating with user profiling techniques .....	55
B.10 Configure /Edit Signature Creation process .....	55
B.11 Distinguishing between certificates .....	55

## CWA 14170:2004 (E)

B.12	Timing of operations.....	56
B.13	Security of terminals in public domain.....	56
B.14	User retention of secrets .....	56
B.15	User instructions .....	56
B.16	Presentation of operational sequence .....	56
B.17	Presentation of distinguishable parts.....	57
B.18	Guidance.....	57
B.19	Terminology.....	57
B.20	Error tolerance .....	57
B.21	Informative error messages .....	57
B.22	Single handed operation of public SCAs.....	57
B.23	Cancellation of operation.....	57
B.24	Undo operation.....	58
B.25	Signer's Authentication Component (SAC).....	58
B.25.1	Choice of signer authentication method .....	58
B.25.2	Biometric signer authentication .....	58
Annex C	Signature Logging Component (SLC) .....	60
Annex D	(Informative) - SCDev Holder Indicator (SHI).....	61
Annex E	(Informative) - References.....	62



This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- Looking for additional Standards? Visit Intertek Inform Infostore
- Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation