SLOVENSKI STANDARD
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Elektronska javna naročila - Naročanje - 1. del: Koreografije

Electronic Public Procurement - Ordering - Part 1: Choreographies

Elektronisches öffentliches Beschaffungswesen - Bestellung - Teil 1: Choreographien

Passation électronique des marchés publics - Gestion des commandes - Partie 1 : Chorégraphies

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ICS:

03.100.10	Nabava. Dobava. Logistika	Purchasing. Procurement. Logistics
35.240.20	Uporabniške rešitve IT pri pisarniškem delu	IT applications in office work
35.240.63	Uporabniške rešitve IT v trgovini	IT applications in trade

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EUROPEAN STANDARD

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ICS

English Version

Electronic Public Procurement - Ordering - Part 1: Choreographies

Elektronisches öffentliches Beschaffungswesen - Bestellung - Teil 1: Choreographien

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European foreword

This document (prEN 17016-1:2022) has been prepared by the Technical Committee CEN/TC 440 "Electronic public procurement", the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document falls under a CEN-CENELEC pilot on derivative use (as approved by the CEN/CA (Administrative Board) through decision 37/2019). For more information about the implementation of derivative use in CEN/TC 440, see here.

This document is part of a series of multi-part documents prepared, or under preparation, by CEN/TC 440:

— 17011-series: e-Procurement Architecture, providing a set of specifications outlining different aspects of the e-Procurement architecture for Business Interoperability Specifications.

— 17015-series: e-Catalogue Business Interoperability Specifications, providing a set of specifications outlining business choreography, transaction, syntax binding specifications and guidelines required to support the e-Catalogue processes.

— 17016-series: e-Ordering Business Interoperability Specifications, providing a set of specifications outlining business choreography, transaction, syntax binding specifications and guidelines required to support the e-Ordering processes.

— 17017-series: e-Fulfilment Business Interoperability Specifications, providing a set of specifications outlining business choreography, transaction, syntax binding specifications and guidelines required to support the e-Delivery processes.

The terms "shall", "shall not", "should", "should not", "may", "can" and "cannot" are interpreted according to Clause 7 of the CEN-CENELEC Internal Regulations Part 3[1].

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[1] https://boss.cen.eu/reference-material/refdocs/pages/

Introduction

Derivative use pilot

This document falls under a CEN-CENELEC pilot on derivative use (as approved by the CEN/CA (Administrative Board) through decision 38/2019).

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Intended use of this publication

This document has been developed for any organization looking for guidance on the implementation and use of electronic procurement deliverables as well as for organizations developing or implementing software applications related to electronic procurement, such as software providers, business entities and national authorities. These software applications must be in conformance with this publication.

Parts of the document to which derivative use apply

Each subclause, which falls under derivative use, will be clearly marked with a note. The degree to which the specific content can be modified is defined in CEN/TS 17011-3:—[2], *Electronic Public Procurement – Architecture – Part 3: Customization Guideline*.

Annex A provides an overview of the line number references to all subclauses of the publication which fall under derivative use.

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[2] Under development.

1 Scope

This choreographies document describes ordering between Buyer and Seller where the Buyer wants to reach an agreement with the Seller about an order. It describes a series of activities that govern communication between the parties and refers to the specifications where information and rules that apply are described.

The various possible behaviours of the Seller and Buyer subsequent to the first order communication are conveyed by variants of this choreography that are described in 5.2.

Previous activities (e.g. cataloguing) and subsequent activities (e.g. invoicing) are outside the scope of this document. If performed electronically, their implementation is covered by other choreographies.

The identifier of this choreographies document is EN 17016-1:2022.

How to claim conformance to this choreography is described in 5.2.3.

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.

EN 17016-2[3], *Electronic Public Procurement — Ordering — Part 2: Transactions*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
agent
person, organization, or system that act in procurement or have the power to act in procurement

[SOURCE: eProcurement Ontology]

3.2
business process
sequence or network of activities and collaborations between two or more agents

3.3
business process variant
specification of a business process belonging to a choreography

Note 1 to entry: Different variants may support different electronic information exchange or collaborations. Agents may publicly advertise their capability to support one or more variants in an automated fashion.

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[3] Under development.

3.4
choreography
set of business processes having the same goals

3.5
collaboration
interaction between two or more agents that result in the exchange of data between the agents involved as part of a business process

3.6
role
part played by an agent in a particular business process, including its responsibilities (options and obligations) to perform certain activities and collaborations in that business process

Note 1 to entry: The role is used to show the division of labour and responsibility amongst the agents involved in the process or within the organization of an agent.

3.7
state
set of options and obligations of the participating agents at a defined step in a business process to perform specific activities and collaborations

Note 1 to entry: Additional information: an activity of an agent or a collaboration may cause the transition of one state to another in a predefined set of next steps.

3.8
transaction
content of data exchanged or shared between the agents in a collaboration

Note 1 to entry: A transaction is the atomic unit that leads to a synchronized state in the information systems of collaborating agents. It is the basic building block to define the choreography between agents. When an agent recognizes an event that changes the state of a business object within a business process, it uses a transaction to synchronize with the collaborating agent. A transaction therefore changes the state of a business process. It carries the intention of the initiating agent and is represented by a data structure that is defined by a data model. The exchange of a transaction may alter legal obligations between business partners.

4   Business environment and high level business requirements

4.1 Choreographies (business) Goals

The business goals supported by implementing this choreography are described in Table 1:

Table 1 — Business goals

ID	Description
G-17016-1:20xx-1	Enable trading partners to communicate without a previous bi-lateral setup or agreement.
G-17016-1:20xx-2	Enable the automation of handling orders in a semi-manual environment.
G-17016-1:20xx-3	Enable customers to set up a standardized acquisition process.
G-17016-1:20xx-4	Enable SMEs to offer their trading partners the option of exchanging standardised documents in a uniform way and thereby move all orders into electronic form.

The main business benefits to be gained by implementing this choreography are described in Table 2:

<p align="center">**Table 2 — Business benefits**</p>

ID	Description
G-17016-1:20xx-5	Realize significant savings both by customers and suppliers through automating and streamlining in-house processes of ordering and subsequent activities as well through increasing quality of data exchanged.
G-17016-1:20xx-6	Pave the way for the buyer to enforce a formal process of approval and cost control within its organization.
G-17016-1:20xx-7	Facilitate the processing of the invoice and so faster payments

4.2 Business environment

4.2.1 Introduction

The intended scope for this choreography includes public procurement, but the choreography may also be used in Business to Business (B2B) relations.

This choreography is intended to support use of electronic documents for processing in (semi-) automated processes. The legal requirements that were taken into account are requirements from European legislation, particularly the EU directives, as mentioned in the Bibliography of this document.

The list of the transactions being part of this choreography is defined in Clause 6.

4.2.2 Business context

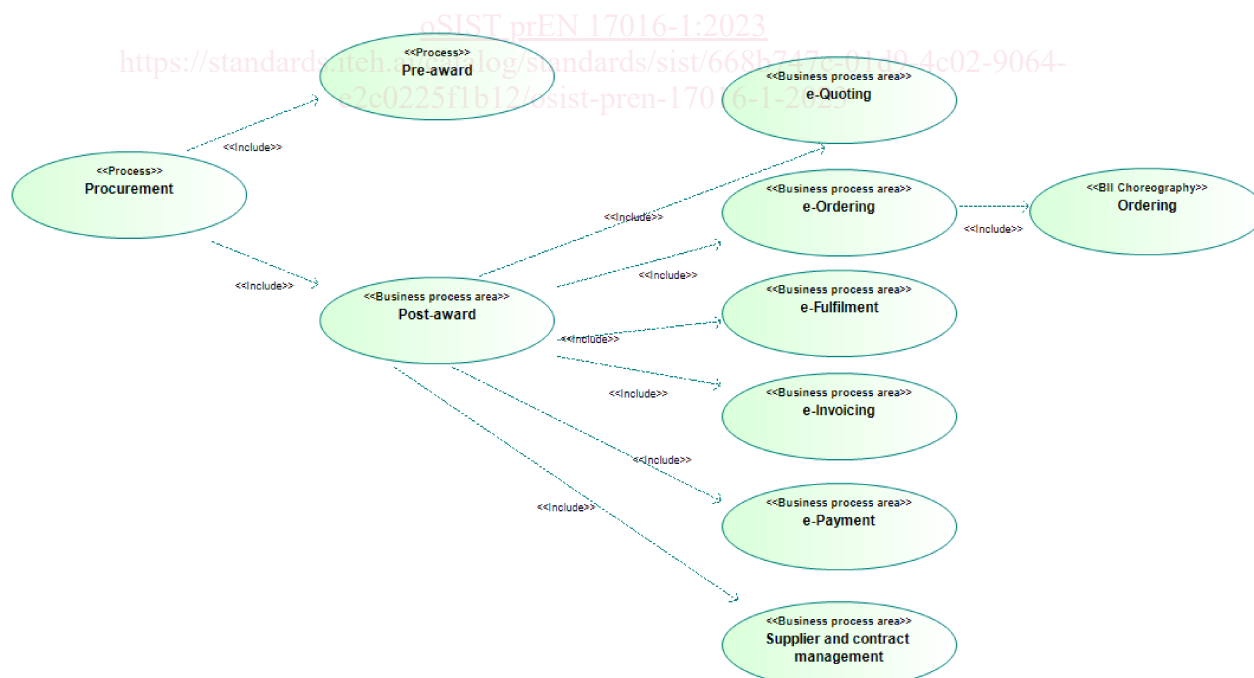This choreography belongs to the e-Ordering business area that is described in Figure 1:

<p align="center">**Figure 1— Position of the Ordering BII Choreography in the Procurement process**</p>

4.2.3 Positioning in EIRA

EIRA provides a reference model that enables architects to position the IOP specifications. This document provides a domain-specific IOP specification to which any SBB implementing the ABB should be compliant to. The positioning of this document in the EIRA context is described in Table 3.

IoP specifications provide a valuable source of information to formulate requirements during architecture development and solution development. By identifying architectural building blocks through a common terminology, it

— helps reuse of cross domain building blocks such for instance e-Signature Verification and Validation Service, and e-Timestamp Creation Service;

— helps synchronization with European solutions such as CEF eDelivery;

— and will provide guidance in using them to provide the prescribed capability enabling, thus managing and rationalizing IT portfolios.

Table 3 — Positioning in EIRA

EIRA ID	Title	Domain	Interface	Scope	Modality
EN 17016-1:20xx	Electronic Public Procurement - Ordering - Choreography	Procurement	Machine /Customer Machine /Supplier	• e-procurement extension of ABB176 Organizational Interoperability Specification • e-procurement extension of ABB12 Business Capability, • e-procurement extension of ABB170 Exchange of Business Information • E-procurement extension of ABB16 Business Rule	Endorsing

4.3 Organization and business partners involved

The following business partners participate in this BII Choreography, acting in the roles as defined in Table 4 and Figure 2 below.

Table 4 — Roles

| Key Role	Description
Buyer	A role of an agent that awards the contract. Additional information: Examples of The Buyer may be the role of contracting authority, contracting entity, a defence contractor, an international organization, or an organization awarding a contract subsidized by a contracting authority.
Seller	A role played by any natural or legal person or public entity or group of such persons and/or entities, including any temporary association of undertakings acting on behalf of a supplier who sells goods, works or services to the buyer
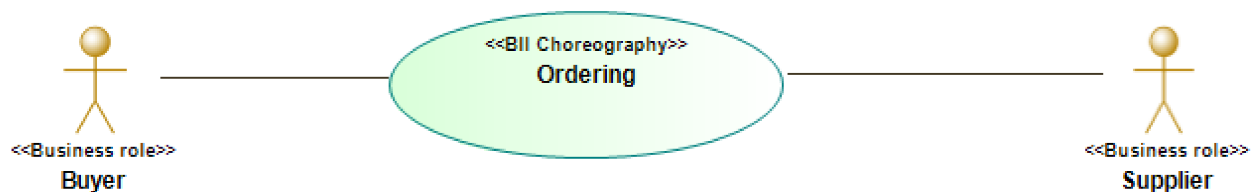
Figure 2 — Ordering BII Choreography Roles

4.4 High level business process requirements

4.4.1 High level business requirements

Based on the goals and scope of this choreography the following set of high-level requirements is identified. Each requirement is connected to a goal.

Additionally, requirements of major business processes that are frequently supported within ordering are listed.

These requirements are relevant for all variants depicted within this choreography and described in Table 5.

Table 5 — High level business requirements

Req. ID	Requirement statement	Ref. to goal
HLR-17016-1:20xx-1	A Buyer submits an Order for delivery of goods, services or works to a Seller.	G-17016-1:20xx-1
HLR-17016-1:20xx-2	Actors involved in the ordering process require a gradual automation of all information exchange of the ordering process: Depending on their capabilities, the organizations may be willing to exchange electronically only some transactions participating in the process.	G-17016-1:20xx-2
HLR-17016-1:20xx-3	Depending on the general rules of a national environment and/or the sector specific rules/contractual terms actors may be willing to exchange electronic documents on the basis of different business processes.	G-17016-1:20xx-1 G-17016-1:20xx-2 G-17016-1:20xx-3
HLR-17016-1:20xx-4	Actors involved in the ordering process require a gradual automation of all information exchange of the ordering process: Depending on their capabilities, the organizations may be willing to exchange electronically only some core information in a structured manner.	G-17016-1:20xx-2 G-17016-1:20xx-3
HLR-17016-1:20xx-5	Structured Ordering: The Order transaction should support the structured ordering of goods and services, using free text or use of identifiers. The information source of the ordered products may be a (paper or electronic) catalogue.	G-17016-1:20xx-2 G-17016-1:20xx-3

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Req. ID	Requirement statement	Ref. to goal
HLR-17016-1:20xx-6	An Order may refer to framework agreement for its items and conditions; Otherwise the Customer terms and conditions apply.	G-17016-1:20xx-1
HLR-17016-1:20xx-7	An Order may contain items (goods or services) with item identifiers or items with free text description or item specification	G-17016-1:20xx-3
HLR-17016-1:20xx-8	If the Order is accepted, a contractual commitment is established between the Buyer and the Seller.	G-17016-1:20xx-1
HLR-17016-1:20xx-9	Accounting: The ordering process shall support the allocation of budgets, so the value amounts of the ordered products may be stated. The buyer may provide some information that the supplier is required to place on the invoice for aiding and automating the invoice processing.	G-17016-1:20xx-6
HLR-17016-1:20xx-10	Invoice verification: The buyer may provide some information that the supplier is required to place on the invoice for aiding and automating invoice approval.	G-17016-1:20xx-7
HLR-17016-1:20xx-11	VAT reporting: VAT reporting is not a general requirement on orders. The level of support in orders is to: - Enable VAT reporting in invoices by providing VAT number of buyers in case of reverse charges. VAT can be stated as an estimate to enable buyers to state expected value of order. This can be helpful in automated matching of orders and invoices. VAT information is informative and does not affect the terms of trade.	G-17016-1:20xx-7
HLR-17016-1:20xx-12	Transport and delivery: Only limited support is in scope for transport related information, but it is recognized that the buyer needs to be able to provide some information about requested delivery location (by use of identifiers or full textual description).	G-17016-1:20xx-3
HLR-17016-1:20xx-13	Inventory: Supporting inventory management is not in scope, but structured orders based on catalogues can be used to automate picking at supplier warehouses.	G-17016-1:20xx-3

NOTE:

Payment:

Information about pre-payment or arrangement of payment are not considered core functionality in order and are therefore not supported.

5   Processes

5.1 Introduction

In order to encompass the various maturity levels of organizations, (see HLR-17016-1:20xx-2), the approach is to specify variants of business processes that use a set of activities around exchanging information in different combinations, still fulfilling the goals set out in 4.1.

The state machine diagram depicted in Figure 3 provides information on the common states for systems to get in agreement.
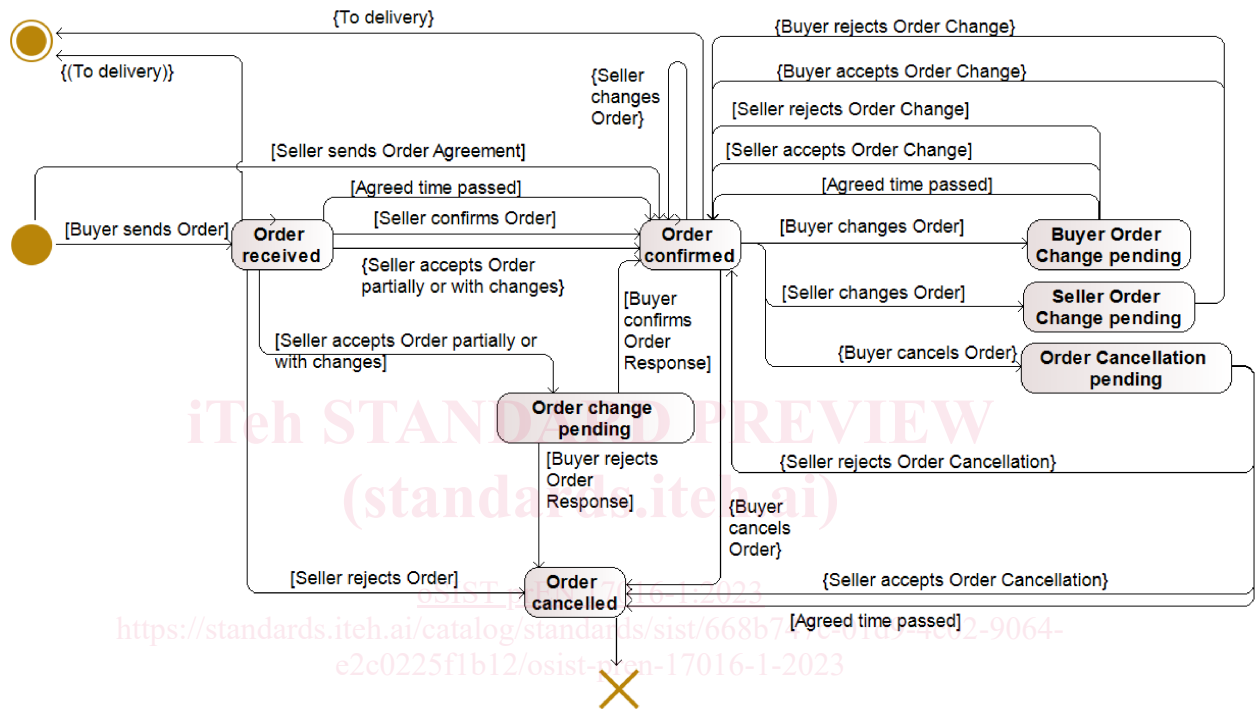

Figure 3 — Ordering State machine diagram [informative]

5.2 Business process variants[4]

5.2.1 Introduction

Eight variants are identified as reported in the following table. They allow for supporting different levels of interoperability maturity of the organizations willing to automate the exchange of information in the business area at stake as defined by High level requirement HLR.

The variants combine in various ways the basic processes defined above through various collaborations between Buyer and Seller as described in Table 6.

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[4] Subclause 5.2 falls under derivative use (as set out in the Introduction). When replicating the section, the content may be modified.

Table 6 — Business process variants

Business Process Variant	Short name	Description
BPV-17016-1:20xx:A	Simple Ordering	The Buyer sends an Order to the Seller. The Seller does not respond to the Buyer.
BPV-17016-1:20xx:B	Buyer Managed Ordering	The Buyer sends an Order to the Seller. The Seller does not respond to the Buyer. The Buyer may send message/s to the Seller to change/cancel an Order until the Order is fully delivered. The Seller does not respond to the Buyer to accept/reject changes or cancellation.
BPV-17016-1:20xx:C	Ordering with Simple Response	The Buyer sends an Order to the Seller. The Seller responds to the Buyer in any case. The Seller may: • state that the Order was received; • accept the Order without changes; • reject the Order.
BPV-17016-1:20xx:D	Buyer Managed Ordering with Seller's response	The Buyer sends an Order to the Seller. The Seller responds to the Buyer in any case. The Seller may: • state that the Order was received; • accept the Order without changes; • reject the Order. The Buyer may send message/s to the Seller to change/cancel a confirmed Order until the Order is fully delivered. The Seller responds to the Buyer to accept/reject changes or cancellation.
BPV-17016-1:20xx:E	Ordering	The Buyer sends an Order to the Seller. The Seller responds to the Buyer in any case. The Seller may: • state that the Order was received; • accept the Order with or without changes; • reject the Order. The Seller may send message/s to the Buyer to change a confirmed Order until the Order is fully delivered. The Buyer does not respond to the Seller to accept/reject the changes.

Business Process Variant	Short name	Description
BPV-17016-1:20xx:F	Advanced Ordering	The Buyer sends an Order to the Seller. The Seller responds to the Buyer in any case. The Seller may: • state that the Order was received; • accept the Order with or without changes; • reject the Order. The Buyer responds to the Buyer to accept/reject the changes. The Buyer may send message/s to the Seller to change/cancel a confirmed Order until the Order is fully delivered. The Seller responds to the Buyer to accept/reject the changes or cancellation. The Seller may send message/s to the Buyer to change a confirmed Order until the Order is fully delivered. The Buyer responds to the Seller to accept/reject the changes.
BPV-17016-1:20xx:G	Simplified Advanced Ordering	The Buyer sends an Order to the Seller. The Seller may respond to the Buyer to: • state that the Order was received; • accept the Order with or without changes; • reject the Order. The Buyer may respond to the Buyer to accept/reject the changes. The Buyer may send message/s to the Seller to change/cancel a confirmed Order until the Order is fully delivered. The Seller may respond to the Buyer to accept/reject the changes or cancellation. The Seller may send message/s to the Buyer to change a confirmed Order until the Order is fully delivered. The Buyer may respond to the Seller to accept/reject the changes.
BPV-17016-1:20xx:H	Order Agreement	The Seller sends an Order Agreement to the Buyer. The Buyer does not respond to the Seller.

A representation of the relationship between the variants can be given by a decision tree (see Figure 4):