# ETSI ESI Workshop

# Signing in the Cloud

## CEN Server signing
## TS 419 241 part 1

Barcelona, 14th March 2013

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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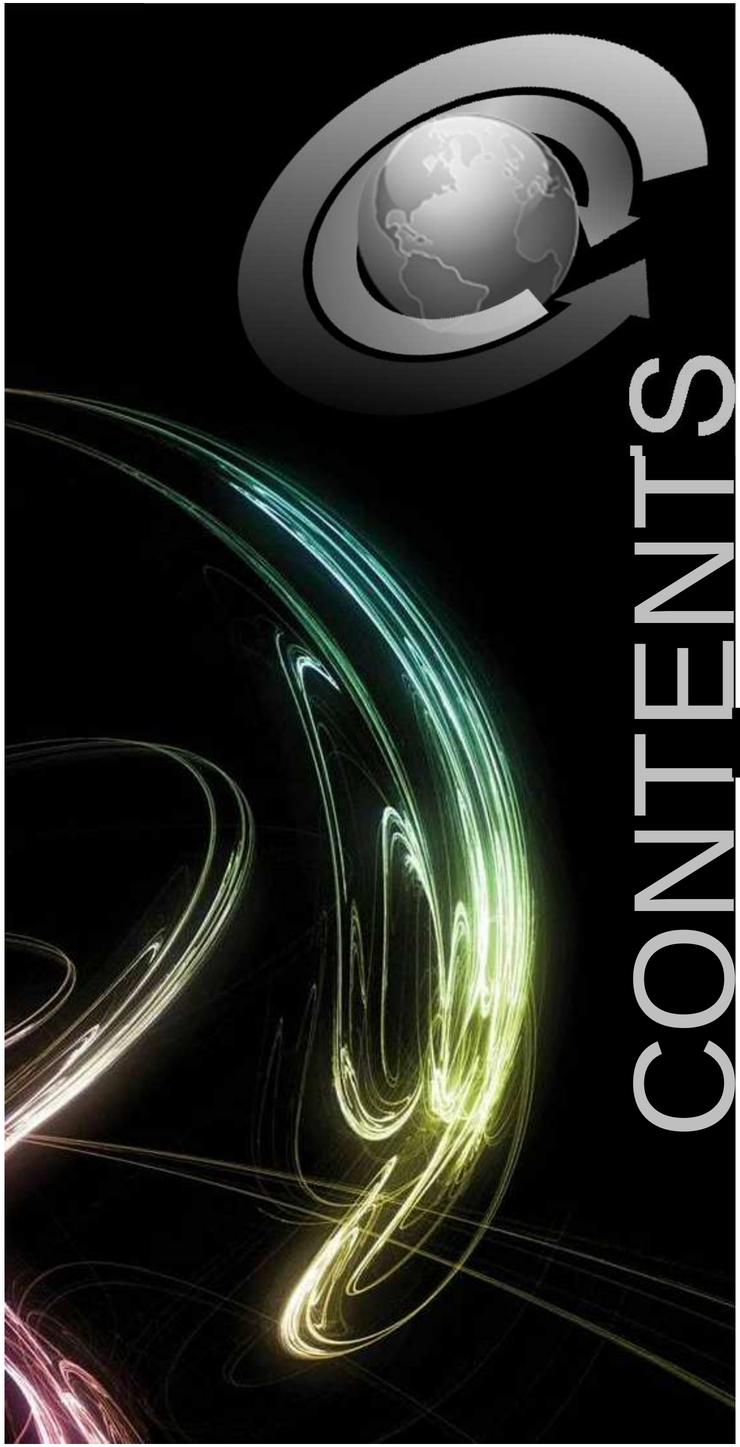

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**01 Server Signing**

02 Sole Control Level 1

03 Sole Control Level 2

04 Protection Profiles

# What is Server Signing ?

This is a networked server which may process electronic certificates used by natural or legal persons for electronically signing/sealing documents.

The server signing application (SSA) is a component to be used by trust service providers (TSP) in order to provide signature generation services (SGS).

## CEN TC224 WG17 workshop goals

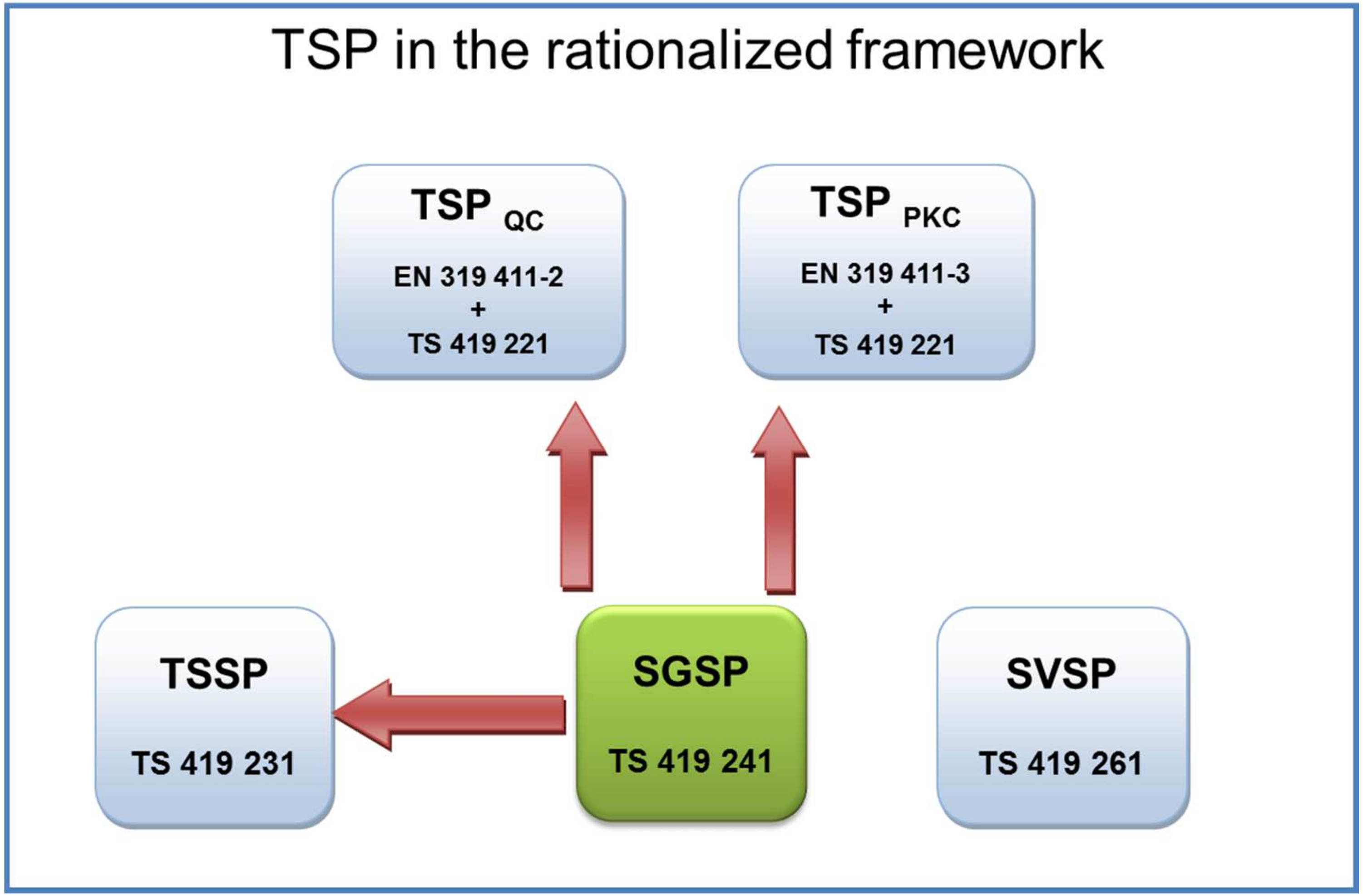
### To define a:

- Trustworthy Systems Supporting Server Signing,
- With a set of security requirements and recommendations.

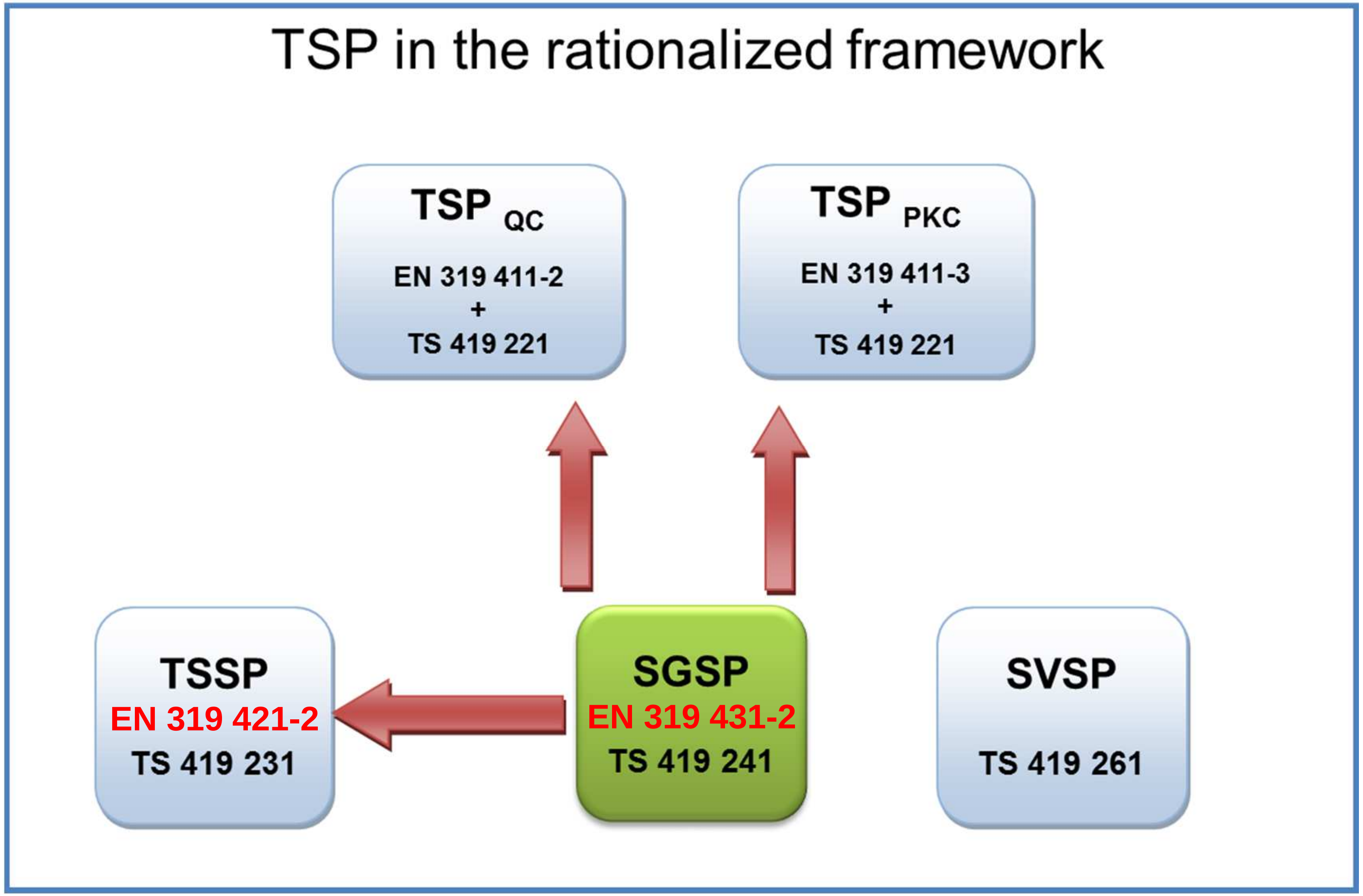
### Drafting TS 419 241-1 a.k.a. «Server signing»

- TS 419 241 part 1, introduction and generic security requirements,
- Future PPs will be in part 2 and 3.

# The place of Server Signing within the rationalized framework



# Link with ETSI TSPs policies (STF 458)



TSP in the rationalized framework

TSP QC
EN 319 411-2
+
TS 419 221

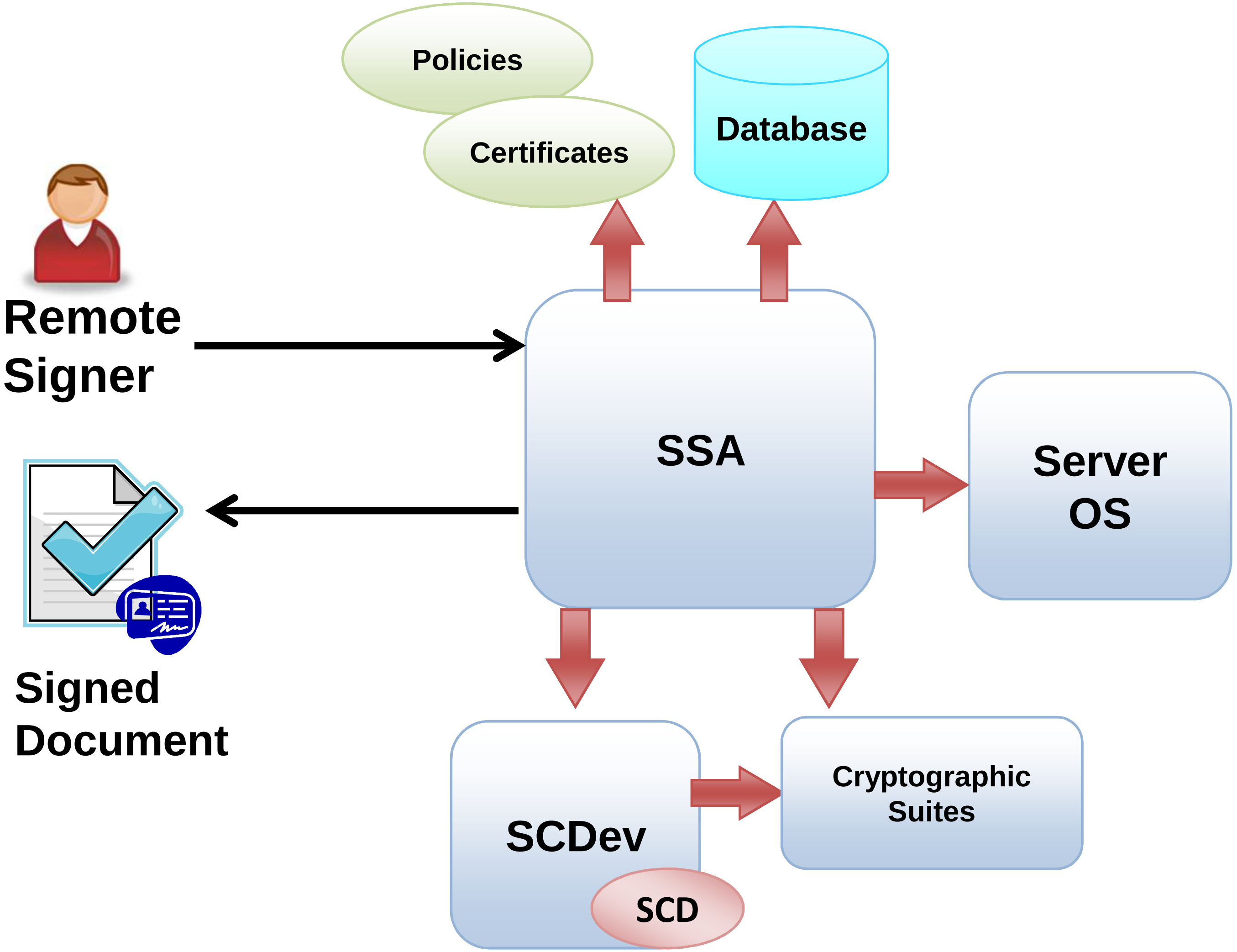
TSP PKC
EN 319 411-3
+
TS 419 221

TSSP
EN 319 421-2
TS 419 231

SGSP
EN 319 431-2
TS 419 241

SVSP
TS 419 261

# Trustworthy System Overview

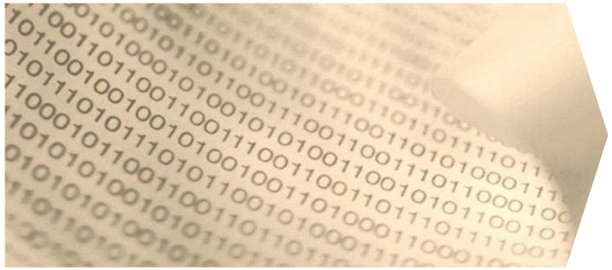


## Objectives

**Server side electronic signatures or electronic seals**

- **The remote signer can be natural or a legal person (e.g. remote application)**

**Need of flexibility to fit existing systems.**



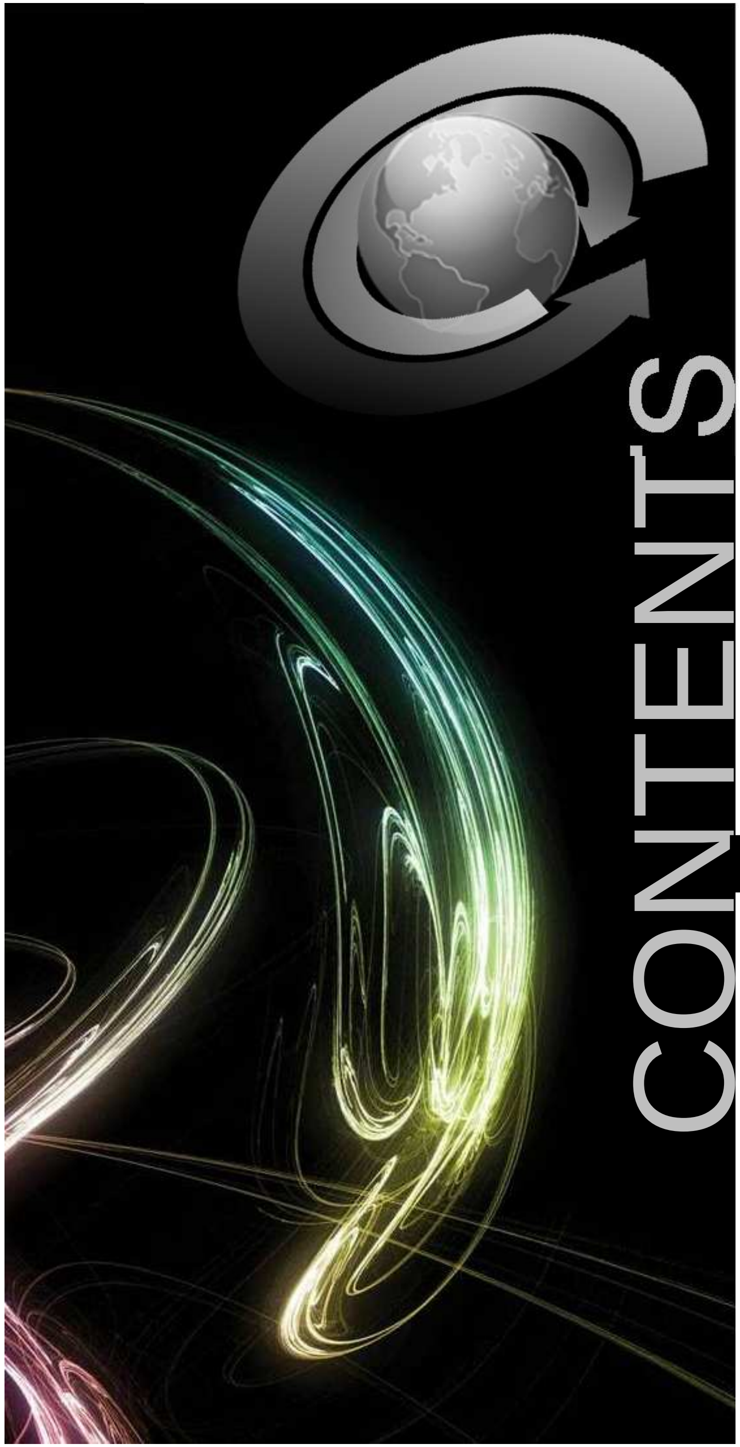
**Need of a comparable level of assurance as it is expected with a SSCD**

## Strategy

# 2 DIFFERENT LEVELS

| | |
|---|---|
| Level 1 | The remote signer authentification is enforced by the system environnement. |
| Level 2 | The remote signer authentification is enforced by the signature creation device.<br>2 factors for authentification are required. |

Level 1 fits existing systems, and level 2 assurance is comparable as expected with a SSCD.



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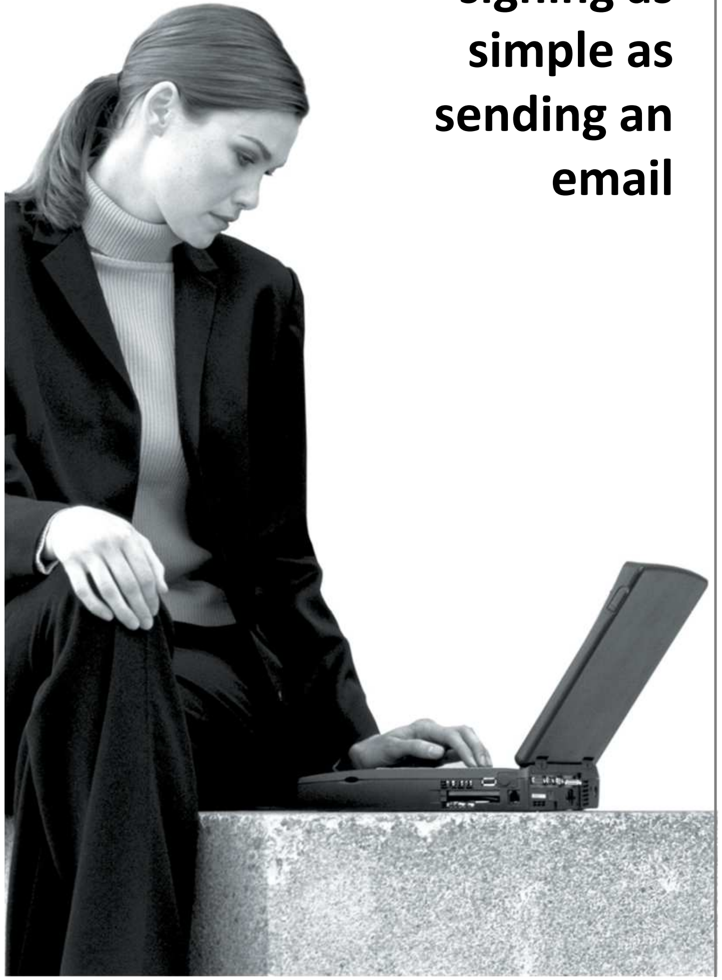
# Usages



Remote signing as simple as sending an email

## Web mail electronic signature

“protect an electronic email via a web mail interface as easily as done with a classic email tool.

## Contract signing

“sign a e-contract with a sustainable private key and avoid on-the-fly certification”

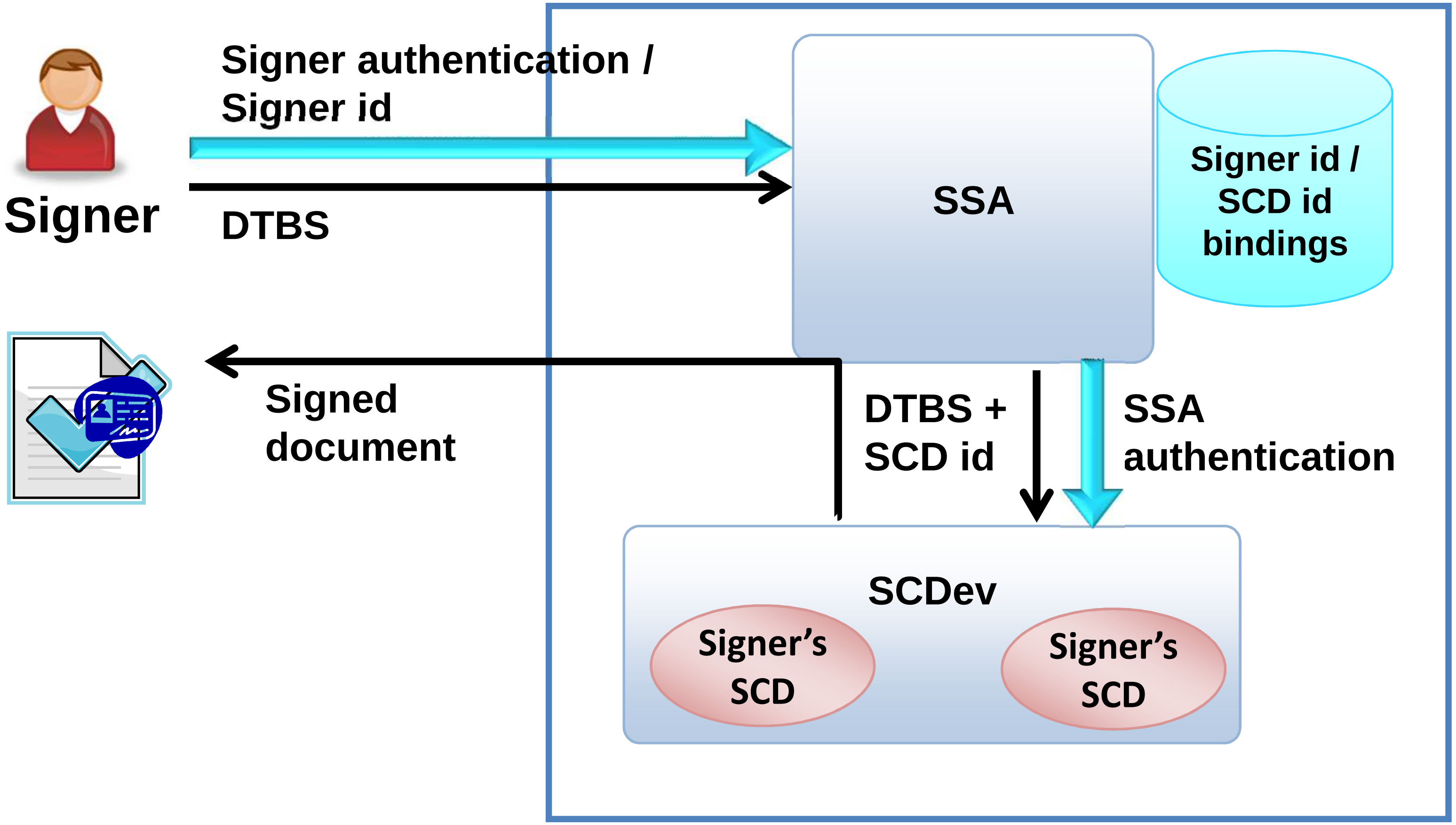
## Equity Arbitrage

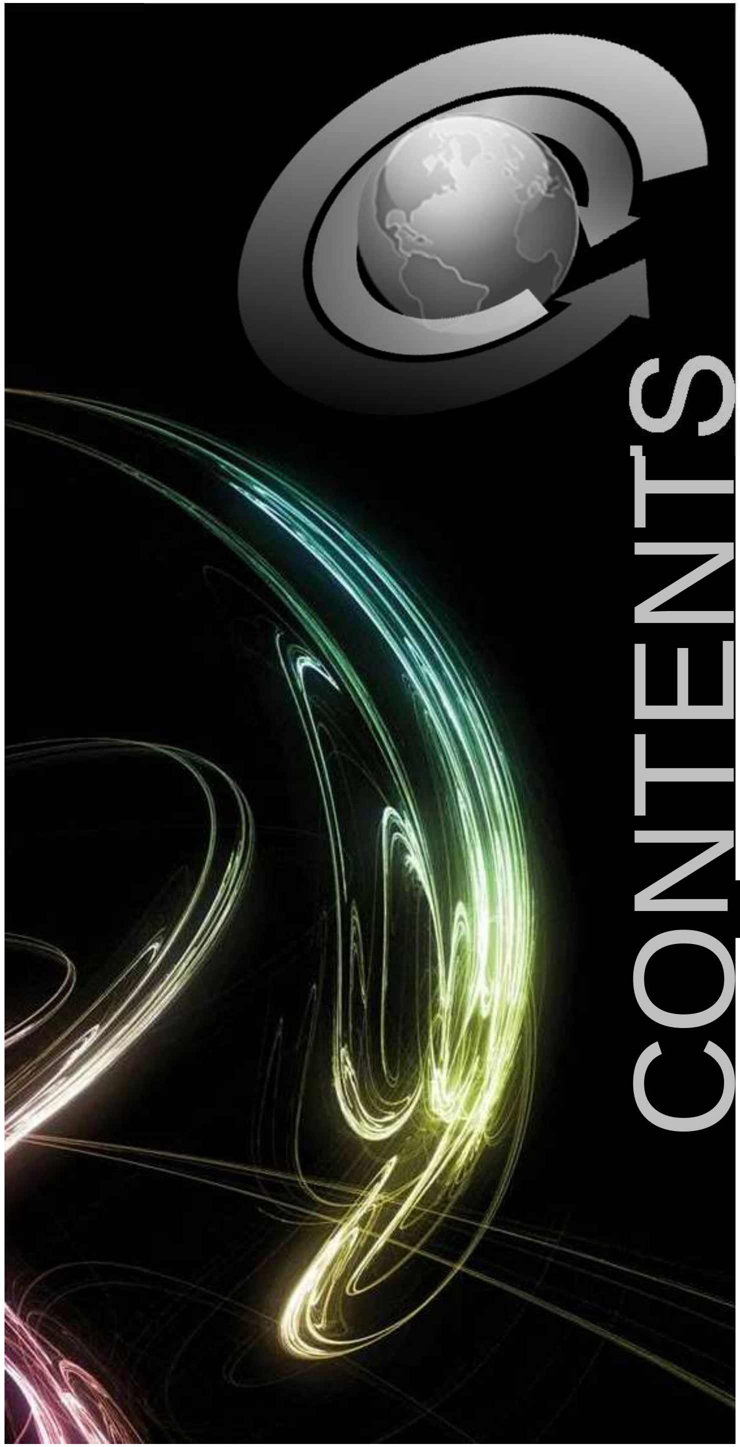
“sign a transaction on shares in a home banking web site”

## Batch e-Sealing

“seal in batch electronic invoices for massive production”

# Level 1: functional example





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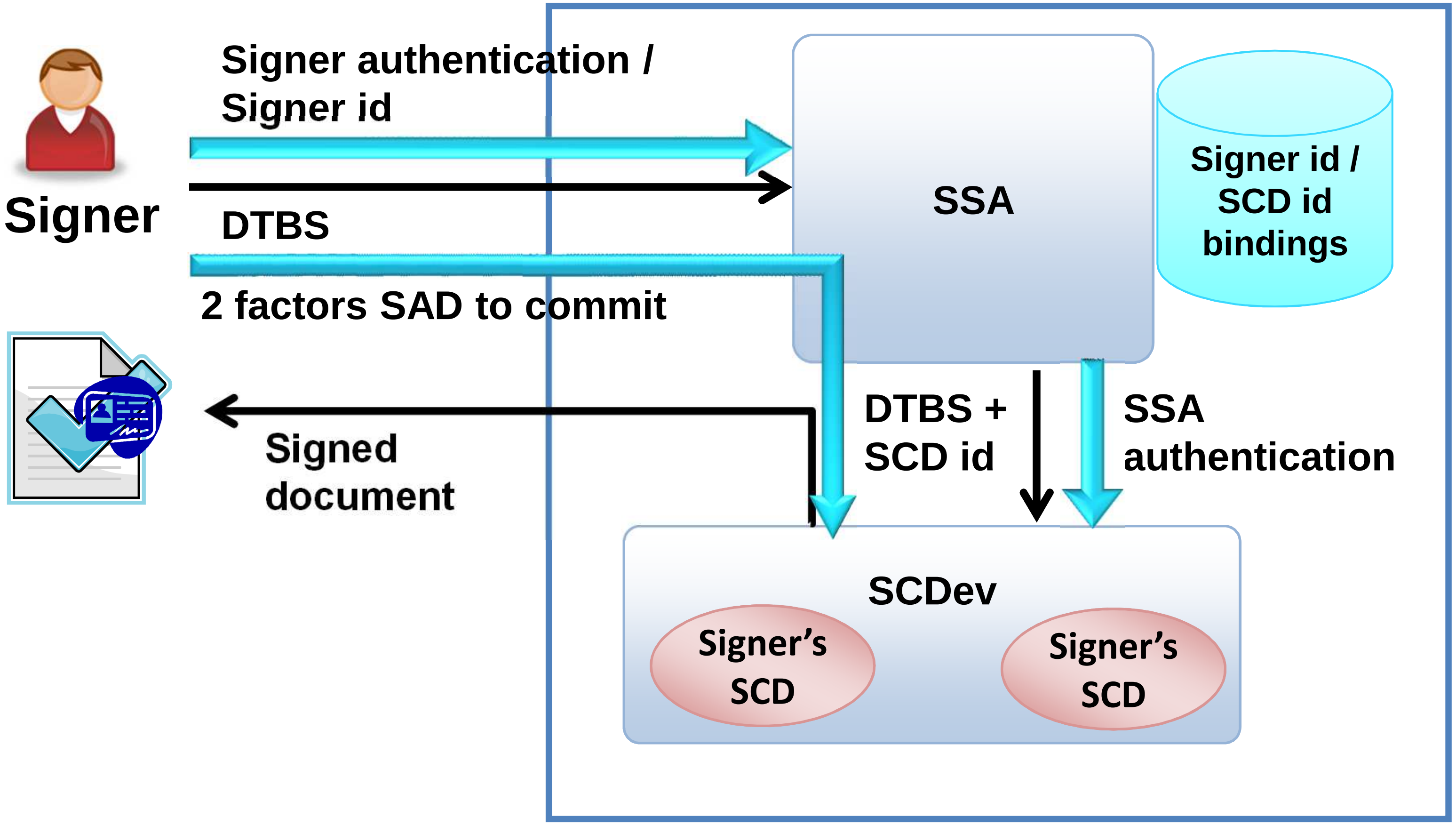
# Signer’s Activation Data: SAD

The Signer’s Activation Data (SAD) is functionnaly equivalent to the verification authentification data (VAD) of a SSCD (e.g. PIN)

For level 2 SAD must have 2 authentification factors

# Level 2: functional example



## Signer’s Activation Data: SAD

## 2 DIFFERENT LEVELS

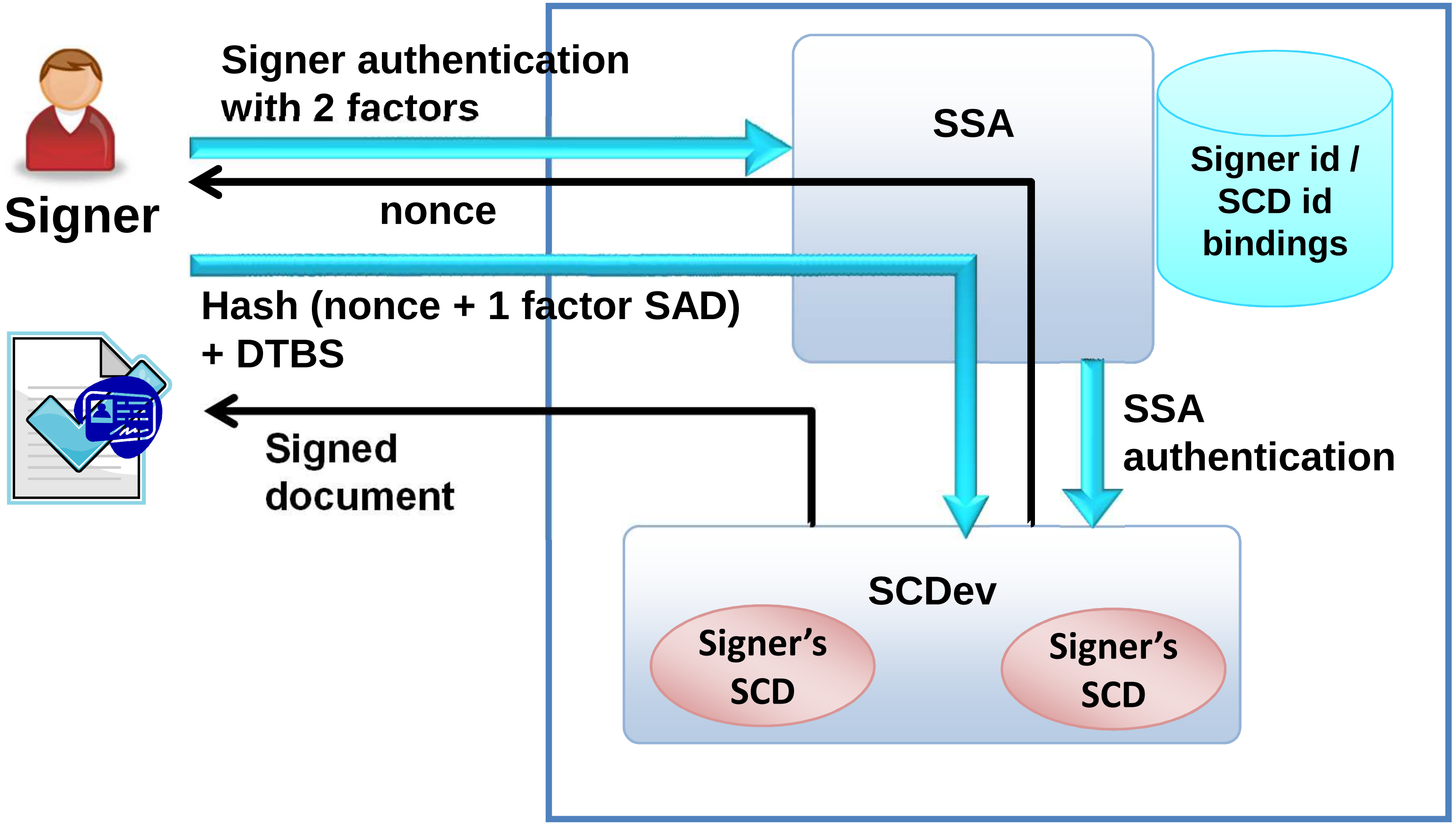
Level 1

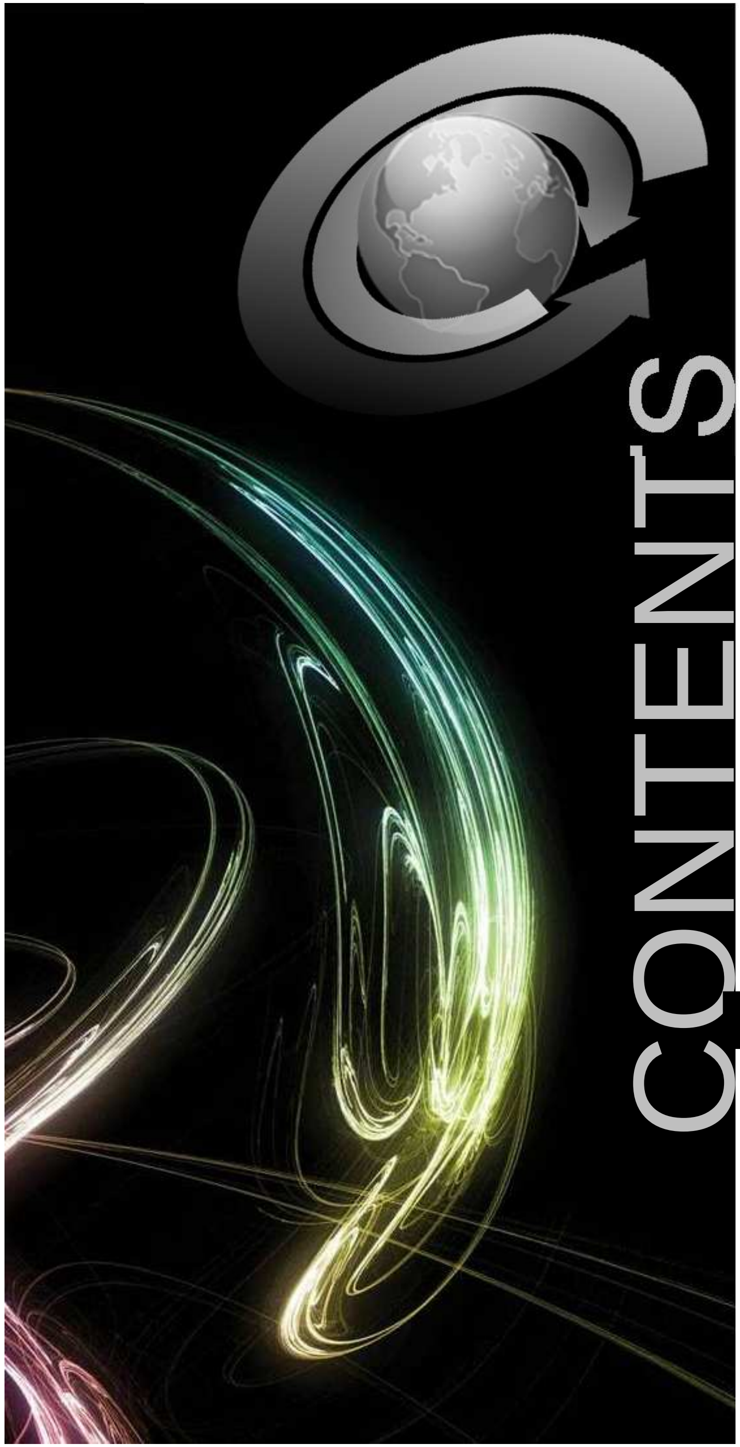
Level 2

### ANOTHER POSSIBILITY FOR LEVEL 2 IS

- Multi-factor authentication of the signer to the system,
- and in this secure channel committing is done by providing a ‘1 factor SAD’ to the SCDev.
- The 1 factor SAD must be protected against replay attack

# Level 2: functional example 2


Signer
Signer authentication with 2 factors
nonce
Hash (nonce + 1 factor SAD) + DTBS
Signed document
SSA
Signer id / SCD id bindings
SSA authentication
SCDev
Signer's SCD
Signer's SCD



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# Proposal for drafting Server Signing PPs

## CEN TC 224

Personal identification, electronic signature and cards and their related systems and operations

Members of CEN TC 224/WG17 made the proposal to draft new PPs on Server Signing

PPs to define Sole Control Level 2 only

Level 1 system should apply TS 419 241 part 1

Two “system” PP with a similar core part (client and server sides)

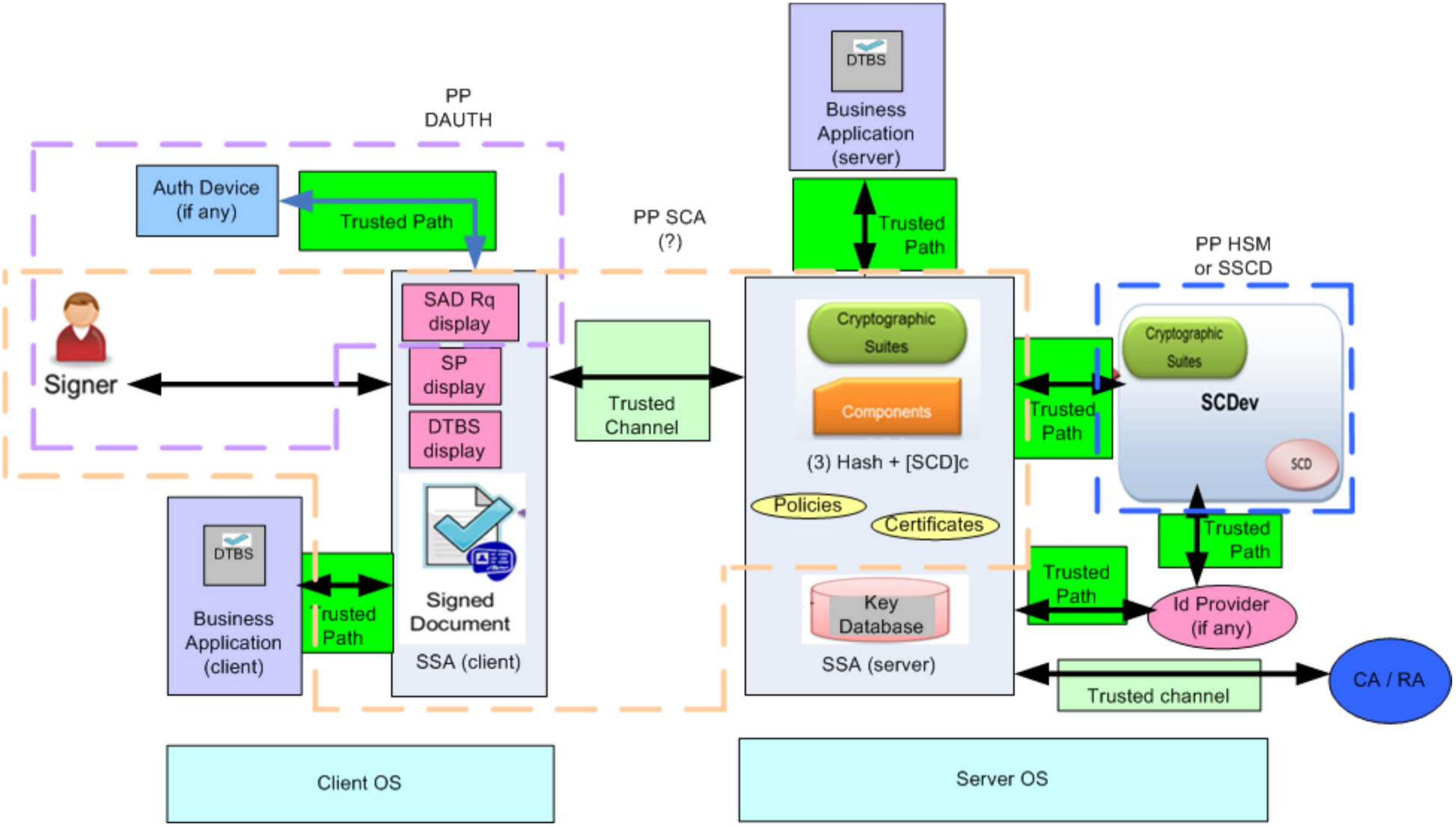
- PP1 : using a SE authentication + HSM
- PP2 : using a TEE authentication + HSM

⇒ Same level for both : EAL4+ AVA_VAN.4 or AVA_VAN.5

## CEN TC 224/WG 17

Protection Profiles in the context of SSCD

# Server Signing Generic Architecture

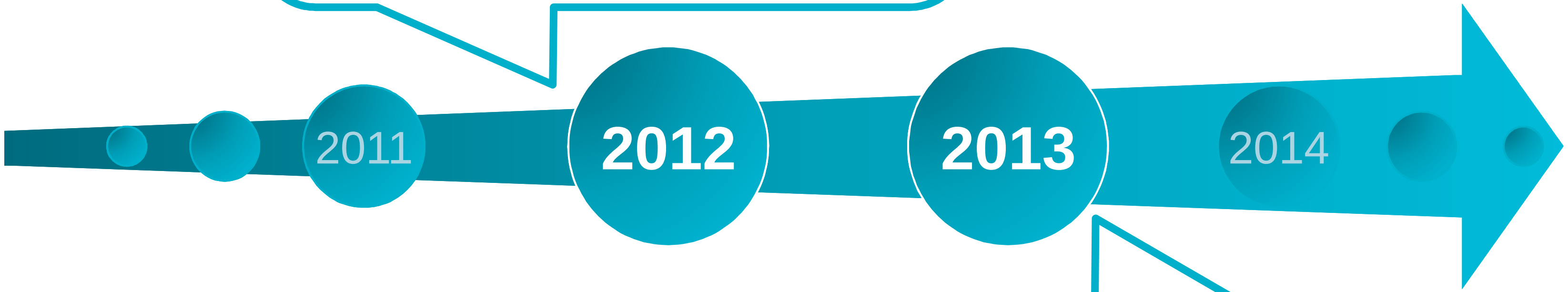


## Calendar

**CIRCULATION OF DRAFT**

**TS 419 241-1 v1.0.0**

**2012/12/22**



**CEN FORMAL VOTE**

**2013/06/30**

**PPs DRAFTING**

**419 241-1 v2 DRAFTING**

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