Project —

**eProcurement Ontology (ePO) – Glossary**

Document—

**Requirements and recommendations for the proposal of terms and the drafting of definitions**

(v.1.0)

# Introduction

The Publications Office of the European Union (OP) has set up a Working Group and is developing an eProcurement Ontology[[1]](#footnote-1) (ePO) within the framework of the ISA2 programme[[2]](#footnote-2). The working group is made up of a diverse range of stakeholders including representatives from Member States, European Institutions and Private Sector experts.

An important goal of the ePO is to help reach a common understanding about the concepts used for eProcurement. With this objective in mind the ePO Working Group is drafting a glossary where:

1. concepts used in eProcurement in the EU are identified, and a unique term is assigned to each concept;
2. one preferred definition is provided for each concept;
3. additional definitions from other sources, examples and alternative terms (synonyms) are optionally supplied.

In order to help the ePO contributors in their work, the Publication Office has studied and customised existing guidelines for the formulation of terms representing the concepts and the drafting of good definitions.

This document reports a summary of requirements and recommendations aiming to that purpose. They are mainly based on the **ISO/IEC 11170-4:2004 — Formulation of data definitions[[3]](#footnote-3)**, which in turn takes into account “ISO 704:2000, Terminology work — Principles and methods”; ISO 1087-1:2000, “Terminology work — Vocabulary — Part 1: Theory and application”; ISO/IEC 2382-1:1993, Information technology — Vocabulary — Part 1: Fundamental terms; and “ISO/IEC 11179-3:2003, Information technology — Metadata registries (MDR) — Part 3: Registry metamodel and basic attributes”. These specifications were also used by the UN/CEFACT and OASIS Technical Committees to define the concepts and document their specifications on procurement, transport and other policy areas.

Bear in mind that the ultimate objective of the ePO is to put forth a commonly agreed OWL ontology that will conceptualise, formally encode and make available in an open, structured and machine-readable format data about public procurement. Therefore the terms and definitions provided by the ePO Glossary are very “data-oriented” in the sense that they are used as a relevant source to develop and improve the ontology (hence the conventions like “data” and “data element” in the following sub-section).

## Conventions

For the purposes of a common understanding amongst the ePO Glossary development contributors, the following conventions are adopted:

**Concept**

Unit of knowledge created by a unique combination of characteristics.

(Source ISO 11179-4:2004)

**Data**

Re-interpretable representation of information in a formalized manner suitable for communication, interpretation or processing.

(Source ISO 11179-4:2004)

**Data element**

Unit of datafor which the definition, term and permissible values are specified by means of a set of data properties or object properties, as understood in ontology modelling[[4]](#footnote-4).

**Definition**

Representation of a concept by a descriptive statement which serves to differentiate it from related concepts.

(Source ISO 11179-4:2004)

**Term**

Designation of a concept by a linguistic expression.

(Source EPO, based on the ISO 11179-4:2004 definition for “name”)

**Use of the RFC 2119**

The verbs must, must not, required, shall, shall not, should, should not, recommended, may and optional in this document are to be interpreted as described in RFC 2119[[5]](#footnote-5).

**Target language**

The requirements and recommendations specified in this document refer only to terms and definitions expressed in the English language used in the European Area.

# Requirements

1. The user experience must be respected

Terms that are not used in the context of the European Public Procurement domain shall not be proposed nor used in the definitions. Do not invent new terms or reuse terms from other contexts that might introduce ambiguity or confusion,

**Example** – About procurement procedure divided into “lots”

* Good term: Lot
* Poor terms: Procurement Object, Part or Component

**Reason**: Object is normally used for Contract Object normally reserved to explain the nature of the contract and the exact works, services or goods that are the matter of the procedure. Thus the use of “Procurement Object” to refer to a “Lot” could introduce confusion about the concept represented by this term. “Procurement Part” or “Procurement Component” are not self-explanatory and are terms unknown and unused in the procurement domain.

1. Do not use the term or a synonym in the definition of a main concept

When describing concepts that represent classes of objects the definition must not contain the same words that the ones used for the term representing the concept. Instead use words representing superior (broader) category concepts that are commonly understood. This rule may not apply to the data or object properties of a class of objects.

Example 1 – Definition of the class “Economic Operator”

* Good definition: Any natural or legal person or public entity, including any temporary association of undertakings, which offers the execution of works and/or a work, the supply of products or the provision of services on the market.
* Poor definition: The potential party, contractor, supplier or service provider responding to a tender.

Reason: The poor definition uses a work already used in the definition and synonyms that do not provide a clear understanding of what an economic operator is.

Example 2 – For the definition of the property “Preselected Party”, an object associated to the class “Short List”, an acceptable definition could be: “Party preselected allowed to submit tenders in a two-phase procedure”. The word “preselected” is here permitted because the “preselecting” concept is well known in the procurement domain and is foreseen as a future concept to be modelled in the ontology.

Reason: The focus in this definition is not on redefining what a party is, which must be done elsewhere, but on the objective of the pre-selection: to be candidate to submit tenders in procedures like negotiated, restricted or competitive dialogue.

1. Concepts must be stated in singular

The concept expressed by the definition shall be expressed in the singular. (An exception is made if the concept itself is plural.)

**Example** - “Procurement procedure identifier”

* Good definition: Distinct combination of characters and (or) numbers issued by the procuring entity identifying the procurement procedure.
* Poor definition: Reference number identifying procurement procedures.

**Reason** - The poor definition uses the plural word “procedures,” which is ambiguous, since it could imply that a “procurement procedure identifier” refers to more than one procedure.

1. State what the concept is, not only what it is not

When constructing definitions, the concept cannot be defined exclusively by stating what the concept is not.

**Example** - “Freight Cost Amount”

* Good definition: Cost amount incurred by a shipper in moving goods from one place to another.
* Poor definition: Costs which are not related to packing, documentation, loading, unloading, and insurance.

**Reason** - The poor definition does not specify what is included in the meaning of the concept. The words “cost” and “amount” are here permitted because both are frequently used in procurement and are modelled (in the case of Amount) or foreseen to be modelled in the ontology.

1. The definition must be stated as a descriptive phrase or sentence(s)

A phrase is necessary to form a precise definition that includes the essential characteristics of the concept. Stating one or more synonym(s) is discouraged and would be insufficient. Simply restating the words of the name in a different order is insufficient. If more than a descriptive phrase is needed, use complete, grammatically correct sentences.

**Example** - “Agent Name”

* Good definition: Name of person or organisation authorized to act on behalf of another person or organisation.
* Poor definition: Representative.

**Reason** - “Representative” is a near-synonym of the data element name, which is not adequate for a definition.

1. The terms and definitions must contain only commonly understood abbreviations

Understanding the meaning of an abbreviation, including acronyms and initialisms, is usually confined to a certain environment. In other environments the same abbreviation can cause misinterpretation or confusion. Therefore, to avoid ambiguity, full words, not abbreviations, shall be used in the definition.

Exceptions to this requirement may be made if an abbreviation is commonly understood such as “i.e.” and “e.g.” or if an abbreviation is frequently used in the domain of the Public Procurement and has been adopted as a term in its own right such as “CPV” standing for “Common Procurement Vocabulary” or “CPB” for “Central Purchasing Body”.

All acronyms must be expanded on the first occurrence of the definitions.

**Example** – (term used in eForms) “CPV”

* Good definition: The Common Procurement Vocabulary (CPV) code, a single classification system for public procurement aimed at standardising the references used by contracting authorities and entities to describe the subject of a procurement procedure/contract[[6]](#footnote-6).
* Poor definition: The CV used to describe the subject of a procurement contract.

**Reason** - The poor definition is unclear because the acronym, CV (standing for “Controlled Vocabulary”), is not commonly understood and some users may need to refer to other sources to determine what it represents. Without the full word(s), finding the term in a glossary may be ambiguous (e.g. it could refer to Curriculum Vitae, Core Vocabulary or other), difficult or impossible.

1. The definition must be expressed without embedding definitions of other underlying concepts

As shown in the following example, the definition of a second related concept should not appear in the definition proper of the primary concept. If the second definition is necessary, it may be attached by a note at the end of the primary definition's main text or as a separate entry in the glossary. Related definitions can be accessed through relational attributes (e.g., cross-reference).

**Example** -"Issuing Bank Documentary Credit Number"

* Good definition: Reference numeric identifier assigned by issuing bank to a documentary credit.
* Poor definition: Reference number assigned by issuing bank to a documentary credit. A documentary credit is a document in which a bank states that it has issued a documentary credit under which the beneficiary is to obtain payment, acceptance, or negotiation on compliance with certain terms and conditions and against presentation of stipulated documents and such drafts as may be specified.

**Reason** - The poor definition contains a concept definition, which should be included in a glossary. The terms “issuing bank” and “credit” are foreseen to be encompassed by the ontology and are well known in the procurement domain.

# Recommendations

1. A definition should state the essential meaning of the concept

All primary characteristics of the concept represented should appear in the definition at the relevant level of specificity for the context. The inclusion of non-essential characteristics should be avoided. The level of detail necessary is dependent upon the needs of the system user and environment.

Example - “Invoice Amount”

* Good definition: Total sum charged on an invoice.
* Poor definition: The total sum of all chargeable items mentioned on an invoice, taking into account deductions on one hand, such as allowances and discounts, and additions on the other hand, such as charges for insurance, transport, handling, etc.

Reason - The poor definition includes extraneous material.

1. Definitions should be precise and unambiguous

The exact meaning and interpretation of the defined concept should be apparent from the definition. A definition should be clear enough to allow only one possible interpretation.

**Example** - “Shipment Receipt Date”

* Good definition: Date on which a shipment is received by the receiving party.
* Poor definition: Date on which a specific shipment is delivered

**Reason** - The poor definition does not specify what determines a “delivery.” “Delivery” could be understood as either the act of unloading a product at the intended destination or the point at which the intended customer actually obtains the product. It is possible that the intended customer never receives the product that has been unloaded at his site or the customer may receive the product days after it was unloaded at the site.

1. Definitions should be able to stand alone

The meaning of the concept should be apparent from the definition. Additional explanations or references should not be necessary for understanding the meaning of the definition.

Example - “Economic Operator Country Name”

* Good definition: Name of the country where the Economic Operator is located.
* Poor definition: The country name.

Reason - The poor definition does not stand alone, it requires the aid of additional contextual data to understand the meaning of the concept.

1. Definitions should be expressed without embedding rationale, functional usage, domain information, or procedural information

Although they are often necessary, such statements do not belong in the definition proper because they contain information extraneous to the definition. If deemed useful, such expressions may be placed in other documents or placeholders (see ISO/IEC 11179-3). It is, however, permissible to add examples after the definition, preferably in a separate section or placeholder next to the definition.

The rationale for a given definition should not be included as part of the definition (e.g. if a definition implies using non-EU units, such as miles instead of kilometres, the reason should not be indicated in the definition.

Functional usage such as “this concept should not be used for ...” should not be included in the definition.

Remarks about procedural aspects. For example, “This concept is used in conjunction with this other concept “xxx”, should not appear in the definition; instead use “Related concept reference” and “Type of relationship” as specified in ISO/IEC 11179-3 (namely for data elements).

Example - “Global Procurement Agreement Indicator”

* Good definition: Indication of whether the procurement procedure is subjected to the conditions expressed in the World Trade Organisation (WTO) Government Procurement Agreement (GPA).
* Poor definition: Boolean value which is used by the software applications in eProcurement platforms to discard or select procurement contracts based on global trade standards like the WTO GPA.

**Reason** - The poor definition contains remarks about functional usage (and additionally uses non explained acronyms, see Requirement number 5 above). This information starting with “which is provided for...” must be excluded from the definition and placed in another attribute, if it is necessary information.

1. Definitions should avoid circular reasoning

Two definitions shall not be defined in terms of each other. A definition should not use another concept's definition as its definition. This results in a situation where a concept is defined with the aid of another concept that is, in turn, defined with the aid of the given concept.

Example - Two concepts with poor definitions:

* Employee ID Number - Number assigned to an employee.
* Employee - Person corresponding to the employee ID number.

Reason - Each definition refers to the other for its meaning. The meaning is not given in either definition.

1. Definitions should use the same terminology and consistent logical structure for related definitions, all through the glossary

A common terminology and syntax should be used for similar or associated definitions.

**Example 1** – In the European context, the terms “tender” and “contract” are sometimes used to refer to “procurement procedure”. This should be avoided as much as possible as “tender” should always refer to the offer submitted by the economic operator and “contract” to the document named “contract”, signed by the procuring entity(ies) and the economic operator(s). Therefore “tender” and “contract” should not appear in definitions unless deemed really relevant.

* Good definition (for the term “CPV”): The Common Procurement Vocabulary (CPV) code, a single classification system for public procurement aimed at standardising the references used by contracting authorities and entities to describe the subject of a procurement procedure/contract.
* Poor definitions (poor use of the term “tender”):
  + Term: Milestones; Definition: A list of milestones associated with the tender;
  + Term: Buyer; Definition: The buyer is the entity whose budget will be used to purchase the goods. This may be different from the procuring agency who may be specified in the tender data.

**Reason**: The definition used for CPV is good because it applies to the object of a procurement procedure or to the contract generated by one or several awarded lots. In the case of “Milestones” and “Buyer”, the term “tender” is improperly used to replace “procurement procedure” and it should be used only to refer to the offer or proposal submitted by the economic operator in the context of a procurement procedure.

**Example 2** - The following example illustrates the recommendation that similar terminology should be expressed in regular form. Both definitions pertain to related concepts and therefore have the same logical structure and similar terminology:

* “Goods Dispatch Date” - Date on which goods were dispatched by a given party.
* “Goods Receipt Date” - Date on which goods were received by a given party.

**Reason** – Both options are to be considered good as using the same terminology and syntax facilitates understanding. Otherwise, users wonder whether some difference is implied by use of synonymous terms and variable syntax.

1. Joinup, eProcurement Ontology: <https://joinup.ec.europa.eu/asset/eprocurementontology> [↑](#footnote-ref-1)
2. ISA, Interoperability Solutions for Public Administrations: <https://ec.europa.eu/isa2> [↑](#footnote-ref-2)
3. Freely available at this ISO/IEC JTC1 SC32 Freely Available Standards site: <http://jtc1sc32.org/free_standards.html> [↑](#footnote-ref-3)
4. See W3C OWL Reference for further explanations: <https://www.w3.org/TR/owl-ref/> [↑](#footnote-ref-4)
5. RFC 2119: <https://www.ietf.org/rfc/rfc2119.txt> [↑](#footnote-ref-5)
6. Source: <http://simap.ted.europa.eu/en/web/simap/cpv> [↑](#footnote-ref-6)