
**Processes, data elements and
documents in commerce, industry
and administration — Trusted
communication platforms for
electronic documents —**

**Part 1:
Fundamentals**

*Processus, éléments d'informations et documents dans le commerce,
l'industrie et l'administration — Plates-formes de communication
sécurisées pour documents électroniques —*

Partie 1: Généralités

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Foreword

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A list of all parts in the ISO 19626 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Amidst the big flow of openness and integration in the world's economy, ICT (information & communications technology) is used as a means for innovation in productivity and connectivity. Since the value chain of products and services gets enlarged globally, business collaborations need electronic communications to be secure in an open and distributed environment. In this sense, electronic documents are asked for as a proof of business communications, meanwhile legal evidence or legal force is required.

However, it can be difficult to recognize electronic documents as the original source. There exist cases where many processes rely only on paper documents, even though electronic documents are widely implemented in business processes. However, the reality is that even if electronic documents are properly communicated in business transactions, the final data output may be on paper and stored in the form of printed copies as legal evidences for a long-term period. As such, this coexisting environment of electronic documents and paper documents causes breakup of the value chain, resulting in sluggish productivity, inefficiency, cost increase and offset of the benefit obtainable from the ICT. To improve these situations, therefore, it is essential to draw out a dematerializing solution that can guarantee the trustworthiness of electronically communicated document given legal evidence.

A dematerializing solution should meet with legal considerations about electronically communicated documents. However, this solution is not easy, because electronic communication itself includes the uncertainties from network failure and the electronic document itself is insufficient in safeguarding the integrity during its lifecycle. In the meantime, the problem due to repudiation, inadvertent disclosure or tamper has been regarded too sensitive to finalize the dematerialization solution related to business transactions as well as diverse governmental services, because it can potentially be embroiled into legal dispute or conflicts.

This document focuses on how to enhance trusted communication in an open and distributed environment. The trusted communication means electronic communication can ensure integrity and non-repudiation of electronic transactions by a trusted third party in a dematerialization manner under the guidance of UNCITRAL (United Nations Commission on International trade Law). For this open and distributed environment, at first, it should be able to minimize some innate difficulties around dematerialization. To solve these difficulties, this document approaches a solution by forming the trusted third party oriented and mutually trusted relationship among concerned stakeholders and implementing a shared platform which is accountable and traceable. In detail, a trusted communication platform needs to be able to keep the evidence about electronically communicated documents in a reliable and trustworthy manner. To achieve that, a new approach is required because the existing ICT environment has some limits for the trusted communication in the following aspects;

- Although an EDI (electronic data interchange) transaction can provide legal evidence about interchanged electronic documents according to the EDI syntax rule, it has limitations allowed only on closed users of EDI network and pre-defined processes of EDI semantics. And in the case of Internet, no matter what business transactions are securely communicated, it is difficult to recognize the legitimacy of communications carried out in other authentication systems. In this sense this document sets up a refined dematerializing process allowable under the open and distributed ICT environment, which is applicable to the trusted communication like electronic trade, electronic administration, e-business and so on.
- The security technology has been used as a core technology for secured electronic documents. However, it is not enough to maintain the dematerialization of electronic documents, because the integrity is easy to be broken in the aspect of the valid period of security. In this sense this document brings up a new way that can secure the authenticity of the trusted communication evidence for a long period of time needed as legal evidences.
- IT services under an open environment can not easily identify the originality of electronic communications by accounting for the communication context, that is originator, addressee(s), communication time and so on. Regarding the uncertainties such as modification, falseness or bleed over electronically communicated documents, it is not easy to identify and ask for whose liability it is among multiple stakeholders. Moreover, if the blockchain are to be applied across the

supply chain, there is a need of trusted communication for seamless connectivity. In this sense, this document can make business transactions accountable and reliable and consequently promote trusted IT services.

An evidence generated via a trusted communication platform can account for the truth of e-communication activities and facilities trusted communication services.

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