The Standards People

Remote signing

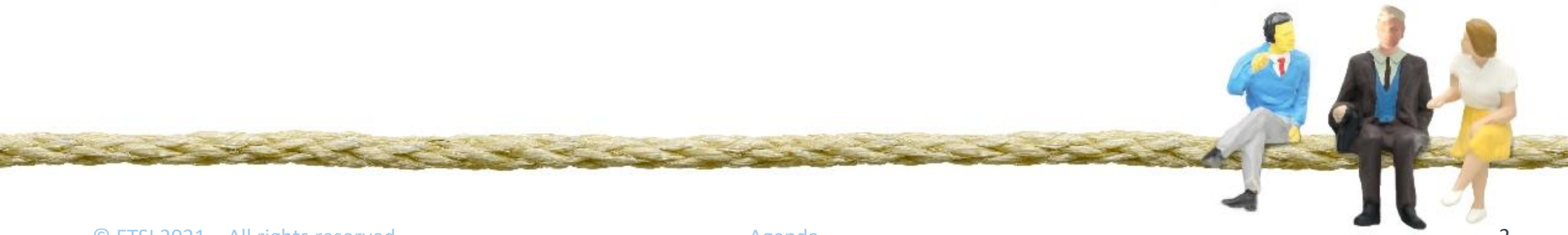
Presented by: **Andrea Röck (Universign)**

For: **ETSI Standards Training Webinar**

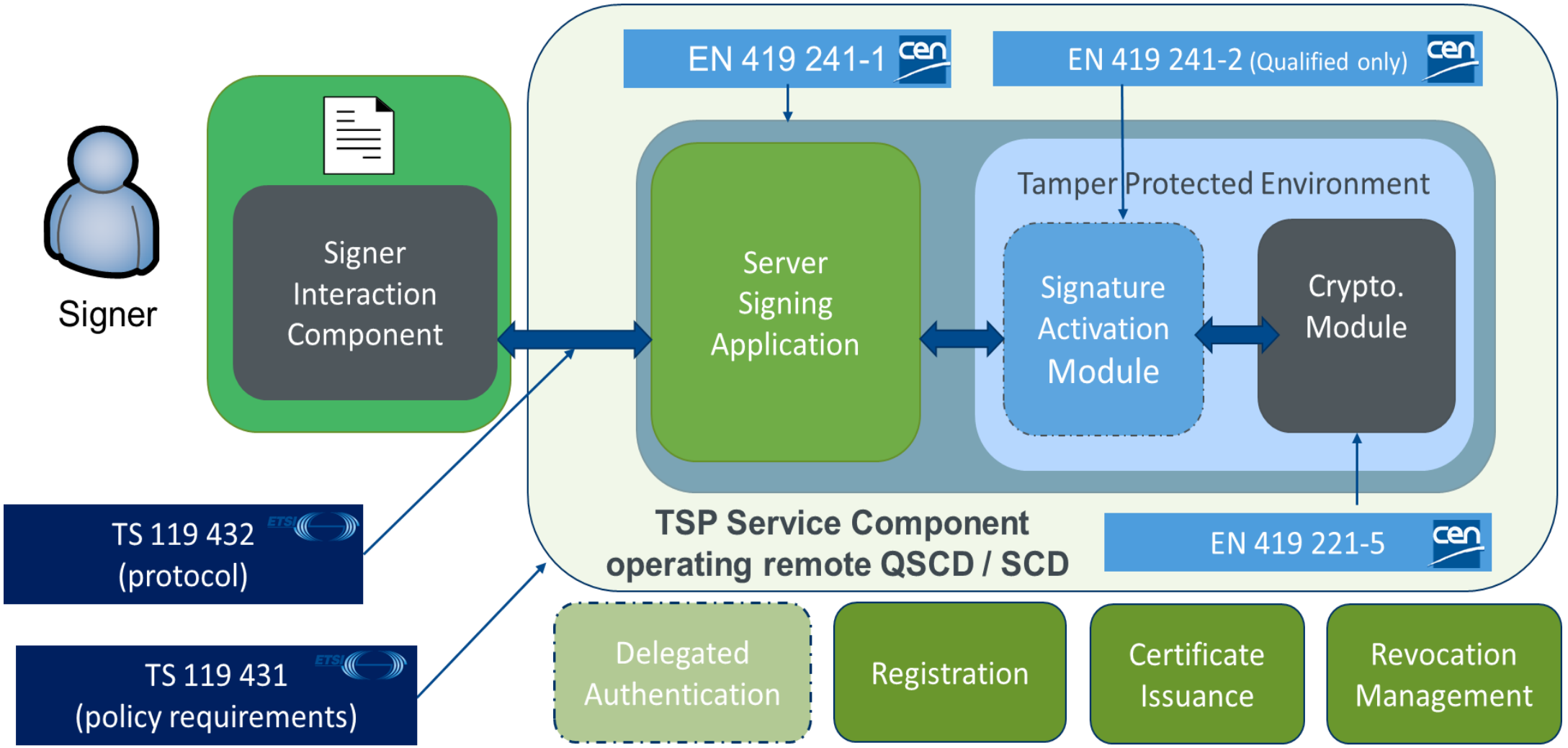
01.06.2021

Agenda for Preservation

- Standards on the different remote signing components
- CEN EN 419 241: Trustworthy Systems Supporting Server Signing
- Signature activation system with SCAL1
- Signature activation system with SCAL2
- ETSI TS 119 431-1
- ETSI TS 119 431-2
- ETSI TS 119 432
- Cloud Signature Consortium (CSC) specification



Standards on the different remote signing components

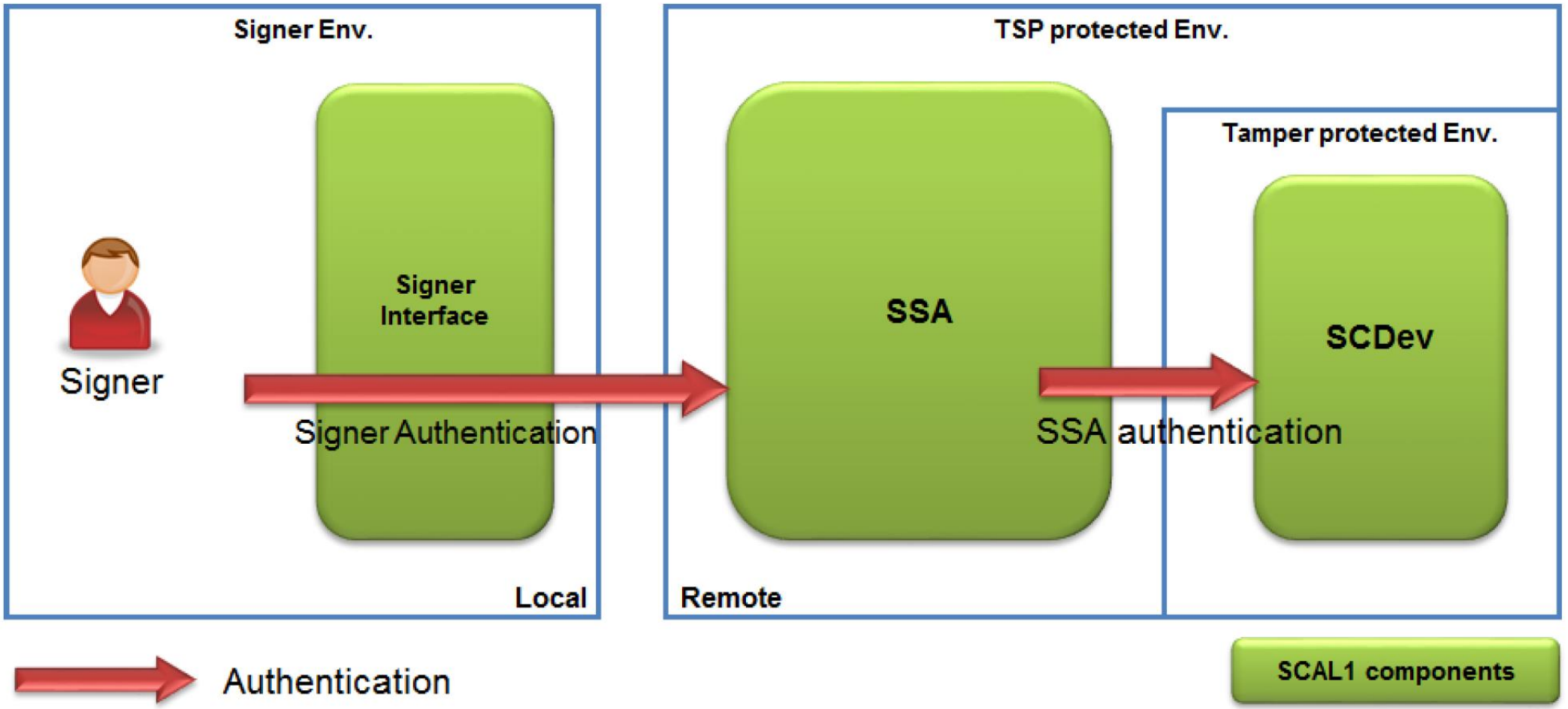


CEN EN 419 241
Trustworthy Systems Supporting Server Signing

- Part 1: General System Security Requirements
- Part 2: Protection Profile for QSCD for Server Signing
- Defines two different Sole Control Assurance Level [CEN EN 319 419-1]
- SCAL1:
  - The signing keys are used, with a **low level of confidence**, under the sole control of the signer.
  - The authorized signer's use of its key for signing is enforced by the server signing applications which authenticates the signer.
- SCAL2:
  - The signing keys are used, with a **high level of confidence**, under the sole control of the signer.
  - The authorized signer's use of its key for signing is enforced by the Signature Activation Module (SAM) by means of Signature Activation Data (SAD) provided, by the signer, using the Signature Activation Protocol (SAP), in order to enable the use of the corresponding signing key.
    - Aiming to support qualified electronic signatures

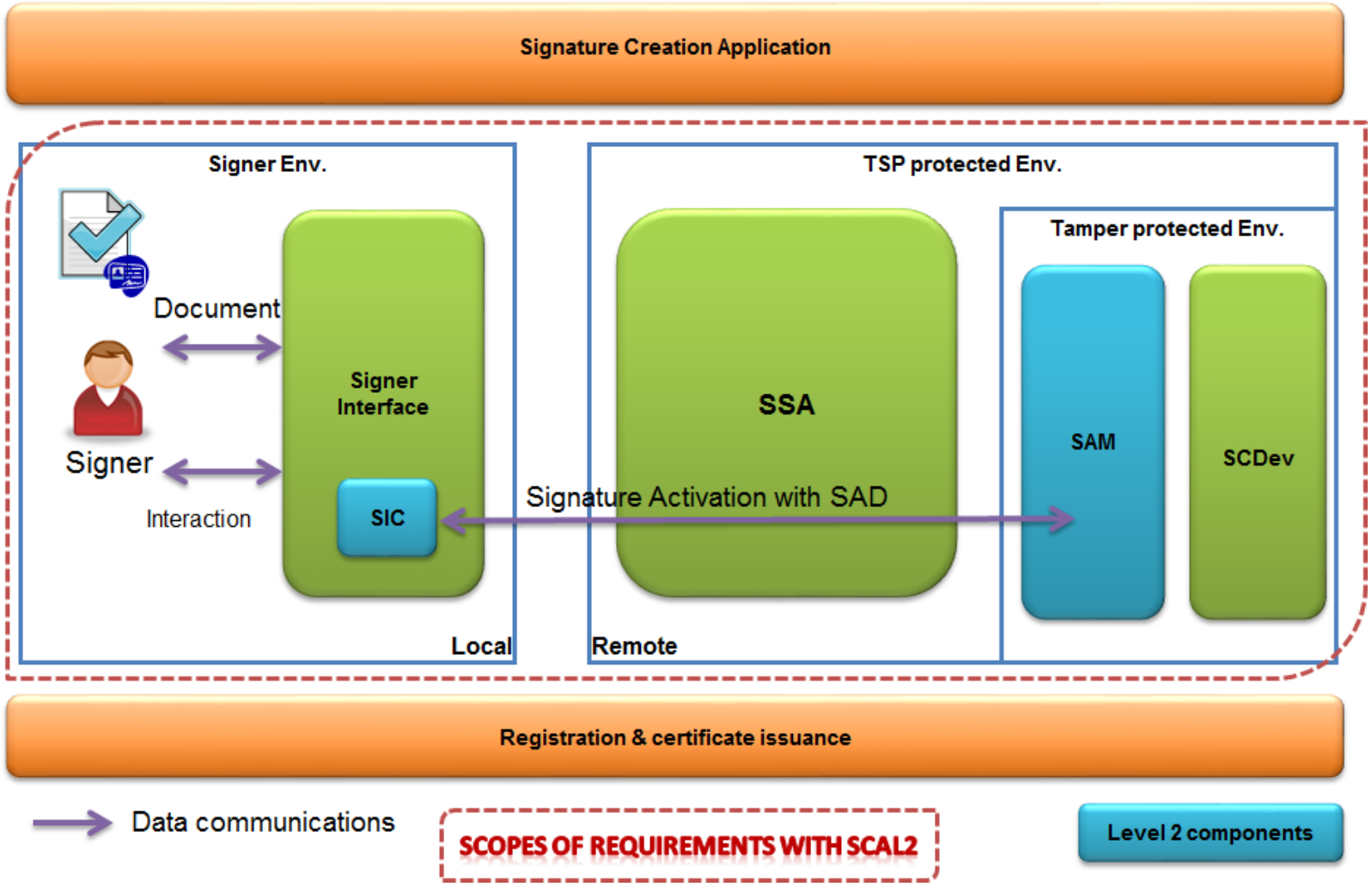
Signature activation system with SCAL1

- CEN EN 419 241-1: Figure 2



Signature activation system with SCAL2

- CEN EN 419 241-1: Figure 3
- Signature activation data shall link
  - DTBS/R
  - Authenticated signer
  - Key to be used

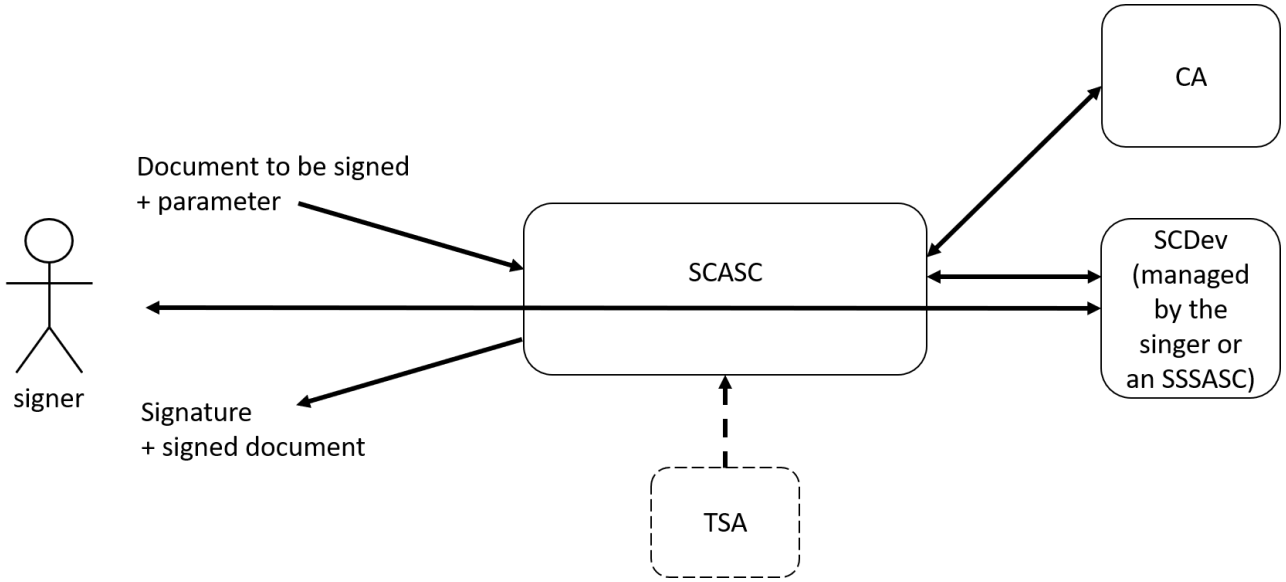


ETSI TS 119 431-1

- Policy and security requirements for Trust Service Providers (TSP) implementing a service component operating a remote signature creation device (SCDev)
  - Server Signing Application Service Component (SSASC)
- Based on requirements in CEN EN 419 241-1
- Defines three SSASC policies
  - LSCP: Lightweight SSASC Policy (less demanding than NSCP, linked to SCAL1)
  - NSCP: Normalized SSASC Policy (general recognized best practice, linked to SCA2)
  - EUSCP: EU SSASC Policy (linked to eIDAS regulation with specific requirements to QSCD management)
- Handles the cryptographic signature

ETSI TS 119 431-2

- provides policy and security requirements for trust service providers (TSP) implementing a service component supporting AdES digital signature creation
  - signature creation application service component (SCASC)



ETSI TS 119 432

- Protocol for remote signing
- Allows creation of cryptographic signature to be used by an SSASC
- Allows creation of AdES signature to be used by an SCASC
- Does not cover the creation of the SAD (not just SCAL2 but signature activation data in a more general sense) but uses the SAD as input
- Defines main functionality and semantic of the protocol
- Allows for symmetric and asymmetric calls
- Defines two different implementations
  - JSON: based on Cloud Signature Consortium specification
  - XML: based on OASIS DSS-X

Cloud Signature Consortium (CSC) specification

- https://cloudsignatureconsortium.org/
- V1.0 was published in 2018
- V2.0 is in work (planned to be published in 2021)
- A protocol for remote signing based on JSON and REST API
- V1.0 version only covers creation of cryptographic signatures on hash
- In addition to ETSI TS 119 432, it also covers mechanisms to create the SAM
- Very flexible protocol, that allows the signing application to discover which specific functionalities a server signing application supports
- V2.0 will contain features of ETSI TS 119 432 (AdES signatures, asynchrony calls) and more possibilities for the credential authorization