

# On-line signing made simple

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*It is now time for a fundamental re-appraisal of electronic signatures. This is long overdue*

## The problem

Why is it that electronic signatures have not been widely adopted since electronic signatures legislation was first introduced in many countries around the turn of the century? The legislation provides that electronic signatures have the same legal effect as manuscript signatures on physical paper. In answer to the question, two principal reasons spring readily to mind. First, there is widespread lack of understanding as to what, in law, constitutes an electronic signature. Second, there is a widespread lack of understanding, coupled with a deep mistrust, of how technology works in this area.

Given the overwhelming desire of all organizations to reduce the internal cost of doing business, while at the same time preserving or increasing their margins, one might have thought that many people would have been quick to take advantage of the changes in the law and the available technology, so as to reduce costs.

It is now time for a fundamental re-appraisal of electronic signatures. This is long overdue.

## The solution

The solution quite simply involves a correct interpretation of the law and the application of technology, which is appropriate to the business risks being managed. What if the true position on the legal effectiveness of electronic signatures was, in fact, much more simple than generally imagined? What also if the true position on technology was not, in fact, that it is a major obstacle to widespread adoption, but rather that it actually provides a common environment in which every component of the current 'physical' world of people that sign documents, people who witness other people signing documents, and people acting and relying on signed documents, could be replicated in the electronic (or virtual) world, at every point in the process, either to the same level of security and comfort factor, or possibly to a higher such level?

## On-line signing of documents

Both the simplicity and the appropriateness of any technology solution for signing documents on-line rely on going back to first principles. If you normally do some due diligence checks on the identity, capacity and authorisation of the signatory before they sign, you should continue to do so. If you are talking with someone on the telephone, and need to do some checks to verify that they are who they say they are, you should continue to do so. So, by combining the use of normal fixed telephone lines, mobile telephones or voice over IP connections, with collaboration document sharing tools, which have both presence awareness utilities and high security, the principal contracting parties and their professional advisers can be virtually together on-line in real-time for the purpose of a 'signing ceremony' or a 'witness ceremony'. In other words, all that signatories, witnesses and recipients need to do is use business tools to replicate what they would otherwise do with manuscript signatures, physical presence and physical communication.

Moreover, the electronic document can be signed using either:

- Simple electronic signatures: by typing your name into the document, or inserting a scanned copy of your manuscript signature, or indeed making any kind of mark to denote your affirmation and understanding of the document, its contents and your intention to sign it, all of which satisfy the definition of an electronic signature under English law or other European laws based on the European Electronic Signatures Directive;<sup>1</sup> or
- More advanced types of electronic signature, such as a digital signature using a digital certificate, which is a form of electronic signature based on cryptographic techniques using so-called public and private key pairs.

<sup>1</sup> Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures (OJ 19.1.2000 L13/12).

It should be emphasised that, because the members of a virtual office workspace can authenticate each other to a mutually agreed level of satisfaction through a combination of (a) the security features inherent in that workspace's application, and (b) their natural ability to recognise each other's voices through the various voice communication channels available to them (which they already do every day when deciding whether to trust the person at the other end of the telephone), this creates a genuine opportunity to transact completed legal business using simple electronic signatures, rather than digital signatures. The former require no cost, while the latter cost money, require prior registration (which slows the whole process down) and are, in any event, not in common usage in business or amongst the general population. Put another way, the widespread absence of digital signatures does not prevent the widespread use of simple electronic signatures, because in the right technology environment, simple electronic signatures can be used for the purpose of signing, while digital signatures can be used for the immediately subsequent step of securing the document. They can be combined in one step, if the signatory has a digital signature, but they can be validly separated, so long as the recipient can satisfy itself with the document's security.

## Back to first principles about signatures

The single word answer to the question 'what is a signature' is 'evidence'. This fact is of paramount importance in understanding that the only difference between a manuscript signature and an electronic signature is the 'electronic' bit. The legal effect of the signature is the same. As Professor Chris Reed makes very clear in his paper,<sup>2</sup> the principal function of a signature is to provide evidence of three matters:

- the identity of the signatory;
- the intention to make a signature; and
- that the signatory adopts the contents of the document.

In other words, the signature is capable of demonstrating that the signatory had the intention to authenticate the document. The signed document provides evidence, which the signatory

or a recipient can use if there is a subsequent dispute.

Some documents are regarded as of higher importance than others. So, for example, they may require two or more signatures. For example, the board of directors of a company may authorize that legal contracts of a certain type or monetary value required two signatures, or they may require the signatory's signature to be witnessed: for example, a transfer of real property.

Many documents are signed in the absence of the physical presence of either a witness or the recipient, and are simply sent by physical post to the recipient, who then very often assumes (without taking any further action) that the signatory, and not an impostor made the signature on the document. Indeed, there is arguably no definitive way of checking that the signatory did actually apply their signature to the document, in the absence of a witness who can provide evidence to support this fact. So, one could further argue that much current signing practice is highly insecure in terms of risk to the recipient, unless the document is notarised, but notarisation is time consuming, expensive and, above all, impractical for many everyday signing situations.

## Definition of electronic signature

In the United Kingdom, s7(2) of the *Electronic Communications Act 2000* (the Act) defines an electronic signature as:

'so much of anything in electronic form as -  
(a) is incorporated into or otherwise logically associated with any electronic communication or electronic data; and  
(b) purports to be so incorporated or associated for the purpose of being used in establishing the authenticity of the communication or data, the integrity of the communication or data, or both.'

In other words, it reflects the principle of Professor Reed's authenticating intention summarised above.

## ■ Methods of electronic signature

According to the Law Commission,<sup>3</sup> there are four methods of electronic signature:<sup>4</sup> Σ

<sup>2</sup> Reed C, 'What is a Signature?', 2000(3) *The Journal of Information, Law and Technology* (JILT) <http://elj.warwick.ac.uk/jilt/00-3/reed/html/>.

<sup>3</sup> Law Commission, *Electronic Commerce: Formal Requirements in Commercial Transactions*, Advice from the Law Commission, December 2001, paragraphs 3.30 to 3.40, available in electronic format at <http://www.lawcom.gov.uk>.

<sup>4</sup> Stephen Mason *Electronic Signatures in Law* (LexisNexis Butterworths, November 2003) and Lorna Brazell *Electronic Signatures: Law and Regulation* (Sweet & Maxwell, January 2004) refer to additional methods of electronic signature.

*In the physical world, a document does not have any inherent feature to preserve its integrity, apart from its physical substance, which helps but does not, by itself, fully secure the document against subsequent change*

- typing a name or other identifying mark;
- scanning a manuscript signature;
- clicking on a web site button to this effect, e.g. the on-line store-style 'Confirm order' or 'Sign here'; and
- attaching a digital signature.

Section 7 (3) of the Act goes on to provide that:

'(3) For the purposes of this section an electronic signature incorporated into or associated with a particular electronic communication or particular electronic data is certified by any person if that person (whether before or after the making of the communication) has made a statement confirming that-

- (a) the signature,
- (b) a means of producing, communicating or verifying the signature, or
- (c) a procedure applied to the signature, is (either alone or in combination with other factors) a valid means of establishing the authenticity of the communication or data, the integrity of the communication or data, or both.'

The model execution clauses discussed below deliberately use similar language extracted from this section and section 7(2).

### **The difference between signing the document and securing the signed document**

This distinction is another of paramount importance in understanding the difference between manuscript signatures and electronic signatures. In the physical world, a document does not have any inherent feature to preserve its integrity, apart from its physical substance, which helps but does not, by itself, fully secure the document against subsequent change, although changes can be detected. Various practices have, of course, grown up to preserve the integrity of the signed document, such as keeping it in a safe place, or with a trusted third party, or binding the pages of the document in ribbon or with a bound strip, or getting the signatory to initial every page in addition to signing the back page, or to mark any manuscript changes to the printed text with the signatory's initials in the margin alongside them. All these practices mitigate the risk of someone tampering with the document after it has been signed, but they cannot completely remove the risk.

In the electronic world, a document does have some inherent features that can provide evidence that it was changed after it has been signed. For example, the metadata in the document provides an audit trail of who did what to the document and when, although this evidence can be manipulated. However, there are some very practical ways in which an electronic document can be made secure in terms of creating reliable evidence. One is to create an Adobe Acrobat pdf version of the signed document immediately after signature and then sign it with an advanced type of electronic signature, such as a digital signature using a digital certificate, which will provide good evidence of every change to the document made subsequent to the signature. However, even in the absence of a digital signature capability, the signatory could still, with or without the full knowledge or participation of any witness or recipient, immediately send the signed document to a trusted third party for safe keeping. For example, it could be sent to their solicitor, and the solicitor can then acknowledge receipt of the document to the recipient. This would, at least, provide some reasonable evidence of the integrity of the signed document at the time of signature. In the final analysis, it is all about risk. That risk is on the recipient, who must decide how much comfort they need before acting in reliance on the signed document.

To set the scene for the next section, the question could be: what is the difference in risk between:

- (a) Two contracting parties sitting around the meeting room table with a single page document in hard copy in front of them, each signing that document with a manuscript signature, and then both taking action in reliance on each other's signature.
- (b) The same two parties sitting around the same table with the same document on a computer screen in front of them, each signing that document with a simple electronic signature, by typing in their respective names, and then both taking action in reliance on each other's signature?

In terms of the effectiveness of the legal signature, there is no difference. In terms of the integrity of the document, if there is a subsequent dispute, there may be a difference, but it will depend on what types of step the parties, and their professional advisers (if any), take to secure the document.

## Comparison of various manuscript signature models with their electronic equivalents

In the next section of this article, a step-by-step account is described of the process of signing first with manuscript signatures and then with electronic signatures. In each example, the true legal position is, in fact, identical. Moreover, in terms of risk analysis, the electronic comparatives may (depending on your perception of technology) demonstrate a more secure position in terms of the evidential value of the signatory's signature.

### Model 1: Manuscript signature in the absence of a witness or the recipient

1

1. The signatory signs the original document with their manuscript signature.
2. The signatory sends a hard copy of the signed document by physical post to the recipient, or scans the document and sends it as an attachment to an e-mail.
3. On receipt of the signed document, the recipient acts on the signed document, on the basis of prior due diligence checks on the identity, capacity and authorisation of the signatory, or will undertake such additional checks as they see fit.

### Model 2: Electronic signature in the absence of a witness or the recipient

2

1. Identical to Model 1 paragraph 1 above, save that the signature is an electronic signature of any type.
2. Identical to Model 1 paragraph 2 above, save that there is no step of scanning the signed document, as the relevant document is already in electronic form and ready to be attached to an e-mail.
3. Identical to Model 1 paragraph 3 above.

### Model 3: Manuscript signature in the presence of a witness or the recipient

3

1. Identical to Model 1 paragraph 1 above.
2. The witness (there may be more than one) signs the signed document as a witness with a manuscript signature. (Even in this example, there is no legal or technical reason why the witness could not use an electronic signature, even in its simplest form, by typing their name into the document.)
3. The signatory sends a hard copy of the signed document to the recipient by physical post or scans the document and sends it as an attachment to an e-mail.
4. On receipt of the signed document, the recipient acts on the signed document, on the basis of prior due diligence checks on the identity, capacity and authorisation of the signatory, or will undertake such additional checks as they see fit.

### Model 4: Electronic signature in the presence of a witness or the recipient

4

1. Identical to Model 3 paragraph 1 above, save only that the signature is an electronic signature of any type.
2. Identical to Model 3 paragraph 2 above, save only that the signature is an electronic signature of any type. (Even in this example, there is no legal or technical reason why, the witness could not use a manuscript signature, on a hard copy of the document, even though the signatory had used an electronic signature.)
3. Identical to Model 3 paragraph 3 above, save only that there is no scanning step, because the relevant document is already in electronic form and ready to be sent as an attachment to an e-mail (unless the witness has used a manuscript signature, in which case the document would have to be scanned before being sent to the recipient).
4. Identical to Model 3 paragraph 4 above.

**Model 5: Manuscript signature in the electronic presence of a witness or the recipient<sup>5</sup>**

5

1. Identical to Model 1 paragraph 1 above.
2. The signatory scans the original signed document and provides access to the electronic version of the scanned document for the witness and the recipient within a secure virtual office workspace.
3. The witness and recipient signify their confirmation that the signed document contains a manuscript signature against the name of the signatory. Neither the witness nor the recipient can confirm definitively that the signature was actually made by the signatory, because the signatory was not physically present. However, to the extent that the witness or the recipient already have a copy of the signatory's usual manuscript signature, the witness or recipient could additionally confirm this in their declaration. For example: "I confirm that the manuscript signature used by the signatory to sign this document appears to be the same as that used by them to sign other documents, originals or copies of which I have in my possession." Alternatively, to increase the evidential value of the signatory's signature, the witness or the recipient could, by telephone, give to the signatory, in advance of the signatory signing, a unique number (for instance, the matter reference number or some other unique number), with instructions to the signatory to place this number at an agreed point in his name, such as between the given name and family name, immediately before the given name, immediately after the family name, or after the first letter of the given name. In other words, the recipient is trying to obtain reasonably good evidence that the intended signatory was, in fact, the same person who actually signed the document.
4. The witness and recipient either (a) print off a copy of the document, sign it with their manuscript signature and sends back to the signatory a hard copy of the document by physical post, or a scanned copy as an attachment to an e-mail or (b) sign it with their electronic signature and sends back to the signatory a hard copy of the document by physical post or a scanned copy as an attachment to an e-mail.
5. Identical to Model 3 paragraph 3 above.
6. Identical to Model 3 paragraph 4 above.

**Model 6: Electronic signature in the electronic presence of a witness or the recipient**

6

1. Identical to Model 1 paragraph 1 above, save only that the signature is an electronic signature of any type.
2. The signatory shares the original signed document with the witness and recipient within a secure virtual office workspace.
3. The witness and recipient confirm that the signed document contains an electronic signature of the signatory. Unlike Model 5 paragraph 3 above, the witness and recipient can confirm definitively the electronic signature of the signatory, because it can be made in real-time in the on-line presence of the witness or the recipient or both of them together. However, to the extent that the evidence might be regarded of lesser value, if the electronic signature was just a typed name, the witness or the recipient could increase the evidential value of the signatory's signature, by first telephoning the signatory, in advance of the signatory signing, and giving to them a unique number (for example the matter reference number or some other unique number), with instructions to the signatory to place this number at an agreed point in their name, for instance between the given and family names, immediately before the given name, immediately after the family name, or after the first letter of the given name.
4. The witness and the recipient either (a) signs the electronic document with his electronic signature and sends back to the signatory a hard copy of the document by physical post or the electronic document as an attachment to an e-mail or (b) prints off a copy of the document, signs it with their manuscript signature and sends back to the signatory a hard copy of the document by physical post or a scanned copy as an attachment to an e-mail.
5. Identical to Model 3 paragraph 3 above.
6. Identical to Model 3 paragraph 4 above.

<sup>5</sup> It should be stressed here that the witness and the recipient could be electronically present with the signatory, either concurrently or consecutively in time, which would depend to the large extent on when they would otherwise be physically present in an equivalent physical circumstance.

## Model execution clauses

There follow two examples of a possible execution clause that a signatory, witness and recipient could use with a simple electronic signature, the wording of which draw heavily on the core part of the relevant definitions of electronic signature as set out in the *Electronic Communications Act 2000*.

### ■ Model execution clause by a signatory using a simple electronic signature

Individual  
Signed by  
COLIN VENDOR

Corporate  
Signed by  
COLIN VENDOR  
[Managing Director  
For and on behalf of  
C. VENDOR LIMITED]

#### Declaration

I understand the entire contents of this document and intend to adopt them by signing this document.

I have signed this document with my electronic signature by typing my name into the space marked below and inserted the time and date of my electronic signature.

I have included within the typing of my name a unique reference number given to me by [e.g.] my solicitor.

I have incorporated my electronic signature into this document and otherwise logically associated it with this document in this way for the purpose of establishing the authenticity and integrity of this document.

I cannot deny having made this electronic signature.

[Where appropriate] By signing this document, I am giving my solicitor express authority to time and date stamp when this document shall take effect.

Insert signature, time and date here

ColinCV123<sup>6</sup> Vendor

Time: 15:00

Date: 1 October 2004

### ■ Model execution clause by a witness or recipient using a simple electronic signature

Signed by  
C. VENDOR'S SOLICITOR  
Solicitor and Partner of  
CV. SOLICITORS LLP

#### Declaration

I confirm that this document contains in the box marked above an electronic signature made by the Signatory in my physical presence.

OR

<sup>6</sup> These numbers could be a unique matter reference number or some other unique number given to the signatory by both the witness and recipient, or either the witness or the recipient in advance of the signing or at the signing.

I confirm that this document contains in the box marked above an electronic signature made by the Signatory in my on-line presence, which [e.g.] involved us simultaneously sharing a telephone call and collaborating together on this document in a virtual office workspace using a secure collaboration workspace environment from/called [INSERT IF THE PARTIES WISH TO RECORD THIS].

I have signed this document with my electronic signature by typing my name into the space marked below and inserted the time and date of my electronic signature.

I have included within the typing of my name a unique reference number given to me by [my client].

I have incorporated my electronic signature into this document and otherwise logically associated it with this document in this way for the purpose of establishing the authenticity and integrity of this document.

I cannot deny having made this electronic signature.

[Where appropriate] In accordance with the authority given to me above by the Signatory, I confirm that the time and date stamp of my electronic signature is the time and date on which this document shall take effect.

---

Insert signature here  
C.Vendor's9876CVSolicitor  
Time: 15:05  
Date: 1 October 2004

## Conclusion

Naturally, everyone takes a physical signature for granted. After all, signing practices and customs have developed over many centuries. However, the principles behind the use of signatures have not changed, and it is by going back to these, as well re-reading carefully what the new electronic signatures laws actually say, that we can find a way to avoid all the problems involved in getting documents signed and then waiting for them to arrive in the post before the next step in the process can be considered. Technology exists to smooth the process, not hinder it. ■

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Tim Travers is a former English practising solicitor and now consultant specialising in helping professional services firms more profitably manage what they know. He maintains a close interest in developments of e-signature applications, having worked on certification-service provider solutions in UK legal and healthcare.

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