OXFORD COLLEGE SCIENTIFIC JOURNAL
Volume 1, Issue 2 (2026) · Open access

REVIEW ARTICLE · LAW

Electronic Contracts and Electronic Signatures: A Comparative Overview of International, European, United Kingdom and United States Frameworks

Oxford College Research Office
Oxford College, London, United Kingdom

Published 24 November 2026 · Volume 1, Issue 2 (2026)

ABSTRACT

Contracts are now routinely concluded through websites, email and electronic signature platforms. This article provides a comparative overview of the legal frameworks that give effect to such transactions. It explains the principles developed by the United Nations Commission on International Trade Law — functional equivalence, technology neutrality and non-discrimination — and traces their influence on the European Union's eIDAS Regulation, the law of England and Wales, and the United States Electronic Signatures in Global and National Commerce Act. It compares the treatment of simple, advanced and qualified electronic signatures, outlines common exceptions, and identifies practical points for organisations that contract electronically: choosing an appropriate level of signature, keeping reliable evidence, and checking formal requirements for particular documents. The article concludes that the main legal question is rarely whether an electronic signature is valid in principle, but whether the chosen method provides sufficient evidence of identity and intention for the transaction concerned.

Keywords: electronic contracts; electronic signatures; eIDAS; UNCITRAL; ESIGN Act; functional equivalence

1. Introduction

Commercial and consumer contracts are increasingly concluded without paper. Customers accept terms on websites, businesses exchange offers by email, and organisations use electronic signature platforms for employment contracts, supplier agreements and corporate documents. Legal systems have responded with rules that recognise electronic communications and signatures. This article gives a comparative overview of those rules at international level and in three influential jurisdictions: the European Union, the United Kingdom (England and Wales) and the United States. It is intended as an introduction to the principles and is not legal advice on any particular transaction.

2. International foundations

2.1 The UNCITRAL model laws

The United Nations Commission on International Trade Law (UNCITRAL) adopted the Model Law on Electronic Commerce in 1996 and the Model Law on Electronic Signatures in 2001. These texts

are not binding in themselves; they are models that states may adopt in national legislation. Three principles run through them.

- **Functional equivalence.** Where the law requires writing, a signature or an original, an electronic record can satisfy that requirement if it fulfils the same purpose — for example being accessible for later reference, or identifying the person and indicating their intention.
- **Technology neutrality.** The law should not favour a particular technology, so that it remains applicable as technology changes.
- **Non-discrimination.** Information should not be denied legal effect solely because it is in electronic form.

2.2 The Electronic Communications Convention

The United Nations Convention on the Use of Electronic Communications in International Contracts (2005) applies these principles to cross-border contracts between parties in contracting states, addressing issues such as the time and place of dispatch and receipt of electronic communications.

3. The European Union: eIDAS

Regulation (EU) No 910/2014 on electronic identification and trust services (eIDAS) establishes a harmonised framework across the Member States. It distinguishes three levels of electronic signature.

- A **simple electronic signature** is any data in electronic form attached to or logically associated with other data and used by the signatory to sign — for example a typed name or a scanned signature image.
- An **advanced electronic signature** must be uniquely linked to and capable of identifying the signatory, created using data under the signatory's sole control, and linked to the signed data so that later changes are detectable.
- A **qualified electronic signature** is an advanced signature created by a qualified signature creation device and based on a qualified certificate issued by a qualified trust service provider.

Under eIDAS, an electronic signature cannot be denied legal effect or admissibility as evidence solely because it is electronic or does not meet the qualified standard. A qualified electronic signature, however, has the equivalent legal effect of a handwritten signature and must be recognised as such in all Member States. The framework was amended by Regulation (EU) 2024/1183, which introduces European Digital Identity Wallets and extends the trust-services framework, while retaining the three-level structure of signatures.

National law continues to determine which documents require a particular form, such as notarial deeds or certain property transactions.

4. The United Kingdom (England and Wales)

The Electronic Communications Act 2000 provides that an electronic signature, and its certification, is admissible in evidence in relation to the authenticity or integrity of a communication or data. After the United Kingdom left the European Union, a retained version of the eIDAS rules continued to apply domestically, with modifications.

The common law has long taken a flexible approach to what counts as a signature, focusing on whether the mark was made with the intention to authenticate the document. In its 2019 report on the electronic execution of documents (Law Com No 386), the Law Commission of England and Wales concluded that an electronic signature is capable in law of being used to execute a document, including a deed, provided that the person signing intends to authenticate the document and any formalities relating to execution are satisfied. Particular care is still required for deeds that must be witnessed and for documents subject to specific statutory or registration requirements.

5. The United States: ESIGN and UETA

In the United States, the Electronic Signatures in Global and National Commerce Act of 2000 (ESIGN), codified at 15 U.S.C. § 7001 et seq., provides that a signature, contract or other record relating to a transaction in or affecting interstate or foreign commerce may not be denied legal effect solely because it is in electronic form. Most states have also adopted the Uniform Electronic Transactions Act (UETA), which follows similar principles at state level. ESIGN includes specific consumer-protection requirements, notably consent to receive information electronically where the law requires it to be provided in writing. Certain categories, such as wills and some family-law documents, are excluded.

6. Comparison

Aspect	EU (eIDAS)	England and Wales	United States
Basic principle	Non-discrimination of electronic signatures	Admissibility; intention to authenticate	No denial of effect solely for electronic form
Tiered signatures	Simple, advanced, qualified	Recognises tiers (retained rules) but flexible at common law	Generally technology-neutral, no statutory tiers
Equivalence to handwriting	Guaranteed for qualified signatures	Depends on intention and formalities	Generally equivalent for covered transactions
Typical exceptions	Set by national law (e.g. notarial acts)	Witnessing and registration requirements	Wills, certain family-law and court documents

7. Practical implications for organisations

1. **Match the signature to the risk.** Simple electronic signatures are adequate for many commercial contracts; higher-risk or cross-border transactions may justify advanced or qualified signatures.
2. **Keep reliable evidence.** Audit trails showing who signed, when, from which account and with what authentication are often more important in a dispute than the signature itself.
3. **Check formal requirements.** Documents such as deeds, real-estate transfers, powers of attorney and wills may be subject to specific rules.
4. **Obtain consumer consent where required.** In consumer transactions, rules on providing information electronically must be followed.
5. **Consider cross-border recognition.** Where a contract will be relied on in several jurisdictions, choosing a method recognised in each reduces later uncertainty.

8. Conclusion

International principles of functional equivalence, technology neutrality and non-discrimination have been widely adopted, and in most commercial contexts electronic contracts and signatures are valid in principle. The practical legal question is therefore one of evidence and form: whether the chosen method reliably shows who signed and with what intention, and whether any special formalities apply. Organisations that select signature methods according to risk and keep good records can contract electronically with confidence.

References

Electronic Communications Act 2000, c. 7 (United Kingdom).

Electronic Signatures in Global and National Commerce Act, Pub. L. No. 106-229, 114 Stat. 464 (2000), codified at 15 U.S.C. § 7001 et seq.

Law Commission. (2019). *Electronic execution of documents* (Law Com No 386). Law Commission of England and Wales.

Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market (eIDAS). *Official Journal of the European Union,* L 257.

Regulation (EU) 2024/1183 of the European Parliament and of the Council of 11 April 2024 amending Regulation (EU) No 910/2014 as regards establishing the European Digital Identity Framework. *Official Journal of the European Union.*

United Nations Commission on International Trade Law. (1996). *UNCITRAL Model Law on Electronic Commerce.* United Nations.

United Nations Commission on International Trade Law. (2001). *UNCITRAL Model Law on Electronic Signatures.* United Nations.

United Nations. (2005). *United Nations Convention on the Use of Electronic Communications in International Contracts.* United Nations.

Article information. This review article was prepared by the Oxford College Research Office with the assistance of generative AI tools, and was reviewed and approved by the editorial office of the Oxford College Scientific Journal. It synthesises published literature and does not report new empirical data.

How to cite. Oxford College Research Office (2026). Electronic Contracts and Electronic Signatures: A Comparative Overview of International, European, United Kingdom and United States Frameworks. *Oxford College Scientific Journal*, 1(2).

Licence. © 2026 Oxford College. Published open access by Oxford College.