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**Mark and Signed Mark Objects Mapping**  
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**Abstract**

This document describes the format of a mark and a digitally signed mark, referred to as a signed mark and the Signed Mark Data (SMD) file as defined by the ICANN Trademark Clearinghouse.

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## **1. Introduction**

This document describes the format of a mark and a digitally signed mark, referred to as a signed mark and the Signed Mark Data (SMD) file as defined by the ICANN Trademark Clearinghouse. This document provides a framework that can be referenced by application protocols like the Extensible Provisioning Protocol (EPP), defined in [[RFC5730](#)].

### **1.1. Terminology**

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [[RFC2119](#)].

XML is case sensitive. Unless stated otherwise, XML specifications and examples provided in this document MUST be interpreted in the character case presented in order to develop a conforming implementation.

"signedMark-1.0" is used as an abbreviation for "urn:ietf:params:xml:ns:signedMark-1.0". The XML namespace prefix "smd" is used, but implementations MUST NOT depend on it and instead employ a proper namespace-aware XML parser and serializer to interpret and output the XML documents.

"mark-1.0" is used as an abbreviation for "urn:ietf:params:xml:ns:mark-1.0". The XML namespace prefix "mark" is used, but implementations MUST NOT depend on it and instead employ a proper namespace-aware XML parser and serializer to interpret and output the XML documents.

## **2. Object Description**

This section defines the objects associated with marks and signed marks. Empty complex element types and abstract elements are defined to support additional mark and signed mark definition using XSD substitution groups. Support for replacement through the XSD substitution groups is included in the descriptions of the objects.

### **2.1. Holder and Contacts objects**

Marks are linked to Holder objects and optionally linked to Contacts objects. This section defines the <mark:holder> and <mark:contact> objects.

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- o The child elements of <mark:holder> include:

- \* An OPTIONAL <mark:name> element that contains the name of the holder. A <mark:name> MUST be specified in case <mark:org> is not specified.
- \* An OPTIONAL <mark:org> element that contains the name of the organization holder of the mark. A <mark:org> MUST be specified in case <mark:name> is not specified.
- \* A <mark:addr> element that contains the address information of the holder of a mark. A <mark:addr> contains the following child elements:
  - + One, two or three OPTIONAL <mark:street> elements that contains the organization's street address.
  - + A <mark:city> element that contains the organization's city.
  - + An OPTIONAL <mark:sp> element that contains the organization's state or province.
  - + An OPTIONAL <mark:pc> element that contains the organization's postal code.
  - + A <mark:cc> element that contains the organization's country code. This a two-character code from [[ISO3166-2](#)].
- \* An OPTIONAL <mark:voice> element that contains the organization's voice telephone number.
- \* An OPTIONAL <mark:fax> element that contains the organization's facsimile telephone number.
- \* An OPTIONAL <mark:email> element that contains the email address of the holder.

- o The child elements of <mark:contact> include:

- \* A <mark:name> element that contains name of the responsible person.
- \* An OPTIONAL <mark:org> element that contains the name of the organization of the contact.
- \* A <mark:addr> element that contains the address information of the contact. A <mark:addr> contains the following child elements:

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- + One, two or three OPTIONAL <mark:street> elements that contains the contact's street address.
  - + A <mark:city> element that contains the contact's city.
  - + An OPTIONAL <mark:sp> element that contains the contact's state or province.
  - + An OPTIONAL <mark:pc> element that contains the contact's postal code.
  - + A <mark:cc> element that contains the contact's country code. This a two-character code from [[ISO3166-2](#)].
- \* A <mark:voice> element that contains the contact's voice telephone number.
  - \* An OPTIONAL <mark:fax> element that contains the contact's facsimile telephone number.
  - \* A <mark:email> element that contains the contact's email address.

## [2.2. Mark](#)

A <mark:mark> element that describes an applicant's prior right to a given domain name.

A <mark:mark> element substitutes for the <mark:abstractMark> abstract element to define a concrete definition of a mark. The <mark:abstractMark> element can be replaced by other mark definitions using the XML schema substitution groups feature.

The child elements of the <mark:mark> element include:

One or more <mark:trademark>, <mark:treatyOrStatute> and <mark:court> elements that contains the detailed information of marks.

- o A <mark:trademark> element that contains the following child elements.
  - \* A <mark:id> element that contains an identifier of the mark. The identifier MUST be globally unique in relation to the repository of marks. A <mark:id> value is a concatenation of the local identifier, followed by a hyphen ("-", ASCII value 0x002D), followed by the issuer identifier.

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- \* A <mark:markName> element that contains the mark text string.
  - \* One or more <mark:holder> elements that contains the information of the holder of the mark. An "entitlement" attribute is used to identify the entitlement of the holder, possible values are: owner, assignee and licensee.
  - \* Zero or more OPTIONAL <mark:contact> elements that contains the information of the representative of the mark registration. A "type" attribute is used to identify the type of contact, possible values are: owner, agent or thirdparty.
  - \* A <mark:jurisdiction> element that contains the two-character code of the jurisdiction where the trademark was registered. This is a two-character code from [[WIPO.ST3](#)].
  - \* Zero or more OPTIONAL <mark:class> elements that contain the Nice Classification class numbers of the mark as defined in the Nice List of Classes [1].
  - \* Zero or more OPTIONAL <mark:label> elements that contain the A-label form of the label that correspond to the <mark:markName>.
  - \* A <mark:goodsAndServices> element that contains the full description of the goods and services mentioned in the mark registration document.
  - \* An OPTIONAL <mark:apId> element that contains the trademark application ID registered in the trademark office.
  - \* An OPTIONAL <mark:apDate> element that contains the date the trademark was applied for.
  - \* A <mark:regNum> element that contains the trademark registration number registered in the trademark office.
  - \* A <mark:regDate> element that contains the date the trademark was registered.
  - \* An OPTIONAL <mark:exDate> element that contains the expiration date of the trademark.
- o A <mark:treatyOrStatute> element that contains the following child elements.
- \* A <mark:id> element that contains an identifier of the mark. The identifier MUST be globally unique in relation to the

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repository of marks. A <mark:id> value is a concatenation of the local identifier, followed by a hyphen ("-", ASCII value 0x002D), followed by the issuer identifier.

- \* A <mark:markName> element that contains the mark text string.
- \* One or more <mark:holder> elements that contains the information of the holder of the mark. An "entitlement" attribute is used to identify the entitlement of the holder, possible values are: owner, assignee and licensee.
- \* Zero or more OPTIONAL <mark:contact> elements that contains the information of the representative of the mark registration. A "type" attribute is used to identify the type of contact, possible values are: owner, agent or thirdparty.
- \* One or more <mark:protection> elements that contain the countries and region of the country where the mark is protected. The <mark:protection> element contains the following child elements:
  - + A <mark:cc> element that contains the two-character code of the country in which the mark is protected. This is a two-character code from [[ISO3166-2](#)].
  - + An OPTIONAL <mark:region> element that contains the name of a city, state, province or other geographic region of <mark:country> in which the mark is protected.
  - + Zero or more OPTIONAL <mark:ruling> elements that contains the two-character code of the countries of the ruling. This is a two-character code from [[ISO3166-2](#)].
- \* Zero or more OPTIONAL <mark:label> elements that contain the A-label form of the label that correspond to the <mark:markName>.
- \* A <mark:goodsAndServices> element that contains the full description of the goods and services mentioned in the mark registration document.
- \* A <mark:refNum> element that contains the number of the mark of the treaty or statute.
- \* A <mark:proDate> element that contains the date of protection of the mark.

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- \* A <mark:title> element that contains the title of the treaty or statute.
- \* A <mark:execDate> element that contains the execution date of the treaty or statute.
- o A <mark:court> element that contains the following child elements.
  - \* A <mark:id> element that contains an identifier of the mark. The identifier MUST be globally unique in relation to the repository of marks. A <mark:id> value is a concatenation of the local identifier, followed by a hyphen ("-", ASCII value 0x002D), followed by the issuer identifier.
  - \* A <mark:markName> element that contains the mark text string.
  - \* One or more <mark:holder> elements that contains the information of the holder of the mark. An "entitlement" attribute is used to identify the entitlement of the holder, possible values are: owner, assignee and licensee.
  - \* Zero or more OPTIONAL <mark:contact> elements that contains the information of the representative of the mark registration. A "type" attribute is used to identify the type of contact, possible values are: owner, agent or thirdparty.
  - \* Zero or more OPTIONAL <mark:label> elements that contain the A-label form of the label that correspond to the <mark:markName>.
  - \* A <mark:goodsAndServices> element that contains the full description of the goods and services mentioned in the mark registration document.
  - \* A <mark:refNum> element that contains the reference number of the court's opinion.
  - \* A <mark:proDate> element that contains the date of protection of the mark.
  - \* A <mark:cc> element that contains the two-character code of the country where the court is located. This a two-character code from [[ISO3166-2](#)].
  - \* Zero or more OPTIONAL <mark:region> elements that contains the name of a city, state, province or other geographic region of <mark:cc> in which the mark is protected. In case <mark:region> is specified a default-deny approach MUST be assumed

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regarding the regions of a country.

- \* A <mark:courtName> element that contains the name of the court.

### **2.3. Signed Mark**

The <smd:signedMark> is the fragment of XML that is digitally signed using XML Signature [2]. The <smd:signedMark> includes a required "id" attribute of type XSD ID for use with an IDREF URI from the Signature element. The certificate of the issuer MAY be issued by a Certificate Authority (CA) that can be chained with the issuer's certificate by the validating client.

A <smd:signedMark> element substitutes for the <smd:abstractSignedMark> abstract element to define a concrete definition of a signed mark. The <smd:abstractSignedMark> element can be replaced by other signed mark definitions using the XML schema substitution groups feature.

The child elements of the <smd:signedMark> element include:

- o The <smd:id> value is a concatenation of the local identifier, followed by a hyphen ("-", ASCII value 0x002D), followed by the issuer identifier.
- o A <smd:issuerInfo> element that contains the information of the issuer of the mark registration. A "issuerID" attribute is used to specify the issuer identifier. The child elements include:
  - \* A <smd:org> element that contains the organization name of the issuer.
  - \* A <smd:email> element that contains the issuer customer support email address.
  - \* An OPTIONAL <smd:url> element that contains the HTTP URL of the issuer's site.
  - \* An OPTIONAL <smd:voice> element that contains the issuer's voice telephone number.
- o A <smd:notBefore> element that contains the creation date and time of the signed mark.
- o A <smd:notAfter> element that contains the expiration date and time of the signed mark.

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- o A <mark:mark> element that contains the mark information as defined in the Mark ([Section 2.2](#)) section.
- o A <Signature> XML Signature [[2](#)] for the <smd:signedMark>. Use of a namespace prefix, like "dsig", is recommended for the "http://www.w3.org/TR/xmldsig-core/" elements.

The following is an example <smd:signedMark> using the XML Signature [[2](#)] to sign all of the elements of <smd:signedMark> element.

```
<?xml version="1.0" encoding="UTF-8"?>
<smd:signedMark xmlns:smd="urn:ietf:params:xml:ns:signedMark-1.0"
id="smd1">
  <smd:id>0000001751376056503931-65535</smd:id>
  <smd:issuerInfo issuerID="65535">
    <smd:org>ICANN TMCH TESTING TMV</smd:org>
    <smd:email>notavailable@example.com</smd:email>
    <smd:url>http://www.example.com</smd:url>
    <smd:voice>+32.00000</smd:voice>
  </smd:issuerInfo>
  <smd:notBefore>2013-08-09T13:55:03.931Z</smd:notBefore>
  <smd:notAfter>2017-07-23T22:00:00.000Z</smd:notAfter>
  <mark:mark xmlns:mark="urn:ietf:params:xml:ns:mark-1.0">
    <mark:trademark>
      <mark:id>00052013734689731373468973-65535</mark:id>
      <mark:markName>Test & Validate</mark:markName>
      <mark:holder entitlement="owner">
        <mark:org>Ag corporation</mark:org>
        <mark:addr>
          <mark:street>1305 Bright Avenue</mark:street>
          <mark:city>Arcadia</mark:city>
          <mark:sp>CA</mark:sp>
          <mark:pc>90028</mark:pc>
          <mark:cc>US</mark:cc>
        </mark:addr>
      </mark:holder>
      <mark:contact type="agent">
        <mark:name>Tony Holland</mark:name>
        <mark:org>Ag corporation</mark:org>
        <mark:addr>
          <mark:street>1305 Bright Avenue</mark:street>
          <mark:city>Arcadia</mark:city>
          <mark:sp>CA</mark:sp>
          <mark:pc>90028</mark:pc>
          <mark:cc>US</mark:cc>
        </mark:addr>
        <mark:voice>+1.2025562302</mark:voice>
      </mark:contact>
    </mark:trademark>
  </mark:mark>
</smd:signedMark>
```

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```
<mark:fax>+1.2025562301</mark:fax>
<mark:email>info@agcorporation.com</mark:email>
</mark:contact>
<mark:jurisdiction>US</mark:jurisdiction>
<mark:class>15</mark:class>
<mark:label>testandvalidate</mark:label>
<mark:label>test---validate</mark:label>
<mark:label>testand-validate</mark:label>
<mark:label>test-et-validate</mark:label>
<mark:label>test-validate</mark:label>
<mark:label>test--validate</mark:label>
<mark:label>test-etvalidate</mark:label>
<mark:label>testetvalidate</mark:label>
<mark:label>testvalidate</mark:label>
<mark:label>testet-validate</mark:label>
<mark:goodsAndServices>guitar</mark:goodsAndServices>
<mark:regNum>1234</mark:regNum>
<mark:regDate>2012-12-31T23:00:00.000Z</mark:regDate>
</mark:trademark>
</mark:mark>
<Signature xmlns="http://www.w3.org/2000/09/xmldsig#">
  <SignedInfo>
    <CanonicalizationMethod
      Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#" />
    <SignatureMethod
      Algorithm="http://www.w3.org/2001/04/xmldsig-more#rsa-sha256" />
    <Reference URI="#smd1">
      <Transforms>
        <Transform
          Algorithm="http://www.w3.org/2000/09/xmldsig#enveloped-signature" />
      </Transforms>
      <DigestMethod
        Algorithm="http://www.w3.org/2001/04/xmlenc#sha256" />
    </Reference>
  </SignedInfo>
  <SignatureValue>
jMu4PfyQGiJBF0GWSEFJCjmywCEqR2h4LD+ge6XQ+JnmKFFCuCZS/3SLKAX0L1w
QDF02e0Y69k2G7/LGE37X3v0flobFM1oGwja8+GMVraoto5xAd4/AF7eHukgAymD
o9toxoa2h0yV4A4PmXzsU6S86XtCcUE+S/WM72ynn47zoUCzzPKHZBRYeWehVFQ+
jYRMIAmzM57HHQA+6eaXefRvtPETgu04aViVSugc40UAZZwbYcZrC6w0aQqqqAZi
30aPOBYbAvHMSmWSS+hFkbshomJfHxb97TD2gr1YNrQIzqXk7WbHWy2SYdA+sI/Z
ipJsXNa6osTUw1CzA7jfWAA==
  </SignatureValue>
  <KeyInfo>
    <X509Data>
      <X509Certificate>
MIIESTCCAzGgAwIBAgIBAjANBgkqhkiG9w0BAQsFADBIMQswCQYDVQQGEwJVUzEL

```

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```

MAkGA1UECBMCQ0ExFDASBgNVBAcTC0xvcyBBbndlbgVzM RMwEQYDVQQKEwpJQ0F0
TiBUTUNIMRswGQYDVQQDEJJQ0F0TiBUTUNIIFRFU1QgQ0EwHcNMTMwMjA4MDAw
MDAwWhcNMTgwMjA3MjM10TU5WjBsMQswCQYDVQQGEwJVUzELMAkGA1UECBMCQ0Ex
FDASBgNVBAcTC0xvcyBBbndlbgVzMRCwFQYDVQQKEw5WYWxpZGF0b3IgVE1DSDEh
MB8GA1UEAxMYVmFsaWRhdG9yIFRNQ0ggVEVTVCBDRVJUMIIBIjANBgkqhkiG9w0B
AQEFAAAOCQ8AMIIIBCgKCAQEAO/cwvXhbVY10RDWwvoyeZpETVZVVcMCovUVNg/sw
WinuMgEWgVQFrz0xA04pEhXCFVv4evbUpk5buqU1gmQyOsCKQ1h0HTdPjkC5u
pDqa51Flk0TMaMkIQjs7aUKCmA4RG4tTTGK/EjR1ix8/D0gHYVRldy1YPrMP+ou7
5b0VnIos+HifrAtrIv4qEqwLL4FTZAUpaCa2BmgXfy2CSRQbxD50r1gcSa3vurh5
sPMCNxqaXmIXmQipS+DuEBqMM8tldaN7RYojUEKrGVsNk5i9y2/7sjn1zyyUPf7v
L4GgDYqhJYW61DnXgx/Jd6CwvsnDF6scscQzUTE1+hywIDAQABo4H/MIH8MAwG
A1UdEwEB/wQCMAAwHQYDVROOBByEFPZEciQcD/Bj2IFz/LERuo2ADJviMIGMBgNV
HSMEgYQwgYGAFO0/7kEh3FuEKS+Q/kYHAd/W6wihowakZDBiMQswCQYDVQQGEwJV
UzELMAkGA1UECBMCQ0ExFDASBgNVBAcTC0xvcyBBbndlbgVzM RMwEQYDVQQKEwpJ
Q0F0TiBUTUNIMRswGQYDVQQDEJJQ0F0TiBUTUNIIFRFU1QgQ0GCAQEwDgYDVR0P
AQH/BAQDAgeAMC4GA1UdHwQnMCUwI6Ahob+GHwh0dHA6Ly9jcmwuawNhbm4ub3Jn
L3RtY2guY3JsMA0GCSqGSIb3DQEBCwUAAYIBAQB2qSy7ui+43cebKUKwWPrzz9y/
IkrmegJGKjo40n+9uekaw3DJ5Eqi0f/qZ4pjBD++oR6BJCb6NQuKwnoAz51E4SSu
y5+i93oT3HfyVc4gNMi0Hm1PS1917DBKrbwbzAea/0jKwVzrvmV7TBfjxD3AQo1R
bu5dBr6IjbdLFln05x0G0mrG7x50UPuurihyiURpFDpwH8KAH1wMcCpXGXFRtGKk
wydgyVYAty7otkl/z3bZkCVT34gPvF70sR6+QxUy8u0LzF5A/beYaZpxSYG31amL
AdxitTWFipaIGea91EGFM0L9+Bg7XzNn4nVLXokyEB3bgS4scG6QznX23FGk
    </X509Certificate>
    </X509Data>
    </KeyInfo>
</Signature>
</smd:signedMark>
```

NOTE: The example shown above includes white-spaces for indentation purposes. It is RECOMMENDED that SMDs do not include white-spaces between the XML elements, in order to mitigate risks of invalidating the digital signature when transferring of SMDs between applications takes place.

NOTE: Exclusive XML canonicalization SHOULD be used when generating the SMD. SHA256/RSA-SHA256 SHOULD be used for digesting and signing. The size of the RSA key SHOULD be at least 2048 bits.

## [2.4. Encoded Signed Mark](#)

The `<smd:encodedSignedMark>` element contains an encoded form of the digitally signed `<smd:signedMark>` element, described in [Section 2.3](#), with the encoding defined by the "encoding" attribute with the default "encoding" value of "base64". The "base64" encoded text of the `<smd:encodedSignedMark>` element MUST conform to [\[RFC2045\]](#). A full example of a `<smd:encodedSignedMark>` element is presented in [Appendix A](#).

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## 2.5. Appendix A. base64 encoded signedMark

The following is an example of a <smd:encodedSignedMark> element that uses the default "base64" for encoding a <smd:signedMark> element.

```
<smd:encodedSignedMark
  xmlns:smd="urn:ietf:params:xml:ns:signedMark-1.0">
PD94bWwgdmVyc2lvbj0iMS4wIiB1bmNvZGluZz0iVVRGLTgiPz4KPHNtZDpzaWduZWRNYXJ
rIHtbG5zOnNtZD0idXJu0m1ldGY6cGFyYW1zOnhtbDpuczpzaWduZWRNYXJrLTEuMCiGaW
Q9I184Yzk0zjRmMS1jZT1mLTRj0TA0TUzMS01MzE1ZDizY2EzYmQiPgogIDxzBwQ6aWQ+M
DAwMDAwMTc1MTM3NjA1NjUwMzkzMS02NTUzNTwvc21k0m1kPgogIDxzBwQ6aXNzdWVySW5m
byBpc3N1ZXJJRD0iNjU1MzUiPgogICAgPHNtZDpvcmc+SUNBTk4gVE1DSCBURVNUSU5HIFR
NVjwvc21k0m9yZz4KICAqIDxzBwQ6ZW1haWw+bm90YXZhaWxhYmx1QGV4YW1wbGUuY29tPC
9zbWQ6ZW1haWw+CiAgICA8c21k0nVybD5odHRw0i8vd3d3LmV4YW1wbGUuY29tPC9zbWQ6d
XjsPgogICAgPHNtZDp2b2l1jZT4rMzIuMDAwMDAwPC9zbWQ6dm9pY2U+CiAgPC9zbWQ6aXNz
dwVySW5mbz4KICA8c21k0m5vdEJ1Zm9yZT4yMDEzLTA4LTA5VDEz0ju10jAzLjkzMVo8L3N
tZDpub3RCZWvcmu+CiAgPHNtZDpub3RBZnRlcj4yMDE3LTA3LTizVDIy0jAw0jAwLjAwMF
o8L3NtZDpub3RBZnRlcj4KICA8bwFyazptYXJrIHtbG5z0m1hcms9InVybjppZXrmOnBhc
mFtczp4bWw6bnM6bwFyay0xLjAiPgogICAgPG1hcms6dHjhZGvtYXJrPgogICAgICA8bwFy
azppZD4wMDA1MjAxMzcNDY40TczMTM3MzQ20Dk3My02NTUzNTwvbWFyazppZD4KICAqICA
gPG1hcms6bwFya05hbWU+VGVzdCAmYW1w0yBWYwxpZGF0ZTwvbWFyazptYXJrTmFtZT4KIC
AgICAgPG1hcms6aG9sZGVyIGVuG10bGvtZw50PSJvd251ciI+CiAgICAgICAgPG1hcms6b
3JnPfNIGNvcnBvcmF0aW9uPC9tYXJr0m9yZz4KICAqICAgICA8bwFyazphZGRyPgogICAg
ICAgICAgPG1hcms6c3RyZwv0PjEzMDUgQnJpZ2h0IEF2Zw51ZTwvbWFyazpdHJ1ZXQ+CiA
gICAgICAgICA8bwFyazpjaXR5PkFyY2FkaWE8L21hcms6Y210eT4KICAqICAgICAgIDxtYX
JrOnNwPfNBPC9tYXJrOnNwPgogICAgICAgPG1hcms6cGM+OTAwMjg8L21hcms6cGM+C
iAgICAgICAgICA8bwFyazpjYz5VUzwvbWFyazpjYz4KICAqICAgICA8L21hcms6YWRkcj4K
ICAqICAgPC9tYXJr0mhvbGRlcj4KICAqICAgPG1hcms6Y29udGFjdCB0eXB1PSJhZ2VudCI
+CiAgICAgICAgPG1hcms6bmFtZT5Ub255IEhvbgxhbmQ8L21hcms6bmFtZT4KICAqICAgIC
A8bwFyazpvcmc+QWcgY29ycG9yYXRpb248L21hcms6b3JnPgogICAgICAgIDxtYXJr0mFkZ
HI+CiAgICAgICAgICA8bwFyazpdHJ1ZXQ+MTMwNSBCcm1naHQgQXZ1bnV1PC9tYXJrOnN0
cmVldD4KICAqICAgICAgIDxtYXJr0mNpdHk+QXJjYWRpYTtwvbWFyazpjaXR5PgogICAgICA
gICAgPG1hcms6c3A+Q0E8L21hcms6c3A+CiAgICAgICAgICA8bwFyazpwYz45MDAyODwvbW
FyazpwYz4KICAqICAgICAgIDxtYXJr0mNjPlVTPC9tYXJr0mNjPgogICAgICAgIDwvbWFya
zphZGRyPgogICAgICAgIDxtYXJrOnZvaWN1PisxLjIwMjU1NjIzMDI8L21hcms6dm9pY2U+
CiAgICAgICAgPG1hcms6ZmF4PisxLjIwMjU1NjIzMDE8L21hcms6ZmF4PgogICAgICAgIDx
tYXJr0mVtYwlsPmluZm9AYWdjb3Jwb3JhdGlvbi5jb208L21hcms6Zw1haWw+CiAgICAgID
wvbWFyazpb250YWN0PgogICAgICA8bwFyazpqdXJpc2RpY3Rpb24+VVM8L21hcms6anVya
XNkaW0aW9uPgogICAgICA8bwFyazpbGFzcz4xNTwvbWFyazpbGFzcz4KICAqICAgPG1h
cms6bGFzWw+dGVzdGFuzHZhbG1kYXR1PC9tYXJr0mxhYmVsPgogICAgICA8bwFyazpsYwJ
1bd50ZXN0LS0tdmFsaWRhdGU8L21hcms6bGFzWw+CiAgICAgIDxtYXJr0mxhYmVsPnRlc3QtZXQtd
mFsaWRhdGU8L21hcms6bGFzWw+CiAgICAgIDxtYXJr0mxhYmVsPnRlc3QtdmFsaWRhdGU8
L21hcms6bGFzWw+CiAgICAgIDxtYXJr0mxhYmVsPnRlc3R1dHZhbG1kYXR1PC9tYXJr0mx
hYmVsPgogICAgICA8bwFyazpsYwJ1bD50ZXN0dmFsaWRhdGU8L21hcms6bGFzWw+CiAgICAgIDxtYXJr0mxhYmVs
PnRlc3R1dC12YwxpZGF0ZTwvbWFyazpsYwJ1bD4KICAqICAgPG1hcms6Z29vZHNBbmRTZXJ
```

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```
Pc01vS1NzV1EzNEI0Uy9qb0U2N25wc0pQVGRLc05QS1R5UU1EQVFBQm80SUJoekNDQV1Nd0
RBWURWUjBUQVFIL0JBSXdBREFkCkJnT1ZIUTRFRmdRVw9GcFk3NnA1eW90RFJHdFFwelZ1U
jgxVvDfRMHdnY1lHQTFVZE13U0J2akNCdTRBVXc2MctwdFlsQUVXQVhEcFgKU29wdDNERU5u
bkdoZ11Da2ZqQjhNUXN3Q1FZRFZRUUDFd0pWVXpFOE1Eb0dBMVVFQ2hNe1NXNTBaWEp1Wlh
RZ1Ey0X1jRz15WvhScApiMjRnWm05eUlFRnpjMmxuYm1Wa01FNWhiV1Z6SUdGdVpDQk9kVz
Fpw1hKek1TOhdMUV1EV1FRREV5WkpRMEZPVG1CVWNtRmtaVzFoCmNtc2dRMnhswvhKcGJtZ
G9iM1Z6W1NCUWFxeHZkQ0JEUV1JZ0xyQWJ1dm9hZTUyeTNmNkMydEIwU24zcDdYSm0wVDAy
Rm9neEtDZk4KaFhxd0RnwURWUjBQQVFIL0JBURBZ2VBTURRR0ExVWRId1F0TUNzd0thQw5
vQ1dHSTJoMGRIQTZMeT1qY213dwFXTmh1bTR1YjNKb1pMM1J0WTJoZmNHbHNiM1F1WTNkC0
1FVuDBMVVKSuFRK01Ed3dPZ11ES2dNRU1ETXdNUV1JS3dZQkJRVUhBZ0VXS1domGRIQTZMe
TkzCmQzY3VhV05oYm00dWIzSm5MM0JwYkc5MFgzSmxjRz16YVhSdmNua3dEUV1KS29aSwH2
Y05BUUVMQ1FBRGdnRUJBSWVEWV1KcjYwVzMKet1RcyszelJWST1rZwtLb201dmtIT2FsQjN
3SGFaSWFBR11wSTK4dFkwYVZ00WFHT04wdjZXUUYrbnZ6MUTSw1FiQXowMUJYdGFSSgo0bV
BrYXJoaHVMbj10a0J4cDhIUjVxY2MrS0g3Z3Y2ci9jMG1HM2JDTkorUVNyN1FmKzVNbE1vN
npMNVVkZFUvVDJqaWJNWEaqL2YyCjFRdzN40VFn31YTEZK0W96YUxnUT1STWtMbE9temtD
QW1YTjVBjQzYUo5Zjd0MmdFMk5uUmp0S21tQz1BQ1EwVFJ3RUtWTGhbDEKVUdxQ0hKM0F
SQLhXSvhONXNqUFFjRC8rbkh1RVhNeF12bEF5cXhYb0QzTVd0UVZqN2oyb3FsYwtPQk1nRz
grcTJxWWxtQnRzNEZ0aQp3NzQ4Sw10DZIS0JScXhIdFpkUktXm1ZxYVE9PC9kc1pYNTA5Q
2VydG1maWNhGU+PC9kc1pYNTA5RGF0YT48L2Rz0ktleuluZm8+PC9kc1pTaWduYXR1cmU+
PC9zbWQ6c2lnbmVKTWfyaz4=
</smd:encodedSignedMark>
```

### **3. Formal Syntax**

Two schemas are presented here. The first schema is the schema for the Signed Mark. The second schema is the schema for the Mark.

The formal syntax presented here is a complete schema representation of the object mapping suitable for automated validation of EPP XML instances. The BEGIN and END tags are not part of the schema; they are used to note the beginning and ending of the schema for URI registration purposes.

#### **3.1. Signed Mark Schema**

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```
BEGIN
<?xml version="1.0" encoding="UTF-8"?>
<schema
  targetNamespace="urn:ietf:params:xml:ns:signedMark-1.0"
  xmlns:smd="urn:ietf:params:xml:ns:signedMark-1.0"
  xmlns:mark="urn:ietf:params:xml:ns:mark-1.0"
  xmlns:dsig="http://www.w3.org/2000/09/xmldsig#"
  xmlns="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">

  <annotation>
    <documentation>
      Schema for representing a Signed Trademark.
    </documentation>
  </annotation>

  <import namespace="urn:ietf:params:xml:ns:mark-1.0"
    schemaLocation="mark-1.0.xsd" />
  <import namespace="http://www.w3.org/2000/09/xmldsig#"
    schemaLocation="xmldsig-core-schema.xsd"/>

  <!--
  Abstract signed mark for replacement via substitution.
  -->
  <element name="abstractSignedMark" type="smd:abstractSignedMarkType"
    abstract="true"/>

  <!--
```

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```
Empty type for use in extending for a signed mark
-->
<complexType name="abstractSignedMarkType"/>

<element name="signedMark" type="smd:signedMarkType"
substitutionGroup="smd:abstractSignedMark"/>

<element name="encodedSignedMark" type="smd:encodedSignedMarkType"/>

<complexType name="signedMarkType">
<complexContent>
<extension base="smd:abstractSignedMarkType">
<sequence>
<element name="id" type="mark:idType"/>
<element name="issuerInfo" type="smd:issuerInfoType"/>
<element name="notBefore" type="dateTime"/>
<element name="notAfter" type="dateTime"/>
<element ref="mark:abstractMark"/>
<element ref="dsig:Signature"/>
</sequence>
<attribute name="id" type="ID" use="required"/>
</extension>
</complexContent>
</complexType>

<complexType name="issuerInfoType">
<sequence>
<element name="org" type="token"/>
<element name="email" type="mark:minTokenType"/>
<element name="url" type="token" minOccurs="0"/>
<element name="voice" type="mark:e164Type" minOccurs="0"/>
</sequence>
<attribute name="issuerID" type="token" use="required"/>
</complexType>

<complexType name="encodedSignedMarkType">
<simpleContent>
<extension base="token">
<attribute name="encoding" default="base64"/>
</extension>
</simpleContent>
</complexType>
</schema>
END
```

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### 3.2. Mark Schema

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```
BEGIN
<?xml version="1.0" encoding="UTF-8"?>
<schema
  targetNamespace="urn:ietf:params:xml:ns:mark-1.0"
  xmlns:mark="urn:ietf:params:xml:ns:mark-1.0"
  xmlns="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">

  <annotation>
    <documentation>
      Schema for representing a Trademark, also referred to
      as Mark.
    </documentation>
  </annotation>
</schema>
```

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```
<!--
Abstract mark for replacement via substitution.
-->
<element name="abstractMark" type="mark:abstractMarkType"
abstract="true"/>

<!--
<mark:mark> element definition
-->
<element name="mark" type="mark:markType"
substitutionGroup="mark:abstractMark"/>

<!--
Empty type for use in extending for a mark
-->
<complexType name="abstractMarkType"/>

<!--
<mark:mark> child elements
-->
<complexType name="markType">
  <complexContent>
    <extension base="mark:abstractMarkType">
      <sequence>
        <element name="trademark" type="mark:trademarkType"
minOccurs="0" maxOccurs="unbounded"/>
        <element name="treatyOrStatute"
type="mark:treatyOrStatuteType" minOccurs="0"
maxOccurs="unbounded"/>
        <element name="court" type="mark:courtType" minOccurs="0"
maxOccurs="unbounded"/>
      </sequence>
    </extension>
  </complexContent>
</complexType>

<complexType name="holderType">
  <sequence>
    <element name="name" type="token" minOccurs="0"/>
    <element name="org" type="token" minOccurs="0"/>
    <element name="addr" type="mark:addrType"/>
    <element name="voice" type="mark:e164Type" minOccurs="0"/>
    <element name="fax" type="mark:e164Type" minOccurs="0"/>
    <element name="email" type="mark:minTokenType" minOccurs="0"/>
  </sequence>
  <attribute name="entitlement" type="mark:entitlementType"/>
</complexType>
```

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```
<complexType name="contactType">
  <sequence>
    <element name="name" type="token"/>
    <element name="org" type="token" minOccurs="0"/>
    <element name="addr" type="mark:addrType"/>
    <element name="voice" type="mark:e164Type"/>
    <element name="fax" type="mark:e164Type" minOccurs="0"/>
    <element name="email" type="mark:minTokenType"/>
  </sequence>
  <attribute name="type" type="mark:contactTypeType"/>
</complexType>

<complexType name="trademarkType">
  <sequence>
    <element name="id" type="mark:idType"/>
    <element name="markName" type="token"/>
    <element name="holder" type="mark:holderType"
      maxOccurs="unbounded" />
    <element name="contact" type="mark:contactType" minOccurs="0"
      maxOccurs="unbounded"/>
    <element name="jurisdiction" type="mark:ccType"/>
    <element name="class" type="integer" minOccurs="0"
      maxOccurs="unbounded"/>
    <element name="label" type="mark:labelType" minOccurs="0"
      maxOccurs="unbounded"/>
    <element name="goodsAndServices" type="token" />
    <element name="apId" type="token" minOccurs="0"/>
    <element name="apDate" type="dateTime" minOccurs="0"/>
    <element name="regNum" type="token"/>
    <element name="regDate" type="dateTime"/>
    <element name="exDate" type="dateTime" minOccurs="0"/>
  </sequence>
</complexType>

<complexType name="treatyOrStatuteType">
  <sequence>
    <element name="id" type="mark:idType"/>
    <element name="markName" type="token"/>
    <element name="holder" type="mark:holderType"
      maxOccurs="unbounded" />
    <element name="contact" type="mark:contactType" minOccurs="0"
      maxOccurs="unbounded"/>
    <element name="protection" type="mark:protectionType"
      maxOccurs="unbounded"/>
    <element name="label" type="mark:labelType" minOccurs="0"
      maxOccurs="unbounded"/>
    <element name="goodsAndServices" type="token" />
    <element name="refNum" type="token"/>
```

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```
<element name="proDate" type="dateTime"/>
<element name="title" type="token"/>
<element name="execDate" type="dateTime"/>
</sequence>
</complexType>

<complexType name="courtType">
<sequence>
<element name="id" type="mark:idType"/>
<element name="markName" type="token"/>
<element name="holder" type="mark:holderType"
    maxOccurs="unbounded" />
<element name="contact" type="mark:contactType" minOccurs="0"
    maxOccurs="unbounded"/>
<element name="label" type="mark:labelType" minOccurs="0"
    maxOccurs="unbounded"/>
<element name="goodsAndServices" type="token" />
<element name="refNum" type="token"/>
<element name="proDate" type="dateTime"/>
<element name="cc" type="mark:ccType"/>
<element name="region" type="token" minOccurs="0"
    maxOccurs="unbounded"/>
<element name="courtName" type="token"/>
</sequence>
</complexType>

<!--
Address (<mark:addr>) child elements
-->
<complexType name="addrType">
<sequence>
<element name="street" type="token" minOccurs="1" maxOccurs="3"/>
<element name="city" type="token"/>
<element name="sp" type="token" minOccurs="0"/>
<element name="pc" type="mark:pcType" minOccurs="0"/>
<element name="cc" type="mark:ccType"/>
</sequence>
</complexType>

<!--
<mark:protection> child elements
-->
<complexType name="protectionType">
<sequence>
<element name="cc" type="mark:ccType"/>
<element name="region" type="token" minOccurs="0"/>
<element name="ruling" type="mark:ccType"
    minOccurs="0" maxOccurs="unbounded"/>
```

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```
</sequence>
</complexType>

<!--
Postal code definition
-->
<simpleType name="pcType">
  <restriction base="token">
    <maxLength value="16"/>
  </restriction>
</simpleType>

<!--
Country code definition
-->
<simpleType name="ccType">
  <restriction base="token">
    <length value="2"/>
  </restriction>
</simpleType>

<!--
Phone number with extension definition
-->
<complexType name="e164Type">
  <simpleContent>
    <extension base="mark:e164StringType">
      <attribute name="x" type="token"/>
    </extension>
  </simpleContent>
</complexType>

<!--
Phone number with extension definition
-->
<simpleType name="e164StringType">
  <restriction base="token">
    <pattern value="(\+[0-9]{1,3}\.[0-9]{1,14})?"/>
    <maxLength value="17"/>
  </restriction>
</simpleType>

<!--
Id type definition
-->
<simpleType name="idType">
  <restriction base="token">
    <pattern value="\d+-\d+/">
```

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```
</restriction>
</simpleType>

<!--
DNS label type definition
-->
<simpleType name="labelType">
  <restriction base="token">
    <minLength value="1"/>
    <maxLength value="63"/>
    <pattern value="[a-zA-Z0-9]([a-zA-Z0-9\-\-]*[a-zA-Z0-9])?"/>
  </restriction>
</simpleType>

<!--
Type used for email addresses
-->
<simpleType name="minTokenType">
  <restriction base="token">
    <minLength value="1"/>
  </restriction>
</simpleType>

<simpleType name="entitlementType">
  <restriction base="token">
    <enumeration value="owner"/>
    <enumeration value="assignee"/>
    <enumeration value="licensee"/>
  </restriction>
</simpleType>

<simpleType name="contactTypeType">
  <restriction base="token">
    <enumeration value="owner"/>
    <enumeration value="agent"/>
    <enumeration value="thirdparty"/>
  </restriction>
</simpleType>
</schema>
END
```

#### 4. Acknowledgements

Special thanks to Chris Wright for creating the first prototype of a SMD; James Gould, Wil Tan and Gavin Brown for creating the mark and SMD definitions in their EPP draft launch extension on which this draft is based.

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## 5. Change History

Version 02 to version 03

<smd:signedMark> example is now aligned with ICANN test SMDs.

<smd:encodedSignedMark> example is replaced with a public ICANN test SMD.

Several recommendations were added.

Version 01 to version 02

Change apID and regNum of trademark validated mark to token

Change refNum of treatyOrStatute validated mark to token

Change refNum of court validated mark to token

Version 00 to version 01

Add missing email element to holderType

Change ruling from an attribute to an element

Version preview-01 to version 00

signedMarkType now ref mark:abstractMark

Security section completed

Version preview-00 to preview-01

Full example of an encodedSignedMark added.

signedMark example now fully validates with XSD.

Fixed labelType to allow two-character labels.

Missing mark:protectionType added in the XSD.

Issuer email is now required

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## **6. IANA Considerations**

This document uses URNs to describe XML namespaces and XML schemas conforming to a registry mechanism described in [[RFC3688](#)]. Three URI assignments have been registered by the IANA.

Registration request for the Signed mark namespace:

URI: urn:ietf:params:xml:ns:signedMark-1.0

Registrant Contact: See the "Author's Address" section of this document.

XML: None. Namespace URIs do not represent an XML specification.

Registration request for the Mark namespace:

URI: urn:ietf:params:xml:ns:mark-1.0

Registrant Contact: See the "Author's Address" section of this document.

XML: None. Namespace URIs do not represent an XML specification.

## **7. Security Considerations**

The object mapping described in this document does not provide any security services or introduce any additional considerations.

## **8. Normative References**

[ISO3166-2]

ISO, "International Standard for country codes and codes for their subdivisions", 2006.

[RFC2045] Freed, N. and N. Borenstein, "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies", [RFC 2045](#), November 1996.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.

[RFC3688] Mealling, M., "The IETF XML Registry", [BCP 81](#), [RFC 3688](#),

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January 2004.

[RFC5730] Hollenbeck, S., "Extensible Provisioning Protocol (EPP)",  
STD 69, [RFC 5730](#), August 2009.

[WIPO.ST3]

WIPO, "Recommended standard on two-letter codes for the representation of states, other entities and intergovernmental organizations", March 2007.

- [1] <<http://www.wipo.int/classifications/nivilo/nice/index.htm>>
- [2] <<http://www.w3.org/TR/xmldsig-core/>>

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