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Chunghwa Telecom

Potential change to browser UI for Subject DN of an EV SSL Certificate

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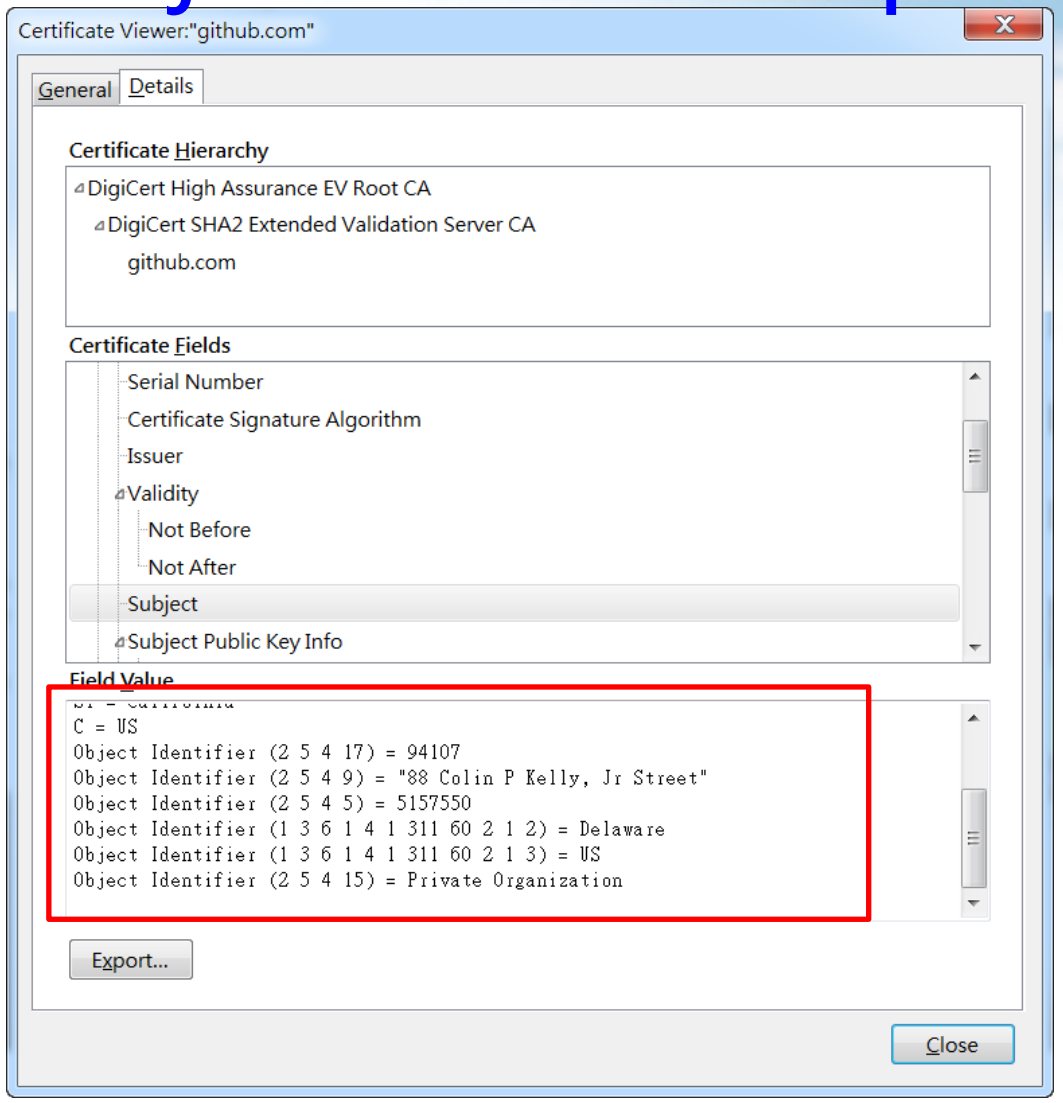
CA/Browser Forum Meeting 39
Redmond , Host: Microsoft
October, 20 , 2016

Two Topics in the session

- Topic 1: Potential change to browser UI for Subject DN of EV SSL Certificate
- Topic 2: Discussion of Amendment of EVGL 9.2.5 about 3 OIDs

EV SSL Certificate Detailed Information of Subject DN view in Opera/Windows 7



Could the UI become :

CN = github.com

O = GitHub, Inc.

L = San Francisco

S = California

C = US

PostalCode = 94107

STREET = 88 Colin P Kelly, Jr Street

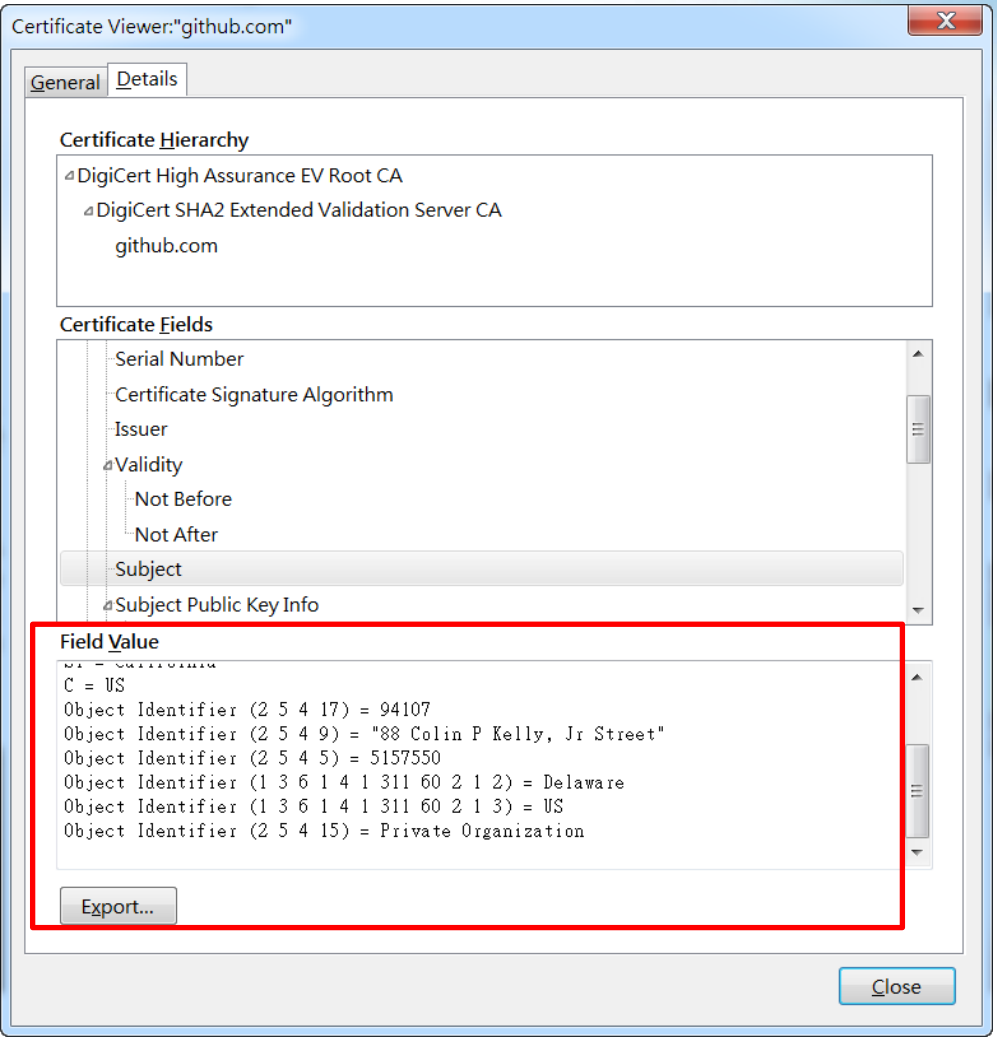
SERIALNUMBER = 5157550

Jurisdiction of Incorporation State or Province = Delaware

Jurisdiction of Incorporation Country = US

Business Category = Private

EV SSL Certificate Detailed Information of Subject DN view in Firefox/Windows 7



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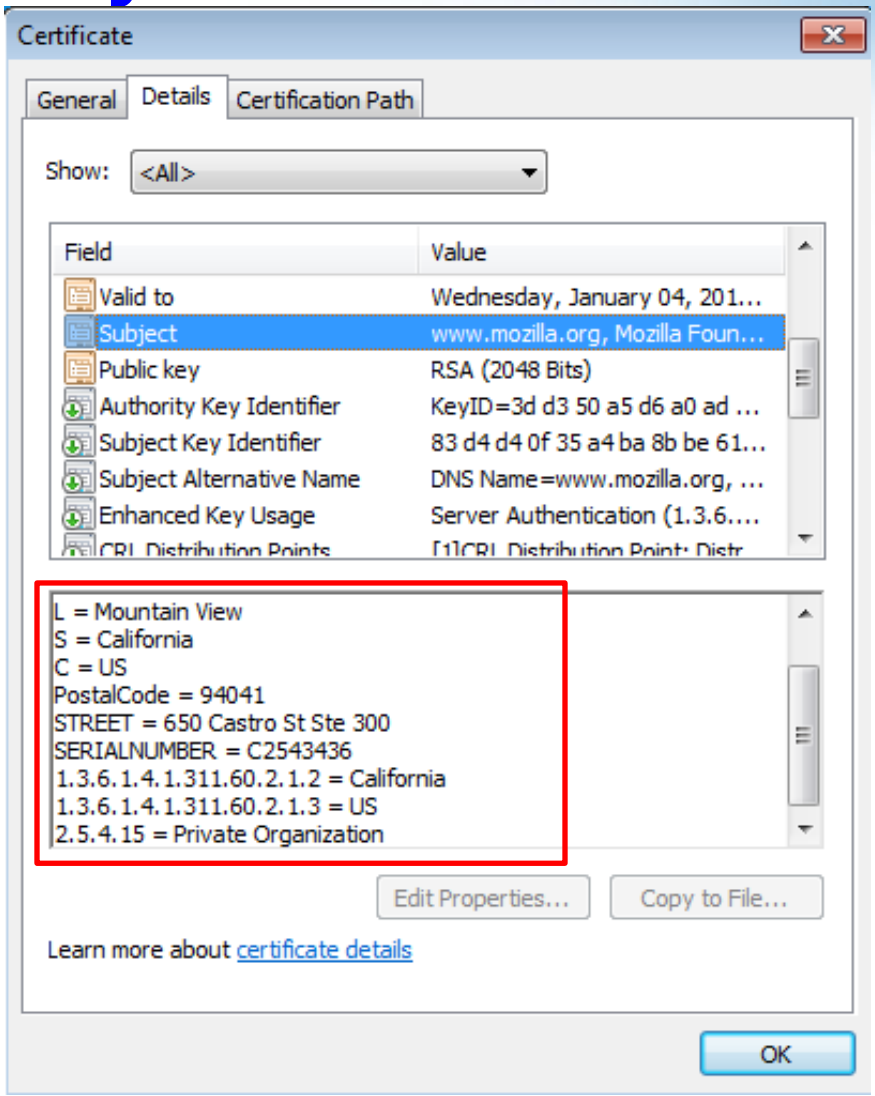
EV SSL Certificate Detailed Information of Subject DN view in IE /Windows 7



Could the UI become :

CN = www.mozilla.org

O = Mozilla Foundation

L = Mountain View

S = California

C = US

PostalCode = 94041

STREET = 650 Castro St Ste 300

SERIALNUMBER = C2543436

Jurisdiction of Incorporation State or Province = California

Jurisdiction of Incorporation Country = US

Business Category= Private Organization

Discussion 1

- The UI for Details of Subject information of an EV SSL certificate by Safari, Chrome in windows is the same as view in IE/Windows
- Could browser parse the OIDS like 1.3.6.1.4.1.311.60.2.1.2 as meaningful string?
- It will greatly improve user experience to browse a important site installed by an EV SSL certificate.
- Could the browser vendors' representatives help to ask the programming team if/when this request is met?

Mapping Table

OID	Proposed UI in details	Note
1.3.6.1.4.1.311.60.2.1.1	Option 1: Jurisdiction State or Province Option 2: Jurisdiction of Incorporation State or Province	EVGL 9.2.5
1.3.6.1.4.1.311.60.2.1.2	Option 1: Jurisdiction State or Province Option 2: Jurisdiction of Incorporation State or Province	EVGL 9.2.5
1.3.6.1.4.1.311.60.2.1.3	Option 1: Jurisdiction of Country Option 2: Jurisdiction of Incorporation Country	EVGL 9.2.5
2.5.4.15	Business Category	EVGL 9.2.4
2.5.4.17	Postal Code	EVGL 9.2.7

Mozilla’ s response

- Thanks for Gervase’ s suggestion to file a bug for Mozilla:
  - This seems like a perfectly reasonable suggestion :-)

    As Mozilla is developed as open source, you should file a bug in our bug tracker here:

    https://bugzilla.mozilla.org/enter_bug.cgi?product=Core&component=Security%3A%20PSM to suggest it.
- Li-Chun has fileed a bug in https://bugzilla.mozilla.org/show_bug.cgi?id=1308755
- Gervase concluded : we are rewriting the part of Firefox which decodes certificates into JavaScript. Once that is done, the new implementation may well be able to support the changes you request.

Topic 2

Discussion of Amendment of EVGL 9.2.5 about 3 OIDs

Discussion 2-EV GL 9.2.5

- In EV GL, 9.2.5 Subject Jurisdiction of Incorporation or Registration Field

Certificate fields:

Locality (if required):

subject:jurisdictionLocalityName (OID: 1.3.6.1.4.1.311.60.2.1.1)

ASN.1 - X520LocalityName as specified in RFC 5280

State or province (if required):

subject:jurisdictionStateOrProvinceName (OID: 1.3.6.1.4.1.311.60.2.1.2)

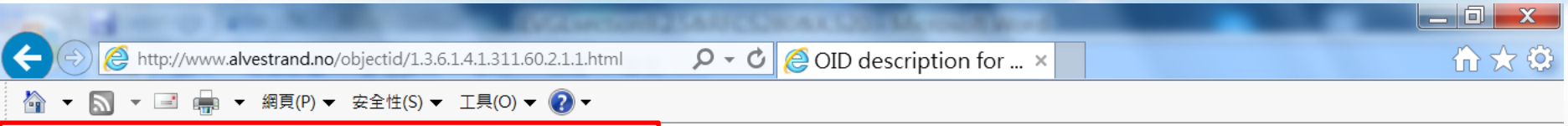
ASN.1 - X520StateOrProvinceName as specified in RFC 5280

Country:

subject:jurisdictionCountryName (OID: 1.3.6.1.4.1.311.60.2.1.3)

ASN.1 – *X520countryName* as specified in RFC 5280

1.3.6.1.4.1.311.60.2.1.1



1.3.6.1.4.1.311.60.2.1.1 - Locality

Submitted by from host (85.157.59.86) on Sat Oct 18 23:23:02 CEST 2014 using a WWW entry form.

OID value: 1.3.6.1.4.1.311.60.2.1.1

OID description:

URL for further info: https://www.mozilla.org/projects/security/certs/ev/guidelines-draft-20.doc ←Broken link

See also the OID Repository website reference for 1.3.6.1.4.1.311.60.2.1.1 ←Please see next page

Superior references

- 1.3.6.1.4.1.311 - Microsoft
- 1.3.6.1.4.1 - IANA-registered Private Enterprises
- 1.3.6.1.4 - Internet Private
- 1.3.6.1 - OID assignments from 1.3.6.1 - Internet
- 1.3.6 - US Department of Defense
- 1.3 - ISO Identified Organization
- 1 - ISO assigned OIDs
- Top of OID tree

Search for text in all OIDs starting with 1.3.6.1.4.1.311.60.2.1.1:

Search...

Go to the top node if you need to search **all** entries.

Tell me about OIDs you know about
Incoming OIDs that have not been proofread yet

Entered: Sat Oct 18 23:23:02 CEST 2014 (not changed manually)

1.3.6.1.4.1.311.60.2.1.1

http://www.oid-info.com/get/1.3.6.1.4.1.311.60.2.1.1 — OID repository - {iso...

網頁(P) 安全性(S) 工具(O)

http://oid-info.com

Home | Tree display | Search OID | FAQ

Display OID: Go

iso(1) identified-organization(3) dod(6) internet(1) private(4) enterprise(1) 311 ev(60) 2 1

jurisdictionOfIncorporationLocalityName(1)

- Format of this page
- Modify this OID
- Create a child OID
- Create a brother OID
- Find similar OIDs

OID description

OID:	{iso(1) identified-organization(3) dod(6) internet (1) private(4) enterprise(1) 311 ev(60) 2 1 jurisdictionOfIncorporationLocalityName(1)}	(ASN.1 notation)
	1.3.6.1.4.1.311.60.2.1.1	(dot notation)
	/ISO/Identified-Organization/6/1/4/1/311/60/2/1/1	(OID-IRI notation)

Description: jurisdictionOfIncorporationLocalityName

Short URL for this page: http://oid-info.com/get/1.3.6.1.4.1.311.60.2.1.1

1.3.6.1.4.1.311.60.2.1.2

←Broken link

←Please see next page

OID repository

www.oid-info.com/get/1.3.6.1.4.1.311.60.2.1.2

OID Repository

http://oid-info.com

Home | Tree display | Search OID | FAQ

Display OID: Go

iso(1) identified-organization(3) dod(6) internet(1) private(4) enterprise(1) 311 ev(60) 2 1

jurisdictionOfIncorporationStateOrProvinceName(2)

- Format of this page
- Modify this OID
- Create a child OID
- Create a brother OID
- Find similar OIDs

OID description

OID:	{iso(1) identified-organization(3) dod(6) internet(1) private(4) enterprise(1) 311 ev(60) 2 1 jurisdictionOfIncorporationStateOrProvinceName(2)}	(ASN.1 notation)
	1.3.6.1.4.1.311.60.2.1.2	(dot notation)
	/ISO/Identified-Organization/6/1/4/1/311/60/2/1/2	(OID-IRI notation)

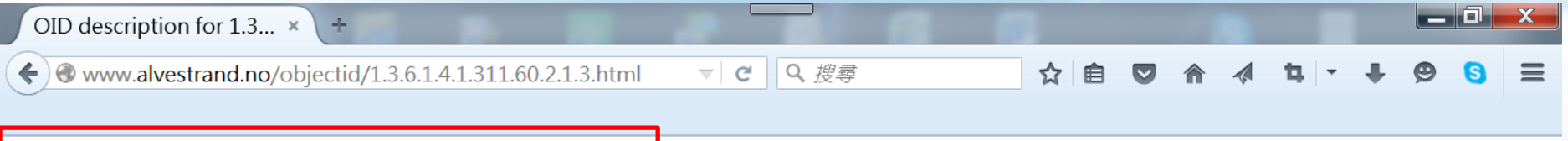
Description: jurisdictionOfIncorporationStateOrProvinceName

Short URL for this page: http://oid-info.com/get/1.3.6.1.4.1.311.60.2.1.2

Webmaster ● 12 Jul 2012 ● Page top

下午 11:37
2016/10/8

1.3.6.1.4.1.311.60.2.1.3



1.3.6.1.4.1.311.60.2.1.3 - Country

Submitted by from host (85.157.59.86) on Sat Oct 18 23:24:03 CEST 2014 using a WWW entry form.

OID value: 1.3.6.1.4.1.311.60.2.1.3

OID description:
subject:jurisdictionOfIncorporationCountryName ASN.1 - X520countryName as specified in RFC 3280

←Bug existed

URL for further info: https://www.mozilla.org/projects/security/certs/ev/guidelines-draft-20.doc

←Broken link

See also the OID Repository website reference for 1.3.6.1.4.1.311.60.2.1.3

←Please see next page

Superior references

- 1.3.6.1.4.1.311 - Microsoft
- 1.3.6.1.4.1 - IANA-registered Private Enterprises
- 1.3.6.1.4 - Internet Private
- 1.3.6.1 - OID assignments from 1.3.6.1 - Internet
- 1.3.6 - US Department of Defense
- 1.3 - ISO Identified Organization
- 1 - ISO assigned OIDs
- Top of OID tree

Search for text in all OIDs starting with 1.3.6.1.4.1.311.60.2.1.3:
Search...
Go to the top node if you need to search **all** entries.

Tell me about OIDs you know about
Incoming OIDs that have not been proofread yet

Entered: Sat Oct 18 23:24:03 CEST 2014 (not changed manually)

1.3.6.1.4.1.311.60.2.1.3

OID repository - {is...

www.oid-info.com/get/1.3.6.1.4.1.311.60.2.1.3

http://oid-info.com

Home | Tree display | Search OID | FAQ

Display OID: Go

iso(1) identified-organization(3) dod(6) internet(1) private(4) enterprise(1) 311 ev(60) 2 1

jurisdictionOfIncorporationCountryName(3)

- Format of this page
- Modify this OID
- Create a child OID
- Create a brother OID
- Find similar OIDs

OID description

OID:	{iso(1) identified-organization(3) dod(6) internet(1) private(4) enterprise(1) 311 ev(60) 2 1 jurisdictionOfIncorporationCountryName(3)}	(ASN.1 notation)
	1.3.6.1.4.1.311.60.2.1.3	(dot notation)
	/ISO/Identified-Organization/6/1/4/1/311/60/2/1/3	(OID-IRI notation)

Description: jurisdictionOfIncorporationCountryName

Short URL for this page: http://oid-info.com/get/1.3.6.1.4.1.311.60.2.1.3

X520Locality in RFC 5280

- For RFC 5280 PKIX Certificate and CRL Profile (https://www.ietf.org/rfc/rfc5280.txt)，page 112,

```
-- Naming attributes of type X520LocalityName
id-at-localityName     AttributeType ::= { id-at 7 }
-- Naming attributes of type X520LocalityName:
--   X520LocalityName ::= DirectoryName (SIZE (1..ub-locality-name))

-- Expanded to avoid parameterized type:
X520LocalityName ::= CHOICE {
    teletexString    TeletexString   (SIZE (1..ub-locality-name)),
    printableString   PrintableString (SIZE (1..ub-locality-name)),
    universalString   UniversalString (SIZE (1..ub-locality-name)),
     utf8String       UTF8String     (SIZE (1..ub-locality-name)),
     bmpString        BMPString      (SIZE (1..ub-locality-name)) }
```

X520StateOrProvinceName in RFC 5280

```
-- Naming attributes of type X520StateOrProvinceName
id-at-stateOrProvinceName AttributeType ::= { id-at 8 }
-- Naming attributes of type X520StateOrProvinceName:
--   X520StateOrProvinceName ::= DirectoryName (SIZE (1..ub-state-
     name))
--

-- Expanded to avoid parameterized type:
X520StateOrProvinceName ::= CHOICE {
      teletexString     TeletexString   (SIZE (1..ub-state-name)),
      printableString   PrintableString (SIZE (1..ub-state-name)),
      universalString   UniversalString (SIZE (1..ub-state-name)),
      utf8String        UTF8String      (SIZE (1..ub-state-name)),
      bmpString         BMPString       (SIZE (1..ub-state-name)) }
```

X520countryName in RFC 5280

- In RFC 5280 Page 114,

-- Naming attributes of type X520countryName
(digraph from IS 3166)

id-at-countryName AttributeType ::= { id-at 6 }

X520countryName ::= PrintableString (SIZE (2))

3 OIDs are not in RFC 5280 and X.520

- Note that in RFC 5280 page 111,

-- Arc for standard naming attributes
id-at OBJECT IDENTIFIER ::= { joint-iso-ccitt(2) ds(5) 4 }

- So these OID of Locality, StateOrProvinceName, countryName in EVGL section 9.2.5. should be 2.5.4.7, 2.5.4.8 and 2.5.4.6, respectively.
- In X.520 or RFC 5280(https://tools.ietf.org/html/rfc5280), There are no jurisdictionLocalityName (OID: 1.3.6.1.4.1.311.60.2.1.1), jurisdictionStateOrProvinceName (OID: 1.3.6.1.4.1.311.60.2.1.2), jurisdictionCountryName (OID: 1.3.6.1.4.1.311.60.2.1.3

Ways to solve the issue

- To solve above EV Guideline section 9.2.5 using the proprietary Microsoft OIDs that don’ t appear in X.520 and RFC 5280 to represent the level of the Incorporating Agency or Registration Agency, let's collect CAs' and Browsers' opinions.
- For Chunghwa Telecom Co. Ltd found the issue in June 2016, we are glad to modify our CPS and EV SSL certificates profiles and programs after a ballot set up an effective date.
- Erwann Abalea has offered several ways to fix the issue in https://cabforum.org/pipermail/public/2016-June/007893.html

Some response about change the OIDs and amend the EVGL(1/2)

- https://cabforum.org/pipermail/public/2016-July/007913.html, where Ryan Sleeve of Google wrote:

"[I want to] indicate that we don't feel it would be appropriate or necessary to introduce new OID arcs for EV attributes, and would in fact be detrimental to the ecosystem. As such, unless new information is shared to further understand the objective, we'd vote no on any such ballot. "

Some response about change the OIDs and amend the EVGL(2/2)

- https://cabforum.org/pipermail/public/2016-July/007979.html, where Rich Smith of Comodo wrote:

Ryan,
My suggestion was based purely on the fact that any documented use of these OIDs is, to the best of my knowledge, only in CA/B Forum work product, so it seemed a good idea to me, now that we can, to transition them to actually being CA/B Forum OIDs. I don't have strong feelings on the matter, but I do think it makes things cleaner over the long haul, especially should we decide to add other related OIDs into future work product, to have them managed in house. But I do take your point as to it being a lot of technical changes, both on browser/relying party side and CA side for what, at least at this moment in time, has pretty much zero need or payback aside from the above mentioned possible future 'benefits'.

Suggestion 1 by Erwann Abalea of DocuSign (1/2)

- I haven’ t seen an authoritative definition of these 3 attributes, but always considered them the way Peter described them. Maybe Microsoft should propose a clear definition, using the syntax from RFC5912, something like this:

id-MS-jurisdictionLocalityName OBJECT IDENTIFIER ::= { 1 3 6 1 4 1 311 60 2 1 1 }

id-MS-jurisdictionStateOrProvinceName OBJECT IDENTIFIER ::= { 1 3 6 1 4 1 311 60 2 1 2 }

id-MS-jurisdictionCountryName OBJECT IDENTIFIER ::= { 1 3 6 1 4 1 311 60 2 1 3 }

Suggestion 1 by Erwann Abalea of DocuSign (2/2)

```
at-jurisdictionCountryName ATTRIBUTE ::= {
  TYPE PrintableString (SIZE (2))
  IDENTIFIED BY id-MS-jurisdictionCountryName
}

at-jurisdictionStateOrProvinceName ATTRIBUTE ::= {
  TYPE DirectoryString {ub-state-name}
  IDENTIFIED BY id-MS-jurisdictionStateOrProvinceName
}

at-jurisdictionLocalityName ATTRIBUTE ::= {
  TYPE DirectoryString {ub-locality-name}
  IDENTIFIED BY id-MS-jurisdictionLocalityName
}
```

DirectoryString is also redefined in RFC5912 to have a size constraint.

Similar to Suggestion 1 by Peter Brown of Amazon(1/2)

- If we removed the lines with "X520" from section 9.2.5 of the EVGL and added the following,

id-evat OBJECT IDENTIIER ::= {iso(1) identified-organization(3) dod(6) internet(1) private(4) enterprise(1) 311 60 2 1 }

id-evat-jurisdictionCountryName AttributeType ::= { id-evat 3 }

jurisdictionCountryName ATTRIBUTE ::= {
SUBTYPE OF name
WITH SYNTAX CountryName
SINGLE VALUE TRUE
LDAP-SYNTAX countryString.&id
LDAP-NAME {"jurisdictionC"}
ID id-evat-jurisdictionCountryName }

Similar to Suggestion 1 by Peter Brown of Amazon (2/2)

```
id-evat-jurisdictionStateOrProvinceName                AttributeType ::= { id-evat 2 }

jurisdictionStateOrProvinceName ATTRIBUTE ::= {
SUBTYPE OF          name
WITH SYNTAX         DirectoryString {ub-state-name}
SINGLE VALUE        TRUE
LDAP-SYNTAX         directoryString.&id
LDAP-NAME           {"jurisdictionST"}
ID                  id-evat-jurisdictionStateOrProvinceName }

id-evat-jurisdictionLocalityName                AttributeType ::= { id-evat 1 }

jurisdictionLocalityName ATTRIBUTE ::= {
SUBTYPE OF          name
WITH SYNTAX         DirectoryString {ub-locality-name}
SINGLE VALUE        TRUE
LDAP-SYNTAX         directoryString.&id
LDAP-NAME           {"jurisdictionL"}
ID                  id-evat-jurisdictionLocalityName }
```

Suggestion 2

Use {joint-iso-itu-t(2) international-organizations(23) ca-browser-forum(140) extended-validation (1) jurisdictionLocalityName(1)}

{joint-iso-itu-t(2) international-organizations(23) ca-browser-forum(140) extended-validation (1) jurisdictionStateOrProvinceName(2)}

{joint-iso-itu-t(2) international-organizations(23) ca-browser-forum(140) extended-validation (1) jurisdictionCountryName(3)}

To replace 1.3.6.1.4.1.311.60.2.1.1, 1.3.6.1.4.1.311.60.2.1.2 and 1.3.6.1.4.1.311.60.2.1.3, respectively.

IF browsers agree to solve Topic 1, maybe browser s change the code when parsing Subject DN of an EV SSL certificate, they show 3 old proprietary Microsoft OIDs and CA/Browser Forum 3 new OIDs as meaningful string.


Value Creator for
Investors, Customers, Employees, and Society
Thank you!
Welcome to 42th CA/B Forum F2F
meeting host by Chunghwa Telecom
Oct.3-5, 2017