**End-to-end trade digitalization: Questionnaire on regulatory analysis**

**Introduction**

The United Nations Commission on International Trade Law (UNCITRAL) at its fifty-seventh session requested the secretariat to conduct a stocktaking exercise to examine all UNCITRAL legislative texts that referred to electronic aspects, including both UNCITRAL texts on electronic commerce and other texts that include provisions on the use of electronic means (A/79/17, para. 299). The Commission also requested a survey of the enactment of those texts and of the references to such texts contained in trade agreements. The secretariat was requested to circulate a questionnaire inviting States to provide the information and to submit copies of the relevant laws.

This Questionnaire has been prepared by the International and Comparative Law Research Center (ICLRC) as a part of its research complementing the stocktaking exercise of the secretariat and is aimed at harmonizing the existing approaches to digital trade. The main objectives of the ICLRC research are to identify the current state of implementation of the UNCITRAL documents, as well as to outline the alternative approaches and possible gaps.

This Questionnaire embraces [MLEC](https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/19-04970_ebook.pdf), [MLES](https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/ml-elecsig-e.pdf), [ECC](https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/06-57452_ebook.pdf), [MLETR](https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/mletr_ebook_e.pdf), [MLIT](https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/mlit_en.pdf), [MLAC](https://uncitral.un.org/sites/uncitral.un.org/files/mlac_en.pdf). It consolidates the UNCITRAL’s provisions on end-to-end trade digitalization based on the existing model laws and the convention in a generalized form in order to avoid duplication.

**Instructions**

This Questionnaire consists of seven parts. The first part deals with the regulatory landscape of your country. Kindly check which areas of digital trade are already covered by specific laws and briefly describe how each of the UNCITRAL General Principles is implemented in your country.

Parts II to VI are based on the relevant model laws and the convention. When answering the questions, please use one of the three colours to fill in the cells in accordance with the colour coding of the study:

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| **no regulation:**  the subject matter is not subject to any specific regulation in your country, but general rules of commercial or contract law may apply | **UNCITRAL regulation:**  the relevant UNCITRAL provision is fully incorporated in the laws of your country. We kindly ask you to briefly describe this regulation | **alternative regulation:** the issue addressed by the relevant UNCITRAL provision is regulated in the alternative manner by the laws of your country. We kindly ask you to briefly describe your country's approach so that we can use it for the proposals for further harmonization and consolidation of UNCITRAL instruments. |

Part VII deals with the regulatory gaps and aims at identifying the areas not yet covered by the UNCITRAL instruments.

The ICLRC would appreciate receiving responses by the end of February to allow time for compilation and analysis. The ICLRC reserves the right to make the information you provide publicly available unless you indicate otherwise.

**Part I. General**

What special laws are there in your country?

on electronic commerce/digital trade

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| Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on electronic commerce') Regulation 2022/2065 on a Single Market For Digital Services (‘Digital Services Act’) |

on electronic/digital signatures

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| 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 and repealing Directive 1999/93/EC |

on identity and trust services

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| 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 and repealing Directive 1999/93/EC |

on automated contracting

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on electronic/digital transferable records

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**Adherence to the UNCITRAL General Principles**

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| **UNCITRAL principle** | **Content of provision** | **Implementation in your country** |
| Non-discrimination | Non-discrimination between information on a paper medium and information communicated or stored electronically. | An electronic document shall not be denied legal effect and admissibility as evidence in legal proceedings solely on the grounds that it is in electronic form |
| Technology neutrality | No discrimination should be made among the various techniques that may be used to communicate or store information electronically. | Laws and regulations do not require the use of any specific technology and do not favour nor discriminate against any technology |
| Functional equivalence | Analysis of the purposes and functions of the traditional paper-based requirement with a view to determining how those purposes or functions could be fulfilled through electronic-commerce techniques. | Modern EU Internet regulation is fundamentally based on the principle of functional equivalence or regulating functionally similar services alike. As new and disruptive services emerge, the laws are consistently adjusted but not fundamentally changed[[1]](#footnote-1) |

**Part II. Electronic communications**

no regulation,UNCITRAL regulation**,** alternative regulation

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| **UNCITRAL provision** | **Content of provision** | **Implementation in your country** |
| Consent to use | Nothing requires a party to use or accept electronic communications, but a party’s agreement to do so may be inferred from the party’s conduct. | Implemented |
| Technological neutrality of communication | The rules do not depend on or presuppose the use of particular types of technology and could be applied to communication and storage of all types of information. | Implemented |
| Writing | The requirement to be in writing is met if the information is accessible so as to be usable for subsequent reference. | An electronic signature should not be denied legal effect on the grounds that it is in an electronic form or that it does not meet the requirements of the qualified electronic signature. However, the requirements for the equivalency between electronic and handwritten signatures are set forth by the Regulation |
| Original | Requirement to be in original is met if the integrity of the information is assured from the time when it was first generated in its final form and, where it is required that the information it contains be made available, that information is capable of being displayed to the person to whom it is to be made available. | No regulation |
| Time of dispatch | The time of dispatch of an electronic communication is the time when it leaves an information system or, if the electronic communication has not left an information system, the time when the electronic communication is received. | No regulation |
| Time of receipt | The time of receipt of an electronic communication is the time when it becomes capable of being retrieved by the addressee at an electronic address designated by the addressee. | No regulation |
| Place of dispatch and receipt | An electronic communication is deemed to be dispatched at the place where the originator has its place of business and is deemed to be received at the place where the addressee has its place of business. | No regulation |
| Invitations to make offers | Advertisement is to be considered as an invitation to make offers, unless it clearly indicates the intention of the party making the proposal to be bound in case of acceptance. | No regulation |
| Withdrawal due to error | The party that made the error has the right to withdraw the portion of the electronic communication in which the input error was made if:  (a) other party was notified of the error as soon as possible after having learned of the error and indicates that he or she made an error in the electronic communication; and  (b) the party that made the error has not used or received any material benefit or value from the goods or services, if any, received from the other party. | The service provider makes available to the recipient of the service appropriate, effective and accessible technical means allowing him to identify and correct input errors, prior to the placing of the order |

**Part III. Electronic signatures**

no regulation,UNCITRAL regulation,alternative regulation

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| **UNCITRAL provision** | **Content of provision** | **Implementation in your country** |
| Signature technology neutrality | The law recognizes any method of creating an electronic signature that satisfies the requirements. | Implemented |
| Compliance with a requirement for a signature | Where the law requires a signature of a person (either in the form of an obligation or in the form of consequences for the absence of a signature), that requirement is met if an electronic signature is used that is as reliable as was appropriate for the purpose for which the data message was generated or communicated. | 2level approach:  An electronic signature shall not be denied legal effect and admissibility as evidence in legal proceedings solely on the grounds that it is in an electronic form or that it does not meet the requirements for qualified electronic signatures. A qualified electronic signature shall have the equivalent legal effect of a handwritten signature. |
| Reliability of signature | An electronic signature is considered to be reliable if:  (a) The signature creation data are linked to the signatory and to no other person;  (b) The signature creation data were, at the time of signing, under the control of the signatory and of no other person;  (c) Any alteration to the electronic signature, made after the time of signing, is detectable; and  (d) Where a purpose of the legal requirement for a signature is to provide assurance as to the integrity of the information to which it relates, any alteration made to that information after the time of signing is detectable. | Implemented for advanced e-signatures only |
| Conduct of the signatory | Signatory shall:  (a) Exercise reasonable care to avoid unauthorized use of its signature creation data;  (b) Without undue delay, notify that the signature creation data have been compromised; or there is a substantial risk that the signature creation data may have been compromised;  (c) Ensure the accuracy and completeness of all material representations that are included in the certificate;  (d) Bear the legal consequences of its failure to satisfy the above mentioned requirements. | Requirements established for electronic signature creation devices |
| Conduct of the certification service provider | Certification service provider shall:  (a) Exercise reasonable care to ensure the accuracy and completeness of all material representations made by it that are relevant to the certificate or that are included in the certificate;  (b) Provide reasonably accessible means that enable a relying party to identify the certification service provider, verify the signatory and its control of the signature creation data at the time when the certificate was issued; and to verify that signature creation data were valid at or before the time when the certificate was issued;  (c) Provide reasonably accessible means that enable a relying party to ascertain:  (i) The method used to identify the signatory;  (ii) Any limitation on the purpose or value for which the signature creation data or the certificate may be used;  (iii) That the signature creation data are valid and have not been compromised;  (iv) Any limitation on the scope or extent of liability stipulated by the certification service provider;  (v) Whether means exist for the signatory to give notice that the signature creation data have been compromised;  (vi) Whether a timely revocation service is offered;  (d) Bear the legal consequences of its failure to satisfy the above mentioned requirements. | Implemented |
| Requirements to certification service providers | In determining whether, or to what extent, any systems, procedures and human resources utilized by a certification service provider are trustworthy, regard may be had to the following factors:  (a) Financial and human resources, including existence of assets;  (b) Quality of hardware and software systems;  (c) Procedures for processing of certificates and applications for certificates and retention of records;  (d) Availability of information to signatories identified in certificates and to potential relying parties;  (e) Regularity and extent of audit by an independent body;  (f) The existence of a declaration by the State, an accreditation body or the certification service provider regarding compliance with or existence of the foregoing;  (g) Any other relevant factor. | Implemented |
| Conduct of the relying party | A relying party shall bear the legal consequences of its failure:  (a) To take reasonable steps to verify the reliability of an electronic signature; or  (b) Where an electronic signature is supported by a certificate, to take reasonable steps:  (i) To verify the validity, suspension or revocation of the certificate; and  (ii) To observe any limitation with respect to the certificate. | Requirements established for the validation of qualified electronic signatures |
| Recognition of foreign certificates and electronic signatures | A certificate issued or an electronic signature created or used outside [the enacting State] shall have the same legal effect in [the enacting State] as a certificate (or signature) issued (created or used) in [the enacting State] if it offers a substantially equivalent level of reliability.  In determining whether a certificate or an electronic signature offers a substantially equivalent level of reliability, regard shall be had to recognized international standards and to any other relevant factors. Where parties agree to use certain types of electronic signatures or certificates, that agreement shall be recognized as sufficient for the purposes of cross-border recognition, unless that agreement would not be valid or effective under applicable law. | Trust services provided by trust service providers established in a third country shall be recognised as legally equivalent to qualified trust services provided by qualified trust service providers established in the Union where the trust services originating from the third country are recognised under an agreement concluded between the Union and the third country in question or an international organisation |

**Part IV. Identity and trust services**

no regulation,UNCITRAL regulation, alternative regulation

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| **UNCITRAL provision** | **Content of provision** | **Implementation in your country** |
| E-identification and identity proofing | Where the law requires the identification of a person, or provides consequences for the absence of identification, that requirement is met with respect to identity management services if a reliable method is used for the identity proofing and electronic identification. | E-identification is recognized subject to the electronic identification scheme and the corresponding assurance level of the electronic identification means |
| Electronic seals | Where the law requires a legal person to affix a seal, or provides consequences for the absence of a seal, that requirement is met if a reliable method is used:  (a) To provide reliable assurance of the origin of the data message; and  (b) To detect any alteration to the data message after the time and date of affixation, apart from the addition of any endorsement and any change that arises in the normal course of communication, storage and display. | Implemented |
| Electronic timestamps | Where the law requires a document, record, information or data to be associated with a time and date, or provides consequences for the absence of a time and date, that requirement is met if a reliable method is used:  (a) To indicate the time and date, including by reference to the time zone; and  (b) To associate that time and date with the data message. | Implemented |
| Electronic archiving | Where the law requires a document, record or information to be retained, or provides consequences for the absence of retention, that requirement is met if a reliable method is used:  (a) To make the information contained in the data message accessible so as to be usable for subsequent reference;  (b) To indicate the time and date of archiving and associate that time and date with the data message;  (c) To retain the data message in the format in which it was generated, sent or received, or in another format which can be demonstrated to detect any alteration to the data message after that time and date, apart from the addition of any endorsement and any change that arises in the normal course of communication, storage and display; and  (d) To retain such information, if any, as enables the identification of the origin and destination of a data message and the time and date when it was sent or received. | Qualified preservation service for qualified electronic signatures |
| Electronic registered delivery services | Where the law requires a document, record or information to be delivered by registered mail or similar service, or provides consequences for the absence of delivery, that requirement is met if a reliable method is used:  (a) To indicate the time and date when the data message was received for delivery and the time and date when it was delivered;  (b) To detect any alteration to the data message after the time and date when the data message was received for delivery to the time and date when it was delivered, apart from the addition of any endorsement or information required by this article, and any change that arises in the normal course of communication, storage and display; and  (c) To identify the sender and the recipient. | Data sent and received using an electronic registered delivery service shall not be denied legal effect and admissibility as evidence in legal proceedings solely on the grounds that it is in an electronic form or that it does not meet the requirements of the qualified electronic registered delivery service.  2. Data sent and received using a qualified electronic registered delivery service shall enjoy the presumption of the integrity of the data, the sending of that data by the identified sender, its receipt by the identified addressee and the accuracy of the date and time of sending and receipt indicated by the qualified electronic registered delivery service |
| Website authentication | Where the law requires website authentication, or provides consequences for the absence of website authentication, that requirement is met if a reliable method is used:  (a) To identify the person who holds the domain name for the website; and  (b) To associate that person to the website. | Implemented |
| Ex post recognition of reliability | The method shall be deemed to be as reliable as appropriate if proven in fact by or before a court or competent adjudicative body to have fulfilled the designated function, by itself or together with further evidence.  In determining the reliability of the method, all relevant circumstances shall be taken into account, which may include compliance with the legal requirements or any applicable recognized international standards and procedures relevant for the provision of the service, as well as any supervision or certification provided with regard to the service. | Not allowed for qualified trust services |
| Ex ante designation | A [person, organ or authority, whether public or private, specified by the enacting jurisdiction as competent] may designate identity management or trust services that are presumed reliable. | Implemented |
| Obligations in case of data breach | If a breach of security or loss of integrity occurs that has a significant impact on a service, the service provider shall, in accordance with the law:  (a) Take all reasonable steps to contain the breach or loss, including, where appropriate, suspending or revoking the affected service;  (b) Remedy the breach or loss; and  (c) Notify the breach or loss. | Implemented |
| Cross-border recognition | The result deriving from the use of an identity management or trust service provided outside [the enacting jurisdiction] shall have the same legal effect in [the enacting jurisdiction] as the result deriving from the use of an identity management or trust service provided in [the enacting jurisdiction] if the method used by the service offers:  (a) At least an equivalent level of reliability, where the reliability levels recognized by such jurisdictions are identical; or  (b) Substantially equivalent or higher level of reliability, in all other cases.  For the purposes of determining the reliability level regard shall be had to recognized international standards. The identity management or trust service shall be presumed to be reliable if [the person, organ or authority specified by the enacting jurisdiction] has ex ante determined the equivalence. | Trust services provided by trust service providers established in a third country shall be recognised as legally equivalent to qualified trust services provided by qualified trust service providers established in the Union where the trust services originating from the third country are recognised under an agreement concluded between the Union and the third country in question or an international organisation |

**Part V. Automated contracting**

no regulation,UNCITRAL regulation,alternative regulation

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| **UNCITRAL provision** | **Content of provision** | **Implementation in your country** |
| Legal recognition of automated contracting | A contract formed using an automated system shall not be denied validity or enforceability on the sole ground that no natural person reviewed or intervened in any action carried out in connection with the formation of the contract  An action carried out by an automated system in connection with the formation or performance of a contract shall not be denied legal effect, validity or enforceability on the sole ground that no natural person reviewed or intervened in the action. | Not regulated[[2]](#footnote-2) |
| Computer code and dynamic information | A contract shall not be denied validity or enforceability on the sole ground that the terms of the contract are contained in data messages in the form of computer code.  A contract or an action in connection with it shall not be denied validity or enforceability on the sole ground that it is based on information from a data source that provides information that changes periodically or continuously. | Not regulated |
| Attribution of actions carried out by automated systems | As between the parties to a contract, an action carried out by an automated system is attributed in accordance with a procedure agreed to by the parties. If this does not apply, an action carried out by an automated system is attributed to the person who uses the system for that purpose. | Not regulated |
| Unexpected actions carried out by automated systems | Unless otherwise agreed by the parties, where an action carried out by an automated system is attributed to a party to a contract, the other party to the contract is not entitled to rely on that action if:  (a) The party to which the action is attributed could not reasonably have expected the action; and  (b) The other party knew or could reasonably be expected to have known that the party to which the action is attributed did not expect the action. | Not regulated |
| Non-avoidance | Unless otherwise provided by law, a party shall not be relieved from the legal consequences of its failure to comply with a rule of law on the sole ground that it used an automated system. | Not regulated |

**Part VI. Electronic transferrable records**

no regulation,UNCITRAL regulation,alternative regulation

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| **UNCITRAL provision** | **Content of provision** | **Implementation in your country** |
| Transferable documents or instruments | Where the law requires a transferable document or instrument, that requirement is met by an electronic record if:  (a) The electronic record contains the information that would be required to be contained in a transferable document or instrument; and  (b) A reliable method is used:  (i) To identify that electronic record as the electronic transferable record;  (ii) To render that electronic record capable of being subject to control from its creation until it ceases to have any effect or validity; and  (iii) To retain the integrity of that electronic record. | No regulation |
| Control | Where the law requires or permits the possession of a transferable document or instrument, that requirement is met with respect to an electronic transferable record if a reliable method is used:  (a) To establish exclusive control of that electronic transferable record by a person; and  (b) To identify that person as the person in control. | No regulation |
| Transfer | Where the law requires or permits transfer of possession of a transferable document or instrument, that requirement is met with respect to an electronic transferable record through the transfer of control over the electronic transferable record. | No regulation |
| Endorsement | Where the law requires or permits the endorsement in any form of a transferable document or instrument, that requirement is met with respect to an electronic transferable record if the information required for the endorsement is included in the electronic transferable record and that information is compliant with the requirements. | No regulation |
| Amendment | Where the law requires or permits the amendment of a transferable document or instrument, that requirement is met with respect to an electronic transferable record if a reliable method is used for amendment of information in the electronic transferable record so that the amended information is identified as such. | No regulation |

**Part VII. Other issues**

Please identify the three most important issues related to the electronic commerce or digital trade that are not covered by UNCITRAL documents, but are or will be regulated in your country:

1. Digital Identity Wallet

2. Gatekeepers and regulation of digital platforms

3. AI use in e-commerce

1. https://research.cbs.dk/en/publications/rule-making-in-the-digital-economy-overcoming-functional-equivale [↑](#footnote-ref-1)
2. https://www.medialaws.eu/automated-contracting-in-europe-developments-and-future-directions/ [↑](#footnote-ref-2)