

Web Cryptography Next Steps

Using the W3C WebCrypto API for document signing





inventivedesigners











BELGIQUE

Carte E

BELGIË

E Kaart

BELGIEN

E Karte

BELGIUM

E Card

Nom / Name
Prénoms / Given names

**Fiores
Gema Frédéric J**

Type de carte / Type of card

Attestation d'enregistrement

Sexe / Sex **F**

N° carte / Card No

B 1003636 00

Valide du - au / Valid from - until

31.01.2001 - 31.01.2006

Signature du titulaire
Holder's signature

Gema



SPECIMEN

SPECIMEN







My eGov Login

Login using my eGov profile with the government



Log in with your eID card ?



To log in with your eID **insert your electronic identity card, electronic foreigner card or Kids-ID into the card reader** and click the Next button below. Enter your PIN code when prompted.

Next

Welcome to My eGov Login

In order to authenticate yourself please provide the requested credential(s). If you do not possess any of these credentials, please go to the Self Registration page: [Self Registration page](#).

If you have any further questions or problems about the authentication please check our [FAQ pages](#).

Looking for an answer about accessing an e-service? Please call 0257/257 57 (normal rate). This telephone service is at your disposal every working day from 8.00 hrs to 17.00 hrs.

Please find below other accepted ways to authenticate:

Token



In order to authenticate with your token, press the Choose button.

Choose



[About this website](#) | [Privacy](#)

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n eGov-login

den bij de overheid met je eGov-profiel



Federale
Overheid
FINANC

Even geduld ...

je geg

Windows Security



Select a Certificate



Stef Janssens (Authenticati...

Issuer: Citizen CA

Valid From: 14/12/2011 to 9/12/2016



Nick Hofstede (Authenticat...

Issuer: Citizen CA

Valid From: 25/03/2009 to 20/03/20...

[Click here to view certificate prope...](#)

OK

Cancel

melden met eID

Om je aan te melden met je elektronische identiteitskaart (eID) op een vreemdelingenkaartlezer en druk op de knop hieronder. Geef je PIN-nummer daarom gevraagd wordt.

je ook aanmelden met:

Om je aan te melden met je token, druk op de **Kiezen**-knop.

Kiezen

n eGov-login

den bij de overheid met je eGov-profiel



Federale
Overheid
FINANCIË

Even geduld ...

je gegevens worden gecontroleerd



melden met eID



Welkom op Mijn eGov-login

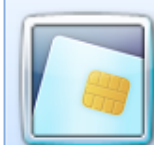
Om je aan te melde
elektronische iden
vreemdelingenkaa
kaartlezer en druk
hieronder. Geef je E
daarom gevraagd w

Windows Security



Microsoft Smart Card Provider

Geef uw PIN in



PIN

[Click here for more information](#)

OK

Cancel

je ook aanmelden met:

Om je aan te melden met je token,
druk op de **Kiezen**-knop.

Kiezen



I Agree



*Congratulations
on 25 years of service*

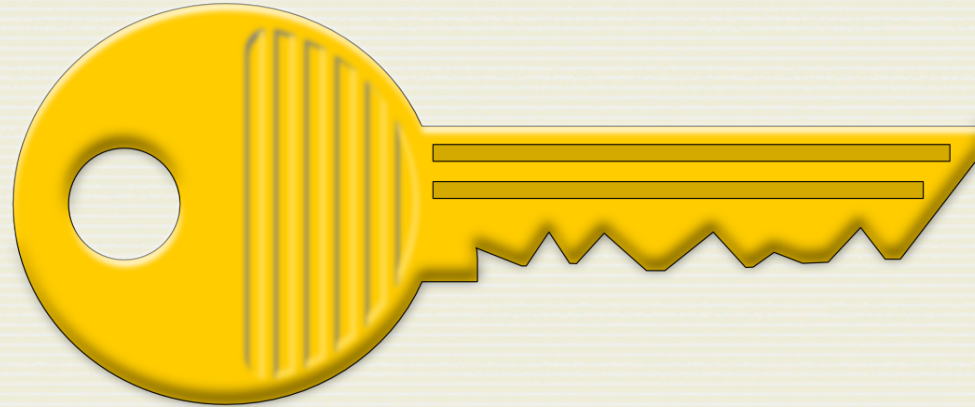
This certifies that

has dedicated twenty five years of service.





Nick Van den Bleeken





http://www





BELGIEN BELGIUM
PERSONALAUSWEIS IDENTITY CARD

-datum / Place and date of birth

1 2006

Geslacht / Sex

M

ELG







Java™



Signing box


Electronic Signatures



What does signing box do?

This application will allow you to electronically sign files and verify signed files, by means of your electronic identity card (eID). Using this application will create a signature on an uploaded file. Only this signature will contain information on your identity. That is, your information will not be stored anywhere else, except in the files you signed.

Upload your file

 If you want more information about eID cards and eID readers, go to: eid.belgium.be



Signing box

Electronic Signatures



1 Upload file >

2 File details < >

3 Sign file

Upload a file

Choose the file you want to sign or verify:

+ Choose a file to upload

If you upload an OpenOffice document (ODF), or a Microsoft Office 2007 file (ooxml), the file itself will be signed.

In case you upload another file format, your file will be zipped, and that zipfile will be signed.



Signing box

Electronic Signatures



1 Upload file >

2 File details < >

3 Sign file

File detail

This document has not been signed

Download file

Upload another file

+ Add signature



Signing box

Electronic Signatures



✓ Upload file >

✓ File details <>



3 Sign file



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eID Digital Signature Service

Sign document



This plugin is disabled.
[Manage plugins...](#)

Security Warning



Block potentially unsafe components from being run?

Application: `com.id.intellistamp.website.applet.signeid.SignEIDApplet`

Java has discovered application components that could indicate a security concern.
Contact the application vendor to ensure that it has not been tampered with.

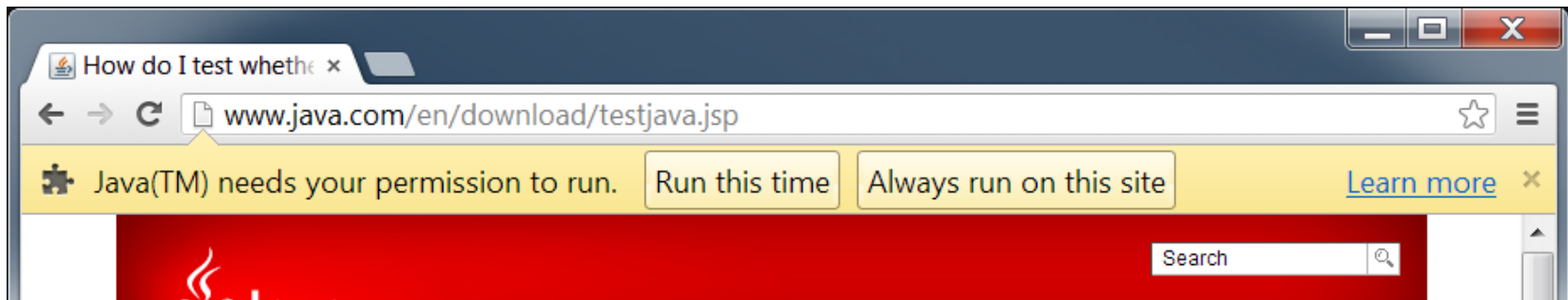
Block

Don't Block



The application contains both signed and unsigned code.

[More information](#)







Signing box

Electronic Signatures



✓ Upload file >

✓ File details < >

3 Sign file



eID Digital Signature Service

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[View document](#)

Please verify the content of the document you're about to sign.

Options »

Contents of this ZIP file

 [donut-chart.png](#)



Signing box

Electronic Signatures



✓ Upload file >

✓ File details < >

3 Sign file



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eID Digital Signature Service

Sign document

Please insert your eID card...



Details >>



Signing box

Electronic Signatures



✓ Upload file >

✓ File details <>

3 Sign file



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eID Digital Signature Service

Sign document

Signing...



Details >>

Signature creation

OK to sign "ZIP container"?
Signature algorithm: SHA-512 with RSA

Yes No



Signing box

Electronic Signatures



- ✓ Upload file >
- ✓ File details <>
- 3 Sign file



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eID Digital Signature Service

Sign document

Signing...



Details >>

Enter PIN code

PIN code:

OK Cancel



1 Upload file > 2 File details <> 3 Sign file

File detail

This file has been signed 1 time(s).

Signed by

Signer: SERIALNUMBER=79081636594, GIVENNAME=Nick, SURNAME=Hofstede, CN=Nick Hofstede (Signature), C=BE

Signing time: Monday, June 17, 2013 6:47:40 PM CEST

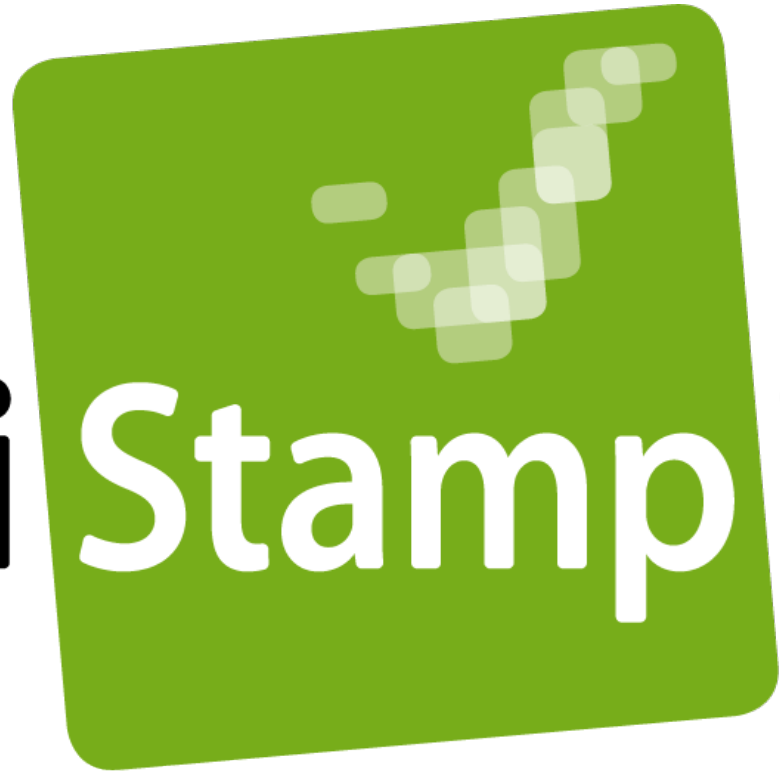
Download file

Upload another file

+ Add signature



Intelli Stamp®



W3C®



Web Cryptography API

W3C Last Call Working Draft *25 March 2014*

This version:

<http://www.w3.org/TR/2014/WD-WebCryptoAPI-20140325/>

Latest published version:

<http://www.w3.org/TR/WebCryptoAPI/>

Latest Editor's Draft:

<http://dvcs.w3.org/hg/webcrypto-api/raw-file/tip/spec/Overview.html>

Previous Version(s):

<http://www.w3.org/TR/2013/WD-WebCryptoAPI-20130625/>

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[Mark Watson](#), Netflix <watsonm@netflix.com>

Participate:

Send feedback to public-webcrypto-comments@w3.org ([archives](#)), or [file a bug](#) (see [existing bugs](#)).

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Abstract

This specification describes a JavaScript API for performing basic cryptographic operations in web applications, such as hashing, signature generation and verification, and encryption and decryption.

```
var algorithmSign = {
  name: "RSASSA-PKCS1-v1_5",
  params: {hash: "SHA-256" }
};

var data = convertToArrayBufferView("hello World!");

window.crypto.subtle.sign(algorithmSign, key.privateKey,
  data).then(
  console.log.bind(console, "Signature: "),
  console.log.bind(console, "Unable to sign: "));
```



WebCrypto Key Discovery

W3C Working Draft 22 August 2013

This version:

<http://www.w3.org/TR/2013/WD-webcrypto-key-discovery-20130822/>

Latest published version:

<http://www.w3.org/TR/webcrypto-key-discovery/>

Latest editor's draft:

<http://dvcs.w3.org/hg/webcrypto-keydiscovery/raw-file/tip/Overview.html>

Previous version:

<http://www.w3.org/TR/2013/WD-webcrypto-key-discovery-20130108/>

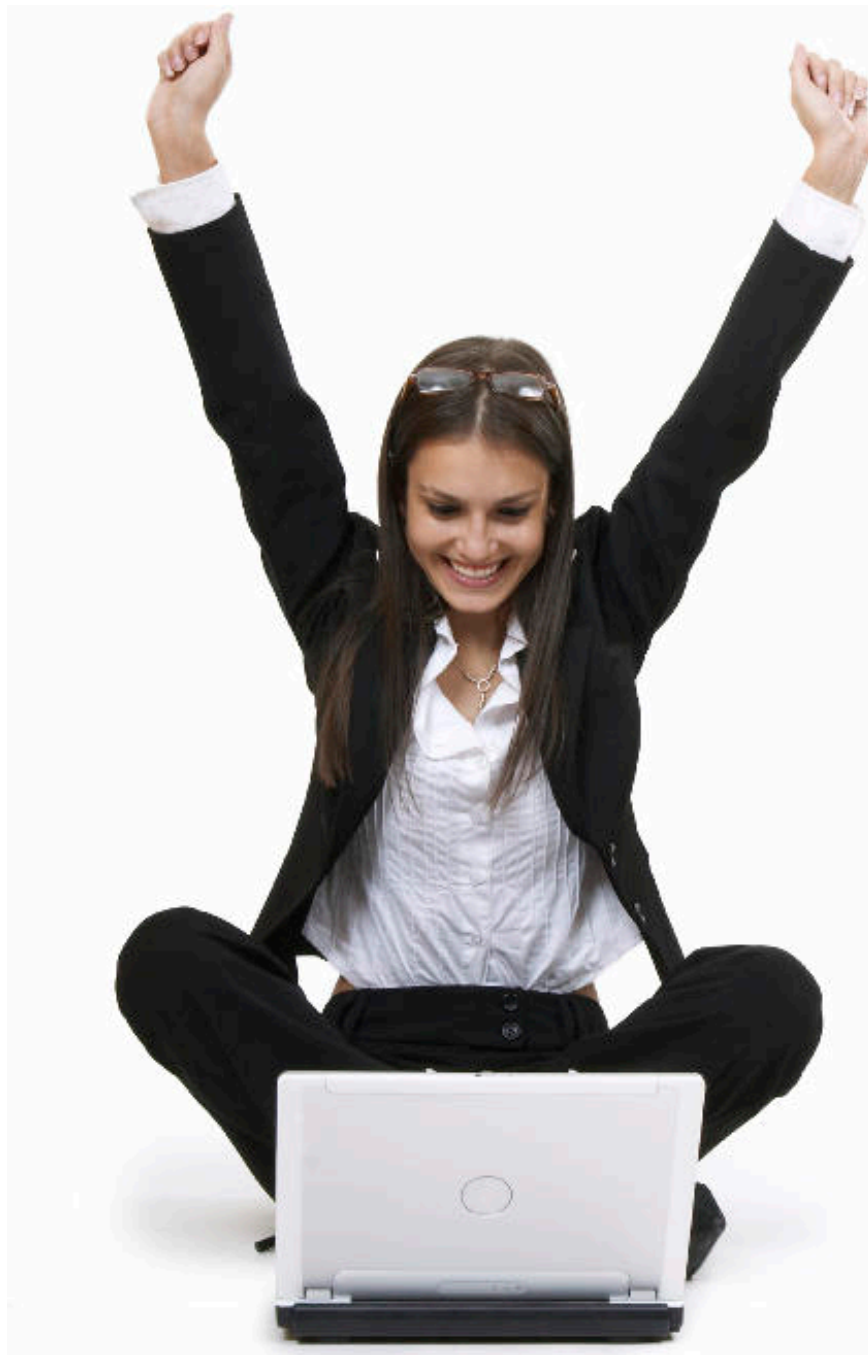
Editor:

Mark Watson, [Netflix](#), watsonm@netflix.com

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Abstract

This specification describes a JavaScript API for discovering named, origin-specific pre-provisioned cryptographic keys for use with the Web Cryptography API. Pre-provisioned keys are keys which have been made available to the UA by means other than the generation, derivation, importation functions of the Web Cryptography API. Origin-specific keys are keys that are available only to a specified origin. Named keys are identified by a name assumed to be known to the origin in question and provisioned with the key itself.



Named

Origin-specific

Pre-provisioned

Named

~~Origin-specific~~

Pre-provisioned

Named

~~Origin-specific~~

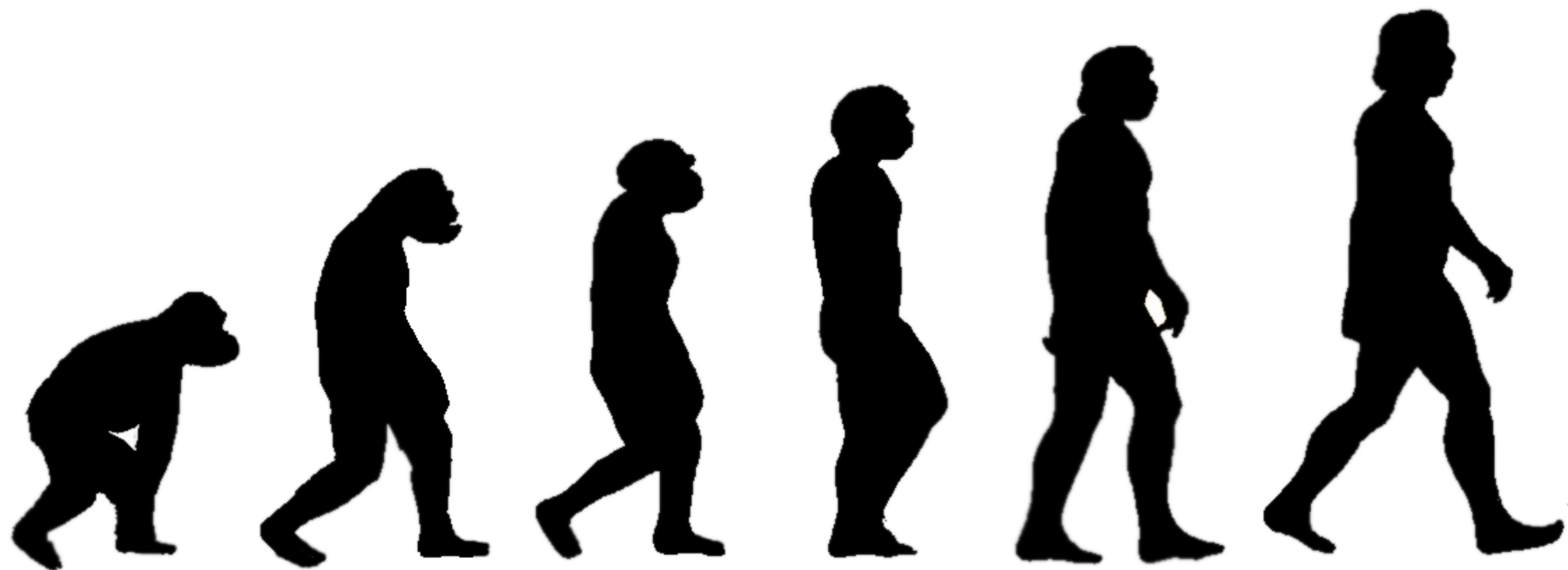
~~Pre-provisioned~~

~~Named~~

~~Origin-specific~~

~~Pre-provisioned~~





Certificate based discovery

```
var c = window.crypto.subtle;
c.createX509Principal("CN=eID Citizen CA, C=BE").then(
  function(issuer) {
    c.selectX509Certificate({
      authorities : [issuer],
      privateKeyValid: true,
      reason: "Select a certificate to sign your document"
    }).then(
      function(cert) {
        var key = cert.privateKey;
        var data = convertPlainTextToArrayBufferView("Foo");
        c.sign(key.algorithm, key, data).then(
          console.log.bind(console, "Signature: "));
      }
    )
  }
)
```



Signing box


Electronic Signatures



What does signing box do?

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Upload your file

 If you want more information about eID cards and eID readers, go to: eid.belgium.be



1 Upload file >

2 File details < >

3 Sign file

Upload a file

Choose the file you want to sign or verify:

+ Choose a file to upload

If you upload an OpenOffice document (ODF), or a Microsoft Office 2007 file (ooxml), the file itself will be signed.

In case you upload another file format, your file will be zipped, and that zipfile will be signed.



Signing box

Electronic Signatures



1 Upload file > 2 File details < > 3 Sign file

File detail

This document has not been signed

Download file

Upload another file

+ Add signature



Signing box

Electronic Signatures



- ✓ Upload file >
- ✓ File details <>
- 3 Sign file

fedict eID Digital Signature Service

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[View document](#)

Please verify the content of the document you're about to sign.

Options »

Contents of this ZIP file

 [donut-chart.png](#)

```
var c = window.crypto.subtle;
c.createX509Principal("CN=eID Citizen CA, C=BE").then(
  function(issuer) {
    c.selectX509Certificate({
      authorities : [issuer],
      privateKeyValid: true,
      reason: "Select a certificate to sign your document"
    }).then(
      function(cert) {
        var key = cert.privateKey;
        var data = convertPlainTextToArrayBufferView("Foo");
        c.sign(key.algorithm, key, data).then(
          console.log.bind(console, "Signature: "));
      }
    )
  }
)
```



Signing box

Electronic Signatures



Upload file >
 File details <>
 3 Sign file



eID Digital Signature Service

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Please verify the content of the document you're about to sign.

Options

Contents of this ZIP file

[donut-chart.png](#)



Signing box

Electronic Signatures





✓ Upload file > ✓ File details << 3 Sign file

Windows Security

Select a Certificate

Select a certificate to sign your document

	Stef Janssens Issuer: Citizen CA Valid From: 14/12/2011 to 9/12/2016
	Nick Hofstede Issuer: Citizen CA Valid From: 25/03/2009 to 20/03/20... Click here to view certificate prope...

OK Cancel

```
var c = window.crypto.subtle;
c.createX509Principal("CN=eID Citizen CA, C=BE").then(
  function(issuer) {
    c.selectX509Certificate({
      authorities : [issuer],
      privateKeyValid: true,
      reason: "Select a certificate to sign your document"
    }).then(
```

```
function(cert) {
  var key = cert.privateKey;
  var data = convertPlainTextToArrayBufferView("Foo");
  c.sign(key.algorithm, key, data).then(
    console.log.bind(console, "Signature: "));
```

```
}}))
```



Signing box

Electronic Signatures



- ✓ Upload file >
- ✓ File details <>
- 3 Sign file

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Sign document

Signing

Details >>

Geef uw PIN in, om u te authentifieren

MULTI APPLICATION CARD

NAME
NR

PIN

Ok Annuleren

```
var c = window.crypto.subtle;
c.createX509Principal("CN=eID Citizen CA, C=BE").then(
  function(issuer) {
    c.selectX509Certificate({
      authorities : [issuer],
      privateKeyValid: true,
      reason: "Select a certificate to sign your document"
    }).then(
      function(cert) {
        var key = cert.privateKey;
        var data = convertPlainTextToArrayBufferView("Foo");
        c.sign(key.algorithm, key, data).then(
          console.log.bind(console, "Signature: "));
      }
    )
  }
)
```



Upload file



File details



Sign file

File detail

This file has been signed **1** time(s).

Signed by

Signer: SERIALNUMBER=79081636594, GIVENNAME=Nick, SURNAME=Hofstede, CN=Nick Hofstede (Signature), C=BE

Signing time: Monday, June 17, 2013 6:47:40 PM CEST

Download file

Upload another file

+ Add signature





Java™







Thank You

Q

+

A