
**Transaction assurance in
E-commerce — Principles and
framework**

*Assurance des transactions de commerce électronique — Principes et
cadre*

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Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Framework of e-commerce transaction assurance	1
5 Principles	2
5.1 General.....	2
5.2 Authenticity.....	2
5.3 Accountability.....	3
5.4 Accessibility.....	3
5.5 Security.....	3
5.6 Privacy.....	3
6 Participants in e-commerce transactions	3
7 Activities during the transaction process	4
7.1 General.....	4
7.2 Activities during pre-transaction phase.....	5
7.2.1 General.....	5
7.2.2 Account registration.....	5
7.2.3 Verification of registered information.....	6
7.2.4 Preparation of third-party service.....	6
7.2.5 Releasing transaction-related information.....	6
7.3 Activities during in-transaction phase.....	7
7.3.1 General.....	7
7.3.2 Placement of electronic order.....	7
7.3.3 Confirmation of electronic order.....	7
7.3.4 Choice of payment method.....	7
7.3.5 Payment for purchased products.....	8
7.3.6 Delivery of purchased products.....	8
7.3.7 Customs clearance.....	8
7.3.8 Receipt with confirmation.....	9
7.4 Activities during post-transaction phase.....	9
7.4.1 General.....	9
7.4.2 Performance evaluation.....	9
7.4.3 Resolving disputes.....	9
7.4.4 Return of products.....	10
7.4.5 Refund of payment.....	10
7.4.6 Compensation for transaction loss.....	10
7.4.7 Maintenance and technical support.....	10
8 Assurance elements	11
8.1 General.....	11
8.2 Identity information.....	12
8.3 Qualification information.....	12
8.4 Terms of use.....	12
8.5 Third-party service rule.....	12
8.6 Online reputation information.....	13
8.7 Product information.....	13
8.8 Transaction document.....	14
8.9 Multiple payment methods.....	14
8.10 Payment security rule.....	14
8.11 Delivery rule.....	14

8.12	Customs clearance rule.....	15
8.13	Performance evaluation rule.....	15
8.14	Dispute resolution rule.....	15
8.15	Return and refund rules.....	15
8.16	Compensation rules.....	16
8.17	Maintenance and technical support rule.....	16
Annex A	(informative) List of principles in e-commerce and equivalent activities.....	17
Annex B	(informative) List of principles in e-commerce and equivalent assurance elements.....	19
Annex C	(informative) Correlation between transaction activities and assurance elements.....	21
Bibliography	22

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 321, *Transaction assurance in E-commerce*.

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

The rapid development and wide use of e-commerce has increased awareness of the importance of fostering a trustworthy, reliable, and secure e-commerce transaction environment to ensure e-commerce transaction activities.

The characteristics of e-commerce transactions, e.g. highly digital, non-face-to-face and cross-regional, can bring challenges. The following are some of the challenges:

- more unknowns in the process of purchasing products;
- issues such as product quality, intellectual property, personal information protection, after-sale services, and transaction security;
- risks in product delivery, e.g. damage, delay and failure.

The challenges of e-commerce transactions come from different elements in upstream/downstream processes of e-commerce transactions, and eliminating those challenges necessitates the attention and efforts of all stakeholders.

This document specifies the principles and framework of e-commerce transaction assurance to support all parties in better understanding e-commerce transaction assurance activities.

It can assist in the following:

- identifying key elements to improve the assurance of the e-commerce transaction process;
- contributing to e-commerce transaction assurance programs;
- informing government or non-governmental organizations or individuals engaged in the e-commerce industry;
- promoting sustainable development of the e-commerce industry.

This document can also facilitate future e-commerce assurance standards development by putting forward key e-commerce assurance principles, identifying key stakeholders and elements and demonstrating the e-commerce transaction process.

Transaction assurance in E-commerce — Principles and framework

1 Scope

This document specifies the principles and framework for e-commerce transaction assurance, including participants, activities and assurance elements. It does not describe specific e-commerce transaction assurance requirements or methodologies in detail. It is intended to be used by organizations and individuals engaged in e-commerce transactions.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 32110¹⁾, *Transaction assurance in E-commerce — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 32110 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Framework of e-commerce transaction assurance

The framework of e-commerce transaction assurance (see [Figure 1](#)) includes principles (see [Clause 5](#)), participants in e-commerce transactions (see [Clause 6](#)), activities during the transaction process (see [Clause 7](#)) and assurance elements (see [Clause 8](#)), as well as their inter-relationships.

Principles provide guidance for participants on how to participate in activities during the transaction process and protect their interests. They also provide guidance for the smooth operation of activities in e-commerce transactions.

Assurance elements associated with activities during the transaction process are the main content of e-commerce transaction assurance. Assurance elements can support the accomplishment and realization of the principles.

Participants engage in activities during the transaction process according to their responsibilities and demands. No matter what role participants play in e-commerce transactions, they should identify and consider the assurance elements associated with their role as much as possible and take effective assurance measures.

1) Under preparation. Stage at the time of publication: ISO/FDIS 32110:2023.

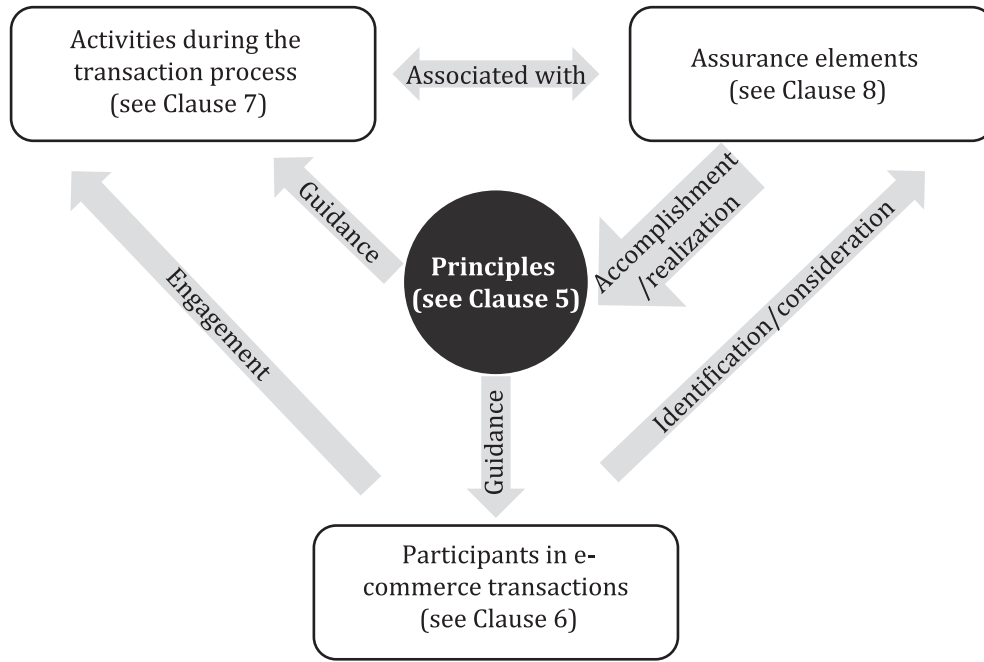


Figure 1 — E-commerce transaction assurance framework

5 Principles

5.1 General

The principles listed here are undertaken in accordance with all applicable requirements consistent with the protections for participants in the activities and the requirements on the assurance elements for e-commerce transactions. The principles are as follows:

- authenticity;
- accountability;
- accessibility;
- security;
- privacy.

The principles can generally support all activities during the transaction process, however, the degree of guidance of each principle towards different activities can differ. [Annex A](#) illustrates the list of e-commerce principles and the equivalent activities.

All assurance elements can support the realization or accomplishment of the principles, however, some assurance elements play a primary role in supporting the accomplishment of certain principles (see [Annex B](#)).

5.2 Authenticity

Participants, products and information generated in e-commerce transactions, should be consistent with what they claim to be.

5.3 Accountability

Participants in e-commerce transactions should be aware of the applicable requirements. Information generated in e-commerce transactions, such as resolving disputes or tracing obligations, should be recorded and stored properly to support e-commerce assurance.

5.4 Accessibility

Relevant services and information about e-commerce transactions should be easily obtained and understood to allow participants to make informed decisions or perform certain actions or to reduce any potential misunderstanding with due consideration to rules including privacy protection.

NOTE 1 Relevant services can include, e.g. logistics services, payment services.

NOTE 2 Relevant information can include, e.g. participant identity information, terms of use, product information, ordering information, logistics information, payment information, reputation information.

NOTE 3 Regional or local rules on accessibility can apply.

5.5 Security

Information generated in e-commerce transactions should be from an authentic data source and protected, for example, against leakage and unauthorized data disclosure. E-commerce activity operations or relevant integrated software should be secured from current or potential danger.

NOTE Keeping software up to date and taking into account security advisories can support the security of e-commerce assurance.

5.6 Privacy

Personal information, including information about an identifiable individual, such as personally identifiable information (PII), should be collected, used, stored or disclosed properly, and protected, for example, against leakage and unauthorized data disclosure.

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6 Participants in e-commerce transactions

An organization or individual that engages in e-commerce transaction activities is a participant. This document identifies major e-commerce transaction participants as the following:

- seller;
- e-commerce platform operator;
- buyer;
- logistics service provider;
- third-party payment service provider;
- software service provider (individual or organization offering software service, refer to ISO 32110:20—, 3.2.11);
- collection agent for goods;
- manufacturer;
- rights holder;
- neutral party (individual or organization taking a neutral position between participants with different interests, most of them being external and therefore neutral, impartial, and fair. Within

this document, they are collectively referred to as "neutral party," e.g. auditors who review the operations of the e-commerce platform operators and certify them where applicable).

NOTE The roles of neutral parties can be important in e-commerce transaction assurance, yet this document does not provide a detailed description on their role due to the differences in different contexts.

An individual or organization can play multiple roles from the above list of participants. For example, an individual or organization can operate an e-commerce platform to sell products manufactured by themselves or others. Meanwhile, an individual or organization can also operate an e-commerce platform to provide one or more services for other parties to facilitate e-commerce transactions.

An individual or organization can be a seller, manufacturer, or rights holder at the same time. The individual or organization can use this document according to the role they play.

For further description on the above participants, see ISO 32110.

7 Activities during the transaction process

7.1 General

There are three phases in the e-commerce transaction process:

— Pre-transaction phase

The process of preparation for the initiation of the e-commerce transaction before the order is placed.

— In-transaction phase

The process that starts once the order is placed to the receipt of products.

— Post-transaction phase

The process that occurs after the receipt of products with confirmation from the buyer.

The main activities in the three phases of e-commerce transactions are listed in [Figure 2](#). While they pertain to different e-commerce transaction scenarios, some of the activities are optional. In each of these activities, there are corresponding participants. [Figure 2](#) divides the participants into "initiator" and "engaged" from the perspective of who triggers the activities and who supports the initiator to complete the activities.

Activities during the transaction process	Participants in e-commerce transactions									
	Seller	E-commerce platform operator	Buyer	Third-party payment service provider	Logistics service provider	Software service provider	Collection agent for goods	Manufacturer	Rights holder	
Pre-transaction phase (7.2)										
Account registration (7.2.2)	●	○	●			○		○	○	
Verification of registered Information (7.2.3)	●	●	●					○	○	
Preparation of third-party service (7.2.4)		●		○	○	○				
Releasing transaction-related information (7.2.5)	●	●	●	○	○	○	○	○	○	
In-transaction phase (7.3)										
Placement of electronic order (7.3.2)	○	○	●							
Confirmation of electronic order (7.3.3)	●	○	●							
Choice of payment method(7.3.4)	○	○	●	○						
Payment for purchased products(7.3.5)	○	○	●	○						
Delivery of purchased products(7.3.6)	●	○	○		○		○	○		
Customs clearance(7.3.7)	●	○	○		○					
Receipt with confirmation (7.3.8)	○	○	●	○	○		○	○		
Post-transaction phase (7.4)										
Performance evaluation (7.4.2)	●	○	●	●	●					
Resolving disputes (7.4.3)	●	○	●	●	●			●	●	
Return of products (7.4.4)	○	○	●		○		○	○		
Refund of payment (7.4.5)	●	○	●	○						
Compensation for transaction loss (7.4.6)	●	●	●	●	●			●	●	
Maintenance and technical support (7.4.7)	●	○	○					●		

Key

- initiator
- engaged

Figure 2 — Activities and relevant participants during the e-commerce transaction process

7.2 Activities during pre-transaction phase

7.2.1 General

The following four activities can take place during the pre-transaction phase:

- account registration;
- verification of registered information;
- preparation of third-party service;
- releasing transaction-related information.

7.2.2 Account registration

Account registration is the act of making an organization or individual known within a particular domain, such as an e-commerce platform, and it can be a premise for them to conduct e-commerce transactions.

The seller or buyer initiates the activity. The other participants engaged can include the e-commerce platform operator, software service provider, manufacturer and rights holder.

The seller can be requested to provide identity information, qualification information, or other necessary information to complete the account registration process. The buyer can be requested to provide

identity information. A secure registration according to the current status should be guaranteed, and it is always recommended to also provide an option for non-registered account checkout.

The main assurance elements associated with this activity include identity information (see 8.2), qualification information (see 8.3) and product information (see 8.7).

NOTE 1 The e-commerce platform operator can sell the product, acting as the seller.

NOTE 2 Manufacturers can sell the product directly on the platform, acting as the seller.

NOTE 3 In the account registration of the seller, other participants such as the manufacturer and the rights holder can be potentially involved, which is indicated in Figure 2 as "engaged". For example, the manufacturer sometimes can be requested to provide qualification information of the product to facilitate the account registration.

7.2.3 Verification of registered information

Verification of registered information is the act of checking the identity of the sellers or buyers, or confirming the consistency of the product with specific requirements.

The e-commerce platform operator, seller, or buyer can initiate this activity. The other participants engaged are the manufacturer and rights holder.

The e-commerce platform operator, seller, or buyer can take different measures to verify the other participant information, including identity information, qualification information and product information.

The main assurance elements associated with this activity include identity information (see 8.2), qualification information (see 8.3) and product information (see 8.7).

NOTE 1 For a product required license, the e-commerce platform operator sometimes verifies the product license properly. For example, in the circumstance of electronic products, a CE certificate can be requested.

NOTE 2 For certain products, the buyer's qualification can also be verified before enabling the buyer to place an electronic order. Examples of certain products include alcohol, tobacco, firearms, R-rated comic books and videos.

7.2.4 Preparation of third-party service

Preparation of third-party service is the act of integrating services such as logistics, payment and software.

The e-commerce platform operator initiates this activity. The other participants engaged are the third-party payment service provider, logistics service provider and software service provider.

The e-commerce platform operator can use technical measures and management measures to establish internet and information services with related participants.

The main assurance element associated with this activity is the third-party service rule (see 8.5).

NOTE Some e-commerce platform operators can provide delivery services themselves.

7.2.5 Releasing transaction-related information

Releasing transaction-related information is the act of making information known to others through an open network.

The seller, e-commerce platform operator and buyer can initiate this activity, and other participants can be engaged. Released information can include terms of use, transaction documents, business activities, payment, or logistics service information.