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ISO/IEC 9796-2

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AMENDMENT 1
2008-01-15

Information technology — Security techniques — Digital signature schemes giving message recovery —

Part 2: Integer factorization based mechanisms

AMENDMENT 1

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Technologies de l'information — Techniques de sécurité — Schémas de signature numérique rétablissant le message —

Partie 2: Mécanismes basés sur une factorisation entière

AMENDEMENT 1

Reference number
ISO/IEC 9796-2:2002/Amd.1:2008(E)

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Amendment 1 to ISO/IEC 9796-2:2002 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 27, *IT Security techniques*.

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Annex E
(normative)

ASN.1 module

E.1 Formal definition

```
MessageRecoverySignatureMechanisms {
   iso(1) standard(0) signature-schemes(9796) part(2) asn1-module(1)
      message-recovery-signature-mechanisms(0) }
DEFINITIONS EXPLICIT TAGS ::= BEGIN

IMPORTS

   HashFunctions
      FROM DedicatedHashFunctions {
         iso(1) standard(0) hash-functions(10118) part(3)
            asn1-module(1) dedicated-hash-functions(0) } ;


SignatureWithMessageRecovery ::= SEQUENCE {
   algorithm  ALGORITHM.&id({MessageRecovery}),
   parameters ALGORITHM.&Type({MessageRecovery}{@algorithm}) OPTIONAL
}

MessageRecovery ALGORITHM ::= {
   dswmr-mechanism1A |
   dswmr-mechanism2A |
   dswmr-mechanism3A |
   dswmr-mechanism1N |
   dswmr-mechanism2N |
   dswmr-mechanism3N |
   dswmr-mechanism1A-sha1 |
   dswmr-mechanism2A-sha1 |
   dswmr-mechanism3A-sha1 |
   dswmr-mechanism1N-sha1 |
   dswmr-mechanism2N-sha1 |
   dswmr-mechanism3N-sha1,

   ...   -- Expect additional signature scheme objects --
}

dswmr-mechanism1A ALGORITHM ::= {
   OID mechanism1A PARMS HashFunctions
}

dswmr-mechanism2A ALGORITHM ::= {
   OID mechanism2A PARMS HashFunctions
}

dswmr-mechanism3A ALGORITHM ::= {
   OID mechanism3A PARMS HashFunctions
}

dswmr-mechanism1N ALGORITHM ::= {
   OID mechanism1N PARMS HashFunctions
```

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```
}

dswmr-mechanism2N ALGORITHM ::= {
   OID mechanism2N PARMS HashFunctions
}

dswmr-mechanism3N ALGORITHM ::= {
   OID mechanism3N PARMS HashFunctions
}

dswmr-mechanism1A-sha1 ALGORITHM ::= { OID  mechanism1A-sha1 }

dswmr-mechanism2A-sha1 ALGORITHM ::= { OID  mechanism2A-sha1 }

dswmr-mechanism3A-sha1 ALGORITHM ::= { OID  mechanism3A-sha1 }

dswmr-mechanism1N-sha1 ALGORITHM ::= { OID  mechanism1N-sha1 }

dswmr-mechanism2N-sha1 ALGORITHM ::= { OID  mechanism2N-sha1 }

dswmr-mechanism3N-sha1 ALGORITHM ::= { OID  mechanism3N-sha1 }

-- Cryptographic algorithm identification --

ALGORITHM ::= CLASS {
   &id    OBJECT IDENTIFIER  UNIQUE,
   &Type  OPTIONAL
}
  WITH SYNTAX { OID &id [PARMS &Type] }

-- Message recovery signature mechanisms --

OID ::= OBJECT IDENTIFIER  -- Alias

signatureMechanismA OID ::= {
   iso(1) standard(0) signature-schemes(9796) part2(2) mechanism(0) alternate(0)
}

mechanism1A OID ::= { signatureMechanismA mechanism1(0) }

mechanism2A OID ::= { signatureMechanismA mechanism2(1) }

mechanism3A OID ::= { signatureMechanismA mechanism3(2) }

signatureMechanismN OID ::= {
   iso(1) standard(0) signature-schemes(9796) part2(2) mechanism(0) normal(1) }

mechanism1N OID ::= { signatureMechanismN mechanism1(0) }

mechanism2N OID ::= { signatureMechanismN mechanism2(1) }

mechanism3N OID ::= { signatureMechanismN mechanism3(2) }

-- Combined signature scheme and hash-function mechanisms --

mechanismA-Hash OID ::= {
   iso(1) standard(0) signature-schemes(9796) part2(2)
      mechanismHash(2) alternate(0) }

mechanism1A-sha1 OID ::= { mechanismA-Hash mechanism1-SHA1(0) }
```

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```
mechanism2A-sha1 OID ::= { mechanismA-Hash mechanism2-SHA1(1) }

mechanism3A-sha1 OID ::= { mechanismA-Hash mechanism3-SHA1(2) }

mechanismN-Hash OID ::= {
   iso(1) standard(0) signature-schemes(9796) part2(2)
      mechanismHash(2) normal(1) }

mechanism1N-sha1 OID ::= { mechanismN-Hash mechanism1-SHA1(0) }

mechanism2N-sha1 OID ::= { mechanismN-Hash mechanism2-SHA1(1) }

mechanism3N-sha1 OID ::= { mechanismN-Hash mechanism3-SHA1(2) }

END  -- MessageRecoverySignatureMechanisms --
```

E.2 Use of subsequent object identifiers

Each of the signature schemes uses a hash-function, a sequence containing a hash algorithm identifier and any associated parameters. Therefore, the signature scheme object identifier may be followed by one of the dedicated hash-function algorithm identifiers specified in ISO/IEC 10118-3 and any associated parameters.

Using the ASN.1 XML value notation, a value of type SignatureWithMessageRecovery using normal signature processing mechanism 1 defined in this Standard and the SHA-1 hash-function defined in ISO/IEC 10118-3 would be represented as:

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```
<SignatureWithMessageRecovery>
   <algorithm> 1.0.9796.2.0.1.0 <algorithm>
   <parameters>
      <HashFunctions>
         <algorithm> 1.3.14.3.2.26 <algorithm>
         <parameters/>
       <HashFunctions>
   </parameters>
</SignatureWithMessageRecovery>
```

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A value of type SignatureWithMessageRecovery using the combined object identifier for normal signature processing mechanism 1 and the SHA-1 hash-function has the simpler form:

```
<SignatureWithMessageRecovery>
   <algorithm> 1.0.9796.2.2.1.0 <algorithm>
</SignatureWithMessageRecovery>
```


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