QED

PERSPECTIVES ON E-SIGNATURES

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Outline

- Reasons for using signatures
- Technical requirements
- Forms of e-signature
- Signature components
- The practical issue
- Technical challenges
- Issues for the relying party
- How courts assess the evidence
- Providing the evidence
Some reasons for using a signature

Primary purpose

evidence that the signatory approves and adopts the contents of the document – often referred to as content commitment

content of the document shall be binding

Secondary purpose

authenticate the identity of the person

content of the document has not been altered subsequently to the affixing of the signature

Record keeping purpose

Technical requirements

There are no technical requirements in their own right

Where and how the technology can help

- The signatory probably signed – *protected private keys*
- The signatory knew what they are signing – SCA & *WYSIWYS*
- The signatory was who they seem/purport to be – *authentication*
- Content of what was signed is not changed – *integrity via crypto*
- The signature is of use to the relying party
  - It is easy to understand – *presentation and assertions*
  - It has all that is needed to make use of the signed item – *formats*
  - It is robust enough to support the burden of proof required of it – *AdES?*
Forms of electronic signature

Typing a name into an e-mail or electronic document
- Interest in property; loan; employment; contract; assignment of guarantee; insurance policy; public administration; judiciary; statute of frauds; wills

Clicking the ‘I accept’ or ‘I agree’ icon

Name in an e-mail address

Using a scanned signature

Using a personal identification number (PIN)

Using a digital signature

Using a biometric measurement

Electronic sound

Name in an e-mail address
QED - Easy to say but how can we do it?
The practical issue

In some jurisdictions, the format that an electronic signature takes is not relevant.

Where one party relies on an electronic signature and the other party denies using the electronic signature, the burden remains as for manuscript signatures, that is:

*The party relying on the signature must prove the signature is not a forgery*

The problem that affects every form of electronic signature is this:

*The recipient does not know whether the signature was affixed to the e-mail or document by the person whose signature it purports to be*
Technical challenges

How robust is robust is robust?

- Non digital signatures
- Digital signatures
- Qualified QAdES/AdES
- Lightweight certificates
- Natural persons and organisations

Formatting and presentation

- What the signatory sees
  - The signature creation application
  - Longevity – the Hash

What the relying party sees… but what do they need?
The relying party

The party relying on the electronic signature has to ask themselves if they have sufficient evidence in place to rely on the signature.

If a dispute occurs, consideration must be given to:

*How to prove the nexus between the application of the signature, whatever form it takes, and the person whose signature it purports to be*

No form of electronic or digital signature proves the user caused the signature to be affixed to the e-mail or electronic document.

This gives rise to the technology and information assurance challenges so that the relying party has substantial proof.
How courts assess the evidence
But where is the evidence?

To be of value to the relying party there must be some robustness and evidence for the burden of proof.

Assurance and compliance
  Compliance regimes – demonstrable?
  Audit regimes – classic evidence
  Interoperability – knowing what the “trust” is

What is important?
In conclusion

The method of signature you use depends on the business and legal context.

Work out the problem before you try to solve it.

Assurance and evidence are both important and difficult.

QAdES sets a high standard but is difficult, expensive and complex - be sure you need this universal solution.

Just solve your problem – don’t be a purist – this saves money and effort.
Questions
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Some useful references

EU Standards

- Regulation (EU) No 910/2014 on Electronic Signatures
- ETSI EN 319 411-1 Gen Reqs. for Cert Providers
- ETSI EN 319 411-2 Reqs. for Qualified Cert Providers
- ETSI EN 319 412-2 Certs for Natural Persons
- ETSI EN 319 412-5 Qualified Certificate Statements
- ETSI TR 119 100 Guidance on Standards - Creation & Validation
- ETSI TR 119 101 Reqs. on Standards - Creation & Validation

RFC 3126 CMS Advanced Electronic Signatures (CAdES)

RFC 3275 XML-Signature Syntax and Processing
Free journal

*Digital Evidence and Electronic Signature Law Review*

http://journals.sas.ac.uk/deeslr

Draft Convention on Electronic Evidence

http://journals.sas.ac.uk/deeslr/issue/view/336/showToc

Free books


*International Electronic Evidence* (British Institute of International and Comparative Law, 2008)

https://www.biicl.org/international-electronic-evidence