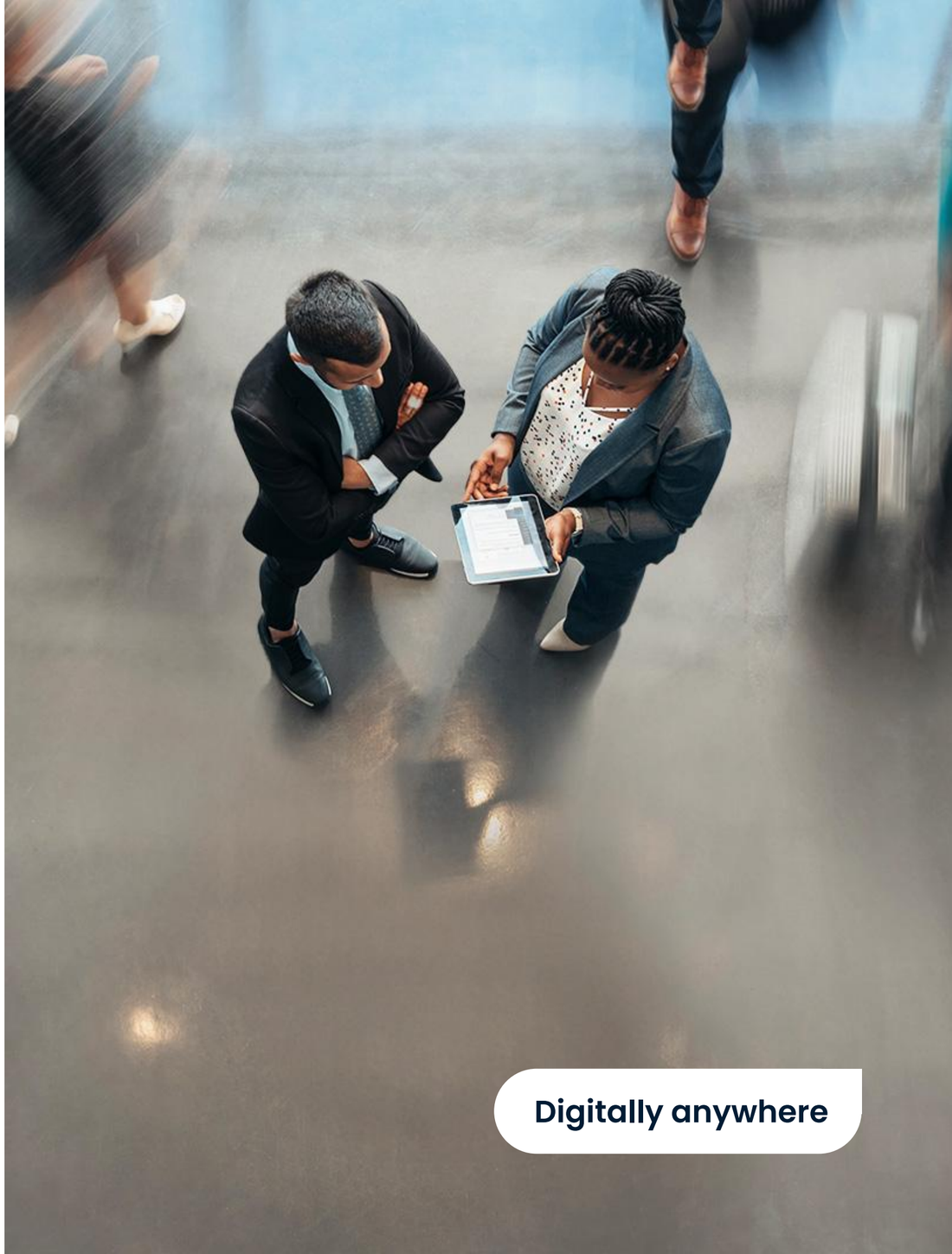
MONET +

System Architecture for

qualified el. signature & document digitization



Jiri Zmelik
Sales

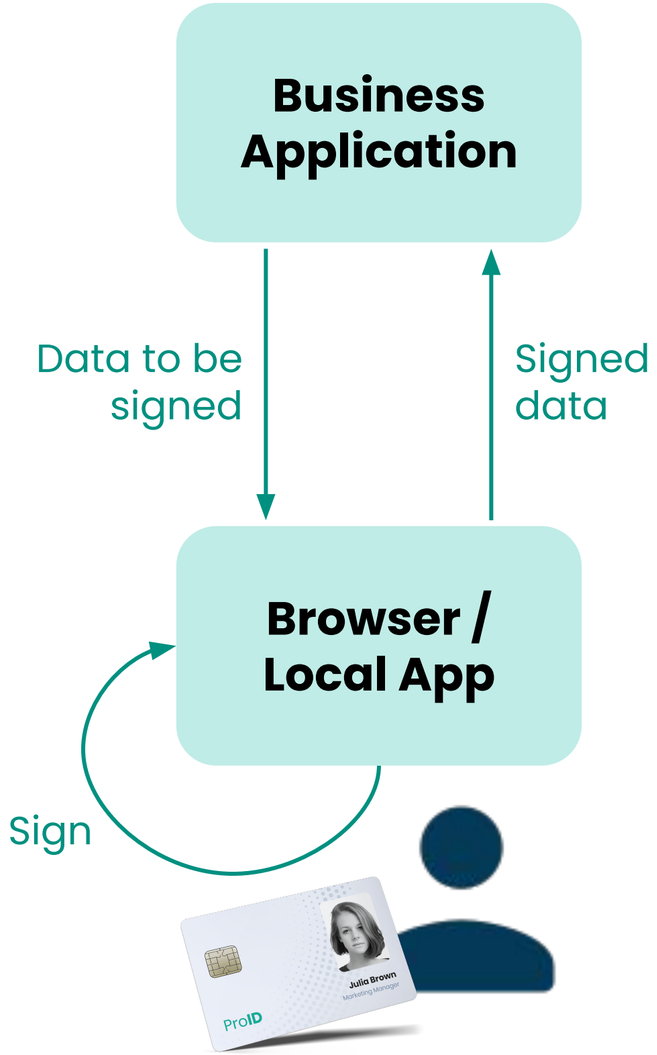
Why sign electronically?

- Paperless (digitization)
- Cost reduction
- Easy data transfer
- Electronic archive
- Process automation

- Consent record / non-repudiation of liability
- Expression of Will
- Data integrity
- Exposing the falsetto / fraud detection
- Timestamp

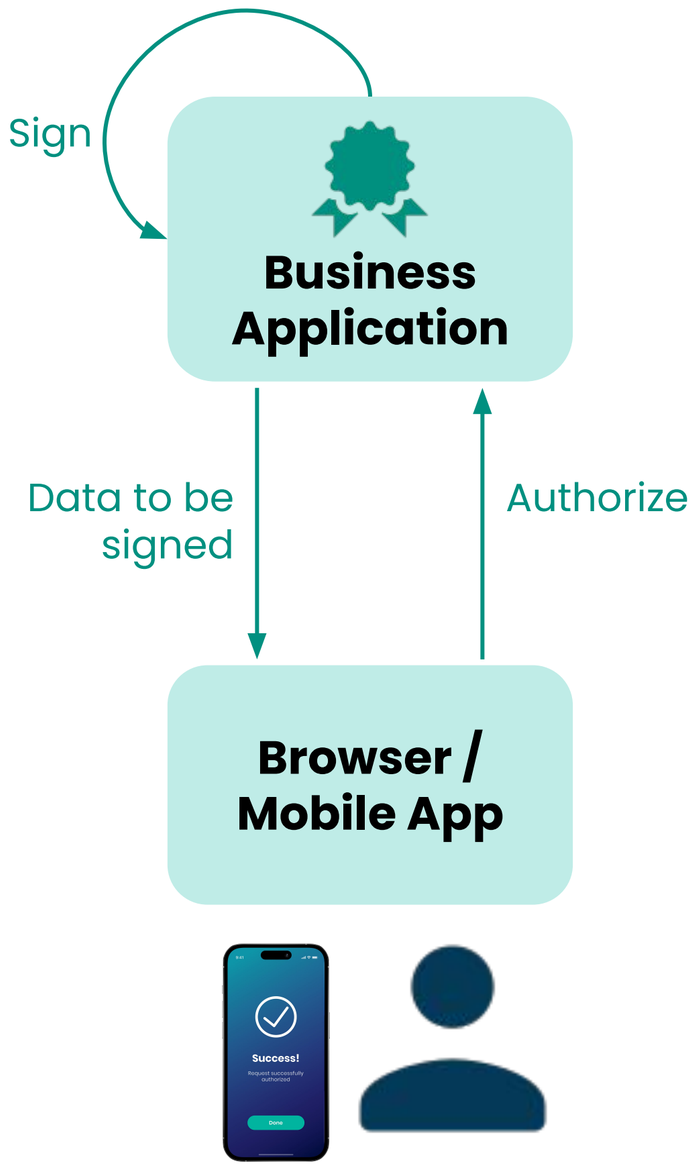
LOCAL electronic signature

- Key + certificate hold by user
- Token and service application distribution
- Certificate issuance / renewal
- The holder controls the key
- Natural 2-factor
- Badge (visual / electronic / contactless)



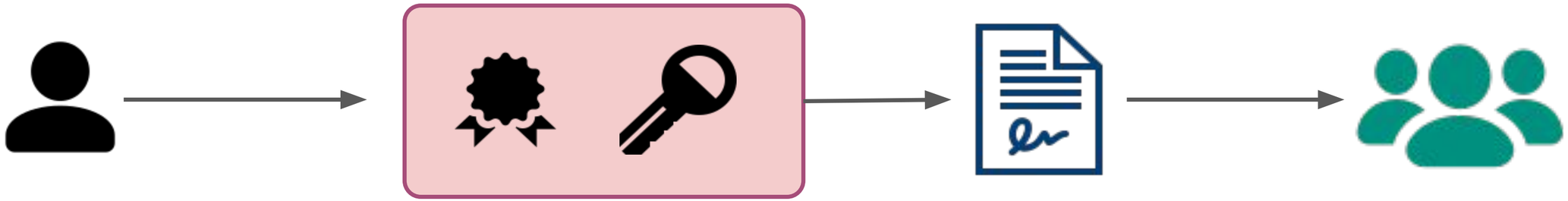
REMOTE electronic signature

- Key + certificate on the server
- Distribution of the authorisation tool
- Automatic certificate issuance
- Trust in the provider
- Suitable for mobiles / biometrics



Credibility of remote signature

- Expression of the user's will
- Misuse prevention



System tech solution

- Standards, regulation, legislation
- Key protection including access
- Connection to CA

Holder´s level of control over key

- Onboarding, identity verification
- Identification tool activation
- Authentication / authorization

Holder's level of control over the signature key

SCAL1

Sole control assurance level 1

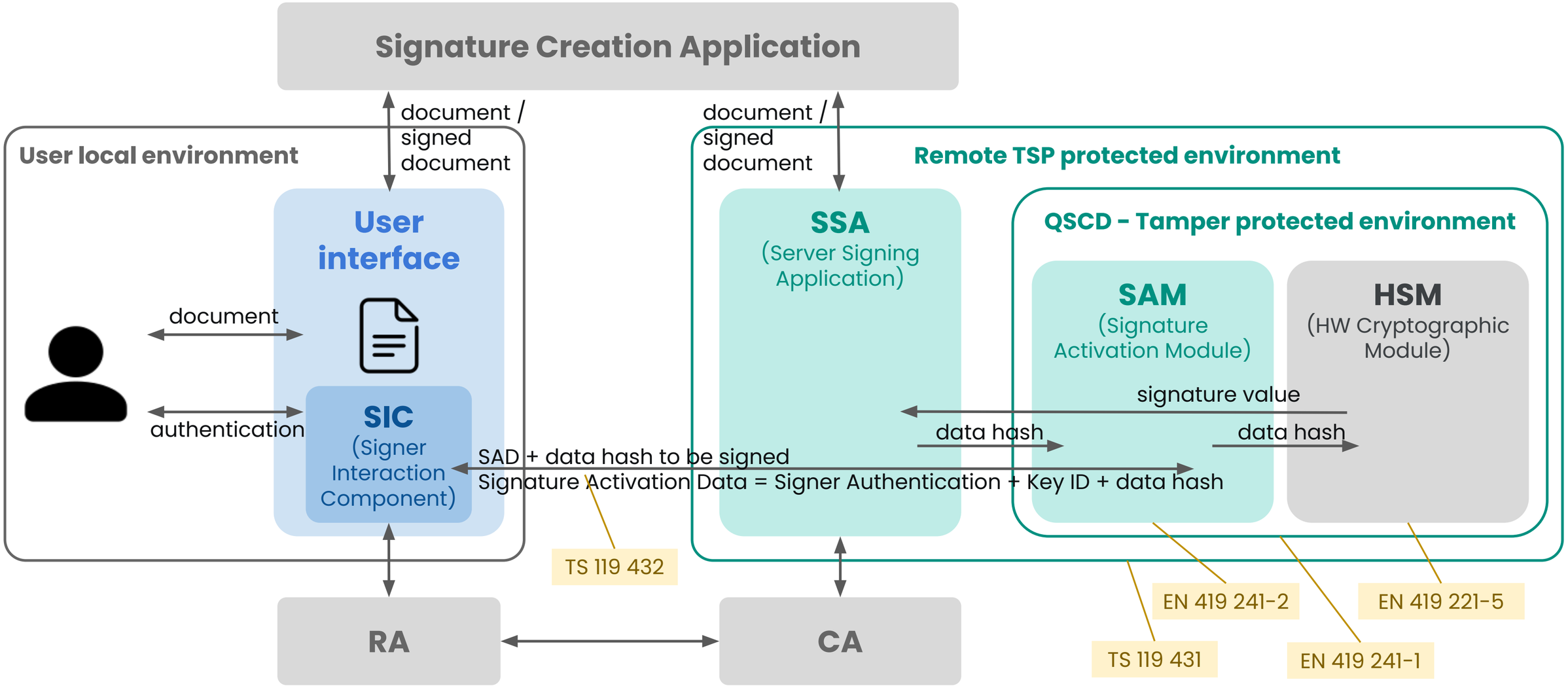
- **Low level** of trust in the signer's control over the signing key
- Use of key based on user authentication
- **Low assurance** level electronic identification tools
- **1-factor** authentication possible

SCAL2

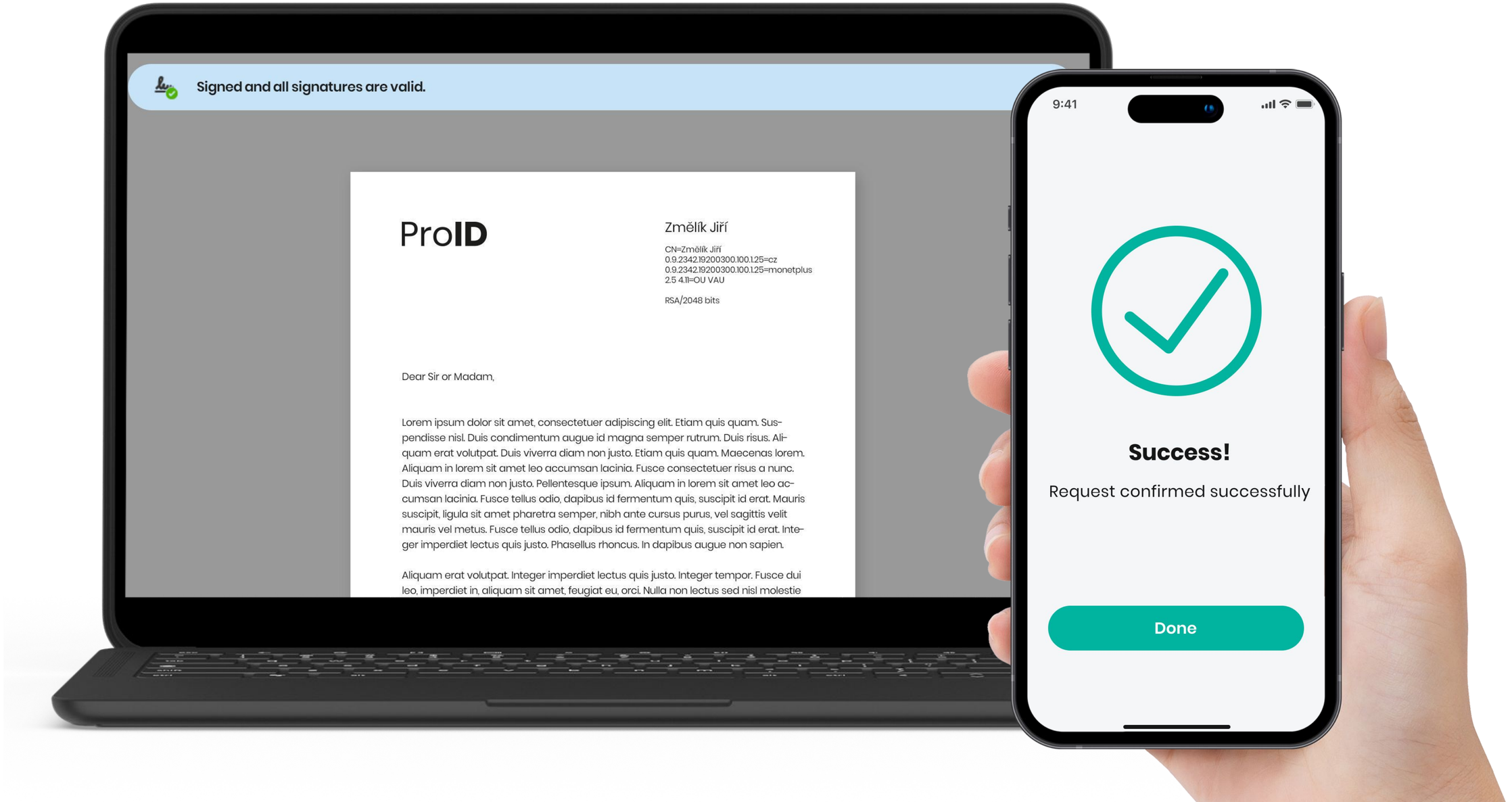
Sole control assurance level 2

- **High level** of trust in the signer's control over the signing key
- Use of a key based on cryptographically secure data, authorized by the signer
- Hardware Signing Key Security **(HSM)**
- **“Substantial” level** of assurance electronic identification tool
- **At least 2-factor** authentication + dynamic authentication

Remote signing - system architecture (SCAL2)



Signature flow



Signed data - formats

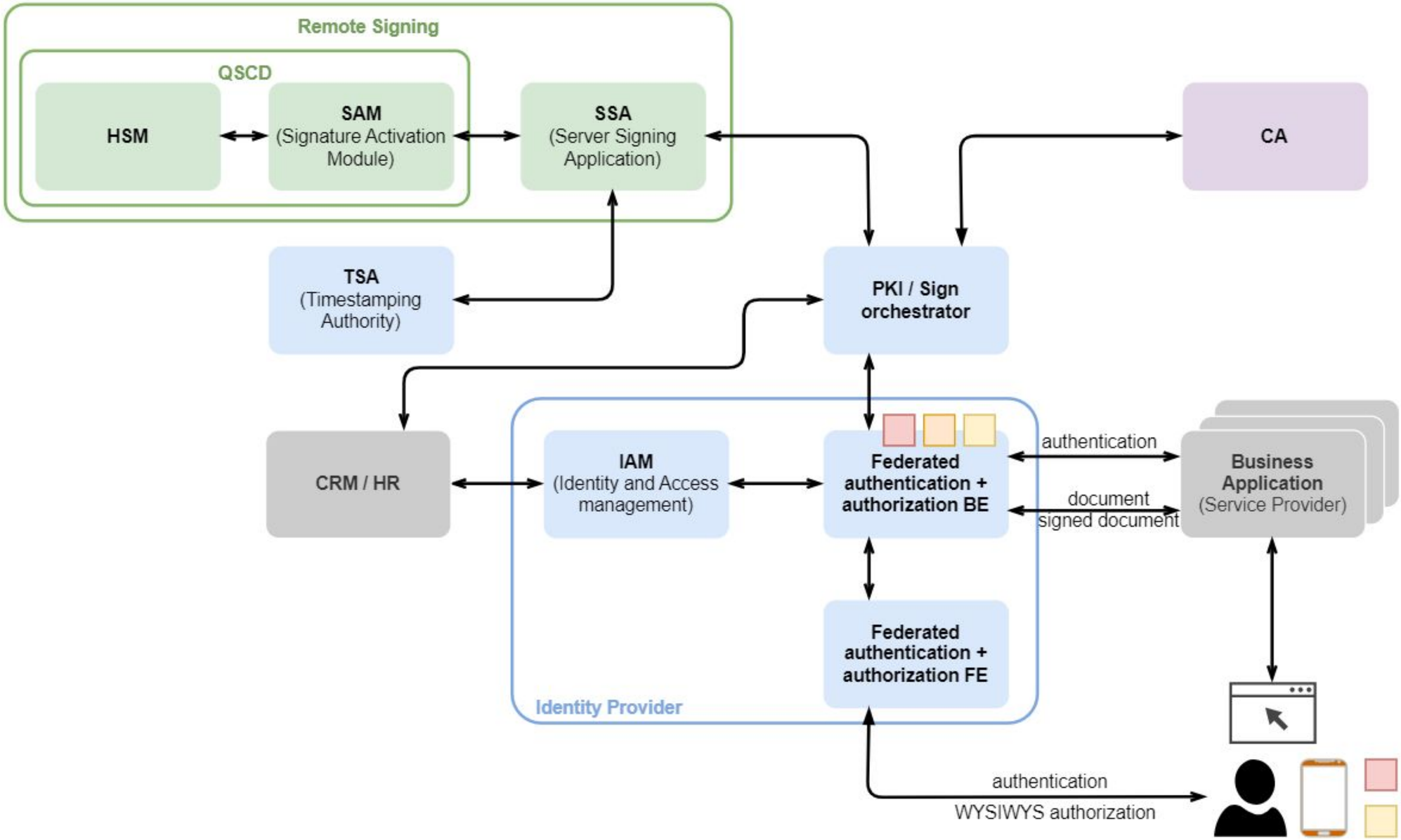
File type:

- **PDF** (PAdES)
- **CMS** (CAdES)
- **XML** (XAdES)
- **Sets of documents** (ASiC)

Signature type:

- **Level B-B**
  - Signature with certificate
- **Lebel B-T**
  - Same + timestamp)
- **Level B-LT**
  - Same + CA certificates, CRL

Remote signing (integration) - modular solution by Monet+



Advanced or Qualified signature?

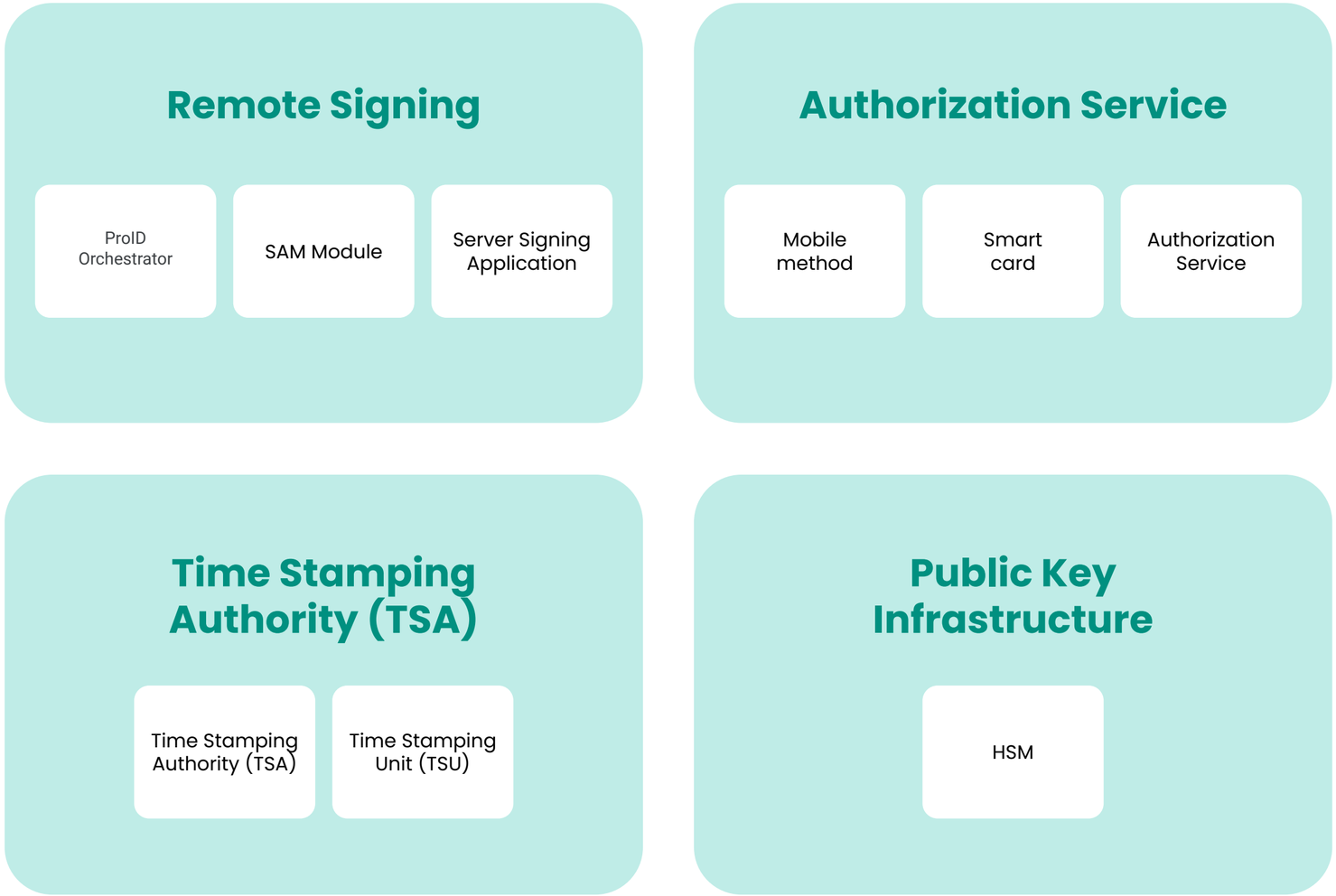
Advanced el. signature

- Closed ecosystem (signing within organization)
- No implementation standards??
- SCAL1 nebo SCAL2
- Key protection - HSM recommended
- On-premise possible
- No audit required
- Non-qualified CA & certificates
- Choice of tool and identification mechanism
- Contract-based trust

Qualified el. signature

- Signing beyond organization ecosystem, Public Administration
- Mandatory standards compliance
- SCAL2 only
- Key protection - in certified QSCD HSM
- Operated by a qualified TSP
- Audit according to eIDAS
- Qualified CA & certificates
- Specification of tool and identification mechanism
- Legislation-based trust

Monet+ Remote Signing Ecosystem



Monet+ Remote Sign

Certified by ASIT

Trusted List

Entrust N-Shield XC HSM

ETSI Plugtests

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Thank you!

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Main changes in remote signature (eIDAS1 vs eIDAS2)

- **Identifikace / autentizace prostřednictvím peněženky digit. identity**
- **Čl.3 bod 16: Správa prostředků pro vytváření el.podpisů na dálku, nově jako služba vytvářející důvěru**
- **Nový čl. 23a) s def. prostředku pro vytváření kval.podpisů na dálku**
- **Čl. 24 - změna požadavků na ověření identity žadatele o kval.certifikát**
  - Zpřísnění oznámených prostředků a změna pořadí způsobu ověření
- **Čl. 29, 1a) Klíče pro vytváření kval.podpisů může spravovat pouze kvalifikovaný poskytovatel (poskytující příslušnou službu - viz výše)**
- **Čl. 29a) Požadavky na kval. službu správy prostředků pro vytváření el.podpisů na dálku**
  - Do 12 měsíců budou stanoveny normy pro hodnocení shody
- **Certifikace QSCD platná 5 let (každé 2 roky hodnocení zranitelnosti)**

Formáty podepsaných dat (Advanced Electronic Signatures)

PAdES
(PDF Advanced Electronic Signature)

CAdES
(CMS Advanced Electronic Signature)

XAdES
(XML Advanced Electronic Signatures)

ASiC
(Associated Signature Container)

Level B-B
podpis s certifikátem

Level B-T
+ časové razítko

Level B-LT
+ CA certifikáty, CRL

Ověření v [ETSI Plugtests]