PEPPOL
Pan-European Public Procurement Online

PEPPOL Deliverable D3.1

Functional, Technical, legal and organisational specifications for the development of Building Blocks Software enabling cross-border use of eCatalogues

Version 1.1 – pending EC approval

Borderless eProcurement

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Version, List of Contributors

Version 0.95	2009/07/03	Submitted to PEPPOL PD and TD, with comments from project management meeting 2009/06/18.
Version 1.0	2009/07/09	For publication, updated according to comments from project management, pending EC approval.
Version 1.1	2009/07/24	For publication on the website, updated exclusively with editing adjustments, pending EC approval.

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List of the main Acronyms

CEN: European Committee for Standardisation

CEN BII: CEN Workshop on “Business Interoperability Interfaces on public procurement in Europe”

CIP: Competitive Innovation Programme

EBXML: Electronic Business using eXtensible Markup Language

EcOp: Economic Operator

EIF: European Interoperability Framework

ICT: Information and Communication Technology

MS: Member State

PEPPOL: Pan-European Public Procurement On Line

RFQ: Request for Quotation

SBA: Small Business Act

UBL: Universal Business Language

UN/CEFACT: United Nations / Centre for Trade Facilitation and Electronic Business

VCD: Virtual Company Dossier

WP: Work package

XML: Extensible Markup Language

xCBL: standardize Common Business Library

Executive Summary

According to the Description of work of PEPPOL, the overall aim of work package 3 (eCatalogues) is "to provide interoperable solutions for economic operators in any European country to utilise eCatalogue information already registered in their systems and to submit this information electronically to any public sector awarding entity from a different Member State when these economic operators decide to apply for public tenders in which the description of the items to be purchased is requested in the form of eCatalogues.

As a first step to specify and implement such interoperable solutions for economic operators, work package 3 investigated existing studies and initiatives, as well as legal frameworks at European and national levels which may have any relevance for eCatalogues. Therefore, the first activities of WP 3 comprised the analysis, synthesis and assessment of existing reports and documents.
Based on the knowledge acquired, an internal discussion was started among WP 3 participants, first to clearly identify the current status, both of the WP 3 participants and of other countries, second to clearly identify the problem to solve, and identify the most suitable solution.

This report documents the results of these activities as follows:

Chapter 1 provides the overall context of PEPPOL in general and of WP 3 in particular, also to facilitate the reading of this document by people who are new to this initiative.

Chapter 2 shortly describes the results of the preliminary survey activities, which formed the basis of information on which the subsequent discussion is founded. A more extensive description of this basis is provided in **Annexes 1, 2 and 3**.

Chapter 3 reviews the typical issues linked to the use of eCatalogues, with a particular focus on public eProcurement, to substantiate a statement of the challenge that PEPPOL WP 3 intends to address; the statement is an important synthesis, that helps in the identification of the solution strategy, that is also sketched in the same chapter. In a very short form, the main challenges of the use of eCatalogues are in the semantic layer, and they are linked to the proper identification of the thousands of data included in eCatalogue documents, ranging from commercial to very technical data; the solution strategy is based on tools that allow the combined use of existing standardized dictionaries for the data to be used.

Chapter 4 is focused on the two most important reference initiatives on which the strategy solution is based, namely the CEN Workshop on Business Interoperability Interfaces (CEN/BII) and the CEN Workshop on eCatalogue (WS/eCAT), as well as on the initiatives with which PEPPOL WP 3 has to coordinate.

Chapter 5 describes the scenario, first as it is today, to establish a common understanding, and then as it is imagined by PEPPOL WP 3, where the tools or 'building blocks' that will be delivered by PEPPOL will facilitate the interoperability. The building blocks will be in particular two tools, one for contracting authorities, the second for economic operators, that facilitate the operations of creation of the templates by the buyers, population of data by the sellers, and associated quality checks. The tool can also have a role for a long term scenario described in Chapter 10, supporting the acquisition of information on the users' behaviours.

Chapters 6, 7, and 8 describe the Legal Requirements, the Functional Requirements and the related Specifications that should be taken into consideration for the implementation of the tools.

Chapter 9 provides the organizational specification for setting up the PEPPOL pilot in practice. These specifications are the result of internal discussion among the participants, that beyond being necessary to start the planning of the tenders that will be launched for the pilot, helped to focus the solution to the challenge identified in Chapter 4.

Finally, **Chapter 10** provides a first sketch of the possible evolution of the system, and for its long term sustainability. The scenario is based on the creation of a Community, that would take care of progressively elaborating the information provided by pioneer users of the tool, so that standardization of behaviours and tools is progressively promoted.

1. Context

1.1. The PEPPOL Project

PEPPOL (Pan European Public Procurement On Line) is a three-year (May 1st 2008 – April 30th 2011) pilot project under the European Commission's CIP (Competitiveness and Innovation Programme) initiative. The vision of the PEPPOL project is that any company and in particular small and medium-sized enterprises (SMEs) in the EU can communicate electronically with any European governmental institution for the entire procurement process.
Following a specification phase (project year 1) and a development phase (project year 2), PEPPOL will run real life pilots (project year 3) involving at least the countries that are partners of the project but possibly also other countries.

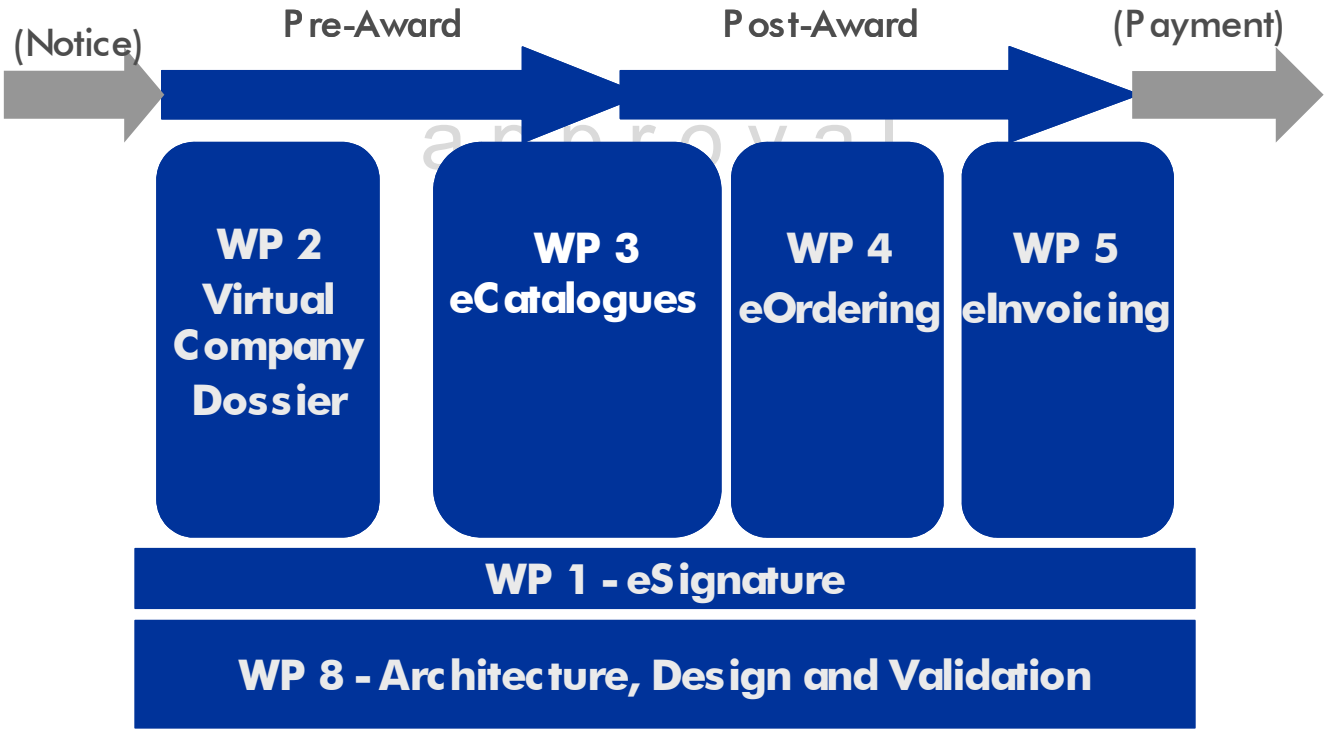


Figure 1 - Structure of PEPPOL project

The structure of the PEPPOL project is shown in Figure 1. In addition to the work packages (WP) shown in the figure, WP6 is project administration and WP7 results dissemination.
Some steps of the procurement process are out of PEPPOL's scope; for instance, noticing of the tenders, and payment after invoicing, which however are assumed to be handled by other systems.
E-procurement processes may be manual or automated, or combinations of the two. For example:
a) Tendering (pre-award) is today typically manual processes:

- Electronic documents are meant to be read by humans (e.g. PDF).
- Documents are submitted and read following manual work processes.
- More automated processes for e-tendering are envisaged but not within the timeframe of PEPPOL

b) Post-award (ordering, invoicing) may be automated or manual

- In the manual case, electronic documents are sent by manual processes, addressed to an actor where a person will read the documents (e.g. a PDF invoice).

- In a fully automated case, the originating system will generate a structured document (typically XML) and ship this off to the receiver, where the document will be handled automatically by the receiver's system. Manual intervention may be kept at a minimum.

PEPPOL mainly addresses the automated case; it is a system integration project focusing on how to automatically exchange structured information between the IT systems of the actors involved.
Correspondingly, PEPPOL has no WP addressing tendering in general; only the aspects of VCD (virtual company dossier) and e-catalogues are covered. Since e-signatures are particularly important for tendering, the e-signature WP (WP1) has assumed responsibility for tendering pilots that are sufficiently advanced to show interoperability even in this phase.
Virtual company dossier (VCD) covers interoperable solutions for utilization of company information (possibly including roles and authorization) that is already registered, in order to reuse this information in electronic tendering processes across Europe. WP2 in PEPPOL will in particular focus on service interfaces and data structures for system integration towards the information sources, and to convey the information between the systems of the parties involved in the tendering process. Interactive, online solutions to business registers are not the main scope. Results from the EBR[1] and BRITE[2] projects will be utilized.
E-catalogues can be used in both tendering and ordering. WP3 in PEPPOL focuses on data structures and interfaces for catalogues suitable for automated exchange between systems, representing products, their specifications, and associated information such as price. PEPPOL will build on existing work in the area. Referral to standard product codes and other nomenclature and semantic information is necessary, although not specifically addressed by PEPPOL. E-catalogues intended for human use (such as PDF-format brochures) are mainly out of scope.
WP4 and WP5 address ordering and invoicing processes respectively. For these WPs, automated transfer (interfaces, data structures) for system to system communication is the main focus. Electronic documents intended for human processing (such as a PDF invoice) are mainly out of scope.
Catalogue, order, order confirmation, and invoice will in PEPPOL be based on the profiles issued by CEN/ISSS Workshop on Information Systems and Business Interoperability Interfaces for public procurement often referred to through the acronyms CEN/BII and WS/BII). PEPPOL contributes strongly to the ongoing standardization work in CEN ISSS WS/BII. This means that all business documents (at least for system to system communication) are XML-based.
The cross-cutting WP1 and WP8 handle e-signatures and transport infrastructure respectively. The transport infrastructure shall explicitly support system to system integration of procurement solutions across Europe. An actor that wants to participate in cross-border public procurement (buyer or seller side) shall integrate towards this infrastructure.
While PEPPOL infrastructure provides transport and transport security for e-procurement, e-signatures must work end-to-end between the actors that do business. Thus e-signature interoperability is dealt with to the separate WP1.

[1] http://www.ebr.org/
[2] http://www.briteproject.net/

1.2. The Work Package 3 on eCatalogues

1.2.1 Work Package 3: Vision and Objectives

Amongst the PEPPOL WPs that cover specific steps of the procurement process (WP 2, WP 3, WP 4 and WP 5), Work Package 3 has the special feature of being the only one dealing with both pre-award and post-award issues.

This feature characterises all of WP 3 contents, and requires often a split of the topics into “pre-award” and “post award”.
In line with the PEPPOL project broader vision, the WP 3 **vision** is that any company (incl. SMEs) in the EU can easily, securely and seamlessly create, validate and send an electronic catalogue as a part of a procurement tender issued by any European contracting authority; and that any company that has been awarded a tender by any European contracting authority can easily, securely and seamlessly create, validate and send an electronic catalogue of the offered goods/services.

To realize this vision, WP 3 has the **goal** to create and test a solution to manage eCatalogues in the framework of cross-border public procurement procedures, both as part of a bid submitted by competing tenderers (pre-award), and as a basis for issuing orders to economic operators (post-award).

The ultimate goal of the WP is to contribute to the PEPPOL Project’s general goal, and to make so that a significant part of the public procurements are made through cross-border transactions.

More specifically, the WP has set the following **objectives** for the pilot project:

1. The development of software tools (“building blocks”) providing the possibility to implement the vision, namely:
   - For Contracting Authorities: a tool to create eCatalogue templates , i.e. eCatalogue structures based on standard formats and standard description of the catalogue items, to create the business rules out of the template, and to manage the receipt of eCatalogues.
   - For Economic Operators: a tool, supporting the creation of eCatalogues according to a given template (format and properties), and the submission through PEPPOL infrastructure.
   - For Contracting Authorities, Economic Operators, Service Providers: tools for converting formats, matching contents and validating assuring quality of contents.

2. The definition of processes for eCatalogue management with the tools developed by Consip i.e. the processes for:
   - setting up eCatalogue templates / receiving eCatalogues (contracting authorities)
   - generating/submitting/uploading eCatalogues (economic operators)
   - supporting activities and services like converting formats, matching classification and description, validating assuring quality of contents (contracting authorities, economic operators, service providers).

3. The implementation of real tenders where the building blocks and the processes will be increasingly used by the procurement actors (PA and economic operators) from WP 3 and non-WP3 countries, so as to gain the experience for laying the foundations for using PEPPOL solutions after the project period, not only not only from the existing PEPPOL countries but also from other countries.

The Expected benefits of the WP 3 are:

for Public Administrations,
- making catalogue management processes more efficient;
- higher participation (->competition) to tenders;
- easier solutions for eCatalogues formats ;
- increased integration with other eProcurement tools;

for Economic Operators,
- reduction of workload for tender participation;

- wider market opportunities;
- reduced transaction costs;

for IT industry,

- integration of the existing SW solutions with new functionalities;
- access to the building blocks software that could be further developed/utilised by the industry;
- business opportunities as VAS Providers.

1.2.2 Work Package 3 Participants

The PEPPOL WP 3 participants are:

- Austria (PEPPOL.AT – BBG Central Purchasing Body of central PA accessible also to local PA)
- Denmark (NITA – National ICT and Telecommunication Agency)
- Finland (VM – Ministry of Finance, managing a PEPPOL national consortium)
- France (ADETEF – UNIHA Central Purchasing body of large hospitals)
- Italy (MEF-Consip - Central Purchasing Body of all PA)
- Italy (CSI Piemonte – Consortium of Regional PA with several tasks including procurement)
- Italy (Intercenter – Central Purchasing Agency of Regional PA)
- Hungary (KSZF – Central Services Directorate - Central Purchasing Body of all PA)
- Norway (Difi – Agency for Public Management and eGovernment – Manager of Framework Agreements to provide national PA with eTendering solutions)

Based on the approval of the proposal submitted to the EC on June 2 2009, as from 1st November 2009, the participants should include also

- Portugal (ANCP - - Central Purchasing Body of all PA),
- Greece (EKEVYL – DYPE Central Purchasing body of Regional Health)
- Scotland (ePS - eProcurement Scotl@nd - Manager of Framework of a freely available eTendering solution and eCatalogue and eOrdering solutions for Scottish PA)
- Czech Republic (MRD – Ministry of Regional Development – Designated Manager of Framework Agreements to provide national PA with eTendering solutions)

1.2.3 Work Package 3 Work Plan and Methodology

The Work Plan that WP 3 defined to achieve its goals is divided into three phases:

1 - Design (13 months)
- As is - Survey of existing solutions features; standards; initiatives
- To be - Definition of building blocks technical specifications

2 - Implementation (11 months)
- 'Building blocks' software development
- Test
- Tender Planning

3 - Interoperability (12 months + 6 extra months)
- Actual procurements and transactions in a real-life setting

The WP 3 planned Official Deliverables are:

3.1 Functional, Technical, legal and organisational specifications for the development of Building Blocks Software enabling cross-border use of eCatalogues

3.2 Standard eCatalogue format and data structure for pre-award and post-award use (ref. Work of CEN/BII)

3.3 Building Blocks Software enabling cross-border use of eCatalogues (post-pilot release)

3.4 Rollout master plan including application experience report, implementation, maintenance & expansion guideline, training material for the pan-European eCatalogues application

This report is the first Official Deliverable (Deliverable 3.1), that marks the conclusion of the Design phase, and describes the results of all the activities carried out by the WP participants.

In particular, under the As-Is activity, a survey to identify all relevant studies and initiatives at EU and international level has been carried out. Subsequently, to facilitate knowledge sharing, each participant has read and summarized the content of the identified relevant document in a report; in addition a knowledge sharing workshop has been held to present to all other WP partners the results of this survey. The results of this activity (activity 3.1.4) are presented in Chapter 2.1 and the linked Annex 1.
The as-is has also taken into consideration the starting point of the different WP 3 participants and the situation in other Countries (reported in paragraphs 2.2 and 2.3 respectively, and the linked Annexes 2 and 3).

Based on the common knowledge acquired during the As-Is activity, the participants shared their views on the "To-be" scenario in several face to face and on-line meetings, and identified the common challenges and the solution strategy described in Chapter 3.
Since the "as-is" allowed to identify a practical absence of legal constraints on the use of eCatalogues (in fact, no legislation nor secondary legislation is particularly binding on formats and contents of eCatalogues, nor on their rules for use in pre-award), the "legal interoperability" is not a big challenge in WP 3.
The solution is thus based on two 'pillars': organizational interoperability and semantic interoperability, and for each 'pillar' a cooperation has been established by PEPPOL WP 3. In particular:

- on one side, the solution of the organizational interoperability is the scope of cooperation with CEN/BII, which gives a reference for processes and rules for the exchange of eCatalogues mainly in the post-award phase, and provides a well defined format for the document "eCatalogue". The format focuses mainly on the "header" part of eCatalogues, and then includes the possibility to have "items" described by "attributes", that are not specified in detail by CEN/BII
- on the other side, the solution of the semantic interoperability is dealt with in the cooperation with CEN WS/eCAT, that deals with the standardization of the eCatalogue contents (items and description).

These two important liaisons are describe in Chapter 4, together with the possible cooperation that PEPPOL WP 3 could establish for the re-use of existing solutions.

The last part of the "to be" activity was targeted at describing the details of the solution, provided in Chapter 5, and at describing the Legal Requirements, the Functional Requirements, and the Functional specifications of the tools identified as the "building blocks" identified in the scenario stemming (Chapters 6, 7 and 8 respectively).
Along with the discussions on the To-be, the WP 3 participants started discussing about the Organizational requirements for the pilot set-up, described in Chapter 9.

Starting from the Functional Requirements of the building blocks identified in this document, in the Construction Phase, the WP 3 will focus on the Definition of Standard processes to manage eCatalogue format and data structure; the Development, including test and release, of software to support the above processes (building blocks); the Management of tenders to be run under the pilot; and on Communication activities (tow. SMEs, trade associations, PAs), to ensure participation of the private sector in the pilot tenders, and to inform the public sector on the project goals.
The Goal of the Construction phase is to be ready by May 2010 to run real tenders, in which eCatalogues are exchanged in pre- and post award procedures with the use of support tools to:

- set up eCat template/receive eCat (contracting authorities)
- generate/submit/upload eCatalogues (economic operators)
- support activities of converting formats, matching contents and assuring quality of contents (CAs, EcOps, VAS Providers)

In the pilot phase, the WP 3 will focus on the implementation of tenders on the identified categories; on managing feed-back from the pilot tenders (Process Design/Software/Specifications Amendment); and on designing the components (organizational, legal, …) to sustain the experience after the project finish (SW maintenance/devel., agreements with standardization bodies, management structure).
The goal of the pilot phase is to ensure participation to the pilot tenders, and to draft a Roll-out Plan for sustaining and diffusing the experience over time.

2. Background

2.1. Overview of existing standardization documents relevant for eCatalogues

The WP 3 participants carried out an analysis on the existing standardization documents relevant for eCatalogues.
The preliminary task of the analysis was the identification of all the relevant initiatives and bibliography documents. A reference starting point for this task was found in the "Information sources relevant for the definition of Common Specifications for cross-border use of Public eProcurement - Version 1.0", distributed in May 2007 together with the CIP ICT PSP call for proposal that funds the PEPPOL project, that was integrated with other sources.

The documents can be grouped into two clusters:

1. General information on the European eProcurement framework

This cluster includes:

- The European Interoperability Framework
- The European eProcurement Action Plan
- The "Explanatory document on Requirements for conducting public procurement using electronic means under the new public procurement Directives 2004/18/EC and 2004/17/EC'"
- Guidelines to Common Specifications for Cross Border use of Public eProcurement
- CWA15236-00-2005-Feb: "Analysis of standardization requirements and standardization gaps for eProcurement in Europe"
- IDABC functional requirements
- CWA 15045:2004 "Multilingual catalogue strategies for eCommerce and eBusiness"

These documents provide a general framework for legal and non legal issues related to eProcurement in general and interoperability in particular, although they do not cover the topic of eCatalogues systematically.

2. Specific documents on eCatalogues

This cluster includes:

- DG-MARKT Study "Electronic Catalogues in Electronic Public Procurement"
- Business Requirements Specifications for Cross-Industry catalogues (CEN/ISSS WS/eBES)
- The CWA156672007 "Business requirements specification - Cross industry catalogue process"
- The CWA 15294:2005 - Dictionary of Terminology for Product Classification
- ePDC project: CWA 15295:2005 - Description of References and Data Models for Classification
- Gen-ePDC project: CWA15556-1:2006 - Product Description and Classification - New Property Library
- Gen-ePDC project CWA 15556-2:2006 - Product Description and Classification - Product Classes with sets of Properties
- Gen-ePDC project CWA 15556-3:2006 - Product Description and Classification - Results of development in harmonization and product classification and in multilingual electronic catalogues and their respective data modelling.

The reference starting point for identifying specifically eCatalogue related documents was the document "Electronic Catalogues in Electronic Public Procurement", and the map included there (see Figure 2), that arranges the listed documents along 6 levels of interoperability, that are clearly linked to the ones of the EIF.

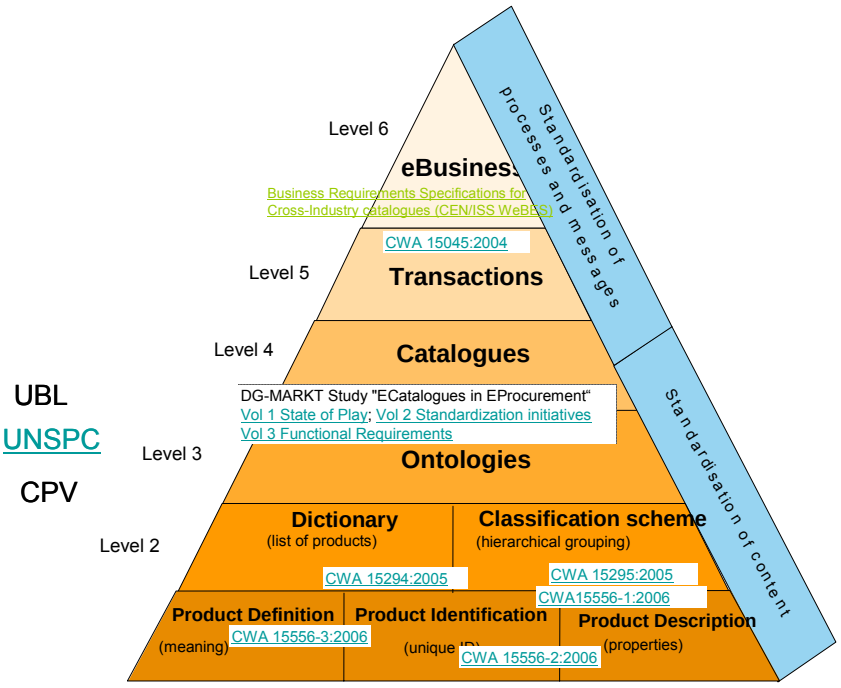


Figure 2 - The studies considered in the As-is activity

Since the volume of reading was too large, the WP participants decided to distribute the workload of reading the documents, and to summarize their contents (only the parts relevant for eCatalogues) in internal reports, drafted according to a standard structure index.

A short summary of the content of all the documents is given in Annex 1. Every participant responsible for reading and summarizing the document presented its contents in a Knowledge Sharing Workshop in Budapest at the end of October 2008.
This arrangement proved very useful to acquire and complete the participants' knowledge in the matter of eCatalogues, providing the necessary basis for identifying the challenges at stake and the possible solutions.

2.2. The starting point of the different WP 3 participants

Along with the external survey on existing studies and initiatives on eCatalogues, the "as-is" activity, was directed to mutually sharing knowledge on the participants' existing systems with regard to eCatalogue management.
The analysis was conducted with two tools:

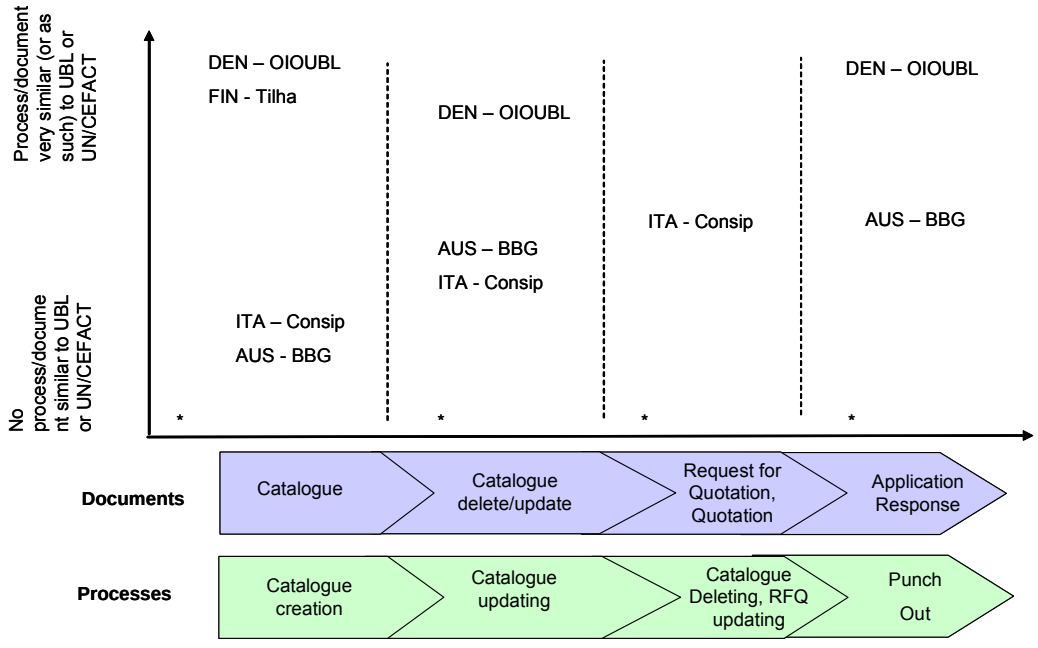
- a Report, that had to be drafted by all the participants, describing - according to a standard index – the way in which eCat are managed in their systems;
- a spreadsheet for systematically mapping – against the two main standards: UBL and c-Catalogue - the catalogue-related processes and the catalogue-related documents used by the participants currently.

In addition, the systems were presented in a Workshop in Rome in mid September 2008, with PowerPoint presentations and demos.

A summary of the Reports is included in Annexe 2, providing some more detail on the existing situations.

Summarizing the results and the key findings, the peculiarity of the partners show in general that:

- Automatic tools: only in a few cases there are fully automated tools to support the eCat management processes;
- Pre/Post award: in general the eCat is used both in pre-award and in post award phases, but n some Countries only in post-award, and the post-award is largely the prevailing use;
- Tools: often supported by Excel spreadsheets, and "quality assurance" tools built on Excel files
- Submission: in the pre-award almost always upload (only Hungary uses CD ROMs)
- Documents: format are often used to define principally catalogue request and the catalogue itself, but nobody implemented UBL or UN/CEFACT standard integrally (some partners have very similar standard and UBL-like formats are more used);
- Processes, standardization is low (Consip implements in every phases a process similar to UN/CEFACT for catalogue creation and update, and something very similar to UBL for pricing and deletion; Austria implements in some areas process vaguely similar to UBL; Denmark implements in almost every phases OIOUBL, a customisation of UBL.



Note: *) HUN – KSZF, ITA – CSI, ITA – Intercent, NOR – DIFI implemented document and processes but in a not standard way

Figure 3 - The eCat management value chain use of standards in PEPPOL WP 3 partners

2.3. The situation in other Countries

This section aims at describing the eCatalogue management legal framework, organizations, processes and tools adopted in some EU Member State (MS) that are not PEPPOL WP 3 partners.

The starting point is that at European level there is not a common detailed eCatalogue definition and that the only official reference is the Directive 2004/18/EC (Whereas 12: "To that extent, a tender submitted by a tenderer, in particular where competition has been reopened under a framework agreement or where a dynamic purchasing system is being used, may take the form of that tenderer's electronic catalogue if the latter uses the means of communication chosen by the contracting authority in accordance with Article 42" definition n. 12).

The analysis showed that:

i) the current use of eCatalogues is primarily limited to the post-awarding phases of public procurement, where eCatalogues are used to enable electronic ordering and invoicing;
ii) there is not a use wide of standards (in content and in processes) to manage eCatalogues;
iii) there is not a widespread use of automatic tools to manage eCatalogue contents and formats (the process is offline and often hand-managed).

The conclusion is that there is room for PEPPOL to strengthen the use of eCatalogue for achieving efficiency gains in the pre-awarding phases of public procurement, where eCatalogues assume the role they were traditionally intended to play in the 'brick and mortar' world, i.e. to constitute documents detailing available products and prices.

From a methodological point of view the analysis was conducted

1) sending a questionnaire constituted by 2 parts, a descriptive part in .doc format and a technical part in Excel format;
2) organizing the feed back data;
3) analysing and extrapolating some critical success factors and some common key issues. Results have been presented in October 2008 in a WP 3 meeting in Budapest.

The descriptive part of the questionnaire is composed by seven sets of questions, structured exactly in the same manner as in the EC study "Electronic Catalogues in Electronic Public Procurement", thus making these results comparable and extending of the Study itself.

Table 1: Structure of the questionnaire

1. Public procurement legal framework	EU Directives, requirements, product classification scheme, use of B2B system, punch out
2. Operations and processes followed for the use of eCatalogues through existing ICT systems	Procedures supported, actors, pre/post awarding, verification, re-use, access, application,
3. Technical aspects of eCatalogues systems	data exchange standards, formatting standards, security, system implementation
4. Content of eCatalogues	Data fields and compulsory
5. Statistics	Start up year, registered user/seller, number of eCatalogues, number of transactions
6. eProcurement programmes and initiatives	New and future initiatives, training
7. Obstacles/issues in establishing eCatalogues systems	Obstacles, need and requirements

The technical part is a technical assessment on the formats and processes used, against the standard formats and processes UBL and c-Catalogue.

Twelve countries answered the questionnaire (see Table 2). Only few MS answered in a complete way and generally only to the descriptive part of the questionnaire. It emerges that out of the 12, only 7 have an eCatalogue solution, and that only Romania and UK use punch-out.

Table 2: The 12 non PEPPOL countries that answered to the eCatalogue management questionnaire

Country	eCat solution	CPA
Belgium	yes	Service fédéral e-Procurement SPF Personnel et Organisation
Czech Republic	no	Administration of the State Material Reserves
Ireland	no	eProcurement Initiative National Public Procurement Policy Unit (NPPPU) Department of Finance
Lithuania	yes	Central Project Management Agency
Luxemburg	no	Ministère des Travaux Publics
Malta	no	Ministry of Finance and Economic Affairs - Contract Department
Romania	yes	Agentia pentru Serviciile Societatii Informationale Ministerul Comunicatiilor si Tehnologiei Informatiei ASSI
Slovakia	no	Office for Public Procurement - Department of European Affairs and International Cooperation and Electronic Public Procurement Department - Slovak Office for Public Procurement
Spain	yes	Ministero de Hacienda, DG Compras
Sweden	yes	Swedish Administrative Development Agency, VERVA
Switzerland	yes	Federal Department of Finance FDF Swiss Federal Strategy Unit for Information Technology FSUIT
UK	yes	OGC bs

The analysis focused only on the seven countries who have an eCatalogue solution. The Table 3 below summarizes the **main findings**.

Table 3: Member State with eCatalogue systems - Key findings overview

Country	Instruments	Pre/Post awarding	Standards in document	Standards in processes
Belgium	eCat for framework agreements, > and < EU thresholds	post awarding	no standard	very similar to UBL 2.0 (create catalogue, update catalogue item specification, update catalogue pricing), deletion is not possible
Lithuania	eCat for framework agreements, > and < EU thresholds	post awarding	re-opening docs very similar to UBL (RfQ) and vaguely similar to UBL (attached document)	processes very similar to UN/CEFACT (new catalogue pubblication, update catalogue)
Romania	eCat for emarketplace, < legal financial limit	direct purchasing but it can be used to propose	docs vaguely similar to UN/CEFACTS (Catalogue information), vaguely similar to UBL (RfQ, quotation, application response, attached document)	vaguely similar to UN/CEFACT (new catalogue publication, punch out)
Switzerland (on phone interview)	Supplier Resource Management application (SAP)	post awarding	use of Open Catalgoue Interface (OCI)	use of Open Catalgoue Interface (OCI)
Spain	eCat for framework agreements	post awarding	docs quite similar to UBL (catalogue request, rejection), doc very similar to UN/CEFACT (catalog reject, subscrition, acceptance), doc quite similar to UN/CEFACT (catalogue acceptance, update, update request, information) , doc vaguely similar to UN/CEFACT (subscriction rejection, catalogue, catalogue message)	processes quite similar to UN/CEFACT (catalogue request, update catalogue on request), doc quite similar to UBL (create catalogue, update)
Sweden (on phone interview)	eCat mainly for framework agreements	mainly for post-awarding processes	There are many solutions and no established standard (eg EDI-standards). Partner of CEN/ISSS BII workshop and catalogues is one of the work items.	
UK	eCat for post award contracts and framework agreements	post awarding	vaguely similar to UN/CEFACT (catalogue, fiew fields of cat in OCI BMEcat), vaguely similaro to UBL (RfQ, quotation,) cXML standard (for RfQ and messages, quotation)	vaguely similar to UN/CEFACT (new catalogue publication, update catalogue, punch out), according to BMEcat (update catalogue), quite similar to UBL (punch out), according to OCI / cXML (punch out)

The framework of the answers from each country is **Annexe 3**.
In the analysis a possible benchmark of the eCatalogue fields structure was also tried, according to 4 main sets of data 1) Product/service defining area (when ordering or preparing a proposal); 2) item defining area (when publishing); 3) vendor defining area (when ordering); 4) supplier defining area (when registering). This analysis emphasized that the UK has the more detailed ones, while others less. Clustering answers, the Figure 4 shows the position of all other countries.

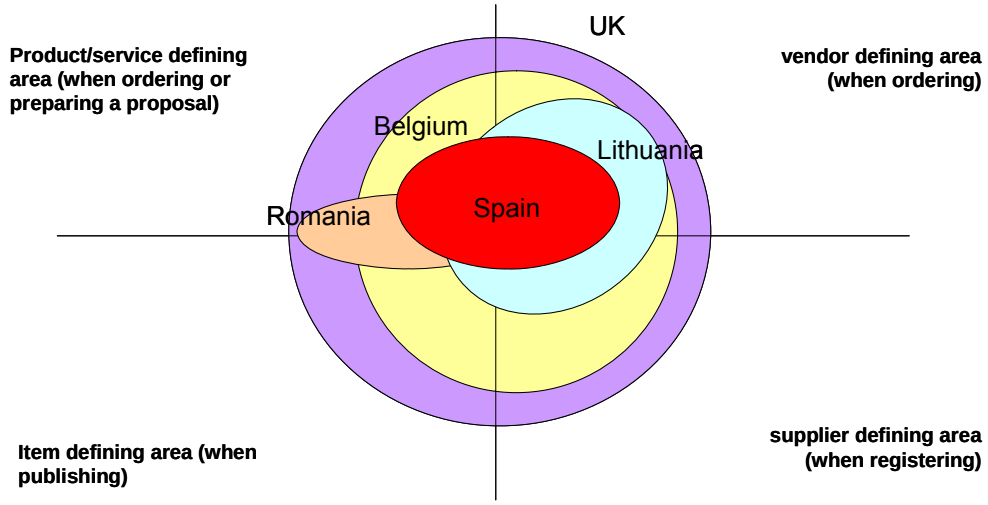


Figure 4 - A qualitative description of how eCatalogue fields are distributed throw 4 main data sets

One of the critical factors identified in the analysis is related to the absence of a **common eCatalogue standard** at EU level, both in formats and in contents. Every MS is demanding for common functional requirements for international eCatalogue systems for interoperability and integration to other eProcurement systems. Such standard has to assure also vendors neutrality in catalogues formats.
Convergence into management standards (content and process), for example UBL or UN/CEFACT, not to be left to individual country's initiatives.
In addition the other eProcurement standards (e.g. transactional message standards) are important in defining the end to end process that eCatalogues sit within.

The **eSignature**: in each MS digital signing of catalogues is not yet available for every contracting authorities or buyers (no e-ID, no card-reader) and there are different levels of use of digital signature in the public administration.

There is not yet a unified vision on how enable eProcurement across many spend categories even in a same Government between different Ministries/Departments.

Another critical factor is the **supplier's ineffectiveness in maintenance** and in updating eCatalogues that is probably related to change management and training troubles of the offer side.

Lack of suitable Commercial off-the-shelf COTS eMarketplace software. End users expect that marketplaces and catalogue systems should offer very intuitive usable interfaces similar to Amazon or eBay, easy to configure and control.

Lack of experience (and maybe **fear of cost** and effort required to establish and manage them) and confidence with eProcurement slows Contracting Authorities in using eCatalogues. In some cases (Slovakia, Ireland) Authorities are awaiting the establishment of an organization that will manage arrangements which would, in the future, lend themselves to include eCatalogues.

Unclear benefits case is recognize to be a critical factor, there is a lack of agreed methodology for predicting and recording **cashable savings**. A transparent and clear way to demonstrate to the buyer's process and cost savings from eProcurement based on eCatalogue would be the best way to spread their use.

Sharing best practice – it would be useful to gain an insight of how different governments have approached cataloguing products and services in different procurement categories.

3. Cross-border use of eCatalogues in public procurement: identification of challenges and the solution strategy

3.1. The typical issues of Product data management in eCatalogues

During the lifecycle of a product its data will propagate through many different IT-systems. Starting with product specification where the first product related properties are defined and continuing until the product is disposed or recycled a huge amount of data is generated and has to be maintained. The duration of maintaining the data is depending on the kind of product and can last for several decades if talking about equipment for production plants or aircrafts.
Information to be exchanged includes language specific types such as terms, definitions as well as more or less language independent types, such as product properties, units of measurement, classification systems, codes of all types, graphical symbols etc.
Nowadays a lot of this information is available as scattered and unsynchronized copies in different systems along the supply chain. Information about a product (e.g. colour laser printer) has to be available in design and product data management systems (CAD, PDM, PLM, …) as well as production planning systems (ERP) and systems for maintenance (e.g. spare part catalogue). As the structure in the industry is today there are also many suppliers delivering parts, component or complete systems to the manufacturer of a product. Therefore product information also needs to be shared with suppliers and, possibly, several levels of sub-suppliers. When looking at a finished product the company has to send information about the product to its distributors and sales partners. Also maintenance and service partners have to be provided with product information and spare-part catalogues. This accentuates the necessity of product information being distributed throughout the extended supply chain.

Product data

Talking about product data has many different interpretations depending to whom we talk. A customer may request electronic data about our products. As relevant product data is always in connection to the respective business process, we have to first verify what he is talking about. Figure 5 - shows different types of product data.

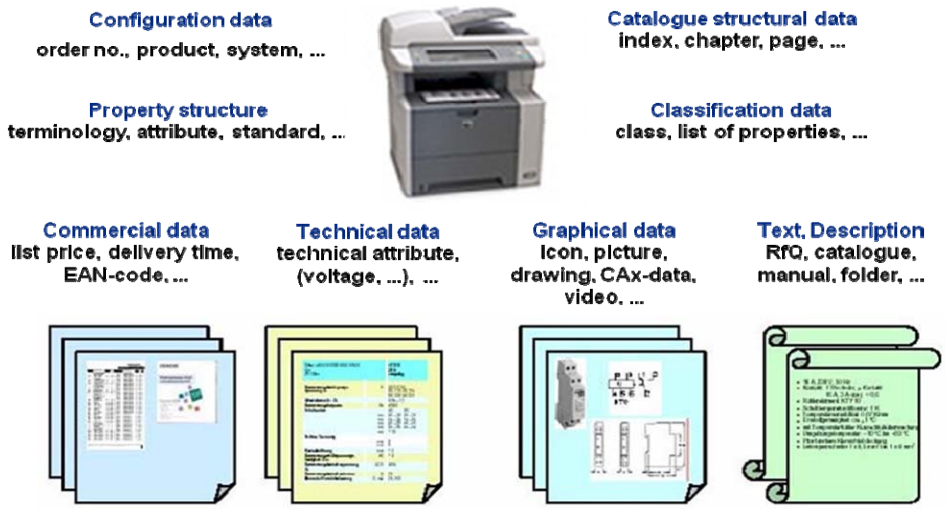


Figure 5 - Product data types

In a business process product data is seen from a very specific perspective. Data has to be selected and configured to serve this process. Nevertheless the same data (maybe in a different configuration) is used in other processes also.

Example:

1. Selection
   If you select a printer you need some requirements from back office (e.g. laser/ink, number of copies per month, network connection, also fax and scanning required, etc.).
2. Order
   Once you order the printer you need an identifier such as a product-number.
3. Installation
   To install the printer you need to know technical specs (e.g. network connection yes/no, type of network connection, printer model, etc.)
4. Payment
   To pay the invoice for the printer you need references to the order and the product
5. Service
   To service the printer you need information about the product's consumables and spare parts
6. Replacement
   To replace the printer you need information about hazardous parts which might need special treatment

Electronic product data exchange

Analyzing eBusiness processes of products throughout the extended supply chain shows that there may be several dozens of different electronic systems involved, where data about products or services are processed and stored. Costs for data transfer between these systems sum up to enormous amounts. When closing up to single business processes, in most cases we examine a data transfer connection set up between two specific systems in the respective business process (e.g. CAD to ERP, ERP to Marketplace, …). Typically, neither preceding nor following business processes are considered and therefore this many-isolated-islands-approach to application data exchange results in significant efforts for the maintenance of dispensable data duplicates, costing companies a fortune.
The global market adds the challenge of delivering data in different languages. Companies deliver data sheets or product catalogues to their customers and business partners. If translations are not perfect or specialties in localization are not met, misinterpretation and failures are the result. Simple errors in data transfer may lead into catastrophes. An example known to the wide public was the NASA mission of the Mars Climate Orbiter in December 1998. The Mars Climate Orbiter probe was destroyed when a navigation error caused the spacecraft to miss its intended 140–150 km altitude above Mars during orbit insertion, instead entering the Martian atmosphere at about 57 km. NASA reported the reason for the loss of the spacecraft as a problem in transfer of information between the Mars Climate Orbiter spacecraft team in Colorado and the mission navigation team in California. One team used U.S. units of measurement (e.g., inches, feet and pounds) while the other used metric units for a key spacecraft operation.
Usually misinterpretation of data respectively errors in data transfer do not have such fatal consequences, however, in all cases they account for additional costs. Errors can cause a dramatic increase of project costs, extended time to market or even result in expensive recalls of products - if errors are not recognized before the product is out on the market. In any case it puts an unnecessary strain on a company's competitiveness.
Currently an integrated eSupply Chain is more or less a theoretical issue. The vast majority of companies create product data redundantly in different systems. Also data maintenance is performed redundantly, read repeatedly, in several systems. Often product catalogues and specifications delivered from suppliers cannot be imported into systems directly and have to be entered manually. This work is error-prone and may cause expensive changes and redesigns of products. Yet more problems arise when different companies name identical product attributes differently or different product attributes identically. In summary, we identify the following types of problems in data transfer.

- Data not correct — data is wrong and no automatic procedures to verify correctness
- Data not clear — misinterpretation of information because information is not understandable for receiver

- Different naming – same meaning — sender and receiver use different naming for the same information
- Same naming – different meaning — sender and receiver use the same naming for different information

Ensuring that none of the above problems can appear is already difficult when transferring data between partners talking even the same language. When working in multilingual environments this imposes outgrowing challenges.
Digital exchange of product data is handled in various departments in companies and organizations every day. The exchanged electronic data serves different purposes and many business processes rely heavily on its provision. Figure 6 - shows electronic product data exchange between a manufacturer and its suppliers and customers during product life cycle. Electronic product data exchange includes different requirements on data content and exchange format. Also different EDP-systems are involved in various phases (design systems (e.g. CAD-, CAE-systems) production ERP-systems, procurement systems, sales systems, maintenance systems, spare part catalogues, etc.)

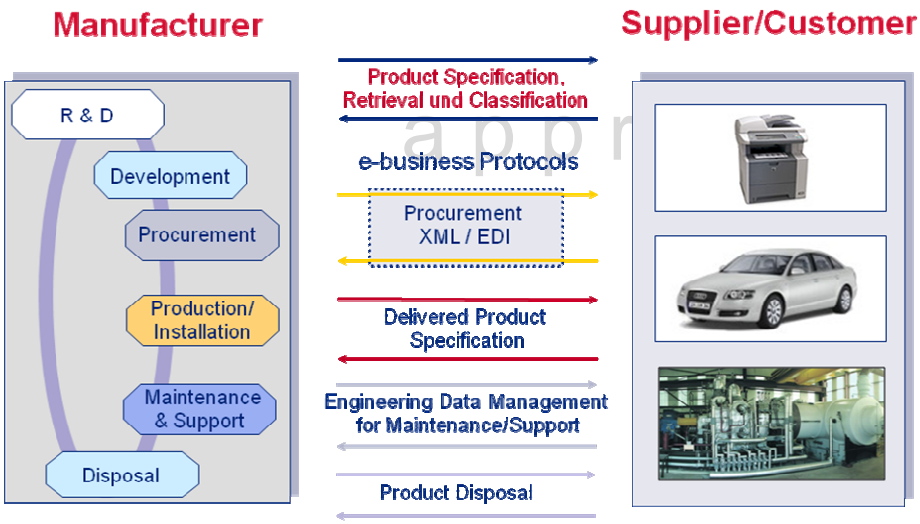


Figure 6 - Electronic exchange of product data throughout the product life cycle

Problems

Duplicate data is redundantly put into stand-alone data bases for different purposes, such as to supply and maintain the data for customers, suppliers or internal use. In a multilingual environment it is virtually impossible to coordinate and consolidate translations even within a company. So misunderstandings and errors from redundant databases and inconsistent translations happen.

Consequences

As a consequence costs for supplying and maintaining data increase significantly. Furthermore, redundant data impedes entering new markets for both identifying new suppliers and selling products to customers. Due to the exchange of incorrect data or data which is not correctly interpreted costs follow up and losses (e.g. for recall of products) increase.

Solution to the problem of product data

The most suitable solution to establish reliable data for product data management and electronic data exchange is standardization of metadata (classification, properties for products and services, terminology, graphical symbols, etc.). Both standardization of data models and exchange formats are necessary to ensure interoperability of data and systems. Also workflows for development and maintenance of data have to be designed and implemented.

3.2. The typical issues of Services data management in eCatalogues

In the case of Services, most of the considerations described for product data apply. In particular, data about services are also stored in many IT systems; the need to exchange information between the buyer and the supplier system; the use of data along the business process; etc.

The real peculiarity of services compared to products is that the configuration of services is generally very flexible, and therefore their description is more difficult to standardise. But, from a conceptual point of view, the best practical solution to the problem of services data is again the standardization of metadata, together with workflows for development and maintenance of metadata.

3.3. The typical issues of Works data management in eCatalogues

The use of eCatalogues in the field of Works is currently very limited, and the challenge is that the practical use of standard classification systems in Works is in general still too limited.

The pilot has to discuss in every case how the eCatalogue can be built based on the needs for every tender based on CEN BII standards. The goal for a pilot is to also piloting Post Award, order and maybe invoice for Works.

Figure 7 below shows an overview of Pre Award process in Public Works.

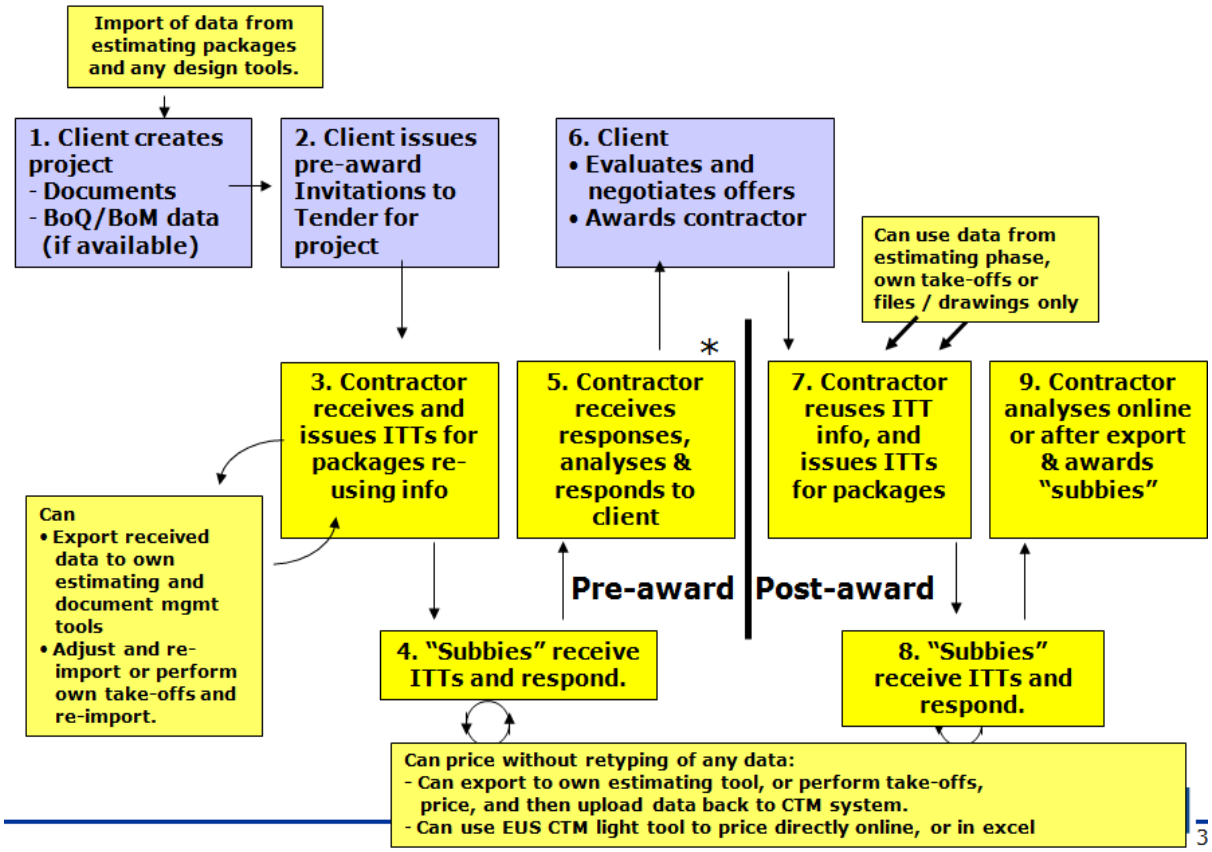


Figure 7 – The Pre Award process in Public Works

In Public Works tenders, Contracting Authorities, or their consultants (or Quantity Surveyors), typically create a project based Bill of Quantity/Price Schedule file including all services and materials required for the project, which are in fact eCatalogues. These BoQ/PS are typically created in Excel or another external

estimating system, and uploaded into the Contracting Authority systems to include them as basis for required pricing by the contractors.

Contractors typically price these BoQ/PS file by (i) importing it into an internal cost calculation system using any supported format (typically XML or xls) and then pricing line items using established cost data, and by (ii) tendering downstream for their typical sub-contractors and suppliers to price more complex elements of the project, e.g. larger installation or service packages.
The result is a combined priced file that is submitted in the format of the Price Schedule provided by the Contracting Authority.
This flow of data can introduce omissions and mistakes at every exchange if not well managed; moreover, if file formats of BoQ/PS files used by the Contracting Authority are adapted to national estimating systems only, questions of possible discrimination may also arise. Therefore it is important to examine and secure the tendering systems process thorough to avoid these matters.
It is not many public Works tenders with eCatalogue to day. Therefore Works, as a product group, is not in the main pilot scope for WP3.

3.4. The additional challenges of cross border eCatalogues in the public sector in the EU

In addition to the problems of product data described in the previous chapter, the public sector has to consider some particular “constraints”, deriving from its particular mission.
In particular all European public administrations have to guarantee the principles of transparency, equal treatment, and non discrimination. These principles, established in the EU Treaties and specified in the Public Procurement Directives, are not “catalogue specific” as they refer to the purchasing procedures in general. Yet, they have obvious repercussions on the solutions to adopt for eCatalogues. In fact, the choice of a standard is a strategic decision, which yields its benefits only in the long term. However, this choice could lead to ‘lock-in’ situations, that are incompatible with the sound competition rules.
Thus, the adoption of standards for the format of eCatalogue and for the item description must not give unjustified advantages to specific suppliers or groups of suppliers (equal treatment) or specific Countries (non discrimination). In principle, the standards adopted in eCatalogues should be to the maximum extent open, also in the sense of “free of charge”.
Moreover, the competition principles require that description of goods and services are detailed enough to allow the competitors understand the needs to satisfy, but generic enough not to give any competitor a particular advantage.

The push for the creation of a single EU market requires that the legal barriers to cross-border procurement be removed, and that the “de facto” barriers be progressively lowered and possible completely removed as well. The eCatalogue can play a significant role in removing these barriers; the solution to the language challenge, that is technically feasible in eCatalogues, can give a significant contribution in this direction, however major challenges remain to have a full interoperability of all 22 EU official languages.

Another big challenge to be considered when dealing with eCatalogues in the Public Sector is that the definition “Public Sector” covers a vast array of entities, different in size, needs, habits, culture, skills, (and language). Therefore, identifying the “common denominator” of the “European Public Sector” in terms of eCatalogue needs is a huge challenge.

In respect of this last point, it is worth mentioning the case experimented by WP 3 for the description of notebooks.

> *Seven WP 3 participants will issue public procurement procedures during the pilot phase, in which eCatalogues will be exchanged. In view of creating a shared description to be adopted in the procedures, all WP 3 participants were requested to report the way they would like describe the product “Notebook”.*

The result was that the seven participants adopted in some cases 7 attributes, and in some cases more than 80 attributes to describe the same item. And, very interesting as well, the combination of the non-overlapping attributes led to define more than 110 attributes. A complete classification and description system like eCl@ss uses 27 attributes to describe a Notebook, which apparently leaves a wide gap of unmapped attributes. However, it has to be considered that a notebook is a bundle of different components, including for instance "video", "keyboard", etc., a number of which represents eCl@ss items 'per se'. Repeating the mapping for the different components leads to practically eliminate the gap of unmapped attributes.
This case lead to conclude that it is not worth trying to solve the problem of attributes pushing towards the adoption of an elective nomenclature supporting attributes, as the risk of generating unsatisfactory description is too high, especially for a plethora of users such the public procurement officers across the EU, who -in addition- buy goods and services from different sectors (and no universal nomenclature has a sufficient depth and granularity in all sectors).

The fact that only seven participants (quite skilled compared to the average of public administration) gave such a large range of descriptions for a relatively "commodity" good was a strong evidence of how difficult it would be to identify a standardised description that satisfies at least a large part of European Public Administrations.

The participants started then to shift from the idea of choosing an elective standard nomenclature that supports attributes, to the idea of (at lease for the pilot and the short term) using standards at the elementary level (the attributes), leaving to the contracting authorities the freedom to choose how to combine the different attributes for each item to describe in a catalogue. The mapping effort should then be redirected towards mapping of different dictionaries of attributes, that would represent a better approach to the solution of interoperability of nomenclatures.

The pilot users and the first users of the PEPPOL eCatalogue tools after the project closure would be the 'pioneers', who will start to create the mass of data for achieving, in the long run, the original idea of a European Level metacatalogue structure, of common use for the Public Sector and well known to the private suppliers of the public sector.

3.5. The issue of multilingualism

The goal of PEPPOL program is to allow European providers to answer on line to European Public procurement tenders. It will be unreachable if the companies cannot find or read the tenders and the catalogues published on the national public purchaser platforms because of the language barrier. Furthermore, SMEs will be more impacted than big companies because the last ones have employees speaking many languages, as SMEs have not. So, the question of multilingualism is closely linked with PEPPOL long term sustainability. If not solved, the language barrier on eCatalogue will definitively miss the opportunity to remove a barrier to cross border trade in public procurement
Leonard Orban, European Commissioner for Multilingualism considers that *"The European Commission needs to deliver results for citizens, and we need to communicate with you in a language you can understand. Promoting multilingualism is an excellent way to bring European citizens closer to each other. To give you access to information and to contributing your views".* So the European Union launched many programs about multilingualism such as:

- The "Semantic Interoperability Europe Centre (SEMIC) supported by DIGIT that gives a methodology to solve those questions ;
- The TED and SIMAP platforms in 23 languages supported by the DG Market for public procurement on line ;
- The cross-border platforms eProcure supported by the DG INFSO that is presently working in 7 languages.

At that stage, the general solution proposed for PEPPOL consists on a European portal in 23 languages such as the DG Market Ted and SIMAP ones, without publication of the tenders on the site but only with the daily tender services as it is the case for the eProcure multilingual platform.

The issue of multilingualism is very complex, as it deals with a political level, in which delicate matters like the identity itself of the EU MS is at stake, but also with very practical issues like the language capability of the civil servants of the public administration (who can not be requested to know 22 languages).
The EU treaties are very clearly stating that any of the 22 European Languages is an official language of the Union, and that public acts (among others, public procurement tenders) have legal value if issued in any of the official languages.
The use of electronic Catalogues has limited possibility to solve all the consequences of this status on public procurement, especially when one considers that the mutual understanding of the characteristics that are the matter of an economic exchange (that is the function played by eCatalogues in the broader picture of the PP process) is just one of the steps to establish the contract that regulates the relationship between the two parties (and the contract will continue to be done in one language).
However, it can not be doubted that standardizing the content for making ICT systems interoperate also makes 'language' interoperability much easier, and this can be an important contribution to enlarge participation to tenders especially in the pre-award phase (assuming that upon selection of the supplier the relationship will still require for many years ahead to establish contracts in one of the official languages of the EU).
It is therefore very important to push the translation of existing Dictionaries, and/or integrate them with CPV, which is the only one supporting any official language of the EU (plus Norwegian and Icelandic).

3.6. PEPPOL Definition of "eCatalogue"

In order to have a clear understanding of the problems, a definition of eCatalogue is necessary in this context. WP 3 chose a very practical approach, described in this paragraph.

In fact, there are many possible answers to this simple question. A good definition of eCatalogue should take into account both format (the general framework in which information the remaining content is inserted) and content (the list of the items and the description of their attributes).
The common sense to the above question could be: an eCatalogue is the electronic representation of a Catalogue document, and the Catalogue is an aggregate of descriptions of items.

As soon as one tries to go just a step further, each possible better specification to the above definition of "what is an eCatalogue" entails many consequences.

For instance, one could say "An eCatalogue is the electronic representation of a Catalogue, and the Catalogue is an aggregate of structured descriptions of items". This seems still a quite obvious statement, however someone could already disagree on the idea that a structured description is essential to call 'Catalogue' an aggregate of descriptions of items. In addition, one could ask what can be defined a structured description, and what can not. And so on.

The standardization effort of many international bodies above has tried to address exactly this kind of issues (attributes, codes, values, etc.), and there are now currently a large number of available standards, addressing in a consistent way all the questions that arise when a better definition of eCatalogue is chosen.

Taking advantage of the above work, and based on the choice (described in paragraph 4.1) to refer to CEN/BII, PEPPOL gives its own conventional definition of eCatalogue, which is quite operational and not too theoretical: "In PEPPOL, an eCatalogue is defined as the electronic document, in which aggregate descriptions of items are included, defined according to CEN/BII standard document called eCatalogue for the format, and including standardized identification of items and descriptions of their attributes".

This choice entails a number of practical implications linked to the structure of the CEN/BII standard, that are listed below:

- clear parties identification (catalogue Provider, Receiver, Seller-Supplier, Contractor-Customer)
- versioning possible at header level
- updates possible at item level
- validity can be managed at catalogue header level, at catalogue line level and at price level on a single line
- item identification according to seller own identification and according to standards identifications if needed (e.g. GTIN)
- standard commodity classification can be used (e.g. UNSPSC, eCl@ss, CPV...)
- different tax category management possible
- different prices per item can be managed (e.g. per period, per location etc.)

3.7. Challenge statement and solution strategy

Summarizing the content of the previous chapters, using eCatalogues in public procurement procedures poses several challenges. In fact it is one of the most complex documents (a Catalogue contains thousands of data), that need to be represented in electronic format (and this requiring a number of choices regarding the technologies and the standards to be used). When used for cross-sector purchases, as it is in PA case, there is a lack of prevailing standards on processes, document formats and contents. Moreover, business partners still need to describe eCats in national languages.

The challenge of the use of eCatalogue in public procurement could be probably stated as follows:
The widespread use of electronic Catalogues in public procurement is not favoured by the current practices of the Contracting Authorities, who have the habit to create own formats, managed with ad hoc tools, thus requiring economic operators to adapt the content of their electronic Catalogues. In the hypothesis that eCatalogues are used in pre-award, many economic operators have to readapt their eCatalogue to the tender specific template; out of the submitted eCatalogues, only one (or a few, in the case of Framework Agreements) will be re-used the contract, while the effort of the other economic operators will be lost.

This problem requires a wider adoption of standardised eCatalogues from the contracting authorities, but there is a still full range of options on how to make this in practice.

The EC Commission Study "ELECTRONIC CATALOGUES IN ELECTRONIC PUBLIC PROCUREMENT" (Final Report, Vol. I - State of Play, September 2007) suggests a two phase strategy to solve the above described problem and "*...to move from the current, inefficient buyer-defined eCatalogues towards a more standardised environment..... In the first phase (Evolution Phase I), buyer-defined eCatalogues would be replaced by supplier-defined ones. In other words, suppliers should have the possibility to submit their existing eCatalogue prospectuses (with only slight adjustments, if any) as tenders for public procurement competitions. In this phase, there would still be only limited opportunities for automation; however, it is anticipated that this practice would lead to more effective competitions, with increased participation.*
In the second phase (Evolution Phase II), contracting authorities will require from suppliers to structure their tenders based on widespread industry standards for eCatalogue, addressing specifications for the format, content and exchange of eCatalogue prospectuses. In this manner, the current need of contracting authorities for defining tailor-made specifications will be minimised, and will relate only to the parts of tenders that cannot be included in the content of eCatalogue prospectuses. Contracting authorities should be able to manage tenders in a semi or fully automated manner, to save cost and time".

It is doubtful whether the suggested "Evolution Phase I" can actually take place, because for each tender it would mean shifting a huge workload from many suppliers to one contracting authority.
So, the strategy agreed in PEPPOL is to start directly from Evolution Phase II, investigating what is necessary to actually structure their catalogue (be they used for tenders or in the post award phase) on widespread industry standards.

The results of the analysis of existing literature and initiatives on eCatalogue standardization were a precious source of information to better focus on how to solve the issue of standardizing eCatalogue contents.

In fact, at first sight the ideal solution could seem the creation of a EU coherent classification and description scheme (or, in other words, an 'ontology' of purchasable objects, or a 'meta-catalogue structure'), to be used –at least as a reference - by all public administrations in their public procurement procedures.
Unfortunately, this "ideal solution" would require a huge effort by a central body for its creation, a considerable effort for the maintenance, and –last but not least- a big effort for promoting its use, beyond being achievable only in the long run.

If the above ideal solution seems not feasible considering the huge investments it would require, resorting to existing classification and descriptions systems seems the only achievable solution in practice.
However, the experience on 'notebooks' (see previous paragraph) showed that a single classification and description can hardly match the need of seven entities (the PEPPOL WP 3 members), and hence it is hard to assume that it would match the need of public administrations on a continental scale.

The conclusion was that, instead of pursuing the standardization of purchasing items, the best solution to ensure standardization of eCatalogue contents is to pursue the standardization of attributes of the items; in other words, to resort to standardized Dictionaries rather than standardized classification and description systems.

This solution has to take into account a number of constraints; for instance:

1. there is not one standardized Dictionary that covers all the 22 EU official languages;
2. there are several standardized Dictionaries, that are sometimes in competition with each other;
3. there are general purpose classification schemes (UNSPSC, and CPV which is mandatory for public procurement), that do not support attributes, but which have a wide application;
4. there are some specific sectors like Health where particular classification and description schemes are widely used.

In regard of the above numbered constraints, the PEPPOL WP 3 – based on the standardization environment analysis and on the internal debate – took the following decisions:

1. the building blocks will take into consideration the most used Dictionaries, namely the dictionaries used by eCl@ss, GPC, and GMDN for the Health sector, and test CPV supplementary Vocabulary;
2. the building blocks will have to take into consideration the most used general purpose classification schemes, namely: CPV (always), UNSPSC, eCl@ss, together with the GMDN classification scheme for the Health sector
3. The inclusion of reference to other Dictionaries (eOTD, ISO) will be investigated, but not taken as a priority.

In practice, the solution strategy chosen by the PEPPOL WP 3 is the practical implementation of the suggestions included in the EC Commission Study "ELECTRONIC CATALOGUES IN ELECTRONIC PUBLIC PROCUREMENT" (Final Report, September 2007), that can be represented by Figure with some re-adaptations regarding the inclusion of CPV and GMDN.

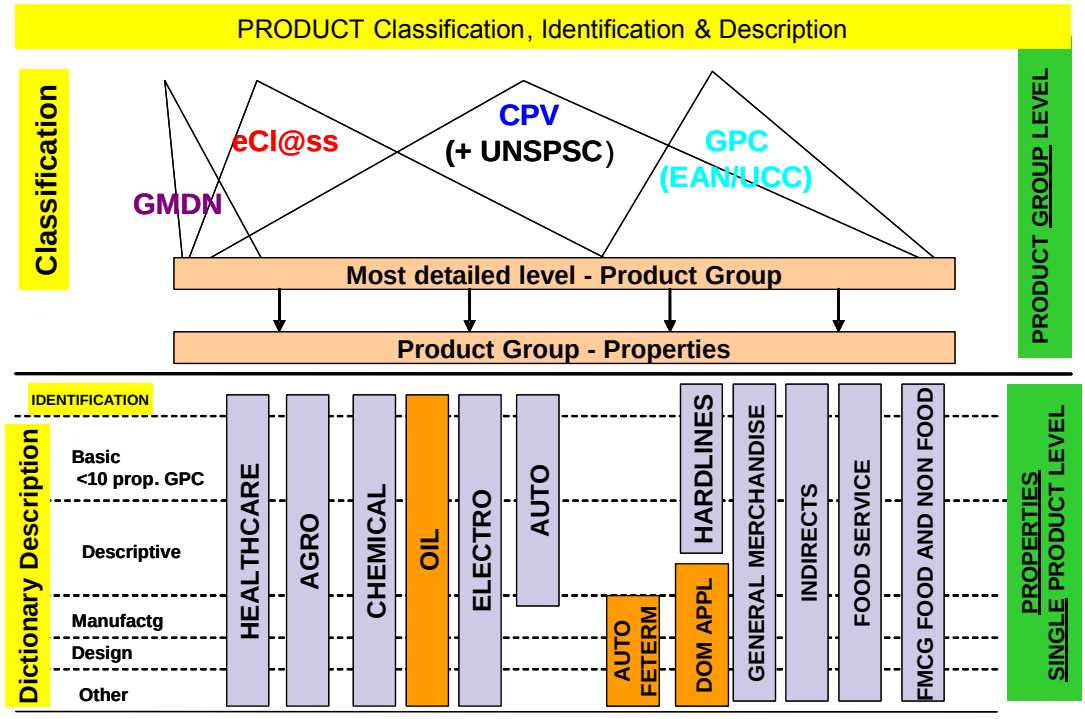


Figure 8 - Electronic exchange of product data throughout the product life cycle

A description of the meaning and functioning of the building blocks and the way they deal with the Dictionaries mentioned in the above picture is provided in Chapter 3.

4. Reference initiatives for the eCatalogue format and content

The eCatalogue project group works closely together with, and uses the results of the CEN BII project (Business Interoperability Interfaces), especially the business profiles and message formats. Some WP3 members take part to the CEN/BII work as well.

The objectives of the CEN/BII Workshop are to provide a basic framework for technical interoperability in pan-European electronic transactions, expressed as a set of technical specifications that cross-refer to relevant activities, and in particular are compatible with UN/CEFACT in order to ensure global interoperability. The Workshop will be focused on implementation facilitations and co-ordinating pilots implementing the technical specifications output.

A profile is set of collaborations in which the exchanges of documents on business level are accurate agreed. A business partner can register which profiles he supports, and another business partner can start doing electronic business with him with out any other agreements than following the profile descriptions.

4.1. The choice of CEN/BII as standard format for electronic documents

The CEN (Comité Européen de Normalisation) is a European standardisation body acting as business facilitator in Europe, removing trade barriers for European industry and consumers. Its mission is to foster the European economy in global trading, the welfare of European citizens and the environment. Through its services it provides a platform for the development of European Standards and other technical specifications.
CEN operates mainly through Technical Committees and Workshops, the BII Workshop (Information Systems and Business Interoperability Interfaces for public procurement) operates in ICT and its main objectives are to provide a basic framework for technical interoperability in pan-European electronic transactions, expressed as a set of technical specifications that cross-refer to relevant activities, and in particular are compatible with UN/CEFACT - in order to ensure global interoperability.

Specific Workshop objectives are:

- to facilitate the convergence between the two standard UN/CEFACT and UBL, for practical implementation;
- to identify and document the required business interoperability interfaces related to pan-European electronic transactions in public procurement expressed as a set of technical specifications
- to co-ordinate and provide support to pilot projects implementing the technical specifications in order to remove technical barriers preventing interoperability.

The starting point for the Workshop is represented by the NES and CODICE customizations of OASIS Universal Business Language 2.0 and other relevant standards including those of UN/CEFACT and CEN.

The choice to use CEN BII WS output, included in the CWA (CEN Workshop Agreement) document, hinges upon different reasons one of this being the strong support that the European Commission gives to the workshop, even considering the intention to implement the results in a project of its own (ePrior).
Another reason is that, nowadays, the only standard implemented and used in Public procurement to exchange structured electronic documents in Europe is UBL. UN/CEFACT has various standardised documents and processes designed but there is not any implementation yet.
As a consequence CEN BII WS results are suitable to be adopted as standard to be used in a pilot project; moreover suggestions coming from real practice connected to NES project implementation were analysed in order to improve processes and data models. CEN BII WS anyway respect to NES widened the number of public procurement processes considered (pre and post-award).

The core concept of the work is represented by the so called documents “Profile”.

A profile is a technical specification describing: business processes, (i.e. a detailed description of the way trading partners intend to play their respective roles, establish business relations and share responsibilities to interact efficiently with the support of their respective information systems), the business rules governing the execution of that business process, possible run-time scenarios and the business commitments achieved, the electronic messages exchanged as part of the business process and the sequence in which these documents are exchanged, the information content of the electronic messages exchanged (data models). The key standardization aspect of the profile description is in the semantics rather than the syntax. Consequently the messages within a profile can be structured based on different message standards/syntax as long as the chosen standard contains all the necessary data elements.

WP3 agreed on using for the pilot the following CEN WS/BII Profiles:

- BII 01 Catalogue Only to set up a catalogue;
- BII02 Catalogue update to maintain a catalogue;
- BII017 Multi party Catalogue (in the case a partner needs to implement an electronic structured data model for a “Catalogue Request”).

Two more CEN/BII profiles potentially linked to eCatalogue will not be used in the Pilot:

- BII16 Catalogue Deletion, this profiles regards catalogue deletion as a whole and imply that after the deletion it is sent a new catalogue. This case is one of the ways used to cancel catalogues but it is not probably the more common one used all over Europe, so it was decided not to implement this profile. The more common behaviour to delete an eCatalogue is through an update action specifying that the old catalogue is replaced by the new one sent via an update transaction,
- BII 18 Punch out. This profile describes a process where a Customer access a website and receives a quote back to his own system (e.g. a public purchasing portal) for further processing, e.g. in the shopping basket. This will typically happens synchronically but could as well be sent asynchrony.

  Since this process it is not a very widespread practice in Europe and because there are legal difficulties or perplexity to use such a kind of mechanism, it was agreed to give a lower priority to the implementation of this profile; however, the possibility of its practical usage will be further analysed.

Interaction between PEPPOL project and CEN ISSS WS/BII are well established and official. In official documents produced in both initiatives there are specific cross references.
In addition cooperation is guaranteed by the fact that CEN WS/BII is receiving and analysing requirements coming from various PEPPOL WP at the aim to implement them, when possible, into the “Profiles”.
Interaction take place because several participants are part as of PEPPOL as of WS/BII, respect to WP3 eCatalogues the cooperation is realised through specific representatives belonging to DIFI, CSI-Piemonte, Consip and KSZF participating to WS/BII Working Group 1 (Business Requirements).
Thanks to the presence of people sitting in both workspaces, the of requirements from PEPPOL are conveyed to WS/BII and the update on WS/BII activities to PEPPOL participants is carried out.

4.2. The Cooperation with CEN WS/eCAT

CEN/ISSS/WS/eCAT was launched in 2002 as a joint initiative of Infoterm and TermNet to address issues related to the use of electronic catalogues used for eBusiness in a multilingual environment. Its scope was extended since to include harmonization of product classification schemes and their application to electronic catalogues.

Since its establishment, several projects were launched under the Workshop umbrella, dealing with eCatalogue related issues, ranging from multilingual eCatalogues to product description and classification. and issued a relevant number of CWA regarding eCatalogues, that have been studied by PEPPOL (see paragraph 2.1).

The CWAs cover a vast array of aspects related with the standardization of eCatalogues.
In the first period of its existence, a common feature of the WS eCat is its focus by private sector, while only more recently the interest was broadened to include also public sector related issues.

- **ePPS**: electronic Public Procurement Server. The project aims at defining a systematic and generic approach to implement an operational product property server. The product property server is initially to be tested in the following industries: heating, ventilation, air-conditioning, sanitary ware, optical – and then extended to other industries.

- **CC3P**: eCatalogue Classification in Public and Private Procurement. The project was launched in April 2009 and is planned to end by March 2010. Its main objectives are to analyse CPV, eCl@ss, GPC and UNSPSC and to propose a plan to improve interoperability between the CPV and the three market oriented classifications (UNSPSC, eCl@ss and GPC).
  The assessment will address five areas food, electronics, energy (electricity, gas), furniture and laboratory materials (equipment and products). Cloths will be also analysed by experts. The assessment and further focussing will be made in collaboration with the PEPPOL project.
  Harmonization will be based both on mapping and, whenever possible, harmonisation of the four hierarchies. Harmonisation will be applied on the fourth level (when it exists) of the four main classifications. When harmonisation is not possible because of data model inconsistencies, mapping will be done by using a mapping tool.
  Areas of improvement in the CPV will be identified and proposed to the European Commission.
  The Workshop will also try to identify and develop missing domains in eCl@ss and GS1/GPC in relation with UNSPSC (which is complete) at the level of products and properties.
  A brief insight into the NATO classification system and the eOTD dictionary will be given for sake of completeness

Due to its importance in regard of eCatalogue standardization, contacts were taken with the Workshop Chair and a formal liaison with the initiatives has been established.
The cooperation has long term and short term goals.
In the long run, the goal is to lay the foundations for a European central server for a classification of goods and services for the public sector, supporting attributes (see the long run vision described in Chapter 11).
In the short run, i.e. for the Pilot, the WS will ensure support in the work on the 11 chosen categories for issuing tenders, for identifying the most suitable dictionaries to describe attributes, for translation into different languages, and assistance in the development of the tools for their catalogues, beyond representing an important trait-d'union with the private sector.

The liaison has already started to produce concrete results. For instance, he CC3P Work Plan has been defined taking expressly into consideration PEPPOL needs and suggestions. Moreover, the WS/eCAT experts were invited in PEPPOL meetings, and gave valuable contribution in the identification of the solution proposed by WP 3.

In 2009, the workshop eCAT is carrying out the ePPS and the CC3P projects. The ePPS project will produce one CWA, which will contain 'Guidelines for the design, implementation and operation of a product property server'. The CWA will be published in 2009. The CC3P project will produce a CWA with analysis on four main classification systems used in Europe and will propose where possible harmonisation and mapping methodologies. Policy proposals will also be proposed with conditions of use of the mapping tools.

4.3. Cooperation with other projects

PEPPOL WP 3 will seek cooperation and coordination with other projects, with the goal to achieve mutual advantages.

The cooperation should be established in all cases where:

- room exists for integrating eCatalogue building blocks into in-place/under-development Open Source Solutions, especially for the pre-award; for instance the eProcure project, the OPOCE project for an eTendering platform;
- re-use of Open Source Software for the development of eCatalogue building blocks is possible; for instance, the solution under development by the Belgian Federal Procurement Service (especially for the Economic Operator client), or with the Turkish Middle East Technical University, for the UBL profile validation tool.

So far, only preliminary contacts have been established with the mentioned initiatives; more projects could come into play in the upcoming period.

5. Description of the Use Cases of eCatalogue in Public Procurement

This chapter aims at outlining at a high level the possible scenarios in which public procurement partners exchange eCatalogues, identifying actors, tools, systems and the roles they play.
The scenario has the goals to:

1) establish a **common reference picture** for PEPPOL WP 3 partners, for other PEPPOL WPs and for interested parties outside PEPPOL.
2) allow the identification of the elements that are necessary for the implementation of the pilot: first, the CEN/BII profiles to be implemented in the pilot; second, the ICT tools that need to be developed, in the construction phase, in order to allow the tender
3) identify the elements that need to be further detailed for a long term sustainability after the end of the project.

Different scenarios are described, according to different possible combinations of time horizons (as is; short term = PEPPOL pilot) and procurement phases (pre-award; re-opening of competition ; post-award).

5.1. As-Is: Identification of Users and systems

The following assumptions have been made regarding the users and their systems:

1. Public Authorities have eProcurement systems, that can have in general three different modules to manage eCatalogues: pre-award, re-opening of competition and post-award module. In principle, they are expected to decide which systems they wish to use to manage their procurement.
2. Economic operators (suppliers) may in general use their own e-catalogue systems either for enabling ordering online (directly through their websites), or through “punch out” (from their customers systems). Price information that they use as basis for tenders may also be stored in such systems.
3. Suppliers’ e-catalogues can also be loaded in the buyer’s systems; in this case messaging of eCatalogues (which can be also cross border) occurs :
   - when suppliers are bidding for contracts from the Authority in one-off procedures, or in the initial tender of repetitive procedures (pre-award);
   - when suppliers are bidding for contracts from the Authority in a second-stage competition of a repetitive procedure (pre-award);
   - when suppliers are requested to provide e-catalogues for ordering (post-award);
   - when suppliers update, delete or manage their catalogues (post-award).

The users and systems used are illustrated in Figures 12 below, in case of contracts with no reopening of competition (Framework Contracts and one-off contracts), and in Figure 13 below, in case of Framework agreements.

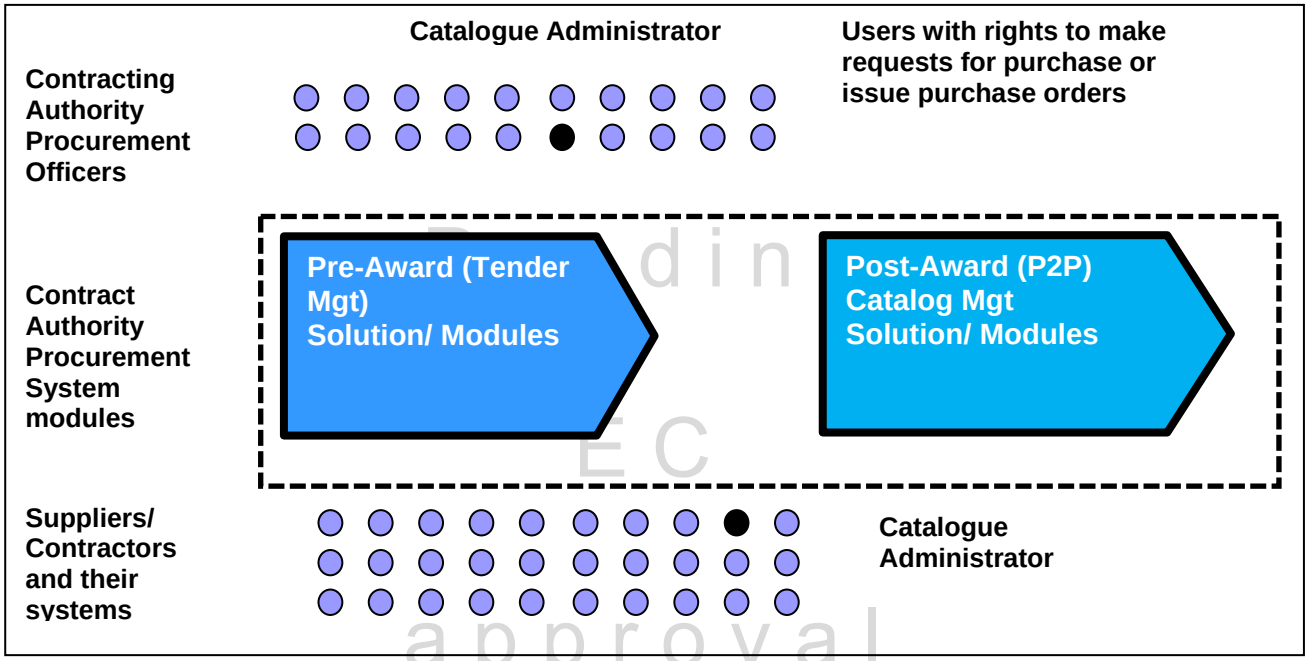


Figure 9 - Illustration of users and their systems in case of contracts with no reopening of competition (Framework Contracts and one-off contracts)

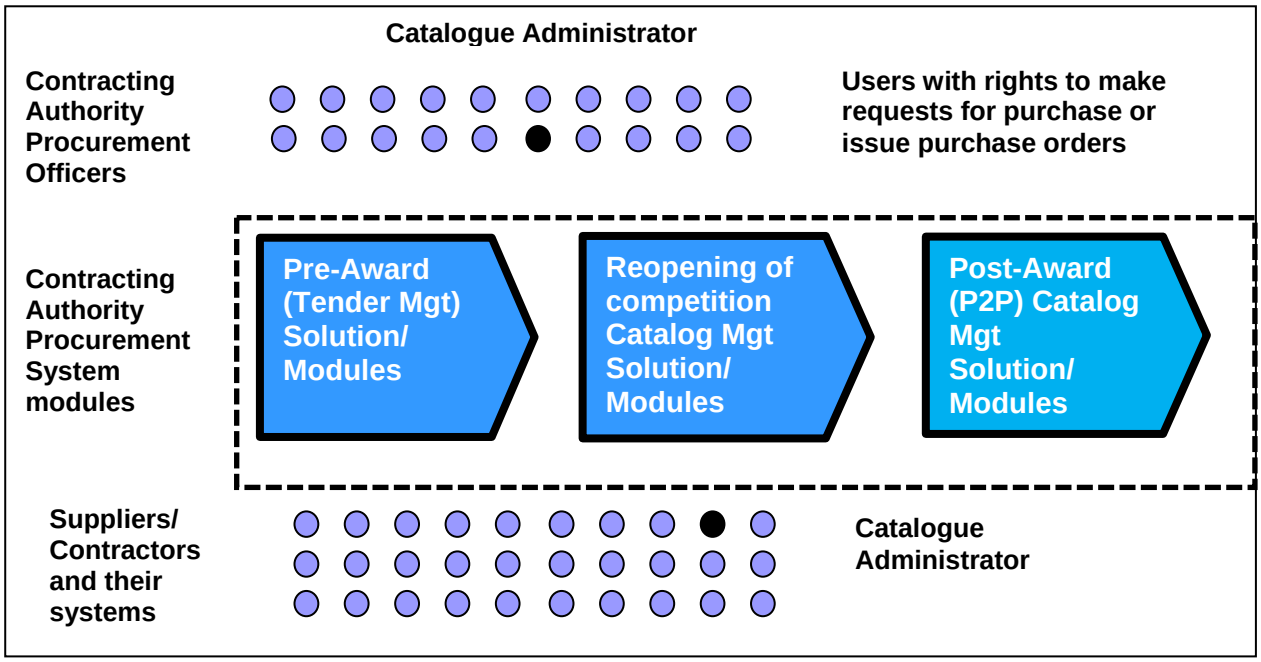


Figure 10 - Illustration of users and their systems in case of Framework Agreements.

5.2. As-Is: Mapping of Inter-system messaging

The basic needs for e-catalogue messaging (or transfer of e-catalogue data) are understood to be the ones listed in Table 4 and illustrated in Figure 14 below, in the case of contracts with no reopening of competition (Framework Contracts and one-off contracts), and in Table 5 and Figure 15 in the case of Framework Agreements.

NOTE: The figures and the tables only identify the steps of the procurement procedure where eCatalogues (or eCatalogues formats) are exchanged. In the figures there are not other steps of the procurement procedures where reference to the eCatalogues can be done (e.g.: Tender publication; Request for quotation to reopen the competition; Request to submit catalogue after award; etc.).

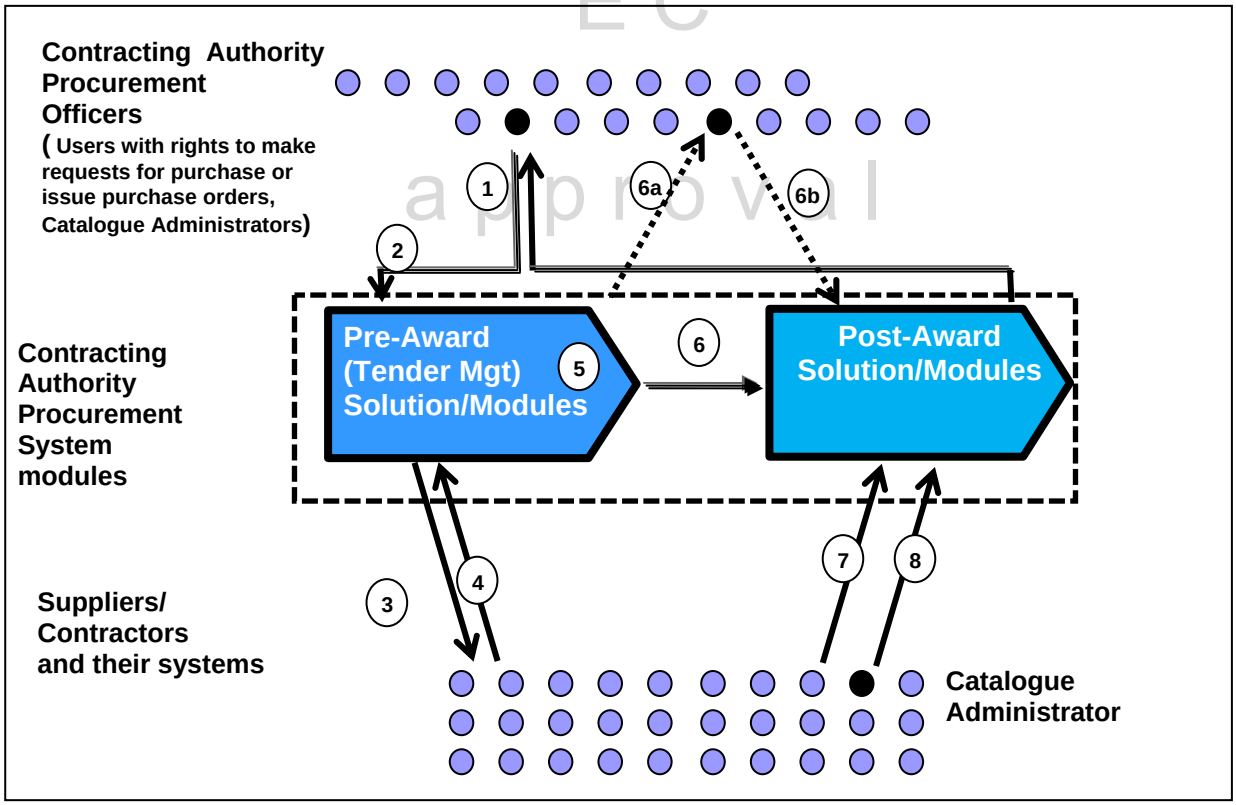


Figure 11 - Illustration of inter-system eCatalogue messaging in case of contracts with no reopening of competition (Framework Contracts and one-off contracts).

The steps illustrated in Figure 14 are described in Table 4 below.

Table 4: Basic e-catalogue messaging needs of contracts with no reopening of competition (Framework Contracts and one-off contracts)

No.	Description/purpose	Users	Potentially Cross-border	Value /Priority
1	Extraction and cleansing of historical spending data, to use as basis ("buyer centric") for re-tendering of contracts or framework agreements	Contract officer in Authority	No	Low
2	Creation of "buyer centric" catalogue templates for the tender, and upload to the pre-award system	Catalogue administrator in Authority	No, but enables cross-border	High
3	Download of "buyer centric" catalogue template	Bid manager in economic operator	Yes	High
4	Upload or submission of the offer, in the form of priced catalogue, including proposed products and services descriptions. The submission is in response of a Catalogue Request included in the Tender documentation.	Bid manager in economic operator	Yes	High
5	(Possible, depending on the Contracting Authority's systems functionalities) Transfer of offered catalogues to an automated tender evaluation system, ranking and award.	Contract officer in Authority	No	Low
	NOTE: After the award, two alternatives are possible: Step 6 (In case no further detailing of eCatalogues is foreseen in the tender procedure), or step 6.a + 6.b (In case further detailing of eCatalogues is foreseen in the tender procedure)			
6	(**In case of no further detailing**) Transfer of catalogues of awarded supplier(s) to Reopening of competition module (CASE: F.A.)	Catalogue administrator in Authority	No	High
6.a	(**In case of further detailing**) Download of negotiated catalogue for awarded supplier(s), for further detailing prior to upload into re-opening of competition modules	Catalogue administrator in Authority	No	Medium
6.b	(**In case of further detailing**) Upload of further detailed e-catalogue into re-opening of competition modules	Catalogue administrator in Authority	No	Medium
7	Upload or submission of further detailed e-catalogue into post-award module. The submission is in response of a Catalogue Request from the Contracting Authority, following the award.	Catalogue administrator in economic operator	Yes	High
8	Updating, managing or deleting of eCatalogue items' prices and/or attributes, in accordance with agreements with the Authority.	Catalogue administrator in economic operator	Yes	High

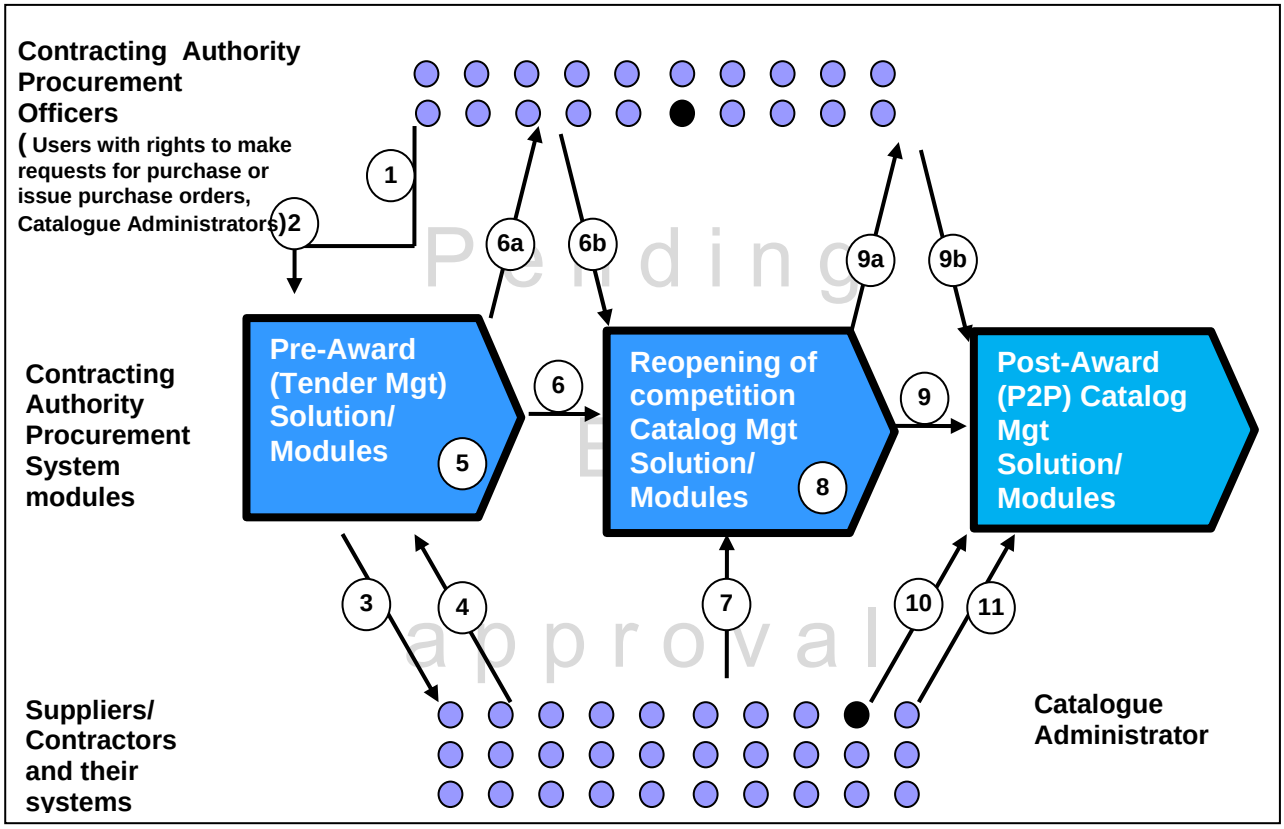


Figure 12 - Illustration of inter-system eCatalogue messaging in case of Framework agreements.

The steps illustrated in Figure 15 are described in Table 5 below.

Table 5: Basic e-catalogue messaging needs in the case of Framework Agreements

No.	Description/purpose	Users	Potentially Cross-border	Value /Priority
1	Extraction and cleansing of historical spending data, to use as basis ("buyer centric") for re-tendering of contracts or framework agreements	Contract officer in Authority	No	Low
2	Creation of "buyer centric" catalogue templates for the tender, and upload to the pre-award system	Catalogue administrator in Authority	No, but enables cross-border	High
3	Download of "buyer centric" catalogue template	Bid manager in economic operator	Yes	High
4	Upload or submission of the offer, in the form of priced catalogue, including proposed products and services descriptions. The submission is in response of a Catalogue Request included in the Tender documentation.	Bid manager in economic operator	Yes	High
5	(Possible, depending on the Contracting Authority's systems functionalities) Transfer of offered catalogues to an automated tender	Contract officer in Authority	No	Low

No.	Description/purpose	Users	Potentially Cross-border	Value /Priority
	evaluation system, ranking and award.			
	NOTE: After the award, two alternatives are possible: Step 6 (In case no further detailing of eCatalogues is foreseen in the tender procedure), or step 6.a + 6.b (In case further detailing of eCatalogues is foreseen in the tender procedure)			
6	(**In case of no further detailing**) Transfer of catalogues of awarded supplier(s) to Reopening of competition module (CASE: F.A.)	Catalogue administrator in Authority	No	High
6.a	(**In case of further detailing**) Download of negotiated catalogue for awarded supplier(s), for further detailing prior to upload into re-opening of competition modules	Catalogue administrator in Authority	No	Medium
6.b	(**In case of further detailing**) Upload of further detailed e-catalogue into re-opening of competition modules	Catalogue administrator in Authority	No	Medium
7	Upload (or submission) of priced tender, in the form of catalogue, in response to a Request for Quotation by the Authority, re-opening the competition. The submission is in response of a Catalogue Request included in the Request for Quotation.	Bid managers	Yes	High
8	(Possible, depending on the Contracting Authority's systems functionalities) Transfer of offered catalogues to an automated tender evaluation system, ranking and award.	Contracting Authority system	no	Low
	NOTE: After the award, two alternatives are possible: Step 6 (In case no further detailing of eCatalogues is foreseen in the tender procedure), or step 6.a + 6.b (In case further detailing of eCatalogues is foreseen in the tender procedure)			
9	(**In case of no further detailing**) Transfer of catalogues of awarded supplier(s) to post-award module	Catalogue administrator in Authority	No	Medium
9a	(**In case of further detailing**) Download of catalogue of awarded supplier(s), for further detailing prior to upload to the post-award module	Catalogue administrator in Authority	No	Medium
9.b	(**In case of further detailing**) Upload of further detailed e-catalogue into re-opening of competition modules	Catalogue administrator in Authority	No	Medium
10	Upload or submission of further detailed e-catalogue into post-award module. The submission is in response of a Catalogue Request from the Contracting Authority, following the award.	Catalogue administrator in economic operator	Yes	High
11	Updating, managing or deleting of eCatalogue items' prices and/or attributes, in accordance with agreements with the Authority	Catalogue administrator in economic operator	Yes	High

5.3. As-Is: Services to facilitate eCatalogue management

Beside basic messaging services detailed in Section 3 above, the following Support services are provided by intermediaries, who provide the services according to service contracts with both the parties, following different pricing schemes.

In principle, the services could be delivered by providers who act for institutional mission (e.g. Public Bodies), although nowadays only for-profit intermediaries have been identified, as no body acting for institutional mission has been detected among (nor by) the WP 3 participating countries.

Basically, the intermediaries deliver their services for any of the messages where eCatalogues (or their templates) are exchanged between Suppliers and Contracting Authorities.

This can be represented as in Figure 16, which is an evolution of Figure 15 where a Service Provider is interposed between the two parties, and all steps between them is broken into two 'legs': the first from one party to the intermediary, and the second from the intermediary to the second party (or vice-versa).
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Table 6: Possible support services to facilitate the use of e-catalogues (referring to following Figure 5 for points)

Service	Description/purpose	Users	Steps	Potentially Cross-border	Value /Priority
A	CONVERSION Conversion of catalogue standards to/from Authority and supplier own formats TO UBL	Bid managers in economic operators Authority Officers and systems		Yes	Medium
B	MATCHING Matching of supplier's own catalogue articles classification and description with buyer's catalogue articles classification and description	Bid managers in economic operators Authority systems (pt 11) Catalogue administrators on buyer and supplier side (pt 12)		Yes	Medium
C	VALIDATION Check of formal compliance	Bid managers in economic operators (pt 10)		Yes	Medium
D	TRANSLATION Translation of the contents from the economic operator's to the contracting authority's language .	Bid managers in economic operators (pt 10)		Yes	Medium

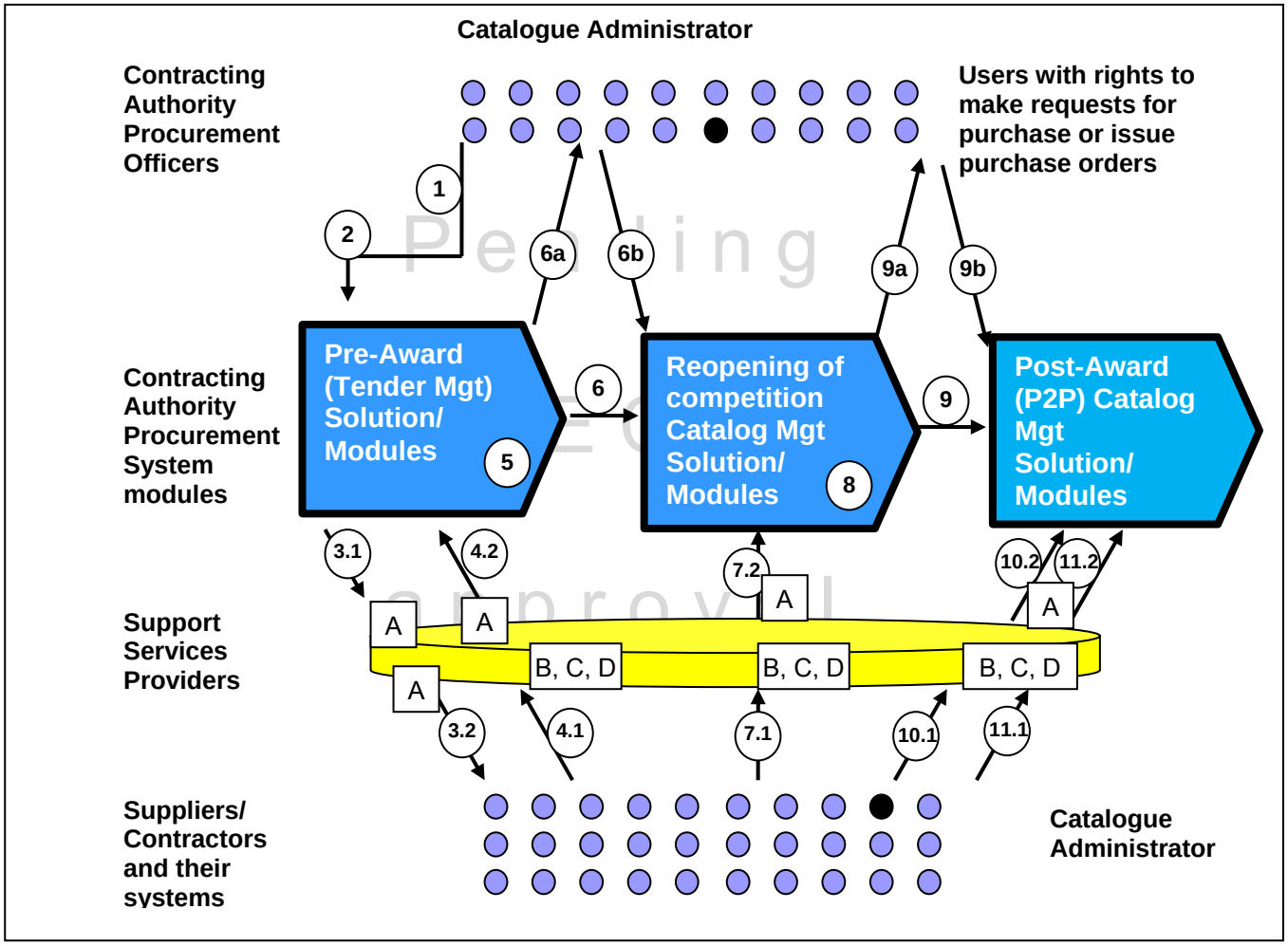

Figure 13 - Possible Support services to facilitate use of e-catalogues

4 A. Conversion

The existence of multiple standard formats may be expected to last for a long time, not the least driven by national level initiatives, with would require many years of effort for a change. There is thus a value for a service of conversion (mapping) of messages to allow users to continue working with their current standard formats, without too big barriers in cross-border situations when other formats are required than the ones currently used (e.g.: from/to BME Cat, xCBL, etc to UBL and vice-versa). This service is already offered in some countries, but at a basic level and with heavy human intervention, thus room exists for a higher automation, which could be facilitated when the set of standard formats start to converge on a limited number.

4 B. Matching

Having a shared Format does not yet allow eCatalogue interoperability, as a mutually understandable classification of goods and services and description of their attributes has to be ensured for every item in the catalogue.
If the two parties (Contracting Authority and Supplier) use different classification systems (e.g.: CPV and UNSPSC), and adopt different description of attributes (e.g.: self-made description, including values; eOTD), then the problem of matching the classifications and description arises.

Moreover, even when two parties use the same attribute Dictionary, it may still happen that not all the properties required by the buyer for describing an item are present in the seller's eCatalogue (for instance, in the case one attribute was added in the Dictionary after the creation of the seller's eCatalogue), requiring an integration of the seller's catalogue.

Nowadays service providers exist supporting the task of matching different classification systems and integrating attributes of one system, but they rely on systems that primarily focus on the integration of missing attributes and partially on matching different classifications, while still require heavy human intervention in the case of matching different classifications and descriptions.

4 C. E-Catalogue Validation

Upon conversion and matching of the eCatalogues , there is still a general need for a service to validate catalogue for syntax, completeness, values inserted, etc.(and potentially some basic semantics).

For example, an Authority may stipulate the format of any catalogue submitted to ensure a non-discriminatory and transparent evaluation, and subsequently to allow any catalogues included in the tender submission to be the basis of any catalogue uploaded into the post-award system. A supplier that wishes to provide a bid in such a situation may -prior to tender deadline- wish to validate its catalogue format to ensure compliance. Alternatively, any pre-award system may provide immediate feedback of validation to the bidding supplier provided that it has a validation service integrated.

Nowadays service providers exist supporting the task of validating eCatalogues.

4 D. Translation

Translation of eCatalogues can in theory be solved by the use of standard classification and description. In practice, not all classifications supporting attributes cover all the languages, and translation may still be a heavy need.
Although translation should be always done by domain experts, it is practically very difficult to find an all-purpose translator.

5.4. To-Be: The Use Case scenarios

The investigation on existing studies, report and initiatives on eCatalogues at a EU level was crucial for a good identification of the common challenges to solve, and a clear statement of the strategy to pursue for their solution.

The identified strategy is deployed in practice in the use cases in which relevant activities on eCatalogues take place along the public procurement procedures, that raise issues concerning interoperability, namely:

- definition of the eCatalogue structure (standard format + standard for item definition = template);
- population of eCatalogues by the tenderers;
- eCatalogue quality check;
- eCatalogue update.

During the definition of the use cases, some important adaptations of the original idea sketched in the Technical Annex of the PEPPOL proposal became evidently necessary.
First, the use cases identify the building blocks for interoperability as two end-to-end tools (one for Contracting Authorities, and the other for Economic Operators), rather than tools that allow the interoperability of 'national solutions'. In fact, the direct relationship that is established between buyers and sellers in public procurement procedure made it impossible to identify a clear role of one (national) participant's solutions in the tenders issued by another participant, or an even less clear role in the tender issued by any other Contracting Authority. This change of approach broadens the possibilities of usage of the building blocks.
Second, the use cases do not include the analysis of the activities on eCatalogues that are not concerned with interoperability between Economic Operators and Contracting Authorities. For instance, the ranking and evaluation of eCatalogues in the form of tenders, or the archiving of eCatalogues, that are clearly necessary functionalities of a fully fledged eTendering solution, are not in scope in the use cases because they deal mainly with the internal ERP systems of Contracting Authorities, and do not regard interoperability in a strict sense. The assumption is that the use of standardized eCatalogues in the exchange phase will naturally facilitate the operations, at the same time inducing adaptations of the internal systems, and thus allowing systems to interoperate in the exchange of eCatalogues.

The use cases are designed for three scenarios: pre-award; post-award/first submission; post-award/update. All three scenarios are designed to fit the public procurement procedures defined by the directives for contracts above the EU thresholds, i.e. Open Procedure and Restricted Procedure (together also referred to as 'one-off procedures'), Framework Agreements, Dynamic Purchasing System (together also referred to as 'repetitive procedures'). The scenario could also fit below the threshold procedures, but the variety of procedural steps defined by each EU Members State legislation makes it too complex to design a scenario that fits all.

The use cases are focused on describing exclusively the steps of the procedures in which eCatalogues documents (eCatalogue templates or eCatalogue filled in with information) are exchanged between the parties. Other steps of the procedures (tender notice; ordering, etc.) are not investigated or directly represented in the scenarios.

The To-Be use cases are based on the existence of two tools: one for Contracting Authorities (CA Tool), the other for Economic Operators (EcOp Tool), that represent the building blocks to be delivered by PEPPOL WP 3.

A first level description of the functioning of the tools is provided below. Chapter 7 provides a more detailed analysis and description of the Functional Requirements.

CA Tool
The tool shall perform several functionalities, that can be logically organized into three different modules.

Module 1
Module 1 supports the creation of a "template", i.e. an eCatalogue structured in a certain format and including the standardized description of a list of items. The module should include the functionalities for:
- providing the choice of the eCatalogue format. In the PEPPOL project, the format defined by CEN/BII will be the embedded format. If possible according to the project timing and available resources, the option to adopt also other formats (to be converted to the CEN/BII format) could be explored; however, in this case the CEN/BII will remain the default option.
- providing the option to identify items according to more than one existing classification system, one being always the CPV; in the case of PEPPOL, the provided options will be: GS1, eCl@ss; GMDN; UNSPSC.
- supporting the retrieval of standardized properties to describe the items. The product properties will always be according to one existing standardized description system, that makes available its Dictionaries on line; in the case of PEPPOL, the provided options will be: GS1, eCl@ss; GMDN. The possibility to adopt other on-line Dictionaries will be explored if possible according to the project timing and available resources.

Module 2
Module 2 supports the generation of the eCatalogues electronic documents, through the functionalities for:
- generating the "eCatalogue templates", i.e. the electronic documents (tender eCatalogue template for pre-award; contract eCatalogue template and/or eCatalogue update template for post-award) that provide the structure according to which the Contracting Authority wishes to receive the information on the items to purchase ; in the case of PEPPOL, the electronic document will always be generated as an XML document;
- supporting the creation of a "business rules document", fixing the constraints that the Contracting authority wishes to impose on the specific template for the specific tender: compulsory/optional attributes; minimum/maximum values; etc.. In the case of PEPPOL, the electronic document will always be generated as an XML document.

Module 3
Module 3 supports the receipt of the eCatalogue documents, through the functionalities for:
- allowing the receipt the electronic documents submitted by the Economic Operators via the PEPPOL infrastructure, and the client tool developed by PEPPOL WP 8;

or
- allowing the Economic Operators to upload the electronic documents to the Contracting Authority's platform.

Module 3 will represent the bridge with the existing internal systems of the CA.

EcOP Tool
The tool shall perform several functionalities, that can be logically organized into three different modules.

Module 1
Module 1 supports the creation of an eCatalogue or an eCatalogue update according to a given template, i.e. matching a specific format and a given structure for the description of a list of items. The module should include the functionalities for:
- exporting/importing the CA eCatalogue/update templates and the economic operator's eCatalogue/update documents to/from commercial and open source spreadsheets;
- supporting the look up into online dictionaries, and facilitate with (semi)automated functionalities the creation/integration of the specific contract eCatalogue by importing the item properties that are missing in the operator's existing eCatalogue
- supporting the manual input of data to integrate the missing information

- (in a second stage) supporting the retrieval of information (classification of items, description of attributes) of an existing eCatalogue from internal systems of the Economic Operators, and reorganizing it according to the given template, also (in a later stage) through the use of artificial intelligence

Module 2

Module 2 supports the validation of the eCatalogues documents, through the functionalities for:

- importing the business rules template that is the basis for the validation of the catalogue;
- performing the validation, i.e. checking the conformance of the Catalogue created by the Economic Operator for the specific tender/contract to the business rules established for the acceptance
- supporting the translation of the catalogue content, if this is necessary
- generating the validated eCatalogue, done in the prescribed format, that will represent the eCatalogue offer for the specific tender –in the pre-award - or – in the post award - the basis for issuing order or the basis for re-opening the competition.

Module 3

Module 3 supports the dispatch of the eCatalogue documents, through the functionalities for allowing submitting the eCatalogue to the Contracting Authorities, via the PEPPOL infrastructure and the client tool developed by PEPPOL WP 8;

The EcOp Tool can be adapted for use also by Service Providers, who act on behalf of the Economic Operator. There is then room for the existence "SP Tool", that will include mutatis mutandis the functionalities of EcOp tool Module 1 and Module 2.

The CA Tool and the EcOp tool represent the building blocks for interoperability that will be delivered by PEPPOL. As said before, they will be end-to-end building blocks, rather than tools used by a few national platforms for allowing interoperability. As any other PEPPOL deliverable, the tools will be released as Free Software in Open Standard (under the EUPL).

Indeed, the tools can not be regarded as "stand alone tools", since they will have to interact with the existing eTendering solutions of Contracting Authorities and with existing ERP systems of the Economic Operators. The use of Free OSS does not guarantee per se the integration of the tools with such systems, and this is an important aspect to better explore in the following phase of the project.

First of all, the tool themselves do not complete the support to eCatalogue management along the procurement process, because other operations are carried out on eCatalogues (ranking and evaluation or the award of tenders, versioning, archiving) that as said above have not been taken into consideration in this context because they are not dealing with interoperability, but that still need to be supported by ICT tools. Moreover, the management of a tender implies the use of tools covering different topics at the same time (VCD, eSignature, eCatalogue), the integration of which is particularly important regarding the pre-award modules in the eTendering solutions of Contracting Authorities. This will require a proper coordination of all the PEPPOL WPs building blocks, and the evaluation of their integration into an even more general eTendering solution, allowing the management of the whole process from eTendering to payment.

5.5. To-Be Scenario: Pre-award

The pre-award scenario fits both one-off procedures (Open Procedures and Restricted Procedures) and repetitive procedures (Framework Agreements, Dynamic Purchasing System).

In the hypothesis of one-off procedures, it makes sense to use eCatalogues in the post-award phase only in the case where such procedures represent the initial tender of a repetitive procedure. In fact, the use of eCatalogue is sensible when a large number of repetitive purchases of different goods and services will take place throughout the duration of the contract established between the Contracting Authority and the Economic Operator.

The scenario focuses on describing the steps of the procurement procedure where the eCatalogue is exchanged. The information flow (in whatever format or by whatever means) that precedes, accompanies or follows the steps described in the scenario are not taken into consideration in this context if an "eCatalogue" is not exchanged between the parties.

The "eCatalogue" can take different statuses along the procedure, since it can be either a "template", i.e. an empty eCatalogue which only provides the structure according to which the information have to be presented, or a '*true*' eCatalogue (first created, then validated) containing all the information according to which the Economic Operators respond the C.A. specific tender.

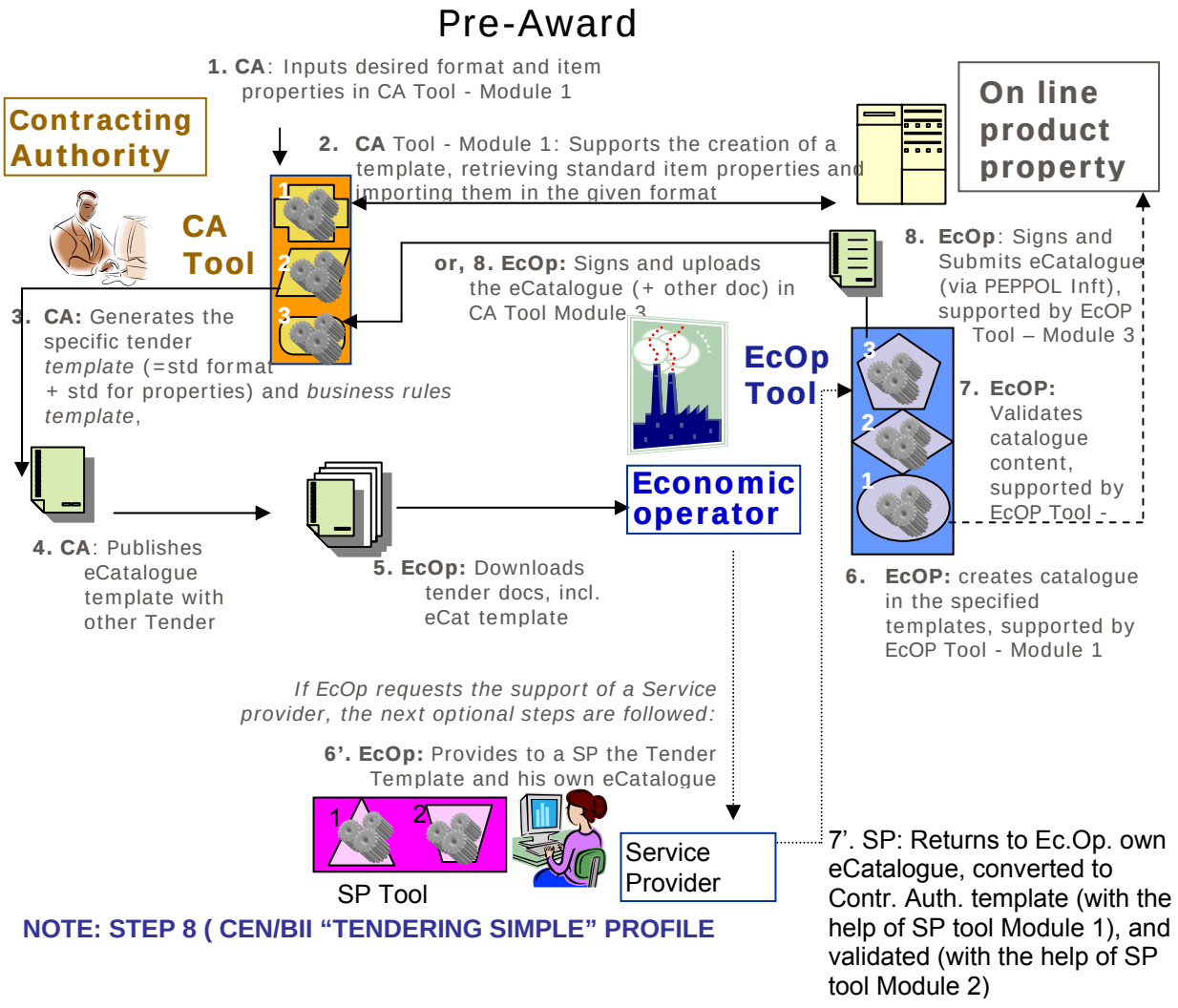

Figure 14 - Pre-award Use Case

STEP 1: A Contracting Authority that intends to issue a tender in which eCatalogues will be requested to submit offers (and then as a basis to issue orders), should decide at least:

- the FORMAT in which the eCatalogue document has to be presented by Economic Operators. The default standard eCatalogue formats will be the ones included in CEN WS/BII "BII01 Catalogue Only" Profile.
- the CLASSIFICATION SYSTEM(S) to describe the items (goods/services) to be purchased. As said before, CPV will be mandatory; UNSPSC, eCl@ss, GPC and GMDN will be additional options.
- the dictionary of STANDARD ATTRIBUTES that will have to be used for the description of the items. As said before, only the Dictionaries supporting on-line provision of properties will be made available in the tool.

Once all these elements are decided, the Contracting Authority Officer will instruct the CA Tool - Module 1- on the choices made on Classification System, and Dictionary.

STEP 2: Upon receipt of the instructions, the CA Tool - Module 1- will look up into the on-line servers of the chosen Dictionaries (e.g., eCl@ss, GPC, or GMDN), and support/lead the Contracting Authority Officer in identifying the properties that best suit his view of how the items to purchase should be described.
For instance, for each item the starting point could be the description of the item included in the classification system; the configuration of bundled products could then lead to more complex description.
If a new property is needed, the request to the body managing the Dictionary could be supported.

When all the items are described appropriately, the CA Tool - Module 1- will lead to the next step.

STEP 3: When all the standardized elements are acquired, the tool is ready to generate the "tender eCatalogue template" (i.e. the combination of standard format and standard description of the items to be purchased) that the Economic Operators will have to use to submit their offers.

The CA Tool - Module 2- will generate the XML document that represents the template, that can be based on the data model elaborated in the Profile document "BII01 Catalogue Only" related to eCatalogue (BiiCoreTrdm019).

In addition, the CA Tool - Module 2- will support the Contracting Authority Officer in the creation of the "business rules" for the specific tenders, that are associated to the eCatalogue template, such as: minimum/maximum values; compulsory/optional attributes; relationships between attributes; etc.

The CA Tool - Module 2- will generate the XML document that represents the business rules, that will be the basis for validation of the Economic Operators eCatalogues.

If requested by the national legislation, the tender documentation may have to be digitally signed by the Contracting Authority prior to its publication. In this case, the Contracting Authority will resort to an external tool for the signature of the two documents (tender eCatalogue template and associated business rules), and to its eTendering solution as for the publication.

In the case where more than one classification is included in the template by the Contracting Authority, the CA Tool – Module 2 – could include a "Wiki" functionality, that automatically communicates to the entities managing the on-line Dictionaries (and/or to a Community of eCatalogue Managers) the association of the classification items (and the attributes used for that specific item) attributes done in the specific tender. This *information is a very useful indication for the mutual mapping of the different description and classification systems. See Chapter 10 "Long Term Vision".*

STEP 4: The Contracting Authority publishes on-line the tender eCatalogue template and the associated business rules, together with other tender documentation.

STEP 5: The interested Economic Operators download the tender eCatalogue template and the associated business rules, together with other tender documentation.

STEP 6: The Economic Operators proceeds to create the eCatalogue for the specific tender. To do so, he must create an eCatalogue according to the template specified by the Contracting Authority. In almost all cases, the Economic Operators do not have an eCatalogue that is 100% readily usable for the specific tender template, since the latter is created ad hoc at every new tender.

If the Economic Operator does not have an eCatalogue at all, he will then have to create it "from scratch". The EcOp Tool - Module 1- will then support the generation of an eCatalogue. The EcOp Tool -Module 1- will detect the standards used in the template, and support the use of those standards to create the eCatalogue in accordance to the given template, also by looking up into the on-line Dictionary Property Server of the Dictionary chosen by the Contracting Authority.

If the Economic Operator does have an existing eCatalogue, but the latter does not match the tender template, the EcOp Tool - Module 1- should support the re-adaptation of the existing eCatalogue to the given template.

This operation can be very complex, as it implies a certain degree of interaction with the Economic Operator's ERP systems.

The description of this operation is therefore split into two: on one side a long term solution is described, on the other side a situation with more simple approach that can be implemented during the pilot phase.

Long term solution

Ideally, the functionality for converting the eCatalogue format from the existing one to the tender specific one shall be supported, together with the functionality to support the mapping from the classification and description standards included in the existing catalogue to the standards included in the tender template eCatalogue. In this situation, the EcOp Tool - Module 1- shall support the mapping both of the classification systems and the attributes.
Regarding the operation of mapping the classification and description, two sub-cases are possible.

In the case where the Economic Operator eCatalogue is based on the same standard classification system and standard attributes used in the template, the EcOp Tool -Module 1- will have to ensure the functionalities for an automatic (or semi-automatic) mapping the items classification and the attributes in the existing eCatalogue to the ones required in the specific tender template. However, the integration of some attributes that are missing in the existing eCatalogue might still be necessary; for this reason, the EcOp Tool -Module 1- must also support the retrieval (through look-ups into the Dictionary on-line servers) and integration of such attributes.

In the case where the Economic Operator eCatalogue is not based on the same standard classification system and/or standardized attributes used in the template, this operation will require a heavier degree of manual intervention, to map the properties from one system to another. Ideally, the EcOp Tool – Module 1 – includes anyway a semi-automatic support. The use of artificial intelligence to support this operation can be envisaged as a second stage improvement of the EcOp Tool – Module 1 - .

Simple solution for the PEPPOL pilot

The implementation of the long term solution implies a certain degree of interaction with the Economic Operator's ERP systems. This is not easy to implement in the short term, because it would require a study of the most used ERP systems, the interaction with the ERP Vendors to get their agreement, etc., and this would require a time that is not compatible with the project plan.

In the short run, an easier solution can be implemented, based on the assumption that almost all the existing eCatalogue management systems have the possibility to export their data into a spreadsheet (most commonly used is Excel).

The EcOp Tool Module 1 would then have to support the export/ import of eCatalogue data to/from common spreadsheets, allowing the use of the spreadsheet functionalities for the mapping of the standard classifications and description used in the eCatalogue template and the existing eCatalogue of the Economic Operator.
Obviously, this would work in the case where the Economic Operator eCatalogue is based on the same standard classification system and standard attributes used in the template.
In the case where the Economic Operator eCatalogue is not based on the same standard classification system and/or standardized attributes used in the template, this operation will require a heavier degree of manual intervention, to map the properties from one system to another. In this case, the EcOp Tool – Module 1 – will support this operation through spreadsheets.
(*However "interoperability" cold not be involved in this case, because there is no eCatalogue existing*)

At the end of the creation or mapping and integration operations, the EcOp Tool – Module 1 – will support the generation of the first draft of XML document that represents the tender-specific eCatalogue.

In the case where more than one classification is provided in the eCatalogue by the Economic Operator, the EcOp Tool – Module 1 – could include a "Wiki" functionality, that automatically communicate to the entities managing the on-line Dictionaries (and/or to a Community of eCatalogue Managers) the association of the classification items (and the attributes used for that specific item) attributes done in the specific tender. This information is a very useful indication for the mutual mapping of the different description and classification systems. See Chapter 10 "Long Term Vision".

STEP 7: Upon creation of the eCatalogue, the Economic Operators proceeds to validate the content of the tender-specific eCatalogue. To help him in this operation, the Economic Operator will input in EcOp Tool – Module 2 - the document including the business rules of the specific tender. The Tool will compare the content with the business rules of the specific tender, issue messages warning of missing / mismatching data or formats, and support the correction. At the end of this step, the validated eCatalogue format is generated in the prescribed format, representing the eCatalogue offer for the specific tender.

NOTE: Steps 6 and 7 can be externalized, requiring the support of a Service Provider. The nature of the relationship between the two subjects is regulated by private agreements, that are not investigated in this context, where only the technical operations are described. In this case, they will be respectively replaced by the two following steps:

STEP 6': *The Economic Operators provides to the Service Provider the eCatalogue template for the specific tender, and the information to generate the tender. This information will either be another eCatalogue, or a paper based description of the necessary information.*

Acting on behalf of the Economic Operator, the Service Provider will perform basically the same operations described in Steps 6. In this, he can be supported by a specific "SP Tool – Module 1 –", that performs the same functionalities of the EcOp Tool – Module 1.

STEP 7': *Upon creation of the eCatalogue, the Service Provider will proceed to validate the content of the tender-specific eCatalogue, basically performing the same operations described in Steps 7. In this, he can be supported by a specific "SP Tool – Module 2 –", that performs the same functionalities of the EcOp Tool – Module 2.*
At the end of Step 7, he will send the eCatalogue to the Economic Operator.

STEP 8: Upon generation of the eCatalogue, the Economic Operator has to sign it together with the other offer documents for the specific tender (if the submission of the signed offer is prescribed by national legislation). In this case, the Contracting Authority will resort to an external tool for the signature of the eCatalogue. The EcOp Tool – Module 3 – supports the inclusion of the "payload" document (together with other documents of the tender,) into the "envelope" to be sent to the Contracting Authority, through the PEPPOL submission client tool and the PEPPOL infrastructure.
In the case where the upload of the offer document is required instead of the submission, the last step will not be applied, and the Economic Operator will upload the document in the Contracting Authority eTendering system according to the tender instructions.

In the pre-award phase the offer in form of a catalogue could be represented by the Data models elaborated in the Profile document "BII01 Catalogue only" elaborated by CEN ISSS WS/BII.
The Data model to be used is be the Core one, coded BiiCoreTrdm019, in this case PEPPOL does not implement the Profiles for tendering but only the Data model related to the eCatalogue.

5.6. To-Be: Post-award (First submission / Re-Opening of competition under Repetitive Procedures)

The post-award scenario described in this paragraph fits both one-off procedures (Open Procedures and Restricted Procedures) and repetitive procedures (Framework Agreements, Dynamic Purchasing System).

As said in the previous paragraph, in the hypothesis of one-off procedures, it makes sense to use eCatalogues in the post-award phase only in the case where such procedures represent the initial tender of a repetitive procedure. In fact, the use of eCatalogue is sensible when a large number of repetitive purchases of different goods and services will take place throughout the duration of the contract between established between the Contracting Authority and the Economic Operator.

The scenario focuses on describing the steps of the procurement procedure where the eCatalogue is exchanged. The information flow (in whatever format or whatever means) that precedes, accompanies or follows the steps described in the scenario are not taken into consideration in this context if an “eCatalogue” is not exchanged between the parties.

In the post award scenario considered in this paragraph, the eCatalogues can be exchanged in two steps of the procurement process:

1. in the first submission following the award of the contract, that takes place in all kind of procedures in which there is an agreement to exchange the electronic catalogue;
2. in the reopening of competition of a Framework Contract or a Dynamic Purchasing System.

In any case, just like in the pre-award phase, the “eCatalogue” can take different statuses along the procedure, since it can be either a “template”, i.e. an empty eCatalogue which only provides the structure according to which the information have to be presented, or a *‘true’* eCatalogue (first created, then validated) containing all the information according to which the Economic Operators respond the C.A. specific request.

The steps described in the scenario can take place in very different moments of the public procurement procedures. For instance, the Contracting Authority may wish to make public the eCatalogue “template” already at the tendering stage, to clarify the commitments that will be required to the Economic Operators. Thus, from a practical point of view, the third step described below can take place even before the award of the contract. However, from a logical point of view, there is always a moment in which the Contracting Authorities decides the format to use and the description to require (if to require it at all), and creates a “template”. The same example applies also for other steps.

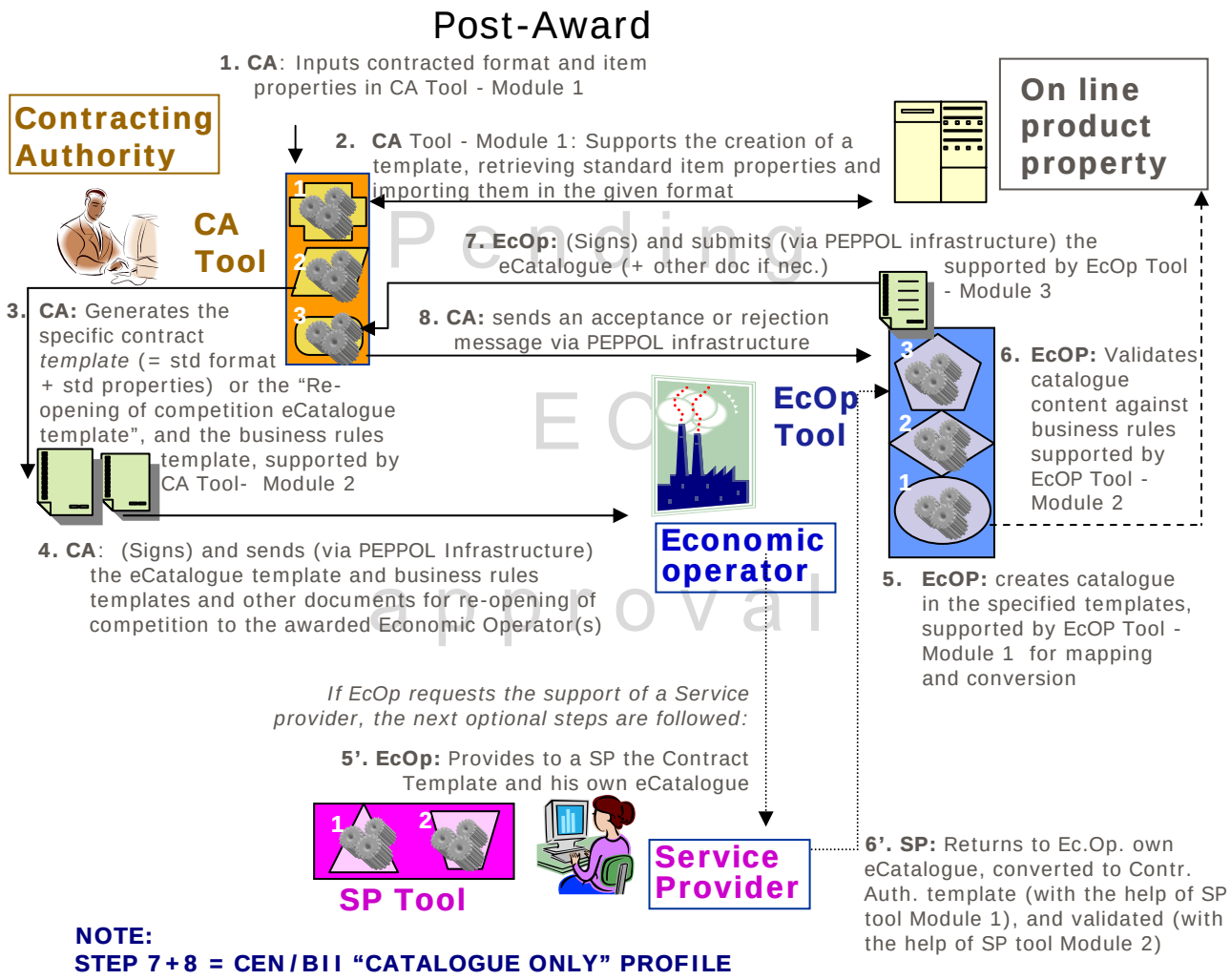

Figure 15 - Post-award First submission / Re-Opening of competition under Repetitive Procedures Use Case

STEP 1: A Contracting Authority that has awarded a tender in which eCatalogues are foreseen as the basis to issue orders, should decide at least:

- the FORMAT in which the eCatalogue document has to be presented by Economic Operators. The default standard format will be that included CEN WS/BII "BII01 Catalogue Only" Profile and it is the data model BiiCoreTrdm019);
- the CLASSIFICATION SYSTEM(S) to describe the items (goods/services) to be purchased. As said before, CPV will be mandatory; UNSPSC, eCl@ss, GPC and GMDN will be additional options;
- the dictionary of STANDARD ATTRIBUTES that will have to be used for the description of the items. As said before, only the Dictionaries supporting on-line provision of properties will be made available in the tool.

Once all these elements are decided, the Contracting Authority Officer will instruct the CA Tool - Module 1- on the choices made on the Classification System to identify items, and Dictionary.

From a practical point of view, these decisions can be already taken at the tendering stage, and included into the tender documentation, for the sake of transparency and clarity of the commitments that will be requested to economic operators.

The first step will take place similarly both in the case of one-off procedures and repetitive procedures. In the latter case, it may be accompanied by decisions regarding aspects other than the eCatalogue (e.g.: deadlines for submission of the offers; additional certifications or attestations) that are not included in the scope of the present document. This possibility is referred to in step 4, when it is said that the Contracting Authority sends "*the eCatalogue template and business rules templates* ***and other documents for re-opening of competition*** *to the awarded Economic Operator(s)*".

STEP 2: Upon receipt of the instructions, the CA Tool - Module 1- will look up into the on-line servers of the chosen Dictionaries (e.g., eCl@ss, GPC, or GMDN), and support/lead the Contracting Authority Officer in identifying the properties that best suit his view of how the items to purchase should be described.
For instance, for each item the starting point could be the description of the item included in the classification system; the configuration of bundled products could then lead to more complex description.
If a new property is needed, the request to the body managing the Dictionary could be supported.

When all the items are described appropriately, the CA Tool - Module 1- will lead to the next step.

From a practical point of view, Step 2 can take place even before the award of the contract. However, from a logical point of view, there is always a moment in which the Contracting Authorities decides the format to use and the description to require (if to require it at all). The CA Tool – Module 1 – will support such step.

STEP 3: When all the standardized elements are acquired, the tool is ready to generate the "contract eCatalogue template" or the "Re-opening of competition eCatalogue template" (i.e. the combination of standard format and standard description of the items to be purchased) that the Economic Operators will have to use to submit their eCatalogues. The said eCatalogues will be used by the Contracting Authority:

- as the indicative tender to compare subsequent eCatalogue offers, in the case of Framework Agreement and Dynamic Purchasing Systems;
- as the basis to issue orders, in the case of Framework Agreement and after the second stage competition of the Framework Agreement.

The CA Tool - Module 2- will generate the XML document that represents the template.

In addition, the CA Tool - Module 2- will support the Contracting Authority Officer in the creation of the "business rules" for the specific contract / request for re-opening of competition, that are associated to the eCatalogue template, such as: minimum/maximum values; compulsory/optional attributes; relationships between attributes; etc.

The CA Tool - Module 2- will generate the XML document that represents the business rules, that will be the basis for validation of the Economic Operators eCatalogues.

If requested by the national legislation, the CA documentation may have to be digitally signed by the Contracting Authority prior to its submission to the Economic Operator. In this case, the Contracting Authority will resort to an external tool for the signature of the two documents (contract eCatalogue template and associated business rules), and to its eTendering solution as for the publication.

From a practical point of view, the eCatalogue template can be already described into the tender documentation, so step 3 (and steps 1 an 2) can take place in different forms from tender to tender. However, from a logical point of view, there is always a moment in which the Contracting Authorities provide to the Economic Operators a "template". The CA Tool – Module 2 – will support such step.

In the case where more than one classification is included in the template by the Contracting Authority, the CA Tool – Module 2 – could include a "Wiki" functionality, that automatically communicate to the entities managing the on-line Dictionaries (and/or to a Community of eCatalogue Managers) the association of the classification items (and the attributes used for that specific item) attributes done in the specific tender. This information is a very useful indication for the mutual mapping of the different description and classification systems. See Chapter 10 "Long Run Vision".

STEP 4: The Contracting Authority sends (via PEPPOL infrastructure) the tender eCatalogue template and the associated business rules, together with other tender documentation, to all the relevant Economic Operators. i.e. :

- o all the EcOps the are awarded the initial tender of a repetitive procedure,
- o the ones chosen for a second stage competition in the case the CA intends to re-open the competition under an existing Framework Agreement
- o all the EcOps the are awarded the initial tender plus the ones qualifying for a second stage competition in the case of a DPS

The CA Tool – Module 2 – supports the submission of the document, interacting with the demonstrator client developed under PEPPOL WP 8.

From a practical point of view, the eCatalogue template can be already described into the tender documentation, so step 4 (and steps 1 to 3) can take place in different forms from tender to tender. However, from a logical point of view, there is always a moment in which the Contracting Authorities provide to the Economic Operators a "template". The CA Tool – Module 2 – will support such step.

STEP 5: The Economic Operators proceeds to create the eCatalogue for the specific contract/re-quest of offer for re-opening the competition. To do so, he must create an eCatalogue according to the template specified by the Contracting Authority.

If the Economic Operator does not have an eCatalogue at all, he will then have to create it "from scratch". The EcOp Tool - Module 1- will then support the generation of an eCatalogue. The EcOp Tool -Module 1- will detect the standards used in the template, and support the use of those standards to create the eCatalogue in accordance to the given template, also by looking up into the on-line Dictionary Property Server of the Dictionary chosen by the Contracting Authority.

If the Economic Operator does have an existing eCatalogue, but the latter does not match the tender template, the EcOp Tool - Module 1- should support the re-adaptation of the existing eCatalogue to the given template.

This operation can be very complex, as it implies a certain degree of interaction with the Economic Operator's ERP systems.

The description of this operation is therefore split into two: on one side a long term solution is described, on the other side a situation with more simple approach that can be implemented during the pilot phase.

Long term solution

Ideally, the functionality for converting the eCatalogue format from the existing one to the tender specific one shall be supported, together with the functionality to support the mapping from the classification and description standards included in the existing catalogue to the standards included in the tender template eCatalogue. In this situation, the EcOp Tool - Module 1- shall support the mapping both of the classification systems and the attributes.

Regarding the operation of mapping the classification and description, two sub-cases are possible.

In the case where the Economic Operator eCatalogue is based on the same standard classification system and standard attributes used in the template, the EcOp Tool -Module 1- will have to ensure the functionalities for an automatic (or semi-automatic) mapping the items classification and the attributes in the existing eCatalogue to the ones required in the specific tender template. However, the integration of some attributes that are missing in the existing eCatalogue might still be necessary; for this reason, the EcOp Tool -Module 1- must also support the retrieval (through look-ups into the Dictionary on-line servers) and integration of such attributes.

In the case where the Economic Operator eCatalogue is not based on the same standard classification system and/or standardized attributes used in the template, this operation will require a heavier degree of manual intervention, to map the properties from one system to another. Ideally, the EcOp Tool – Module 1 – includes anyway a semi-automatic support. The use of artificial intelligence to support this operation can be envisaged as a second stage improvement of the EcOp Tool – Module 1 - .

Simple solution for the PEPPOL pilot

The implementation of the long term solution implies a certain degree of interaction with the Economic Operator's ERP systems. This is not easy to implement in the short term, because it would require a study of the most used ERP systems, the interaction with the ERP Vendors to get their agreement, etc., and this would require a time that is not be compatible with the project plan.

In the short run, an easier solution can be implemented, based on the assumption that almost all the existing eCatalogue management systems have the possibility to export their data into a spreadsheet (most commonly used is Excel).

The EcOp Tool Module 1 would then have to support the export and import of eCatalogue data to/from common spreadsheets, allowing the use of the spreadsheet functionalities for the mapping of the standard classifications and description used in the eCatalogue template and the existing eCatalogue of the Economic Operator.
Obviously, this would work in the case where the Economic Operator eCatalogue is based on the same standard classification system and standard attributes used in the template.
In the case where the Economic Operator eCatalogue is not based on the same standard classification system and/or standardized attributes used in the template, this operation will require a heavier degree of manual intervention, to map the properties from one system to another. In this case, the EcOp Tool – Module 1 – will support this operation through spreadsheets.

At the end of the creation or mapping and integration operations, the EcOp Tool – Module 1 – will support the generation of the first draft of XML document that represents the tender-specific eCatalogue.

In the case where more than one classification is provided in the eCatalogue by the Economic Operator, the EcOp Tool – Module 1 – could include a "Wiki" functionality, that automatically communicate to the entities managing the on-line Dictionaries (and/or to a Community of eCatalogue Managers) the association of the classification items (and the attributes used for that specific item) attributes done in the specific tender. This information is a very useful indication for the mutual mapping of the different description and classification systems.

STEP 6: Upon creation of the eCatalogue, the Economic Operators proceeds to validate the content of the contract specific eCatalogue. To help him in this operation, the Economic Operator will input in

EcOp Tool – Module 2 - the document including the business rules of the specific contract/request for re-opening of competition. The Tool will compare the content according to the business rules of the specific case, and issue messages warning of missing / mismatching data or formats, supporting their correction. At the end of this step, the validated eCatalogue document is generated in the prescribed format, representing the contracted eCatalogue basis for future orders or requests or re-opening of the competition, or the offer for the specific re-opening of the competition.

NOTE: Steps 5 and 6 can be externalized, requiring the support of a Service Provider. The nature of the relationship between the two subjects is regulated by private agreements, that are not investigated in this context, where only the technical operations are described. In this case, they will be respectively replaced by the two following steps:

STEP 5': *The Economic Operators provides to the Service Provider the eCatalogue template for the specific case, and the company information to generate the eCatalogue. This information will either be another electronic catalogue, or a paper based description of the necessary information.*

Acting on behalf of the Economic Operator, the Service Provider will perform basically the same operations described in Step 5. In this, he can be supported by a specific "SP Tool – Module 1 –", that performs the same functionalities of the EcOp Tool – Module 1.

STEP 6': *Upon creation of the eCatalogue, the Service Provider will proceed to validate the content of the case-specific eCatalogue, basically performing the same operations described in Step 6. In this, he can be supported by a specific "SP Tool – Module 2 –", that performs the same functionalities of the EcOp Tool – Module 2.*
At the end of Step 6', he will send the eCatalogue to the Economic Operator.

STEP 7: Upon generation of the eCatalogue, the Economic Operator may be requested by national legislation to sign it prior to the submission. In this case, the Contracting Authority will resort to an external tool for the signature of the eCatalogue. The EcOp Tool – Module 3 – will then support the inclusion of the "payload" document (together with other documents of the specific re-opening of competition, if any) into the "envelope" to be sent to the Contracting Authority, through the PEPPOL submission client tool and the PEPPOL infrastructure.
In the case where the upload of the eCatalogue is required instead of the submission, the last step will not be applied, and the Economic Operator will upload the document in the Contracting Authority eTendering system according to the tender instructions.
CEN WS/BII Profile "BII01 Catalogue Only" will be used to implement this step (core data model used is BiiCoreTrdm019).

STEP 8: Upon receipt of the eCatalogue (first set up) the Contracting Authority issues a message of acceptance or rejection via PEPPOL infrastructure. The response has to be put into the "envelope" to be sent to the Economic Operator through the Infrastructure.
To support activities for setting up an eCatalogue, the CEN WS/BII Profile document "BII01 Catalogue Only" will be used. In particular, the data model will be the BiiTrdm057 for acceptance and BiiTrdm058 for rejection.

5.7. To-Be: Post-award (Update)

The post-award scenario described in this paragraph regards the case whereby an eCatalogue that has already been submitted by an Economic Operator - following the award of a repetitive procedure (Framework Agreements, Dynamic Purchasing System) - has to be updated.

The scenario focuses on describing the steps of the procurement procedure where the eCatalogue is exchanged. The information flow (in whatever format or whatever means) that precedes, accompanies or follows the steps described in the scenario are not taken into consideration in this context if an "eCatalogue update" is not exchanged between the parties.

In this context, 'update' of a Catalogue means replacing entire Catalogue Lines. In this case, the Catalogue update document will contain only the Catalogue Lines (Item specifications) that are to be added, deleted and/or updated. To facilitate this usage, the Catalogue Line contains an action code describing how the recipient should process the Catalogue Line.

In the post award the eCatalogues can be updated for several reasons; for instance:

1. changes in address, names, etc.
2. extension of period of validity
3. improvements of the technical features of the existing items
4. price changes of the existing items
5. deletion of an item that is no longer available
6. addition inclusion of a new product
7. etc.

In the common practice, the case largely prevailing is the one whereby the process for updating the eCatalogue is started by the Economic Operators who, under the terms foreseen in the contract, proceed spontaneously to update the Catalogue lines.
However, there are certain cases where the Contracting Authority can start the process for updating the eCatalogue, by requesting the update under the terms foreseen in the contract.

In any case, just like in the case of the first submission of an entire post-award "eCatalogue", the "eCatalogue update" document can take different statuses along the procedure, since it can be either a "template", i.e. an eCatalogue update document which only provides the structure according to which the information have to be presented, or a *'true'* eCatalogue update document containing all the information that the Economic Operators actually provides to update an item line of an existing eCatalogue.

The scenario described below has to be read as a 'logical' and general scenario, that includes different possible cases in an apparently sequential manner. However, it has to be clear that in a specific case the steps described in the scenario can take place in very different moments of the public procurement procedures, and it could happen that some steps do not take place at all.
For instance, in a specific case, the Contracting Authority may wish to make public the eCatalogue update "template" already at the tendering stage, to clarify the way in which the information will be exchanged and thus the commitments that will be required to the Economic Operators.
Or, the Contracting Authority may wish to clarify the template at every single update event, or does not send it as an XML document but just describes by other means the wished format, because the update regards a very simple and limited lot of information; or even, as said before, the update of Catalogue line may be started spontaneously by the Economic Operators under the terms of the contract, so the steps from 1 to 4 where the Contracting Authority requests the update do not take place or take place with some differences (for instance: there is not a set of business rules).

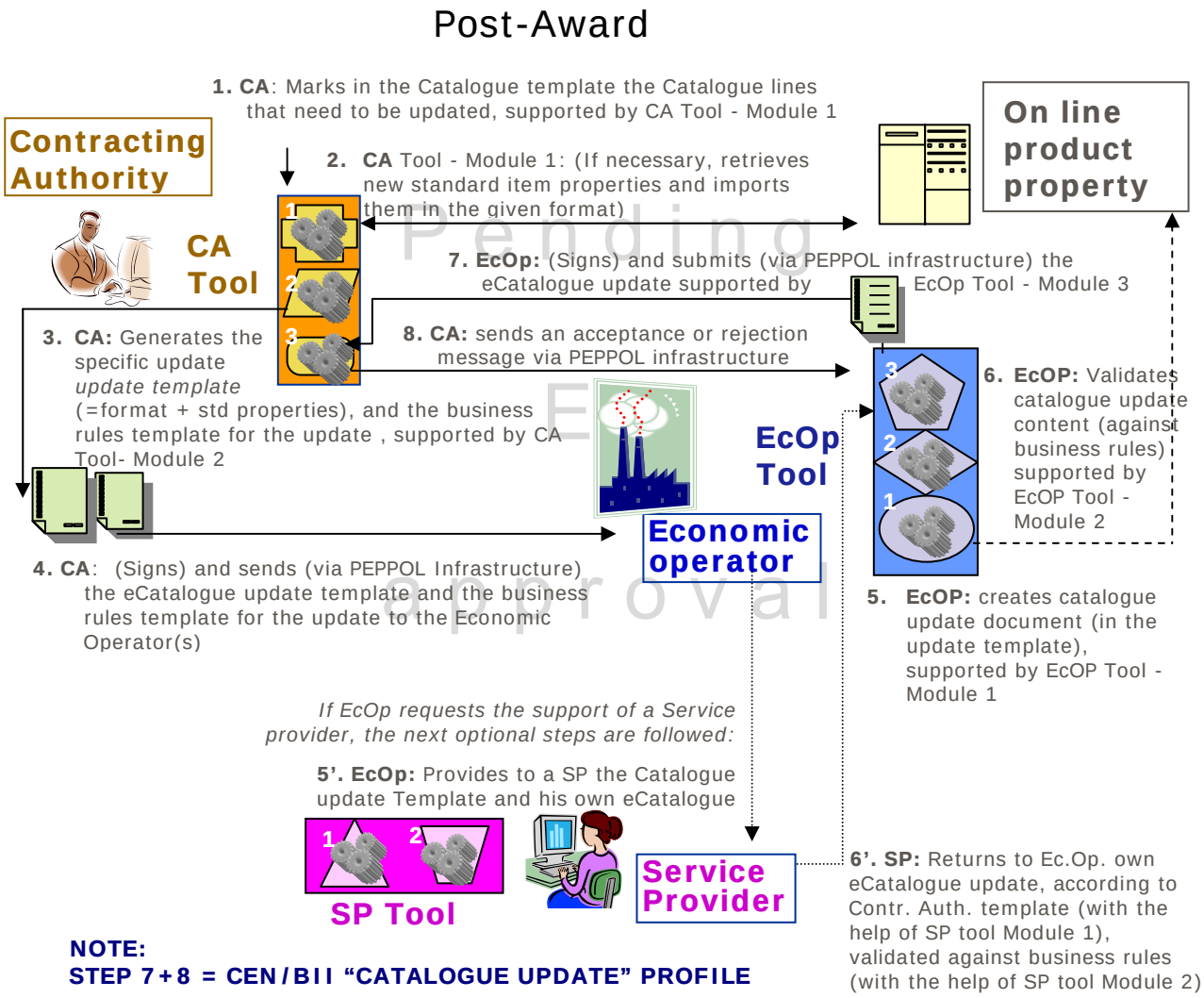

Figure 16 - Post-award First submission / Re-Opening of competition under Repetitive Procedures Use Case

STEP 1: A Contracting Authority that has awarded a tender in which eCatalogues are foreseen as the basis to issue orders, may need (under the conditions foreseen by the Contract) to update one or more information included in the Catalogue, from general information (changes of address, names, extension of period of validity, etc.) to the information on the Catalogue items (improvements of the technical features, price changes, deletion of an item that is no longer available; addition inclusion of a new product; etc) .

A generic information of the Catalogue is in this context referred to as "catalogue line".

In general the Contracting Authority has already created a template for the eCatalogue, establishing the standard both for the general information format and for the classification and description of items.

If the changes regard general information, the Contracting Authority should have the possibility to mark on the eCatalogue template the catalogue lines that need to be changed, in order to subsequently communicate them to the Economic Operator(s).

If the update regards the inclusion of a new item, then the Contracting Authority might need to decide:

- the CLASSIFICATION SYSTEM(S) to describe the new items to be purchased. As said before, CPV will be mandatory; UNSPSC, eCl@ss, GPC and GMDN will be additional options.
- the dictionary of STANDARD ATTRIBUTES that will have to be used for the description of the items. As said before, only the Dictionaries supporting on-line provision of properties will be made available in the tool.

Once all these elements are decided, the Contracting Authority Officer will instruct the CA Tool - Module 1- on the choices made on:

1. Catalogue lines to be updated
2. Classification System and Dictionary to be used for the new products.

From a practical point of view, this step might not take place if the update is started by the Economic Operator.

STEP 2: Upon receipt of the instructions, if product properties have to be added/updated, the CA Tool - Module 1- will look up into the on-line servers of the chosen Dictionaries (e.g., eCl@ss, GPC, or GMDN), and support/lead the Contracting Authority Officer in identifying the properties that best suit his view of how the items to purchase should be described, similarly to step 2 of the pre-award phase and step 2 of the first submission of the post-award phase.

When all the items are described appropriately, the CA Tool - Module 1- will lead to the next step.

From a practical point of view, this step might not take place if the update is started by the Economic Operator.

STEP 3: When all the information on the needed updates elements is acquired, the tool is ready to generate the “eCatalogue update template” (i.e. the combination of standard format for the exchange of information on the update and the standard description of the items to be purchased) that the Economic Operators will have to use to submit their eCatalogue updates.

The CA Tool - Module 2- will generate the XML document that represents the eCatalogue update template.

In addition, the CA Tool - Module 2- will support the Contracting Authority Officer in the creation of the “business rules” for the specific eCatalogue update, that are associated to the eCatalogue update template, such as: minimum/maximum values; compulsory/optional attributes; relationships between attributes; etc.

The CA Tool - Module 2- will generate the XML document that represents the business rules, that will be the basis for validation of the Economic Operators eCatalogues.

If requested by the national legislation, the CA documentation may have to be digitally signed by the Contracting Authority prior to its submission to the Economic Operator. In this case, the Contracting Authority will resort to an external tool for the signature of the two documents (contract eCatalogue template and associated business rules), and to its eTendering solution as for the publication.

From a practical point of view, this step might not take place if the update is started by the Economic Operator.

STEP 4: The Contracting Authority sends (via PEPPOL infrastructure) the tender eCatalogue update template and the associated business rules to the relevant Economic Operator(s).

The CA Tool – Module 2 – supports the submission of the document, interacting with the demonstrator client developed under PEPPOL WP 8.

From a practical point of view, this step might not take place if the update is started by the Economic Operator.

STEP 5: The Economic Operators proceeds to create the eCatalogue update, based on a request from the Contracting Authority, or on an obligation from the contract (e.g.: a price revision in connection with market a index variation, etc.), or on a need arisen from the Economic Operator himself (change of address, etc.).
To do so, he must create an eCatalogue update document, according to the template specified by the Contracting Authority.

The EcOp Tool - Module 1- will support the functionality for updating catalogue lines, in connection with the contracted eCatalogue already submitted to the Contracting Authority, or the eCatalogue update template.

The intervention will be basically manual, but in future improvements the tool will support a semi-automatic compilation of the update.

At the end of the creation or mapping and integration operations, the EcOp Tool – Module 1 – will generate the first draft of the XML eCatalogue update document for exchanging information about the lines to be updated.

STEP 6: Upon creation of the eCatalogue update document, the Economic Operators proceeds to validate the content. To help him in this operation, the Economic Operator will input in EcOp Tool – Module 2 - the eCatalogue update document including the eCatalogue update business rules template. The Tool will compare the content against the business rules of the specific update, and issue messages warning of missing / mismatching data or formats, supporting their correction. At the end of this step, the validated eCatalogue update document is generated in the prescribed format, representing the eCatalogue basis for future orders or requests or re-opening of the competition, or the offer for the specific request.

NOTE: Steps 5 and 6 can be externalized, requiring the support of a Service Provider. The nature of the relationship between the two subjects is regulated by private agreements, that are not investigated in this context, where only the technical operations are described. In this case, they will be respectively replaced by the two following steps:

STEP 5': *The Economic Operators provides to the Service Provider the eCatalogue update template for the specific case, and the information to generate the eCatalogue update. This information will either be another electronic catalogue, or a paper based description of the necessary information.*

Acting on behalf of the Economic Operator, the Service Provider will perform basically the same operations described in Step 5. In this, he can be supported by a specific "SP Tool – Module 1 –", that performs the same functionalities of the EcOp Tool – Module 1.

STEP 6': *Upon creation of the eCatalogue update document, the Service Provider will proceed to validate the content of the case-specific eCatalogue update, basically performing the same operations described in Step 6. In this, he can be supported by a specific "SP Tool – Module 2 –", that performs the same functionalities of the EcOp Tool – Module 2.*
At the end of Step 6', he will send the eCatalogue update to the Economic Operator.

STEP 7: Upon generation of the eCatalogue update, the Economic Operator may be requested by national legislation to sign it prior to the submission. In this case, the Contracting Authority will resort to an external tool for the signature of the eCatalogue. The EcOp Tool – Module 3 – will then support the

inclusion of the "payload" document (together with other documents of the specific re-opening of competition, if any) into the "envelope" to be sent to the Contracting Authority, through the PEPPOL submission client tool and the PEPPOL infrastructure.
In the case where the upload of the eCatalogue is required instead of the submission, the last step will not be applied, and the Economic Operator will upload the document in the Contracting Authority eTendering system according to the tender instructions.
To support activities of updating eCatalogues the Profile document "BII02 Catalogue Update" elaborated by CEN WS/BII will be used (core data models: BiiCoreTrdm20 for item update and BiiCoreTrdm21 for price update)

STEP 8: Upon receipt of the eCatalogue update (Item or price), the Contracting Authority issues a message of acceptance or rejection of the update via PEPPOL infrastructure. The response has to be before put into the "envelope" to be sent to the Economic Operator through the infrastructure. To support of eCatalogues updating activities the Profile CEN WS/BII document "BII02 Catalogue Update" will be used (core data models: BiiCoreTrdm60 for item update acceptance, BiiCoreTrdm59 for item update rejection, BiiCoreTrdm62 for price update acceptance, BiiCoreTrdm61 for update rejection)

6. Legal Specifications

6.1. General EU legislative context

E-catalogues, in the usual meaning, are electronic documents established by economic operators which describe products and prices which may, under certain conditions, be submitted as a tender.

It is preliminary to be affirmed that the EU Directives allow (Recital 12 of the EU Directive 18/2004/EC[3]), under specific conditions, that a tender may be submitted in a procurement procedure in an electronic format. In such a case contracting authorities may make use of this electronic technique, providing such use complies with the rules drawn up under this Directive and, basically, the principles of **equal treatment, non-discrimination and transparency.**

Under these conditions, and exclusively whether explicitly provided by the contracting authority, the submission of electronic tenders in a public procurement competition may assume the form of e-catalogues. Though the Directive recommends the recourse to e-catalogues where competition has been reopened under a framework agreement or where a dynamic purchasing system is being used, the recourse to e-catalogues may take place in any tender procedure, at condition that the use of it is **made in compliance with the rules provided by the article 42 (Rules applicable to communications) and Annex 10 of the Directive itself**[4] (as well as with possible requirements provided by the contracting authority).

In this sense it will actually be the concerned contracting authority which will specify the exact conditions for the creation and exchange of e-Catalogues in form of tenders. So, contracting authorities shall individuate content requirements and may request specific formats for e-Catalogues, providing that these specifications are not contrary to the general principle of equality of treatment, non-discrimination and transparency.

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[3] Recital 12 of the EU Directive 18/2004/EC states: "*Certain new electronic purchasing techniques are continually being developed. Such techniques help to increase competition and streamline public purchasing, particularly in terms of the savings in time and money which their use will allow. Contracting authorities may make use of electronic purchasing techniques, providing such use complies with the rules drawn up under this Directive and the principles of equal treatment, non-discrimination and transparency. To that extent, a tender submitted by a tenderer, in particular where competition has been reopened under a framework agreement or where a dynamic purchasing system is being used, may take the form of that tenderer's electronic catalogue if the latter uses the means of communication chosen by the contracting authority in accordance with Article 42.*"

[4] "*1. All communication and information exchange referred to in this Title may be by post, by fax, by electronic means in accordance with paragraphs 4 and 5, by telephone in the cases and circumstances referred to in paragraph 6, or by a combination of those means, according to the choice of the contracting authority.*

2. The means of communication chosen must be generally available and thus not restrict economic operators' access to the tendering procedure.

3. Communication and the exchange and storage of information shall be carried out in such a way as to ensure that the integrity of data and the confidentiality of tenders and requests to participate are preserved, and that the contracting authorities examine the content of tenders and requests to participate only after the time limit set for submitting them has expired.

4. The tools to be used for communicating by electronic means, as well as their technical characteristics, must be non-discriminatory, generally available and interoperable with the information and communication technology products in general use.

5. The following rules are applicable to devices for the electronic transmission and receipt of tenders and to devices for the electronic receipt of requests to participate:

(a) information regarding the specifications necessary for the electronic submission of tenders and requests to participate, including encryption, shall be available to interested parties. Moreover, the devices for the electronic receipt of tenders and requests to participate shall conform to the requirements of Annex X;

(b) Member States may, in compliance with Article 5 of Directive 1999/93/EC, require that electronic tenders be accompanied by an advanced electronic signature in conformity with paragraph 1 thereof;

(c) Member States may introduce or maintain voluntary accreditation schemes aiming at enhanced levels of certification service provision for these devices;

(d) tenderers or candidates shall undertake to submit, before expiry of the time limit laid down for submission of tenders or requests to participate, the documents, certificates and declarations referred to in Articles 45 to 50 and Article 52 if they do not exist in electronic format.

6. The following rules shall apply to the transmission of requests to participate:

(a) requests to participate in procedures for the award of public contracts may be made in writing or by telephone;

(b) where requests to participate are made by telephone, a written confirmation must be sent before expiry of the time limit set for their receipt;

(c) contracting authorities may require that requests for participation made by fax must be confirmed by post or by electronic means, where this is necessary for the purposes of legal proof. Any such requirement, together with the time limit for sending confirmation by post or electronic means, must be stated by the contracting authority in the contract notice."

6.2. General Legal requirements for electronic tender procedures

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-1**
Name	**Guarantee equal treatment, non-discrimination and transparency**
Sources	Requirement, based on: - Recital 2 and 12 of the EU Directive 18/2004/EC - Functional Requirement #2 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority
Status	Mandatory
General Context Description	Any tender, in whatsoever tender procedure, shall mandatory respect these general principles. When submitted in an electronic format, contracting authorities shall ensure that the recourse to electronic instruments shall necessarily comply with all the rules drawn up under the Public Procurement Directives and, more generally, with the principles of equal treatment, non-discrimination and transparency governing any tender procedure Only under the compliance of these conditions, the submission of electronic tenders in a public procurement competition may assume the form of e-catalogues.
Legal Requirement Description	The award of public contracts concluded in the Member States is subject to the respect of the principles of the EU Treaty and those deriving therefrom, such as the principle of equal treatment, the principle of non-discrimination, the principle of mutual recognition, the principle of proportionality and the principle of transparency. Such principles shall apply also to this Pilot with the peculiarities related to the electronic conduct of the procedure. In particular: - equal treatment principle, involves that all economic operators shall be treated in exactly the same way. For example: the information provided by contracting authorities must be the same for all economic operators; the criteria for the award of the contract should enable tenders to be compared and assessed objectively; the necessary electronic tools and means that economic operators must use for taking part in a public competition must be equally accessible to suppliers. - non-discrimination involves that: a) the system and the electronic devices used must be widely accessible and easily usable offering the grounds for effective competition and should not discriminate or restrict access to the procurement procedure; b) guaranteeing from the date of publication of the notice until the expiry of the deadline for submitting tenders, the unrestricted and full direct access to the Contract Documents and all relevant documents; c) providing free, available and reliable access to the contracting authority's system, in order to guarantee that access to the tendering procedure is not restricted and to ensure equal treatment and effective competition. - mutual recognition involves that the Pilot shall consider as equivalent requirements lawfully obtained in another Member (i.e. electronic signatures, production qualifications etc). - the transparency principle, involves that electronic procedures must be conducted in a manner that ensures that all processes are transparent and fair. Moreover all the information concerning the participation and the awarding of the contract must be made available and accessible in any way to interested economic operators

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-2**
Name	**Guarantee general availability of the electronic instruments**
Sources	Requirement, based on: - Recital 12 of the EU Directive 18/2004/EC - Article 42 of the EU Directive 18/2004/EC - Annex 10 of the EU Directive 18/2004/EC - Functional Requirement #2 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority
Status	Mandatory
General Context Description	The System and the electronic means used in the Pilot shall be commonly accessible and easily usable, in order to ensure the compliance with the general principle of equal treatment and non-discrimination and offering, at the same time, a real openness to the market and the grounds for effective competition (see functional requirement #1).
Legal Requirement Description	In order to achieve unrestricted and full direct access to all the tender documents all the relevant documents shall be accessible on a precise website and around the clock from the date of publication of the contract notice until the expiry of the deadline for submitting tenders. In this sense, the System shall guarantee free, available and reliable access to an open network under the contracting authority's connection so as to guarantee that access to the tendering procedure is not restricted and to ensure equal treatment and effective competition.

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-3**
Name	**Guarantee interoperability of the electronic instruments**
Sources	Requirement, based on: - Recital 12 of the EU Directive 18/2004/EC - Article 42 of the EU Directive 18/2004/EC - Annex 10 of the EU Directive 18/2004/EC - Functional Requirement #2 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority
Status	Mandatory
General Context Description	The electronic means used and any electronic tool made available by the Pilot shall be able to function and interact with commonly used equipment and applications as well as with commonly used hardware and software equipment available on the market and normally used by economic operators in order to ensure the compliance with the general principle of equal treatment and non-discrimination and offering, at the same time, a real openness to the market and the grounds for effective competition
Legal Requirement Description	In particular, such means and tool shall not represent barriers for cross-border suppliers or certain groups of suppliers. In this sense tools shall function and interact with commonly used equipment and applications, exchange of information or services to be performed satisfactorily between systems and users). Contracting authorities' ICT systems should have the capability to exchange information or services directly and satisfactorily between other systems and/or users, so as to operate effectively. This requires the capability to provide interchange of electronic data among, e.g. different signal formats, transmission media, applications or performance levels. Digital signature

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-4**
Name	**Guarantee integrity, confidentiality and security of data**
Sources	Requirement, based on: - Recital 12 of the EU Directive 18/2004/EC - Article 42 of the EU Directive 18/2004/EC - Annex 10 of the EU Directive 18/2004/EC - Functional Requirement #2 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority
Status	Mandatory
General Context Description	The electronic tools and means used for the transmission and storage of all information concerning a tender procedure shall be realised in a way to safeguard the integrity, confidentiality and security of transmitted data, ensuring that data exchanged between contracting authorities and economic operators or stored within an electronic platform or system is not accessible to other parties and that the aforementioned data and information may not be modified or tampered with (on purpose or accidentally) by the contracting authorities themselves or by third parties, mainly in order to ensure the compliance with the general principle of transparency.
Legal Requirement Description	The System adopted by the Pilot shall guarantee that any offer, including those submitted in the form of e-catalogues: a) is in an inaccessible format in order to guarantee confidentiality of the information contained in the tender, contracting authorities shall guarantee at any stage of the procedure that sensitive information shall not be disclosed to unauthorised parties, and when allowed it must be possible only through simultaneous action by authorised persons; b) is in an unamendable format in order to guarantee security of the information and integrity of data inserted in the tender. From one side this implies that contracting authorities shall provide mechanisms for offering a reasonable level of protection from external factors and guarantee a high level of security to procurement data. In this way data and information provided by economic operators shall not be modified or tampered with (on purpose or accidentally) by the contracting authorities or by third parties; from the other side, it effectively implies that the content of an e-Catalogue shall be exactly determined and properly communicated by the contracting authority and the economic operator shall pay attention that it is comprehensive of all the exact information as required (since it won't be Integra table in any of its parts); c) satisfies all the security requirements in order not to harm the system (e.g. files containing viruses);

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-5**
Name	**Guarantee traceability of data**
Sources	Requirement, based on: - Recital 12 of the EU Directive 18/2004/EC - Article 42 of the EU Directive 18/2004/EC - Annex 10 of the EU Directive 18/2004/EC - Functional Requirement #2 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority
Status	Mandatory
General Context Description	The system adopted by the Pilot shall be capable of documenting exactly all the times and activities performed by all its users during the tender procedure in order to ensure the compliance with the general principle of transparency
Legal Requirement Description	It involves that traceability operations of the System should record the exact date and time of receipt of tenders having the form of e-catalogues and shall record all operations performed during the tender submission period, and guarantee that no unauthorised access has been detected. As a consequence: - the System shall accept tenders only until the expiry of the designated tender submission deadline. Tenders received afterwards should be rejected by the device and the tender considered as not submitted; - the System shall provide for appropriate information to economic operators in case the e-catalogue submission process is not successful; on the other hand the System shall send acknowledgements of tender receipts to economic operators that have successfully submitted e-catalogues; - the system shall unlock e-catalogues only after the designated tender opening time has been elapsed

6.3. Specific Legal requirements for tenders submitted in the form of e-catalogues

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-6**
Name	**Adequate publicity of documents and express authorization to submit tender in the form of e-catalogues**
Sources	Requirement, based on: - Recital 12 of the EU Directive 18/2004/EC - Article 42 of the EU Directive 18/2004/EC - Annex 10 of the EU Directive 18/2004/EC - Functional Requirement #2 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority
Status	Mandatory
General Context Description	Contracting authorities shall expressly authorise offers to take the form of e-Catalogue and, of such a decision, shall be given information in the Contract notice.
Legal Requirement Description	- Contracting authorities shall provide economic operators with all the information and specifications necessary for creating and submitting tenders in the form of e-catalogues at the beginning of the competition, when publishing the contract notice and/or contract documents; - moreover the tender documents shall clearly and unequivocally define all the essential requirements of the e-catalogues, their form and their content (on this purpose, it would be recommendable in this sense that format and contents of e-catalogues have the same structure and products/services are described in a similar manner for all the contracting authorities at EU level in order to simplify participation, increase competition and permit re-use of the e-catalogues themselves); - It shall be guaranteed that the collection and transmission of e-catalogues from the economic operators to the contracting authority will be made shall be electronically or uploaded in the contracting authority electronic platform or website (punch-out is not foreseen in this Pilot)

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-7**
Name	**Guarantee the source, certainty and the authenticity of the tender**
Sources	Requirement, based on: - Recital 12 of the EU Directive 18/2004/EC - Article 42 of the EU Directive 18/2004/EC - Annex 10 of the EU Directive 18/2004/EC - Functional Requirement #2 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority and economic operators
Status	Mandatory
General Context Description	The electronic tender submitted in form of e-catalogue shall be subscribed, whether required by the single Member State, with an electronic signature adopted in compliance with the Directive 1999/93/EC (if the whole process id intended to be made on-line).
Legal Requirement Description	In order to put the electronic document on par with the traditional paper document, the EU Directives provide that the electronic document shall be signed with an electronic signature adopted in compliance with the Directive 1999/93/EC. Only under these circumstances, the transmission of documents by using electronic means of communication has the same evidential value of the communications sent by mail and contracts concluded by an electronic signature has the same legal evidence of a contract manually subscribed Unfortunately the new public procurement Directives do not define what type of e-signatures should be used in electronic tendering and leave to Member States the choice if using e-signatures or not. In spite of the adoption of the Directive 1999/93/EC, the legal concept and the security standards of electronic signature throughout the EU, and in particular qualified signatures (advanced electronic signatures based on a qualified certificate, which are created by a secure-signature-creation device) still differ almost everywhere. Since the System of this Pilot requires the use of such qualified signatures for the submission of e-catalogues, such a situation, if not solved in advance, would represent a huge barrier for the effective functioning of the whole System. On this purpose, It will be necessary that the adoption of the e-signature to submit e-catalogues reflects standards and devices adopted throughout all the Member States, otherwise there would be an infringement of the general principle of non – discrimination and effective competition.

7. Functional Requirements

7.1. Introduction

The functional requirements listed and describe in this section are focused on the implementation of WP3 PEPPOL TOOLS.

The starting point for the identification of the Functional Requirements was the EC Study "Electronic Catalogues for Electronic Public Procurement", by DG Internal Markets (European Commission). This Study, also based on IDABC functional Requirements, identifies the requirements of a 'fully fledged" eTendering system, that allows the management of eCatalogues.
The more general requirements or those not pertaining to the specific use case and Tools described previously in this document are considered to implemented by an eProcurement (eTendering) system belonging to the single Contracting Authority and potentially already existing, and have not been investigated in the scope of PEPPOL WP 3.

To clarify the approach, the Figure ..... portrays the situation according the functional requirements described in the study on the eCatalogues issued by European Commission DG Internal Markets in November 2007 and those produced by PEPPOL WP3, and the intended use of the FRs in the existing ICT systems.

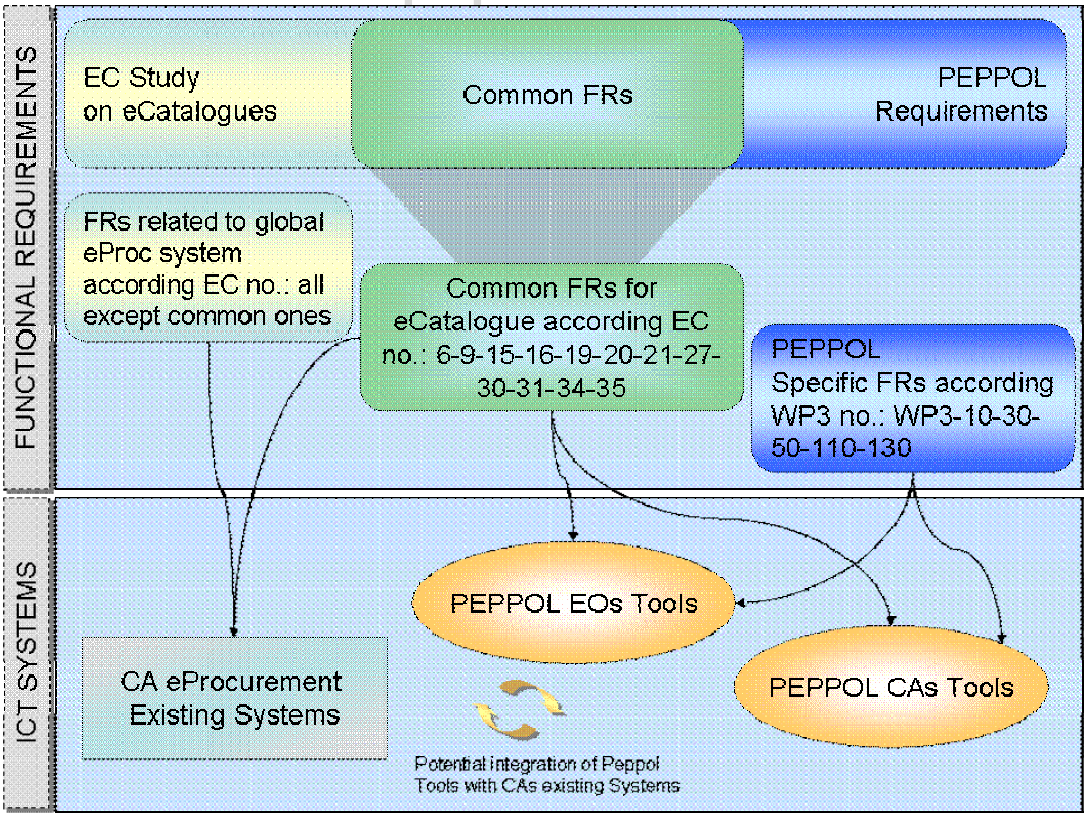

Figure 17 - Relationship between PEPPOL WP 3 FRs and FRs for a complete eTendering solution

The "Common FRs for eCatalogues according to EC Study on eCatalogues" and the "PEPPOL Specific FRs according to WP 3" are listed in the table n.4.; a reference to the FRs that were present in the EC Study is indicated when applicable, and displayed in paragraph 7.2.

The "FRs related to a global eProcurement system" that were present in the EC DG MARKT Study are listed in the table n. 5, where those in common with PEPPOL are emphasized in bold,

Table 7: List of FRs for the PEPPOL WP 3 building blocks.

our new #	# of Commis - sion doc	Functional requirement	Refers to Tool
10		Supporting Multilingual to enable cross-border participation in eCatalogues	CROSS ALL TOOLS
20	35	Make eCatalogue suitable to place orders	CROSS ALL TOOLS
30		Allow the creation of a catalogue template	CA Tool Module 1
40	9	Use the Common Procurement Vocabulary (CPV) classification	CA Tool Module 1
50		Generation of the business rules for the specific tender in the specific eCatalogue format	CA Tool Module 2
60	6	Provide standards-based tender specifications for eCatalogues	CA Tool Module 2
70	19	Support creation of (initial) offers in the form of eCatalogues	EcOP Module 1
80	15	Make available to suppliers tools for verifying the technical format of their eCatalogues	EcOP Module 2
90	16	Make available to suppliers tools for assessing the quality of their eCatalogues	EcOP Module 2
100	34	Automate verification of technical format and quality of eCatalogue update	EcOP Module 1 and Module 2
110		Allow a human readable interface of eCatalogues	EcOP Module 3
120	20	Dispatch of tenders in the form of eCatalogues	EcOP Module 3
130		Interoperable and secure submission of eCatalogues (post award)	EcOP Module 3
140	21	Electronic receipt of tenders (including eCatalogues)	CA Tool Module 3
150	27	Invite Economic Operators to submit tenders in the form of eCatalogues	NO TOOL
160	30	Support creation of specific offers in the form of eCatalogue update	EcOp
170	31	Allow management of eCatalogue versioning	NO TOOL?

Table 8: List of FRs identified functional requirements for an eTendering in the EC study on eCatalogues (those in common with PEPPOL are emphasized in bold)

FReq #	Title
1	Register user
2	Support user profiling
3	Support user authentication
4	Support user authorisation
5	Create a call for tenders workspace
6	**Provide standards-based tender specifications for eCatalogue prospectuses**
7	Define a tender evaluation mechanism for eCatalogue prospectuses
8	Prepare official procurement notices including eCatalogue information
9	**Use the Common Procurement Vocabulary (CPV) classification**
10	Use the Nomenclature of Territorial Units for Statistics (NUTS) classification
11	Electronically dispatch notices to OJS - Interface with OJEU
12	Publish Contract Documents
13	Provide searching mechanisms for calls for tenders
14	Provide electronic access to call for tenders specifications (Visualise/Download)
15	**Make available to suppliers tools for verifying the technical format of their eCatalogue prospectuses**
16	**Make available to suppliers tools for assessing the quality of their eCatalogue prospectuses**
17	Publish additional information/documents
18	Support automated notifications
19	**Support creation of initial offers in the form of eCatalogue prospectuses**
20	**Allow for the interoperable and secure submission of tenders in the form of eCatalogue prospectuses**
21	**Support a device for the electronic receipt of tenders (including eCatalogue prospectuses)**
22	Securely store tenders in the form of eCatalogues
23	Open tenders following the four-eyes principle
24	Ensure the confidentiality of tenders
25	Automate the evaluation of tenders in the form of eCatalogue prospectuses
26	Create reports
27	**Invite Economic Operators to submit tenders in the form of eCatalogues**
28	Verify eCatalogue prospectus format outside specific calls for competition and request refinement if needed
29	Support the refinement of eCatalogue prospectus format
30	**Support creation of specific offers in the form of eCatalogue prospectus update (in view of re-opening of competition)**
31	**Archive submitted eCatalogue prospectuses prior to any updates**
32	Support an appropriate device for the active collection of tenders (“punch-out”)
33	Support creation of specific offers in the form of eCatalogue prospectus update (under re-opening of competition)
34	**Automate verification of technical format and quality of eCatalogue update**
35	**Automate placing an order based on an eCatalogue prospectus**
36	Create DPS workspace
37	Support DPS reporting
38	Create indicative Tenders in the form of eCatalogue prospectuses in a DPS
39	Create an eAuction workspace and establish eAuction parameters
40	Rank tenderers based on the automated evaluation of bids in the form of eCatalogue prospectuses in an eAuction

7.2. List and description of Functional Requirements

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-10**
Name	**Supporting Multilingual to enable cross-border participation in eCatalogues**
Sources	Requirement, based on: - Article 42 of [2004/18/EC] and article 48 of [2004/17/EC]: Rules applicable to communication, point 5 (a)
Actors	Contracting Authority (eProcurement system/external ICT services)
Tool	CROSS ALL TOOLS
General Context Description	The possibility to have interoperable eCatalogues requires standardising, beyond the format, the content itself of the catalogue, i.e. the description of the properties/attributes of the items that form the catalogue. The standardization of items description can be done either: 1. by referring to a standard classification system supporting properties (which should be standardised, together with the admitted values), and importing in the catalogue exactly the item as described in the system; or 2. by describing the item in an ad hoc manner (i.e., without assuming a standard set of properties for its definition), but using standardised properties/attributes (together with the standard admitted values), or to say it in a more simple way, by using standardised Dictionaries. The description through standardised Dictionaries is probably the only possible way to standardise the content of eCatalogues, as the set of properties that describe a certain good is too much dependant on discretional factors. WP 3 will rely on this solution (standardising properties, not items descriptions). However, even if the use of Dictionaries was a common practice, the language barrier would have to be solved. In fact, the description of goods and services that form the items of an electronic Catalogue is usually done by economic operators in their national language. This requires that the parties have the possibility to read the content in their national language. The standardization of properties would help solving the translation problem among the national language supported by the Standard Dictionaries, making possible and automated translation. Moreover the parties using the tools provided by PEPPOL must have the possibility to operate in their national language.
Functional Requirement Description	1. The GUI of the PEPPOL eProcurement tool for Contracting Authorities must be available in the ten native languages of all WP 3 existing and prospective countries (Danish, English, Finnish, French, German, Greek, Hungarian, Italian, Norwegian, Portuguese) 2. The GUI of the PEPPOL eProcurement tool for Economic Operators must be available in native languages of all WP 3 existing and prospective countries (Danish, English, Finnish, French, German, Greek, Hungarian, Italian, Norwegian, Portuguese) 3. The PEPPOL Tools of Contracting Authorities and Economic Operators must support the translation of a Catalogue content from any to any of the languages supported by the reference dictionaries used to describe the catalogue items.
Related Requirements	
Process phase	Both pre- award and post-award
Accomplished by	Each tools forecast in the use cases scenario, that is, CA Tool and EcOp Tool
Constraints	Legal: • Ensure equal treatment, non discrimination and transparency • Use understandable electronic means for communications • Interoperability: • Use at least two languages : English, Native one for the CA

Number	**PEPPOL #WP3-20**
Name	**Make eCatalogue suitable to place orders**
Sources	Requirement, based on: - Functional Requirement #35 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority
Tool	n.a.
General Context Description	In the post-award phase the suppliers ask catalogue publication, finalized to permit to place order. The catalogue characteristics should permit that Purchasing Bodies and suppliers identify with no ambiguities goods and services. The system hosting the eCatalogue will guarantee CA identification and permit placing orders only to authorized administrations.
Functional Requirement Description	1. The catalogue should be structured. (The catalogue information describing goods and services are well formed against technical and quality checks made during the catalogue verification phase by EcOp Module 2 tool. (ref. WP3-80, WP3-90)). • Catalogue structure must be adopted/developed to describe goods and services using predefined technical and commercial attributes. • Technical attributes of goods and services must be possibly derivated by using standard classification systems or must be established by CA that is issuing the contract. • Attributes must be defined by following characteristics: o Type (numeric, text) o Field length 2. It should be implemented a multilingual support (ref. WP3-10) Catalogue header, attributes descriptions and contents must be supported by multilingual functionalities. (ref. WP3-10) 3. It should be implemented the acknowledgement of involved economic operators. The CA must be able to identify economic operators offering catalogues; the economic operators must be able to identify the CA placing orders. • The suppliers must be identified by: o company name, o legal address, o national VAT number • The CA must be identified by: o CA name, o legal address, o national VAT number 4. The catalogue should permit the comparison of similar good and services. The comparison function characteristics are related to purchasing business model. Comparison functionality will be available using structured information as attributes and adopting standard classification systems (e.g. eCl@ss, CEN BII) The comparison functionality must be supported by catalogue hosting

	system; this functionality allows CA to search and compare for specific items. 5. The catalogue should permit definition of economic and logistic terms In order to support economic and logistic terms, the following eCatalogue attributes must be managed: • Delivery area of goods or services supply area • Payment terms • Allowances • Lead time • Packaging • Stockings
Related Requirements	WP3-10, WP3-80, WP3-90
Constraints	

Number	**PEPPOL #WP3-30**
Name	**Allow the creation of a catalogue template**
Sources	
Actors	Contracting Authorities
Tool	CA Tool Module 1
General Context Description	The aim is to create a tool (cfr. CA Tool Module 1) that should guarantee the possibility of creating e-catalogue templates to be used by CA as basis for a tender or in the post award phase to build an e-shop or to allow the secondary tendering phase i a framework agreement. The catalogue format generate by the CA Tool Module 1 must be compliant with the CEN BII specifications. Also the CA Tool Module 1 should provide the possibility to insert into the e-catalogue template product classifications or product descriptions, retrieving them on line from existing library.
Functional Requirement Description	The CA Tool Module 1, builds eCatalogue structure and templates with the following functional requirements: 1. The e-catalogue template generated by the tool must be compliant with the CEN BII specifications 2. The tool should guarantee the possibility to easily pick-up classifications from existing classification systems and insert them in the catalogue template, with the following functionalities: – In case the classification contains product properties, the tool should automatically import them in the product description of the catalogue. – In case the classification contains multilingual labels the tool should import all the available languages. 3. The tool should guarantee the possibility to easily pick-up product properties from existing libraries and insert them in the catalogue template. In case the product properties contain multilingual labels the tool should import all the languages 4. The tool must guarantee the possibility to access at least CPV, UNSPSC, GMDN, eCl@ss and GS1 libraries
Related Requirements	**PEPPOL #WP3-10, PEPPOL #WP3-50, PEPPOL #WP3-60, PEPPOL #WP3-100**
Constraints	To access GS1, UNSPSC, GMDN and eCl@ss libraries specific agreement must be issued between the PEPPOL consortium ad the library owner/manager

Number	**PEPPOL #WP3-40**
Name	**Use the Common Procurement Vocabulary (CPV) classification**
Sources	Requirement, based on: - Functional Requirement #9 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority (procurement officers)
Tool	CA tool Module 1
General Context Description	The CPV establishes a single classification system for public procurement aimed at standardising the references used by contracting authorities and entities to describe the subject of procurement contracts. The CPV consists of a main vocabulary for defining the subject of a contract, and a supplementary vocabulary for adding further qualitative information. The main vocabulary is based on a tree structure comprising codes of up to 9 digits (an 8 digit code plus a check digit) associated with a wording that describes the type of supplies, works or services forming the subject of the contract. The main vocabulary is based on a tree structure comprising codes of up to nine digits associated with a wording that describes the supplies, works or services forming the subject of the contract. The use of the CPV is mandatory in the European Union as from 1 February 2006. The CPV version 2008 is the current CPV version to fill the notices of calls for competition, search business opportunities, find contract notices, in the archive, i.e. in TED.
Functional Requirement Description	Contracting authorities should try to find the code that suits their purchase as accurately as possible. Although in some occasions contracting authorities may find themselves having to select several codes, it is important that they select a single code for the title of the contract notice. Should the level of accuracy of the CPV be insufficient, then contracting authorities should refer to the division, group, class or category that better describes their intended purchase - a more general code that can be recognised because it has more zeros. 1. the CPV must be mandatory in the catalogue XML document. The CPV code must be requested in the pre-award phase. CA tool Module 1, during the phase of catalogue structure definition, must permit to select the appropriate CPV codes of tendered goods and services. It must be permitted to insert more than one CPV code. 2. the CPV code should be integrated by related description to make it readable. The CPV code description must be automatically associated to selected CPV code. CPV doesn't include items attribute. The CPV should be linked to classification systems that support items attribute management (i.e.: eCl@ss). Because of the lack of level of details in the CPV nomenclature it should be used UNSPSC (Translated to 14 languages) /GS1 or other nomenclature t improve e-catalogues usability.
Related Requirements	

Constraints	Legal: • The use of the CPV is mandatory in the European Union as from 1 February 2006. • The CPV, adopted by Regulation (EC) No. 213/2008, is in use since 15/09/2008 • Regulation No 2151/2003 made the use of CPV compulsory as of 16 December 2003.

Number	**PEPPOL #WP3-50**
Name	**Generation of the business rules for the specific tender in the specific eCatalogue format**
Sources	WP3
Actors	Contracting Authorities
Tool	CA Tool Module 2
General Context Description	In the pre-awarding phase, the CA issuing a tender establishes business rules for the specific tender describing the basic requirements of goods and services. The offer built by economical operator must respect the predefined rules, otherwise the CA can disqualify the economical operator.
Functional Requirement Description	The CA, supported by CA Tool Module 1, builds eCatalogue structure and templates (ref WP3-30). 1. The CA must be also supported by another module, named CA Tool Module 2, that, according the defined structure, allows to establish business rules as stated in Call for Tender documents. The CA Tool Module 2 must be integrated with CA Tool Module 1 allowing CA to select eCatalogue attributes and to link them to business ruiles using graphical user interface. The tool must support the following business rules type: • Mandatory or optional attributes • Admitted list of values • Relational and logical operators (“greater than”, “less than”, “equal to”, “greater or equal to”, “less or equal to”, “not equal to”) • Related attributes: the tool checks that all related attributes are specified. • Exclusion: the tool checks that some attributes are not specified if other attributes are specified. • “Mandatory relationship”: the tool checks that some attributes are mandatory if related attributes are specified. Related lists of values: choosing specific attribute value from a list the tool checks against permitted values in other related list. 2. CA Tool Module 2 generates an output file containing the business rules that will be used as input by EcOp Module 2 during the quality checking phase (ref. WP3-80, WP3-90). In order to assure sharing and reusability of output file should be generated using standard format as for example XML Schematron (an ISO standard) that is a validation language based on finding patterns inside an XML document.
Related Requirements	

Constraints	

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-60**
Name	**Provide standards-based tender specifications for eCatalogues**
Sources	Requirement, based on: - Article 42 of [2004/18/EC] and article 48 of [2004/17/EC]: Rules applicable to communication, point 5 (a) - Functional Requirement #6 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority (procurement officers)
Tool	CA Tool Module 2
General Context Description	Call for tenders documents must clearly describe the subject of the contract and the exact requirements for participating in the competition. In addition they describe the expected content and format of tenders to be received, as well as, processes that suppliers must follow in order to participate in the competition. Contracting authorities may only define the minimum information that should be included in tenders, as well as, the industry-wide standards that suppliers should abide to in order to submit their eCatalogues (e.g. UBL for the document exchange, or eCl@ss /UNSPSC for goods and services classification).
Functional Requirement Description	To ensure a correct use of eCatalogues and the standardization in submitting a tender in form of catalogue several aspects must be defined. In particular: required eCatalogue format: • it is allowed Office applications format (e.g. MS xls spreadsheets, Open Office spreadsheets), or • structured xml catalogue messages (e.g. based on UBL 2.0 or 2.1 or ebxml) • the expected content of eCatalogues grouping information into: • General data: at least supplier identification information, • Commercial Data, • Technical data (e.g. item features and other related items data), • Contract notice/call for tender references • Standard international product classification and description to use in addition to CPV: standard classification can be different according to the sector of the contract object (e.g. electronics, healthcare apparels, drugs, automotive etc.) • Logistics data related to delivery lead-time • Procedure to follow to submit the tender in form of a catalogue: • Specify Receiver information details in the catalogue (e.g. Entity, address, person) • Ways allowed to send the catalogue are: in electronic format via e-mail or through automatic communication system-to-system (ICT platform or application systems) • Catalogue files must be digitally signed (the level of eSignature strength is different country by country so at least the minimum level of “eSignature” has to be supported; it is supposed that WP1 will find a good solution for digital signature interoperability)
Related Requir.	PEPPOL#WP3-70
Process phase	Pre - Award
Accomplished by	CA tool – Module 2

Constraints	Legal: • Ensure equal treatment, non discrimination and transparency • Use interoperable electronic means for communications • Provide non discriminatory specifications for creating tenders in the form of eCatalogue prospectuses • Provide additional information after publication • Interoperability: • Use a wide spread standards in defining the eCatalogue prospectus format (CEN BII http://spec.cenbii.eu/ , Data model called BiiCoreTrdm019)

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-70**
Name	**Support creation of (initial) offers in the form of eCatalogues**
Sources	Requirement, based on: - Preamble (12) of [2004/18/EC] and preamble (20) of [2004/17/EC]: Use of electronic means in submission of tenders - Functional Requirement #19 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority (procurement officers)
Tool	CA Tool Module 1
General Context Description	eCatalogues comprise data combining the technical characteristics of the products/services offered by suppliers, as well as, their financial offerings, also providing associated information, e.g. for handling and invoicing. eCatalogues may be created for tendering for a complete call for tenders, or for a set of lots (or one lot) included in it. Contracting Authorities may support the Tenders' submission either internally by an eProcurement system or by external ICT services. In both cases must be ensured that : • a supplier will be able to create eCatalogues directly in the system or • a supplier may create eCatalogues off-line and will upload it onto the system or • a supplier may create eCatalogues inside its ICT application, which manages eCatalogues, and through an integration channel will upload directly it onto the eProcurement system.(Semantic Interoperability)
Functional Requirement Description	To support Economic Operators during creation of eCatalogues it is needed: 1. On line electronic tools: eProcurement system, External ICT services (e.g. ad-hoc SaaS, Internet Centralised Service) that must guarantee: Secure User Session (through an https url) Authenticated User Session (only registered users can create on eProcurement system an eCatalogues) At least CPV codes classification available Or 2. Off line Web Client (asynchronous session) providing at least CPV codes classification 3. Guidelines and User Manual to use the above mentioned tools (eProcurement system/external ICT services/Off-line creation)
Related Requirements	PEPPOL#WP3-60

Process phase	Pre-Award and Post-Award under re-opening of competition
Accomplished by	EcOP Tool : all modules
Constraints	Legal: • Ensure equal treatment, non discrimination and transparency • Use interoperable electronic means for communications • Provide non discriminatory specifications for creating tenders in the form of eCatalogues • Provide additional information after publication Interoperability: • Use a wide spread standards in defining the eCatalogues format. (CEN BII http://spec.cenbii.eu/ , Data model called BiiCoreTrdm019) Security: • **Integrity**: a security feature that protects data from being modified or corrupted, either maliciously or accidentally. It is recommended that an eProcurement system should feature mechanisms to identify whether data transmitted to/from the system has been corrupted during transmission. • **Confidentiality**: the property of the system to guarantee that its data is not disclosed to unauthorised persons or processes. • **Non-repudiation**: the method by which the sender of data is provided with proof of delivery and the recipient is assured of the sender's identity, so that neither can later deny having exchanged the data. This aspect is particularly important for the submission of tenders (including full eCatalogues or partial updates), especially when this is accompanied with official time-stamping, guaranteeing the exact date/time a tender submission has taken place. • **Official time-stamping**: a mechanism by which an eProcurement system can obtain and record the exact date and time of an event, certified by an official Time-stamping authority.

Number	**PEPPOL #WP3-80**
Name	**Make available to suppliers tools for verifying the technical format of their eCatalogues**
Sources	Requirement, based on: - Functional Requirement #15 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Economic operators
Tool	EcOp Module 2
General Context Description	The availability of tool for verifying the technical format of eCatalogue prospectus is strongly recommended to help suppliers in producing correct XML catalogue before sending them to contracting authority. The verifying process makes validation checks against: well-formed elements and syntax rules. Verifying functions are developed using XML standard technologies, therefore it is possible to assure sharing and reusability. In the Pre-award: It must be mandatory software tool in order to make available for supplier the validation of the generated XML catalogue. This validation must be done by the supplier before sending the catalogue to the contracting authority as a part of an offer, avoiding the risk to be disqualified just for not formal corrected XML catalogue. It is an assumption that XML catalogue for this phase must be

	encrypted. In the Post-award: The contracting authority can accept or reject the catalogue in case of mistakes.
Functional Requirement Description	The supplier is supported by a tool, EcOp Module 2, in catalogue verification. 1. The software tool must help to produce correct XML catalogue documents In order to verify whether an XML document is correct, it should be possible to use XML Schemas, that describe XML documents in terms of structure and data constraints (i.e. code lists). EcOp tool Module 2 should check XML catalogue documents using as input a unique associated XML Schema. This XML Schema is unique as it must be set by the same standard body that has defined the XML catalogue documents. 2. It must be possible to make validation checks against: well-formed elements and syntax rules Verifications must be done against: • Technical format • Data type in specific fields of an eCatalogue • Mandatory/Optional 3. The tools must be developed to assure sharing and reusability. • The tool must be released under OpenSource licence in order to easily use it by different parties • The tool must be written by wide spread develop standards (Java, .Net, …) in order to run on the majority operating systems
Related Requirements	
Constraints	

Number	**PEPPOL #WP3-90**
Name	**Make available to suppliers tools for assessing the quality of their eCatalogues**
Sources	Requirement, based on: - Functional Requirement #15&16 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting Authority and Suppliers
Tool	EcOp Module 2
General Context Description	The availability of tools for verifying the assessing the quality of eCatalogue prospectus is strongly recommended to help suppliers in producing correct XML catalogue before sending them to contracting authority. The verifying process makes validation checks against business rules. Verifying functions are developed using XML standard technologies, therefore it's possible to assure sharing and reusability. Pre-award: It must be mandatory software tool in order to make available for supplier the validation of the generated XML catalogue. This validation must be done by the supplier before sending the catalogue to the contracting authority as a part of an offer, avoiding the risk to be disqualified just for not formal corrected XML catalogue. It is an assumption that XML catalogue for this phase must be encrypted. Post-award: The contracting authority can accept or reject the catalogue in case of mistakes.
Functional Requirement Description	The supplier is supported by a tool, EcOp Module 2, in catalogue verification. 1. The software tool must help to produce correct XML catalogue documents The business rules are generated by CA Tool Module 2 in a standard format (i.e. XML Schematron). In order to verify whether a XML document complies business rules, EcOp Module 2 uses as input the file that is output of CA Tool Module 2 and distributed with Tender documentation. 2. It must be possible to make validation checks against business rules. EcOp Module 2 during the quality checking phase uses as input the CA Tool Module 2 generated file containing the business rules. Verifications must be done against the set of rules as described in WP3-50-Sp01 3. The tools must be developed to assure sharing and reusability. • The tool must be released under OpenSource licence in order to easily use it by different parties • The tool must be written by wide spread develop standards (Java, .Net, …) in order to run on the majority operating systems
Related Requirements	WP3-50
Constraints	

Number	**PEPPOL #WP3-100**
Name	**Automate verification of technical format and quality of eCatalogue update**
Sources	Requirement, based on: - Functional Requirement #34 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Contracting authorities
Tool	
General Context Description	The supplier sends his catalogue and the systems checks it automatically, verifying the defined rules. The checks are formal and about the contents.
Functional Requirement Description	The catalogue sent by the supplier may be automatically checked for its compliance against the predefined rules. The catalogue in formal mistake should be notified to supplier, in the phases in which it is permitted, showing the mistakes. In the case in which the contracting authority asks a new catalogue , the actual catalogue should be stored in a secure are for traceability scope. A messaging system should be implemented for exchanging information and for definition of messages.
Related Requirements	PEPPOL #WP3-4: Make available to suppliers tools for verifying the technical format and assessing the quality of their eCatalogue prospectuses
Constraints	

Number	**PEPPOL #WP3-110**
Name	**Allow a human readable interface of eCatalogues**
Sources	
Actors	Economic Operators
Tool	EcOP Module 1
General Context Description	The EcOP Module 1 should allow Economic Operators to check the catalogue before electronically signing and sending it to the Contracting Authority. To this end the tool must contain an human interface that allow to read e-catalogue files
Functional Requirement Description	The EcOP Module should provide the following requirements: 1. Having a human interface enabling EcOP to read the catalogue that they have filled in 2. Highlighting errors in the format (es. Field empty, wrong data format) 3. Highlighting non compliance with business rules (e.g. value out of a range, etc.)
Related Requirements	**PEPPOL #WP3-70, PEPPOL #WP3-50, PEPPOL #WP3-70, PEPPOL #WP3-100**
Constraints	

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-120**
Name	**Dispatch of tenders in the form of eCatalogues**
Sources	Requirement, based on: - Functional Requirement #17 from Vol. I Functional Requirement for conducting electronic public procurement under the EU framework, Jan 2005, European Dynamics S.A.(European Commission) - Functional Requirement #20 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	eProcurement System/external ICT services
Tool	EcOp Tool Module 3
General Context Description	Economic operators should have the possibility to electronically submit or dispatch their tenders in the form of eCatalogues to the eProcurement system of the contracting authority. Economic operators that have submitted a tender should be provided with the possibility to update their tender until the fixed tender submission deadline. A tender dispatch can be made by a supplier: • confirming the eCatalogues directly in the system (using a previously created object - in a draft status - or in the same user session) • uploading eCatalogues, created off-line, onto the system • sending an eCatalogues as a structured file, previously created in its ICT application, which manages its catalogues • sending an e-mail with an eCatalogues as an attachment.
Functional Requirement Description	Sending invites to Economic Operators through: Appropriate Communication Channels: secure e-mail, web sites etc..("the Buyer's Profile" MUST BE one of the web sites), or Automated notifications by eProcurement system(supporting above communication channels)
Related Requirements	PEPPOL#WP3-140, PEPPOL#WP3-160
Process phase	Post-award under re-opening of competition
Accomplished by	EcOP Tool – Module 3
Constraints	<u>Legal:</u> • Ensure equal treatment, non discrimination and transparency • Use interoperable electronic means for communications • Provide non discriminatory specifications for creating tenders in the form of eCat • Provide additional information after publication <u>Interoperability:</u> • Use a wide spread standards in defining the eCatalogues format <u>Security:</u> • **Integrity**: a security feature that protects data from being modified or corrupted, either maliciously or accidentally. It is recommended that an eProcurement system should feature mechanisms to identify whether data transmitted to/from the system has been corrupted during transmission. • **Confidentiality**: the property of the system to guarantee that its data is not disclosed to unauthorised persons or processes. • **Non-repudiation**: the method by which the sender of data is provided with proof of delivery and the recipient is assured of the sender's identity, so that neither can later deny having exchanged the data. This aspect is particularly important for the submission of tenders (including full eCatalogues or partial updates), especially when this is accompanied with official time-stamping, guaranteeing the exact date/time a tender submission has taken place. • **Official time-stamping**: a mechanism by which an eProcurement system can obtain and record the exact date and time of an event, certified by an official Time-stamping authority.

Number	**PEPPOL #WP3-130**
Name	**Interoperable and secure submission of eCatalogues (post award)**
Sources	
Actors	Enterprises
Tool	EcOP Tool Module 3
General Context Description	In the post award phase once generated the catalogue either with the EcOp Tool or directly from their service, the Enterprises should submit the catalogue to the contracting authorities through the PEPPOL infrastructure. The transport infrastructure must ensure the security of the transmission, the traceability of the transmission and the provenance of the message.
Functional Requirement Description	The EcOP Tool Module 3 must be integrate with the software component released by WP8 to allow the connection of the Enterprises to the PEPPOL infrastructure. The PEPPOL infrastructure must ensure that: 1. The transmission security, avoiding intrusions; 2. The traceability of the transmission; 3. The file provenance. The specifications for the catalogue transmission are included in the WP8 work.
Related Requirements	**PEPPOL #WP3-10, PEPPOL #WP3-50, PEPPOL #WP3-60, PEPPOL #WP3-100**
Constraints	

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-140**
Name	**Electronic receipt of tenders (including eCatalogues)**
Sources	Requirement, based on: - Functional Requirement #19 from Vol. I Functional Requirement for conducting electronic public procurement under the EU framework, Jan 2005, European Dynamics S.A.(European Commission) - Functional Requirement #21 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	eProcurement System/external ICT services/Contracting Authority Storage
Tool	CA Tool Module 3
General Context Description	In order to make available an ICT eProcurement system which can receive eCatalogues either based on industry-wide standards or tailor-made specifications, the eProcurement system should feature a suitable communication channel for external ICT systems to be able to communicate with it. That communication channel must, amongst others, be able to accept new/updated eCatalogues. In this respect, the device for the electronic receipt of tenders can support the receipt of both eCatalogues and non-eCatalogues based tenders, as the same communication channel is used for both. Thus, the device for the electronic receipt of eCatalogues must not be considered as a supplementary mechanism to the general device for the electronic receipt of tenders.
Functional Requirement Description	To ensure a correct storing of eCatalogues: Receiving eCatalogue format : Appropriate Web Forms (eProcurement system/ external ICT services) Returning a receipt for the submitted eCatalogue (eProcurement system/external ICT services/Off-line creation) : for example a message with an ID associated to the eCatalogue On line receiving on eProcurement system: Secure User Session (through a https url) Authenticated User Session (only registered users can create on eProcurement system an eCatalogues) Tender Confidentiality
Related Requirements	PEPPOL#WP3-120, PEPPOL#WP3-150
Process phase	Pre-Award and Post-Award under re-opening of competition
Accomplished by	CA Tool – Module 3
Constraints	Legal: • Ensure equal treatment, non discrimination and transparency • Use interoperable electronic means for communications • Provide non discriminatory specifications for creating tenders in the form of eCatalogues • Provide additional information after publication Interoperability: • Use a wide spread standards in defining the eCatalogues format Security: • **Integrity**: a security feature that protects data from being modified or corrupted, either maliciously or accidentally. It is recommended that an eProcurement system should feature mechanisms to identify whether data transmitted to/from the system has been corrupted during transmission. • **Confidentiality**: the property of the system to guarantee that its data is not disclosed to unauthorised persons or processes. • **Non-repudiation**: the method by which the sender of data is provided with proof of delivery and the recipient is assured of the sender's identity, so that

	neither can later deny having exchanged the data. This aspect is particularly important for the submission of tenders (including full eCatalogues or partial updates), especially when this is accompanied with official time-stamping, guaranteeing the exact date/time a tender submission has taken place. • **Official time-stamping**: a mechanism by which an eProcurement system can obtain and record the exact date and time of an event, certified by an official Time-stamping authority.

Number	PEPPOL number for the functional requirement → **PEPPOL #WP3-150**
Name	**Invite Economic Operators to submit tenders in the form of eCatalogues**
Sources	Requirement, based on: - Functional Requirement #22 from Vol. I Functional Requirement for conducting electronic public procurement under the EU framework, Jan 2005, European Dynamics S.A.(European Commission) - Functional Requirement #27 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	eProcurement System/external ICT services
Status	Optional
General Context Description	Once all requests to participate (including the provided proof documents) have been examined and, where applicable, candidates have been short-listed, based on objective selection criteria, pre-stated in the contract notice, the contracting authority invites all or some economic operators to submit their tenders until a pre-defined tender submission deadline. From this point onwards, all call related information (comprising contract documents, and additional documents) should be disclosed only to the economic operators selected to submit a tender. Rejected economic operators should be notified that they will not be invited to submit tenders. This process can be simplified for contracting authorities by an eProcurement system, which automatically or semi-automatically calculates the deadline for submitting tenders.
Functional Requirement Description	Sending invites to Economic Operators through: Appropriate Communication Channels: secure e-mail, web sites etc..("the Buyer's Profile" MUST BE one of the web sites) or Automated notifications by eProcurement system(supporting above communication channels)
Related Requirements	PEPPOL#WP3-140, PEPPOL#WP3-160
Process phase	Pre-Award and Post-Award under re-opening of competition
Accomplished by	CA eProcurement system

Constraints	Legal: • Ensure equal treatment, non discrimination and transparency • Use interoperable electronic means for communications • Provide non discriminatory specifications for creating tenders in the form of eCatalogues • Provide additional information after publication Interoperability: • Use a wide spread standards in defining the eCatalogues format Security: • **Integrity**: a security feature that protects data from being modified or corrupted, either maliciously or accidentally. It is recommended that an eProcurement system should feature mechanisms to identify whether data transmitted to/from the system has been corrupted during transmission. • **Confidentiality**: the property of the system to guarantee that its data is not disclosed to unauthorised persons or processes. • **Non-repudiation**: the method by which the sender of data is provided with proof of delivery and the recipient is assured of the sender's identity, so that neither can later deny having exchanged the data. This aspect is particularly important for the submission of tenders (including full eCatalogues or partial updates), especially when this is accompanied with official time-stamping, guaranteeing the exact date/time a tender submission has taken place. • **Official time-stamping**: a mechanism by which an eProcurement system can obtain and record the exact date and time of an event, certified by an official Time-stamping authority.

Number	**PEPPOL #WP3-160**
Name	**Support creation of specific offers in the form of eCatalogue update**
Sources	Requirement, based on: - Functional Requirement #30 & 33 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	Economic operators
Tool	
General Context Description	The suppliers may update their eCatalogues for renew the items for whichever scope, but in accordance with specifications defined by the contracting authority. eCatalogue will be aligned to the predefined terms.
Functional Requirement Description	A contracting authority may request suppliers to submit an offer for a specific contract under a FA or a DPS. Suppliers should be able to update his own eCatalogue for whichever scope, also within a FA or a DPS. They may use the original offer to participate in the competition for the specific contract; or they may update their already published eCatalogue. In post-award phase a supplier must be able to: • updating his own catalogue for technical or commercial changes; • prepare a new catalogue as part of an offer on the re-opening phase of re-opening phase of FA or DPS. This catalogue is originated from DPS initial offer or e-Shop FA. The suppliers, supported by EcOp Module 1 and 2, use the template and business rules generated by CA to update their own catalogue. • The update may only be made for eCatalogue updates that have been authorised by contracting authority. • Supplier can update his own eCatalogue within specific rules and limits (fields, time-periods, …) (ref. WP3-80, WP3-90) • Supplier may create a new catalogue that replaces the previous. It must be managed by Catalogue ID. • Supplier may update the previous catalogue: he changes one or more items. It must be managed by the version of that eCatalogue, but with the same Catalogue ID. • FA and DPS re-opening of competition generate a specific copy of catalogue valid only for the specific contract. • The specific copy does not replace the original offer (initial or indicative) but only serves for the submission of the catalogue for the specific contract.
Related Requirements	WP3-80, WP3-90
Constraints	

Number	**PEPPOL #WP3-170**
Name	**Allow management of eCatalogue versioning**
Sources	Requirement, based on: - Functional Requirement #31 from Vol. III Functional Requirement Report, Nov 2007, DG Internal Markets (European Commission)
Actors	System
Tool	EcOp Module 1
General Context Description	The CA eProcurement system should be able to manage different catalogue versions resulting from update and renew of already published catalogues. Suppliers may submit a new catalogue, or update a part of initial catalogue. It should be recommended that previous versions are stored for general purposes of traceability.
Functional Requirement Description	The tool EcOp Module 1 must allow the economic operator to manage different eCatalogue versions related to a specific contract. The renewal of the catalogue changes the ID Catalogue. The update of the catalogue changes the Version, but not the ID. In both cases the previous catalogue should be stored by the CA eProcurement system for later use. It should be possible to retrieve stored catalogues using the following criteria: • Data of issue • Supplier • Id Catalogue • Version • Specific contract
Related Requirements	WP3-150: Invite Economic Operators to submit tenders in the form of eCatalogue WP3-160: Support creation of specific offers in the form of eCatalogue update
Constraints	

8. Functional and Technical Specifications

8.1. Introduction

The Functional Specifications detailed in Chapter 7 are completed with the Functional and Technical Specifications described in this chapter, that provide some important detail for the actual implementation of the PEPPOL WP 3 Building Blocks.

The set of specification represent a first effort, that has to be completed during the Software Development Activity.

8.2. Description of Functional/Technical Specifications

Number	WP3-20-Sp01
FR reference	WP3-20
Name	The catalogue should be structured
Specification Description	• Catalogue structure must be adopted/developed to describe goods and services using predefined technical and commercial attributes. • Technical attributes of goods and services must be possibly derived by using standard classification systems or must be established by CA that is issuing the contract. • Attributes must be defined by characteristics such as: o Type (numeric, text) o Field length o …… Follow Data model BiiCoreTrdm019 issued in document Profile “BII01 Catalogue Only” by CEN WS/BII

Number	WP3-20-Sp02
FR reference	WP3-20
Name	It should be implemented a multilingual support
Specification Description	Catalogue header, attributes descriptions and contents must be supported by multilingual functionalities. (ref. WP3-10)

Number	WP3-20-Sp03
FR reference	WP3-20
Name	It should be implemented the acknowledgement of involved economic operators. The CA must be able to identify economic operators offering catalogues; the economic operators must be able to identify the CA placing orders.
Specification Description	1. The suppliers must be identified by: • company name, • legal address, • national VAT number 2. The CA must be identified by: • CA name, • legal address, • national VAT number

Number	WP3-20-Sp04
FR reference	WP3-20
Name	The catalogue should permit the comparison of similar good and services. The characteristics of function are related to purchasing business model
Specification Description	Comparison functionality will be available using structured information as attributes and adopting standard classification systems (e.g. eCl@ss, CEN BII, etc.) The comparison functionality must be supported by catalogue hosting system; this functionality allows CA to search and compare for specific items.

Number	WP3-20-Sp05
FR reference	WP3-20
Name	The catalogue should permit definition of economic and logistic terms
Specification Description	In order to support economic and logistic terms, the following eCatalogue attributes must be managed: • Delivery area of goods or services supply area • Payment terms • Allowances • Lead time • Packaging • Stocking Follow Data model BiiCoreTrdm019 issued in document Profile “BII01 Catalogue Only” by CEN WS/BII

Number	WP3-30-Sp01
FR reference	WP3-30
Name	The e-catalogue template generated by the tool must be compliant with the CEN BII specifications
Specification Description	• The data model of the catalogue must be compliant with CEN BII specifications • The catalogue format must be compliant with CEN BII specifications

Number	WP3-30-Sp02
FR reference	WP3-30
Name	Connection to classification systems for the automatic classification acquisition
Specification Description	• The tool must access, via web services, the classification systems libraries, allowing to choose a classification and import it into the catalogue. • In case the classification contains product properties, the tool should automatically import them in the product description of the catalogue by adding product attributes in the catalogue. • In case the classification contains multilingual labels the tool should import all the available languages.

Number	WP3-30-Sp03
FR reference	WP3-30
Name	Connection to classification systems for the automatic product properties acquisition
Specification Description	• The tool must access, via web services, the classification systems libraries, allowing to choose product properties and add them as product attribute into the catalogue

Number	WP3-40-Sp01
FR reference	WP3-40
Name	the CPV must be mandatory in the catalogue XML document
Specification Description	The CPV code must be requested in the pre-award phase. It must be permitted to insert more than one CPV code.

Number	WP3-40-Sp02
FR reference	WP3-40
Name	the CPV code should be integrated by related description to make it readable.
Specification Description	The CPV code description must be automatically associated to selected CPV code.

Number	WP3-50 Sp01
FR reference	WP3-50
Name	The CA must be also supported by another module, named CA Tool Module 2, that, according the defined structure, allows to establish business rules as stated in Call for Tender documents.
Specification Description	The CA Tool Module 2 must be integrated with CA Tool Module 1 allowing CA to select eCatalogue attributes and to link them to business rules using graphical user interface. The tool must support the following business rules type: • Mandatory or optional attributes • Admitted list of values • Relational and logical operators (“greater than”, “less than”, “equal to”, “greater or equal to”, “less or equal to”, “not equal to”) • Related attributes: the tool checks that all related attributes are specified. • Exclusion: the tool checks that some attributes are not specified if other attributes are specified. • “Mandatory relationship”: the tool checks that some attributes are mandatory if related attributes are specified. • Related lists of values: choosing specific attribute value from a list the tool checks against permitted values in other related list.

Number	WP3-50 Sp02
FR reference	WP3-50
Name	CA Tool Module 2 generates an output file containing the business rules that will be used as input by EcOp Module 2 during the quality checking phase (ref. WP3-81, WP3-82).
Specification Description	In order to assure sharing and reusability of output file should be generated using standard format as for example XML Schematron (an ISO standard) that is a validation language based on finding patterns inside an XML document.

Number	WP3-80-Sp01
FR reference	WP3-80
Name	The software tool must help to produce correct XML catalogue documents
Specification Description	In order to verify whether an XML document is correct, it should be possible to use XML Schemas, that describe XML documents in terms of structure and data constraints (i.e. code lists). CA tool Module 2 should check XML catalogue documents using as input a unique associated XML Schema. This XML Schema is unique as it must be set by the same standard body that has defined the XML catalogue documents.

Number	WP3-80-Sp02
FR reference	WP3-80
Name	It must be possible to make validation checks against: well-formed elements and syntax rules
Specification Description	Verifications must be done against: • Technical format • Data type in specific fields of an eCatalogue • Mandatory/Optional

Number	WP3-80-Sp03
FR reference	WP3-81
Name	The tools must be developed to assure sharing and reusability
Specification Description	• The tool must be released under Open Source licence in order to easily use it by different parties • The tool must be written by wide spread develop standards (Java, .Net, PHP, …) in order to run on the majority operating systems

Number	WP3-90-Sp01
FR reference	WP3-90
Name	The software tool must help to produce correct XML catalogue documents
Specification Description	The business rules are generated by CA Tool Module 2 in a standard format (i.e. XML Schematron). In order to verify whether a XML document complies business rules, EcOp Module 2 uses as input the file that is output of CA Tool Module 2 and distributed with Tender documentation.

Number	WP3-90-Sp02
FR reference	WP3-90
Name	It must be possible to make validation checks against business rules
Specification Description	EcOp Module 2 during the quality checking phase uses as input the CA Tool Module 2 generated file containing the business rules. Verifications must be done against the set of rules as described in WP3-50-Sp01

Number	WP3-90-Sp03
FR reference	WP3-90
Name	The tools must be developed to assure sharing and reusability
Specification Description	• The tool must be released under Open Source licence in order to easily use it by different parties • The tool must be written by wide spread develop standards (Java, .Net, PHP, …) in order to run on the majority operating systems

Number	WP3-14-Sp01
FR reference	WP3-14
Name	The catalogue sent by the supplier may be automatically checked for its compliance against the predefined rules
Specification Description	

Number	WP3-14-Sp02
FR reference	WP3-14
Name	The catalogue in formal mistake should be notified to supplier, in the phases in which it is permitted, showing the mistakes
Specification Description	

Number	WP3-14-Sp03
FR reference	WP3-14
Name	In the case in which the contracting authority asks a new catalogue , the actual catalogue should be stored in a secure are for traceability scope
Specification Description	

Number	WP3-14-Sp04
FR reference	WP3-14
Name	A messaging system should be implemented for exchanging information and for definition of messages
Specification Description	

Number	WP3-160-Sp01
FR reference	WP3-160
Name	Suppliers should be able to update his own eCatalogue for whichever scope, also within a FA or a DPS. They may use the original offer to participate in the competition for the specific contract; or they may update their eCatalogue
Specification Description	• The update may only be made for eCatalogue updates that have been authorised by contracting authority. • Supplier can update his own eCatalogue within specific rules and limits (fields, time-periods, …) (ref. WP3-81-Sp02, WP3-82-Sp02) • Supplier may create a new catalogue that replaces the previous. It must be managed by Catalogue ID. • Supplier may update the previous catalogue: he changes one or more items. It must be managed by the version of that eCatalogue, but with the same Catalogue ID. • In FA and DPS re-opening of competition, it should be created the “master copy” of the eCatalogue • In FA and DPS re-opening of competition, it should be generated a “specific copy” to be used for the specific contract. • The specific copy does not replace the original offer (initial or indicative) but only serves for the submission of the catalogue for the specific contract. • It should be linked the specific copy to specific contract.

Number	WP3-170-Sp01
FR reference	WP3-170
Name	The catalogue must allow the economic operator to manage different eCatalogue versions related to a specific contract.
Specification Description	The eCatalogue must support at least the following data contents: • Data of issue • Supplier • Id Catalogue • Version • Specific contract The renewal of the catalogue updates the Id Catalogue. The update of the catalogue updates the Version of catalogue, but not the ID catalogue. In both cases the previous catalogue should be stored for later use Follow Data model BiiCoreTrdm019 issued in document Profile “BII01 Catalogue Only” by CEN WS/BII

9. Organizational Specifications for the Pilot Set up

The following statements describe some macro-requirements for the set up the piloting stage in PEPPOL project, that will be further elaborated and detailed in view of the pilot phase start.

The set up requirements are described separately for pre-award and post-award implementation.

9.1. Pre-Award pilot set-up requirements

9.1.1 General Requirements

- The pilot will be carried out with real tenders, not (or not only at least) “dry runs” or “mock tenders”.
- The focus will be only on a limited number of categories, which in principle will respond to the following criteria:
  - well established nomenclature/classification
  - existing on-line standardized dictionary suitable to describe the attributes of the items
  - diffusion and overall volume(source: internal portfolio)
  - cross-border potential (source: n° of cross border already in portfolio; language suitability)
  - familiarity of sector with eProcurement (source: market knowledge)
  - absence of “too heavy” side legal constraints (source: market knowledge)
  - n° of potential bidders (source: past experience)
- To the extent possible, processes, business rules, collaborations, choreographies and documents used in PEPPOL pilot on eCatalogues will be complying with CEN/BII standard Profile “Tendering Simple”. However, the WP 3 pilot will only focus on the eCatalogue format and content standardization; use of documents other than eCatalogues will not be considered a must, while for submission see the specific paragraph.
- The guidelines for Test set up and Evaluation provided by PEPPOL Deliverables 5.1a and 5.1.b will be considered in setting up the WP 3 pilot

9.1.2 Procedures for the Pilot

- To the extent possible, all the participants will adopt the same procedure: Framework Agreement with 3 or more suppliers, and flexible conditions.
- The previous point shall not mean excluding from the pilot other kinds of contracts/procedure; in particular, for example Frame Contracts (i.e. Framework Agreement with 1 supplier, and fixed conditions). If these other formats will be adopted, they will be run in parallel with the others.
- The format for re-opening the competition under the pilot Framework Agreements should be uniform in all tenders regarding the same category. This means for instance that if additional information on eCatalogues is requested after the initial tender, Contracting Authorities will use the same set of additional information, as well as the same formats and standards.

9.1.3 Tender Documentation

- The tender documentation must require that catalogue bids be submitted in electronic format. Contracting Authorities will provide formats for submitting offers (and, in case of FA, request) directly on the eProcurement platform;
- The tender documentation shall always allow submission of bids in contracting authorities’ national language and in English (at least).
- The tender documentation shall always refer (beyond CPV) to a commercial international classification.
- The tender documentation will include a PEPPOL disclaimer to emphasize the experimental nature of the tender;
- The tender documentation should include indications for the coordination with the other WPs, if applicable, in line with the indications of this paragraph.

9.1.4 eCatalogue Format and Content (eCatalogue Template)

- The eCatalogue Format and Content (eCatalogue Template) shall be defined in the tender documentation.
- In all pilot tenders will to the same CEN/BII eCatalogue format will be used. The decision on whether it will be the simple or the extended eCatalogue will be taken at a later stage.
- For each purchasing category, the description of goods/services characteristics shall always refer in all tenders to the same dictionary. E.g.: for Notebooks, all pilots will use the eCl@ss Dictionary to describe the notebooks attributes; for Paper, all pilots will use the GS1 Dictionary to describe the paper attributes; etc.
- The business rules (i.e. constraints on attributes like minimum values, maximum values, etc.) for the specific tenders will refer to the structure of the eCatalogue template.

9.1.5 Coordination with other Work Packages

- Coordination with WP 1 and WP 2 should always be sought, but carrying out the pilot should not depend on other WPs deliveries. In practice, this means that:

- if the contracting authority is from a country also in WP1, the tender documentation (including eCatalogues) should be digitally signed, if foreseen in the national legislation (if the WP 1 output will be ready for the Pilot date);
- it must be possible to sign an eCatalogue electronically, either separately or as part of a bid (in other words: contracting authorities can request that bids -including eCatalogues- be digitally signed, according to the level foreseen in the national legislation);
- however, in this case WP 3 participants should offer support to help economic operators get the digital signature (e.g.: buy and initialize the software; register on contracting authority's domain; etc.) or be able to manage non national eSignature in their own eProcurement system. This would be true only for the pilot stage, and would not be a permanent commitment;
- In any case, if eSignature is not available for any reason, the WP3 pilot participants will accept also paper based documents (to safeguard legal value), at the same time requesting the electronic version of those documents (to safeguard the pilot's goals). In these cases, the paper version will be the one with legal value, and the participants will undertake to check the consistency between the two versions.

- if the contracting authority is from a country also in WP2, certificates and attestations should comply with VCD requirements (if the WP 2 output will be ready for the Pilot date);
- if the economic operator is from a WP2 Country that foresees to make a stage 2 pilot, the existence of service providers issuing the VCD should be publicised

- In principle, all tenders issued under the pilot for the pre-award phase should undergo also the piloting of the post-award phase.
- whenever a participant is ready to accept electronic orders and invoices in electronic format, a reference to the obligation of sending orders and invoices in electronic format according to WP 4 and WP 5 requirements will be done in the tendering documentation;

9.1.6 Submission

- As the tendering process is much less standardized compared to ordering and invoicing, the tender submission shall use national solutions (even if not always provide eCat submission, for example in on line auction 2004/18/EC compliant)
- Focus will be mostly given to standardizing content across different tenders, so as to allow in principle economic operators the submission of the same eCatalogues for different tenders.
- However, WP 3 partners have to prepare their national platforms to accept document in XML with CEN/BII standards.

9.1.7 Commitment to push the private sector to take part to the pilot

- As WP 3 partners can issue tenders, but not ensure that will be a cross-border participation of third parties, they shall strive to have economic operators who submit tenders from at least one country other than contracting authority's own country.
- This entails undertaking a large communication campaign to inform economic operators about PEPPOL project and other countries contracting authorities PEPPOL pilot tenders (in collaboration with WP 7).

9.2. Post-Award pilot set-up requirements

9.2.1 General Requirements

- The pilot will be carried out with real tenders, not (or not only at least) “dry runs” or “mock tenders”.
- In principle, all tenders issued under the pilot for the pre-award phase should undergo also the piloting of the post-award phase.
- However, some tenders can be issued aimed at testing the only the post-award, designed as a “hybrid”, using a traditional paper-based approach in the pre-award phase. In the case of Framework Agreements, catalogues can be submitted in paper only in the initial tender phase; after that, the awarded suppliers will have to submit the catalogues to be used for reopening the competition in electronic format.
- In such “hybrid” pilots, the eCatalogue template shall be defined already at the tendering stage. This means that – already in the tendering documentation - at least all the information that is necessary to is necessary to comply with the CEN/BII standard must be requested already at the stage of the initial tender, even if this is run on paper; and that the attributes used to describe the catalogue items, must be requested according to the standard of an on-line Dictionary, in order to make it possible requesting the economic operators to provide in the post-award the electronic Catalogue according to a certain standardized description of the items.
- The focus will be only on a limited number of categories, which in principle will respond to the following criteria:

- well established nomenclature/classification
- existing on-line standardized dictionary suitable to describe the attributes of the items
- diffusion and overall volume(source: internal portfolio)
- cross-border potential (source: n° of cross border already in portfolio; language suitability)
- familiarity of sector with eProcurement (source: market knowledge)
- absence of “too heavy” side legal constraints (source: market knowledge)
- n° of potential bidders (source: past experience)

- The processes, business rules, collaborations, choreographies and documents used in the WP 3 post award PEPPOL pilot on eCatalogues will be complying with CEN/BII standard Profiles “Catalogue only” and “Catalogue update”. If a partner wishes to pilot also on “Multiparty Catalogue”, he will use this profile.
- WP 3 partners have to prepare their national platforms to accept document in XML with CEN/BII standards.
- Punch-out will be not included in the pilot scope.

9.2.2 Procedures for the Pilot

- To the extent possible, all the participants will adopt the same procedure: Framework Agreement with 3 or more suppliers, and flexible conditions.
- The previous point shall not mean excluding from the pilot other kinds of contracts/procedure; in particular, for example Frame Contracts (i.e. Framework Agreement with 1 supplier, and fixed conditions). If these other formats will be adopted, they will be run in parallel with the others.
- The format for re-opening the competition under the pilot Framework Agreements should be uniform in all tenders regarding the same category. This means for instance that if additional information on eCatalogues is requested after the initial tender, Contracting Authorities will use the same set of additional information, as well as the same formats and standards.

9.2.3 Tender Documentation

- The tender documentation issued in the pre-award phase must require that selected catalogues be submitted in electronic format, and provide the formats. Contracting

Authorities will provide formats for submitting offers (and, in case of FA, request) directly on the eProcurement platform.
- The tender documentation will include a PEPPOL disclaimer to emphasize the experimental nature of the tender;
- The tender documentation issued in the pre-award phase shall always allow submission of bids in contracting authorities' national language and in English (at least).
- The tender documentation issued in the pre-award phase shall always refer to a commercial international classification
- The description of goods/services shall always refer to shall refer to an internationally recognized scheme / format.

9.2.4 eCatalogue Format and Content (eCatalogue Template)

- The eCatalogue Format and Content (eCatalogue Template) shall be defined in the tender documentation.
- If the case of pilot focused only on post-award, the tender documentation will be in paper; however, the constraint on the eCatalogue template should be present already at the tendering stage, in order to ensure that the standards for the description of the item attributes be usable also in the post award phase;
- In all pilot tenders will to the same CEN/BII eCatalogue format will be used. The decision on whether it will be the simple or the extended eCatalogue will be taken at a later stage.
- For each purchasing category, the description of goods/services characteristics shall always refer (explicitly or implicitly) in all tenders to the same dictionary. E.g.: for Notebooks, all pilots will use the eCl@ss Dictionary to describe the notebooks attributes; for Paper, all pilots will use the GS1 Dictionary to describe the paper attributes; etc.
- The business rules (i.e. constraints on attributes like minimum values, maximum values, etc.) for the specific tenders will refer to the structure of the eCatalogue template.

9.2.5 Coordination with other Work Packages

- Coordination with WP 1 should always be sought, but carrying out the pilot should not depend on other WPs deliveries. In practice, this means that:

- if the contracting authority is from a country also in WP1, e-signing the eCatalogues should be possible (and mandatory, if foreseen in the national legislation);
- however, in this case WP 3 participants should offer support to help economic operators get the e-signature (e.g.: buy and initialize the software; register on contracting authority's domain; etc.) or be able to manage non national eSignature in their own eProcurement system.. This would be true only for the pilot stage, and would not be a permanent commitment;
- In any case, if eSignature is not available for any reason, the WP3 pilot participants will accept also paper based documents (to safeguard legal value), at the same time requesting the electronic version of those documents (to safeguard the pilot's goals). In these cases, the paper version will be the one with legal value, and the participants will undertake to check the consistency between the two versions.

- whenever a participant is ready to accept electronic orders and/or invoices in electronic format, the obligation of sending orders and invoices in electronic format according to WP 4 and/or WP 5 requirements will be required.

9.2.6 Commitment to push the private sector to take part to the pilot

- As WP 3 partners can issue tenders, but not ensure that will be a cross-border participation of third parties, they shall strive to have economic operators who submit tenders from at least one country other than contracting authority's own country.
- This entails undertaking a large communication campaign to inform economic operators about PEPPOL project and other countries contracting authorities PEPPOL pilot tenders (in collaboration with WP 7).

9.3. Items to be tendered and technical specifications

The choice of the possible items to be tendered in the pilot started from the analysis of some potentially interesting categories, based on the criteria of having a Consolidated Nomenclature, representing interesting economic Volumes, showing a good Cross-border Potential, regarding sectors with a good Familiarity with eProcurement, and with possibly no or few Legal Constraints.

After an analysis by the participants, the following items have been chosen to issue tenders:

- pc desktop
- printers
- furniture (school and university halls)
- drugs (for innovative drugs)
- clothing (work clothes)
- incontinence products
- laboratory diagnostic systems
- waste bins
- fresh food

The analysis on these items is described in Annex 1.

The listed categories are to be considered preferential, in the sense that they are the most likely to be found useful by the market operators (eCatalogue suitability) and to generate some cross-border tendering (cross border potential).
Beyond these, the pilot should also include some tenders where eCatalogue on services are included. As discussed in the related chapter, services are ‘per se’ less standardizable (a standardized description of a service is very hard to find) and bought as commodities, and hence less suitable to eCatalogues. However, the strategic approach chosen (i.e. referring to standardized dictionaries for the eCatalogue items attributes description) makes in principle possible also the pilot on service eCatalogues.

The reflection on which services are more suitable for the tender should still start; however from some participants experience, some services that are bought via eCatalogues include:

- post sales services of ICT equipment
- training
- cleaning services

9.4. Pilot Actors

The two actors of the purchasing activity, buyer and seller, will be represented by contracting authorities, and economic operators.

9.4.1 Demand side

The PEPPOL WP 3 participants are:

- Austria (PEPPOL.AT – **BBG** Central Purchasing Body of central PA accessible also to local PA)
- Denmark (**NITA** – National ICT and Telecommunication Agency)
- Finland (**VM** – Ministry of Finance, managing a PEPPOL national consortium)
- France (ADETEF – **UNIHA** Central Purchasing body of large hospitals)
- Italy (MEF-**Consip** - Central Purchasing Body of all PA)
- Italy (**CSI Piemonte** – Consortium of Regional PA with several tasks including procurement)
- Italy (**Intercenter** – Central Purchasing Agency of Regional PA)
- Hungary (**KSZF** – Central Services Directorate - Central Purchasing Body of all PA)
- Norway (**Difi** – Agency for Public Management and eGovernment – Manager of Framework Agreements to provide national PA with eTendering solutions)
- Norway (**DIFI** – Agency for Management and Innovation – Manager of Framework Agreements to provide national PA with eTendering solutions)

As from 1st November 2009, the participants will include also

- Portugal (**ANCP** - - Central Purchasing Body of all PA),
- Greece (**EKEVYL** – DYPE Central Purchasing body of Regional Health)
- Scotland (**ePS** - eProcurement Scotl@nd - Manager of Framework of a freely available eTendering solution and eCatalogue and eOrdering solutions for Scottish PA)
- Czech Republic (**MRD** – Ministry of Regional Development – Designated Manager of Framework Agreements to provide national PA with eTendering solutions)

From the point of view of the capability to take part to the tenders, three kind of “roles” are possible for the participants:

- Direct pilot makers:
  - BBG
  - Intercenter
  - UNIHA
  - ANCP
  - DYPE
  - KSZF
- Indirect pilot makers, and prospective participants:
  - DIFI (Hospitals; other PAs)
  - NITA (SKI, the Danish Central Purchasing body; Hospitals)
  - VM (Hansel, the Finnish Central Purchasing body)
  - CSI (Hospitals)
  - MRD (other Contracting Authorities)
  - ePS (participation in the pilot to be confirmed)
- A combination of the former two:
  - MEF-Consip (Universities; Local Authorities)

Not all of pilot makers will test all the possible testing combinations in terms of phase (pre-award / post award), tender procedure, purchasing category, etc.

A macro planning has started based on 13 preferential categories described in the previous chapter has started. At the time of the release of this Deliverable, the situation is represented in the table below. The situation is largely indicative, and no binding commitment has been taken by the participants on the shown situation

Table 9: Preliminary indicative Planning of the pilot tenders

Intentions regarding the tender contract		Consip/MEF	CSI Piemonte	Intercenter	BBG	KSZF	NITA	DIFI	UNIHA	VM	ANCP	ePS	EKEVYL
school and university furniture	F.Agr./ F.Contr.	FC		FC1				*					
	Ab/Bel. threshold	A						*					
	Own /3rd Parties	O		O				*					3P
office furniture	F.Agr./ F.Contr.		FC3			*		*					
	Ab/Bel. threshold					*		*					
	Own /3rd Parties	O	3P			*		*					3P
pc desktop	F.Agr./ F.Contr.	FC1		FC1	*	*				*			
	Ab/Bel. threshold	A			*	*				*			
	Own /3rd Parties	O		O	*	*				*			3P
notebooks	F.Agr./ F.Contr.	FC1		FC1	*	*		FA		*			
	Ab/Bel. threshold	A			*	*		*		*			
	Own /3rd Parties	O		O	*	*		*		*			3P
printers	F.Agr./ F.Contr.	FC1				*							
	Ab/Bel. threshold	A				*							
	Own /3rd Parties	O				*							3P
food stuff	F.Agr./ F.Contr.	FC1											
	Ab/Bel. threshold	A											
	Own /3rd Parties												3P
incontinence products	F.Agr./ F.Contr.	FA1						FA1					
	Ab/Bel. threshold	A						*					
	Own /3rd Parties	O						*					3P
laboratory materials	F.Agr./ F.Contr.						FA3	FA1					
	Ab/Bel. threshold												
	Own /3rd Parties												3P
drugs	F.Agr./ F.Contr.			FC1			FA3						
	Ab/Bel. threshold												
	Own /3rd Parties			O									3P
waste bins	F.Agr./ F.Contr.						FA3	FA1					
	Ab/Bel. threshold												
	Own /3rd Parties	*											3P
clothes (working clothes)	F.Agr./ F.Contr.												
	Ab/Bel. threshold												
	Own /3rd Parties	*											3P
Paper	F.Agr./ F.Contr.		FC3	FC1	*	*	FA3						
	Ab/Bel. threshold				*	*							
	Own /3rd Parties	3P	3P	O	*	*							3P
Printer Consumables	F.Agr./ F.Contr.					*							
	Ab/Bel. threshold					*							
	Own /3rd Parties					*							3P

Notes: [1)] pre and post award; [2)] pre award; [3)] post award; [*)] shows an interest in that category in short-medium term.

9.4.2 Supply side:

The participation of the supply side can not be given for granted in the pilot, as no supplier is partner to the pilot. Still, the suppliers (and in particular SMEs) are the intended ultimate beneficiary of PEPPOL WP 3, and their absence in the tenders would mean an unsuccessful pilot.

For the above reasons, all PEPPOL WP 3 participants (partners) and other PEPPOL parties (parties) will 'push' their country's economic operators to take part to the piloting stage, responding to the tenders.

9.5. High profile timing

Tenders will be issued as soon as possible; in principle, every participant should aim at issuing **at its first tenders starting by June-July 2010**. However, more tenders can be issued after that date.

This means that the procurement strategy has to be defined starting from **May 2009**. All "participants" and "partners", and to the extent possible all "parties", will exchange data by **May-June 2009**, on their respective markets on the selected categories, in order to allow all participants to design their tendering strategy with a view to a cross-border supply market.
A more detailed planning is on-going, but it is too early to include a meaningful picture of this report.

9.6. Business Processes and documents implemented in the pilot

Referring to CEN/BII standard profiles, the participants choose to implement:

Pre-award
No profile, as the focus will be on the standardization of eCatalogues format and on the choice of classifications and descriptions.

Post-award
- Profile 1 – "BII01 - Catalogue only" as a coverage of Step 10 in case of Framework Agreements, and step 7 in case of contracts with no reopening of competition.
The data models considered will be those called "Core" and coded as follows: BiiCoreTrdm019, BiiCoreTrdm057, BiiCoreTrdm058,

- Profile 2 "BII02 - Catalogue with update " as a coverage of Step 11 in case of Framework Agreements, and step 8 in case of contracts with no reopening of competition.
The data models considered will be those called "Core" and coded as follows: BiiCoreTrdm020-, BiiCoreTrdm059-BiiCoreTrdm060 for item update, BiiCoreTrdm021-BiiCoreTrdm061-BiiCoreTrdm062 for prices update

- **Profile 17 "BII17 – Multi Party Catalogue"** as a coverage of Step 11 in case of Framework Agreements, and step 8 in case of contracts with no reopening of competition.
The data models considered will be those called "Core" and coded as follows: BiiCoreTrdm018, BiiCoreTrdm055, BiiCoreTrdm054)

Referring to WS/BII standard profiles, the participants will implement the following messages/documents:
- Catalogue (Core document: BiiCoreTrdm019)
- Catalogue acceptance (Core document: BiiCoreTrdm057)
- Catalogue rejection (Core document: BiiCoreTrdm058
- Catalogue Item Update (Core document: : BiiCoreTrdm020)
- Catalogue Item Update acceptance (Core document: BiiCoreTrdm059)
- Catalogue Item Update rejection (Core document: BiiCoreTrdm060
- Catalogue Price Update (Core document: BiiCoreTrdm021)

- Catalogue Price Update acceptance (Core document: BiiCoreTrdm061)
- Catalogue Price Update rejection (Core document: BiiCoreTrdm062)
- Catalogue Request (Core document: BiiCoreTrdm018)
- Catalogue Request rejection (Core document: BiiCoreTrdm055)
- Multi party Catalogue (Core document: BiiCoreTrdm054)

9.7. eCatalogue standards

9.7.1 Format

The tools will be based on the core version of the CEN/BII standard catalogue format. The extended version will be an upgrade in the tool.
Depending on other standard organization availability to cooperate with PEPPOL, the option to provide conversion from other standards can be added to the tool

9.7.2 Item classification and description

The building block tools will support the identification of the eCatalogue items through the four classification systems that are in the scope of the CEN WS/eCAT CC3P project, plus a popular system in the medical sector, so namely:

- CPV
- eCl@ss
- GPC
- UNSPSC
- GMDN (for the medical sector)

The building block tools will not rely on a preferential standard classification system for item identification. However, the use of at least of CPV at the item level will be encouraged, to ensure a common reference classification that is neutral and public-procurement-related.

Regarding the description of the items attributes, the building block tools will rely on the dictionaries of
- eCl@ss
- GPC
- GMDN (for the medical sector).

Agreements will be taken with the organization supporting the classification and description systems, to ensure their cooperation with PEPPOL during the pilot phase.

The choice of one classification will be done in common by all the participants, and adopted in all tenders regarding a certain category. So far, the participants decided that:
- Notebooks tenders will be based on eCl@ss classification and description;
- Paper tenders will be based on GPC classification and description;
- Medical Devices will be based on GMDN classification and description.

The lack of a description system that covers all languages of the pilot will be dealt with by the participants, who will provide ad hoc translations of the items and attributes that are in scope of the single tenders.

9.8. Connections with other PEPPOL WPs

During the tender, cooperation will be sought with all other PEPPOL WPs, and especially eOrdering and eInvoicing, to test in the same tender different solutions.

The coordination with WP4 and WP5 will be done especially at the document content level. Regarding the coordination at process level, the coordination with WP4 and WP5 will require to test under the same pilot procurement tenders I) the use of eCatalogues as part of the bids, II) their submission to become a basis for ordering, III) the issue of eOrders based on the awarded eCatalogues and IV) the eInvoices in response to the eOrders. The coordination of all these steps under the same procurement procedure will be a quite complex task, requiring also the consensus of third parties, and although it has not to be expected to be possible in all cases it will be tested in the pilot whenever possible.

10. Long Term Vision and Sustainability of the proposed solution

The long run vision for PEPPOL WP 3 is linked also to the foreseeable overall evolution of eGovernment scenario[5], which in the next 10 years will see the evolution from Web 2.0 to Web 3.0. This evolution will be based on some success factors[6]; in particular:

i) in the knowledge society eGovernment has an added value if it helps to build and to produce a sharing of knowledge with networking communities, network systems, stimulating voluntary cooperation;
ii) the idea of a joint service authority and information hub should be tested to verify cost and information redundancy reduction;
iii) the authentication (including eSecurity, eSignature, privacy issues, etc) and data management has to find more effective solutions;
iv) perform a unified approach in the eGovernment services (e.g. Platform that operates with different communication channels like TV, mobile phones);
v) aim to a "user centric approach" giving the chance to the users to rate and evaluate performances, and with an inclusion path;
vi) improve system architectures based on common collaboration cooperative structures, that support -in a distributed way – delocalization and the consolidation of networked local private/public players (nearest to users requirements).

Inside this framework eGovernment vision, an eCatalogue management long run vision should integrate communities role like an important player.

In fact, in a user centric approach, PEPPOL will provide tools and web services to manage eCat (e.g. validation) that help both buyers and suppliers using the eCat in an intuitive and quick way. These software, that will be developed with open source (OSS) licence (under the EUPL), requires a developing community that assures upgrading and new features development. This eCat OSS community could be composed by software vendors and universities, under some EC framework (e.g. Open Source Observatory and Repository for European public administrations, osor.eu).

More over, considering that the eCat structure design is a key step in the eCat management process we can image another community that addresses, supports and integrates this phase using standardized product data descriptions. This EU eProcurers Community could have the main role to integrate (during the eCat structure design phase) the use of the on line attributes dictionaries (e.g. eCl@ass) with new attributes descriptions in case of non compliance with public standard or when the attributes is not present in the on line dictionary. In that cases, the Community could use a wiki model to develop in a shared way new attribute definitions. The Community, after developing a new attribute definition (or an integration), a so called Beta version, will test it and after will ask for a dictionary integration to the interested standardization body. This could be an open, shared but structured way to integrate and build an EU common on line attributes dictionary[7].

The EU eProcurers Community could have other important roles, in particular in the eCat management fields:

1. information and training (with other EU training bodies e.g. EIPA, or on the model of US *Federal Acquisition Institute FAI*);

[5] Bertini, L., *eGovernment Scenarios and Visions to 2011*, www.concreta-mente.it, 2007. This paper synthesizes 9 scenario documents: 1) Scenarios of eGovernment in 2010, PRISMA, 2004; 2) eGovernment beyond 2005, EC e-gov unit, 2005; 3) eGovernment in the EU in the next decade, Institute for Prospective Technological Studies e EC Joint research centre, 2004; 4) Government in 2020: taking the long view, Gartner Group, 2005; 5) The advent of digital government, American Political Science Association, 2000; 6) Transformational Government enabled by technology, UK Cabinet Office, 2005; 7) Dygnet runt, Swedish Innovation Agency "24/7", 2005; 8) Towards modern and consolidated government, VISAM Project, Sweden, 2005; 9) e-Services in the public sector, VINNOVA, 2003.

[6] Even if we have to take into consideration the possibility of a regressive eGovernment path too.

[7] Proposal, sharing, approval and adoption procedure. The idea behind this procedure is basically the OSS community working method. In case of a product eCat design does not have all the necessary attributes or an attribute have to be integrate respect from the use of an existing on line dictionary (released by a standardizing body), a Contracting Authority can design the attributes and propose it on the wiki system to the other buyers. In other words "the first who do the work, give the standard" and if someone else have some proposals has to share it with other partners with the wiki system. After an attribute beta version testing, the Community can ask to the standardization body to adopt it. This procedure could create and continuously improve a shared standard attributes eCat dictionary.

2. sharing best practices (on the model of ePractice community) and lead innovation with experimentation of new features and tools (e.g. in eCat management);
3. addressing management practices with manuals and toolkits;
4. defining other eCat requirements, according to other standardization bodies;
5. developing the use of semantic web in eProcurement field (it will be very useful in future, searching for products/services in a complementary way of eProcurement systems on line categories breakdown tree);
6. maintaining Multilanguage attributes versions and developing Multilanguage translators tools (based on semantic web and standardized attributes dictionaries);
7. improving continuous and long run networking activities with procurement's sector stakeholders pursuing an inclusive approach[8].

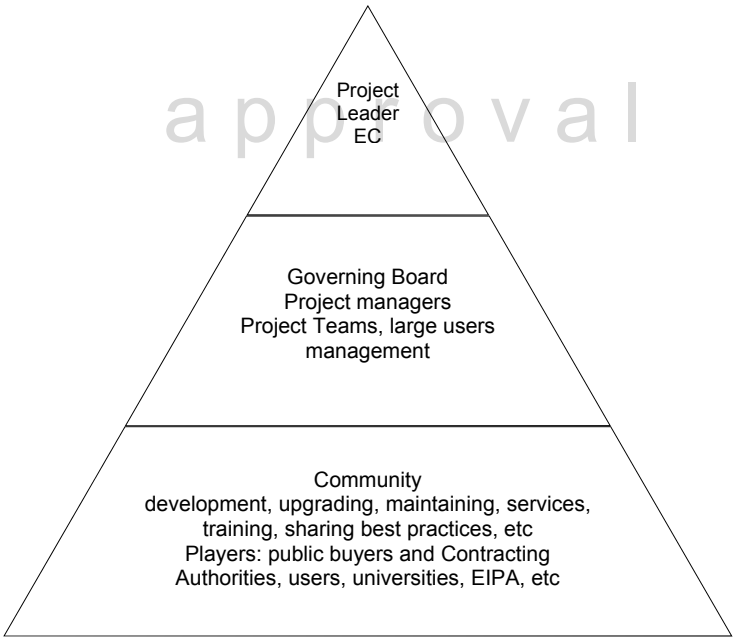

Figure 18 - The Procurers Community

[8] Inclusion mean that more and more players (eg suppliers, buyers) and stakeholders (eg EC, multinational standardization bodies) will be on boarded also with long run partnership and membership forms.

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12. Annexes

ANNEX 1 : DOCUMENTS RELEVANT FOR THE ECATALOGUE

A.1.1. The European Interoperability Framework

The first version of EIF (EIF v1.0) was published in 2004[9]. Following IDABC's goals, it focused on the implementation of pan-European Government services. It quickly turned out that interoperability stretched far beyond this approach and specifically also includes non-governmental parties. This fact has been taken into consideration when IDABC started to develop the second version of EIF. External parties (industry, NGOs) were actively involved to provide input and participate in the development of the revised version of EIF. The involvement of external parties clearly showed some shortcomings of EIF v1.0, like:

- The original interoperability model could be more complete (only three levels)
- More attention to the question of legacy systems and the evolution of standards is needed (in addition to the long-term focus on open standards introduced in the original EIF)
- Unclear responsibilities (the cataloguing of which adds up to the absence of strong governance)
- Insufficient attention was paid to the question of legal barriers to interoperability, which are both numerous and serious.

These conclusions led to the set up of EIF v0.2, which has been published in a draft version for public review in 2008. The updated version is introduced in the following chapter. EIF v0.2 is by now not officially released,

It should be noted that the Interoperability Framework itself is not a standard; it rather provides a framework (policies and guidelines) for a structured selection or definition of standards. EIF is made up from three dimensions as shown in the illustration below:

[9] European Communities IDABC, Draft document as basis for EIF 2.0, 2008 (http://ec.europa.eu/idabc/servlets/Doc?id=31597)

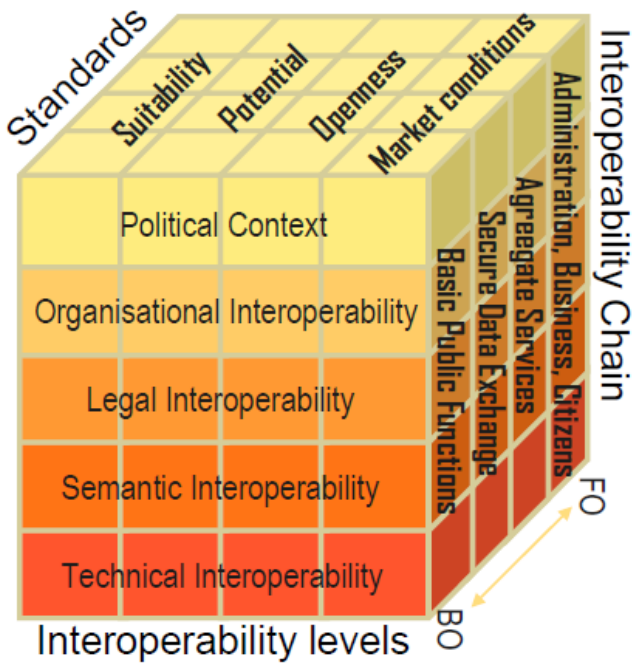


Figure 19 - The European Interoperability Framework

The interoperability levels refer to the different dimensions that are affected by the interoperability discussion, their relevance in the eCatalogue area will be explained in more detail in the following chapters.
The interoperability chain describes the building blocks to be implemented for providing the infrastructure necessary to enable interoperability. For PEPPOL, many of these technical common components will be defined and/or built by WP8. Furthermore, PEPPOL will have to develop a governance model to ensure the sustainability of that infrastructure.
The interoperability standards define the agreements that have been made by the process participants in order to ensure the same understanding of the exchanged information. In PEPPOL WP3 context, these agreements are mostly reflected in eCatalogue profiles (see chapter 9.6).

1.1.1 Political Context

Political support is a basic condition for creation of interoperable structures as this does not only involve efforts, resources and costs; politics on different levels specifically come into play when legal and/or organisational change has to be addressed.
As described in chapter 6 and 9, a certain number of technical and non-technical elements will have to be created or adapted for the pilot on European and national level. WP3 members have different experiences with the extent of political support: taking part in the PEPPOL project itself can surely be seen as important political commitment. In some countries, the change of political sponsors has proved to be a challenge for the continuous support and funding of the national part of PEPPOL. It is therefore imperative, that PEPPOL is consequently marketed on national and EU-level. This task is assigned to WP7.

1.1.2 Legal Interoperability

From a WP3 point of view, legal interoperability provides the framework in which the exchange of eCatalogue data has the same meaning and the same legal weight (both, obligations and rights derived from the order documents).
Many aspects of public procurement are heavily regulated, both on European and on national level. This applies to most of the pre-award phase of public procurement (supplier selection, i.e. eTendering and eCatalogue) and to some elements of the post-award phase (e.g. invoicing).
An analysis of the elements covered by WP3 has shown that there are obliging regulations for eCatalogues.

The results of these different legal requirements are discussed in chapter 6.

1.1.3 Organisational Interoperability

Organisational interoperability aspects focus on the process, i.e. the synchronization and cooperation of the process partners.
The "as-is" eCatalogue process is rather complex and multi-directional between multiparty (see chapter 5.1 to 5.3). It has further in particular for the pre-award phase not been transposed into an electronic environment so far and processes for information exchange differ heavily between the paper-based and the electronic version.
Furthermore, the catalogue-relevant parts of the process have very dissimilar requirements in both, public and private sector (like the pre-award phase / supplier selection that differs due to heavy legal restrictions in the public procurement area).

However, as described in chapter 5.1 to 5.4 , the catalogue processes and the existing tools to support the "to-be" process are different to some extent in the existing national solutions, which leads to the necessity of organisational alignment. The basis for this alignment is the process that is defined in chapter 5.4 to 5.7

1.1.4 Semantic Interoperability

By realizing semantic interoperability, the process partners agree on the format and meanings of data exchanged and therefore reach a common understanding / interpretation of the exchanged information. The reduction of semantic mismatch between sender and receiver of information will allow minimizing errors and manual interventions and enable efficient re-using of the exchanged data.
Applied to the work concerning eCatalogue in PEPPOL project, this interoperability aspect is catered for by two work packages:

- WP8 establishes the basic framework in which data will be exchanged. This framework consists of technical building blocks or specifications (e.g. specifications of web services linking access points to the PEPPOL infrastructure).
- WP3 will provide semantic definitions of the data to be exchanged for the eCatalogue process. These definitions are defined in co-operation with CEN ISSS WS/BII and comprised in the document specification part of the order-relevant CEN profiles (being the second important definition of a CEN profile in addition to the process specifications mentioned before).

The WP3 analysis of existing national applications has shown that a quite variety of semantic frameworks currently exist. Given the time frame of PEPPOL project, it is not realistic (and not a PEPPOL goal) that semantic interoperability will be achieved by harmonizing all the existing applications. In a first step, this "common language" will therefore be implemented for information exchange within the PEPPOL infrastructure. This requires a mapping of existing data structures and data elements to the newly defined PEPPOL semantics.
In former initiatives (e.g. IDABC, 2005[10]) the feasibility of centralized services of pan-European Clearing Houses was analyzed. PEPPOL has a different approach in that it tries to avoid the set-up of centralized services and/or infrastructure components for multiple reasons (e.g. responsibility, maintenance and governance). Instead, these mappings will have to be cared for by the individual process participants (either directly or by using third-party service providers – e.g. VANs). It is, however, PEPPOL's goal to provide these specifications in a way that not only public services will incorporate them into their applications but also commercial suppliers of e-Procurement software and middleware components.

In the meaning of semantic standards for standardised product descriptions it turned out, that it is **not** a goal of WP3 to specify standard templates for eCatalogues (e.g. notebook) with fixed sets of attributes (see chapter 3.4). But WP3 shift to the idea of using standards at the elementary level (the attributes), leaving to the contracting authorities the freedom to choose how to combine the different attributes for each item to describe in a catalogue.

[10] IDABC Semantic Interoperability Strategy: The European XML Clearinghouse Feasibility Study

1.1.5 Technical Interoperability

The technical linkage of IT systems and services cover many aspects, such as: interfaces, data integration, security, accessibility, storage, non-repudiation, etc. In PEPPOL, the technical interoperability is catered for by WP8. Their specifications have been set up based on requirements that were analyzed and aligned with the other PEPPOL work packages.

1.1.6 Benefits

Benefits of the introduction of e-Procurement systems are numerous and cover aspects like:

- Removal/minimization of paper-based processes
- Reduction of manual, error-prone process steps
- Increase of transparency, security and traceability
- Shift of work description from operative to strategic purchasing activities

By its nature, e-Procurement systems have to integrate into a supply chain that again interconnects internal and external process parties. In order to raise their full potential, the different elements of the supply chain have to be interoperable in the sense of a minimum need for manual intervention. If achieved, all parties involved can benefit from these advantages.
In the context of public procurement the direct beneficiaries are:

- Administrations and
- Businesses

Indirectly, practically every citizen / tax-payer can benefit, e.g. when public procurement becomes more efficient and thus save costs.

A.1.2. The European eProcurement Action Plan

In 2004 the European Commission issued the "*Action plan for the implementation of the legal framework for electronic public procurement*", for the implementation of the new legal framework for electronic public procurement adopted in April 2004 as part of the legislative package of Procurement Directives, 2004/18/EC and 2004/17/EC.
In fact, while the directive provide a coherent framework for conducting e procurement electronically respecting the fundamental EU principles of competition, transparency, and non discriminatory way), a risk exists to generate a high market fragmentation due to inappropriate introduction of the tools, and to create legal, technical and organisational barriers to conduct public procurement online.

In this landmark document, the Commission proposes measures along three axes:

1. Ensure a well functioning Internal Market when public procurement is conducted electronically
   The actions identified along this axis are:
   - *Correct and timely Implementation of the legal framework*
   - *Completion of the legal framework by the appropriate basic tools*
   - *Removal / prevention of barriers in carrying public procurement procedures electronically*

   Under this axis the Plan actions identifies *inappropriate design of tendering systems and incompatible IT standards.* as one of the barriers businesses fear most in cross-border tendering. This issue, that is typically cutting across different topics, affects certainly also eCatalogues. The analysis of interoperability in public procurement carried out under CEN/ISSS (i.e. the Workshop on "Business Interoperability Interface") is indicated as one of the key initiatives to face interoperability problems over time.

2. Achieve greater efficiency in procurement and improve governance;
   The actions identified along this axis are:
   - Increase of efficiency of public procurement and improvement of governance
   - Increase of competitiveness of public procurement markets across the EU

   Under this axis the use of electronic Catalogues is expressly identified as one of the fundamental issues to promote competition, and particularly to involve SMEs in public procurement, since they are instruments to present the offered products and services at reasonable costs and in reasonable time. The plan stresses that the lack of uniform specifications and regulations on eCatalogues entails the risk of having in the market ICT applications that are not compatible with the conditions posed by the public sector.
   Also in this case the Plan remits to CEN/ISSS workshops the preparation of framework rules on eCatalogues, identifying the IDABC project as the suitable initiative for the study and testing of the functional requirements, the usage of eCatalogues in Dynamic Purchasing Systems and in Framework Agreements.

3. Work towards an international framework for electronic public procurement.

   Under this axis the Plan recalls the importance of making legal and technical choices that do not prevent access of European businesses to international procurements, nor of international businesses to EU procurements.
   To this end, the Plan foresees that the Commission promote standardization activities of international fora and institutions, and maintain contacts with the goal to avoid rising of international technological barriers to interoperability. The convergence of eCatalogue standards of UN/CEFACT and OASIS UBL has to be read under this light.

A.1.3. The “Explanatory document”

The aim of the document is to present the rules and principles governing eProcurement under the new public procurement Directives.
The general rules and principles and the features that are relevant to all communications in an eProcurement process are first examined, and specific rules governing notices and access to contract documents are then presented. The rules related to the reception of requests to participate and tenders are analysed in relation to both, individual “one-off” purchases and to repetitive purchases under framework agreements and dynamic purchasing systems.
The analysis included in the document covers those aspects of a procurement procedure that are regulated by the Directives, i.e. basically the pre-award steps of the process (from the publication of the contract notice to the receipt of tenders, and the re-opening of competition).
In this respect, also the use of eCatalogues is analysed in the document in the pre-award use, in light of the possibility introduced by the Directives to use them as tools to submit offers.
The ideal use of eCatalogue is seen in the document in the second stage competition of repetitive purchases, when all the tenderers are known (thus lowering requirements for signature of the tenders), thus making it possible to apply also the procedure of ‘active collection of tenders’, whereby the tenderers are informed beforehand of the deadline and the conditions in which the C.A. will retrieve the information on their websites.

A.1.4. Guidelines to Common Specifications for Cross Border use of Public eProcurement

The report was dedicated to support the preparation of proposals for the Call in 2007 under the theme “efficient and interoperable eGovernment services”, by providing some guidelines for the definition of Common Specifications for an interoperability layer and for the building blocks implementing the themes to be addressed by the Pilot “*Enabling EU-wide public eProcurement*”.

The objective of the guidelines were to provide some help to clarify the aims, the need and the boundaries of the Common Specifications, with particular emphasis on the interoperability issues; it also provided information and references to existing elements (legal explanatory documents, existing specifications, well-accepted standards and tools) that could be exploited for the implementation of an interoperability layer for cross-border use of eProcurement.

The document focuses on four themes, namely, *cross border recognition of eSignatures*, *electronic exchange of certificates and attestations –'Virtual Company Dossier', eCatalogues*, *eInvoicing/eOrdering*, themes that are essential for effective cross border use of eProcurement but that may suffer from interoperability concerns.

In short, following guidelines are given:

- e-catalogues may be used in all the various phases of the eProcurement cycle: from sourcing to payment and invoicing. The Pilot project should analyse the specific requirements and subsets of data that are relevant in each procurement phase, and seek to progress on their interoperability.
- The adoption of commonly agreed standards for the definition of catalogue exchange messages does not seem to be a major barrier (XML-based standards are widely accepted also in the public sector and NES-UBL provides a unified format for the content of the eCatalogues). **However much needs to be done on the definition and standardisation of catalogue contents that would be suitable to be submitted as offers, and standardised rules for the presentation of these contents.**
- Another relevant challenge is the provision of high-quality catalogues, where additional information (not merely technical description of a product) can be used to easily compare offers and support their automatic evaluation.

In addition, the Pilot solution for interoperable eCatalogues should provide functionalities for:

- Automatic mapping and conversion mechanisms between catalogues;
- Automatic translations of the catalogue contents.

A.1.5. DG-MARKT Study "Electronic Catalogues in Electronic Public Procurement"

The European Commission commissioned the Report to a private consultant in the frame of the Action Plan for eProcurement. Although the document does not reflect the official view of the Commission, it is certainly well known to them, and represents since its issue a landmark document on eCatalogues.

The Study was issued at the end of 2007; at the moment, no update of the document is foreseen.

The goals of the three volume Study are:

- To define the **notion of eCatalogues** and study their **current use** in procurement practices, both in the public and private sectors (Focus of Volume I).
- To **review relevant standardisation activities** with a view to identify advancements, gaps and areas for future work (Focus of Volume II).
- To identify the **general and specific functional requirements** that can be derived from the legal framework established by the PP Directives, specifying the conditions to preserving eCatalogues legal validity in eProcurement, and interoperability with eCatalogue applications (Focus of Vol.III).
- To define **recommendations for Member States, Standardisation Bodies and the European Commission** on actions and activities that can contribute to the more efficient and beneficial use of eCatalogues in European public procurement (Focus of Volumes I, II and III).

The Volume I State of Play focuses on:

- **Legal background** (legal provisions of EU Directives, focusing on eCatalogues);
- **Definition of "eCatalogue types" emerging from current practice** (1. eCatalogue=supplier prospectus; eCatalogue=Buyer's IT system collecting info from suppliers);

- **Analysis of eCatalogue prospectuses ideal scope** (phases of public procurement in which eCatalogue prospectuses are more suitable, and expected benefits);
- **eCatalogue practices in public and private sectors across EU** (Comparative analysis on the eCatalogue public initiatives in HUN, ITA, LAT, NOR, SCO, SWE, identifying common points, differences, needs, requirements and good practices; differences with private sector);
- **Analysis on content** (req.s for creation of tenders, and descr.of products/services offered in eCat);
- **Interoperability and standardisation of eCatalogue prospectuses** (current relevant initiatives and bodies standardising eCatalogues and product description/classification schemes);
- **eCatalogue initiatives / projects in European public administrations** (country sheets on legal setting and practices on Hungary, Italy, Latvia, Norway, Scotland, Sweden);

The Vol. II - Standardisation Initiatives focuses on:

- **Overview of Standardisation Bodies** and processes, and focus on the field of eCatalogues;
- **eCatalogue standards** and other relevant standardisation initiatives, **including standards for Product Classification and Description**, and an overview of European countries initiatives;
- **Comparison between UBL 2.0 and c-Catalogue;**
- Use of UBL 2.0 and c-Catalogue in pre-awarding phases;

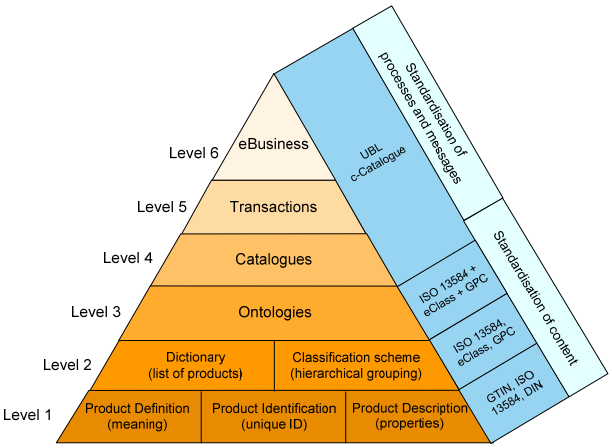
The Vol. III - Functional Requirements focuses on:

- **Use of eCatalogue in public procurement** (Overview of the eCatalogue types, and proposal for a two-phase evolution for the improvement use of eCatalogues in public procurement);
- **Legal, Functional and non functional Req.** (Set of requirements for the use of eCat, including req for legal setting, ICT systems and tools, covering all phases of eProcurement cycle and all procurement procedures, incl. interoperability and security provisions for eProcurement systems making use of eCatalogues);

The main conclusions are the following:

- The current use of eCatalogues in public procurement demonstrates significant interoperability limitations;
- All stakeholders should work to standardise eCats in PP, both for the pre and post-award phases;
- The standardisation relates to processes/messages and content;
- For processes/messages standardization the Study suggests UBL 2.0 and c-Catalogue, but they should converge;
- For standardisation of content related to product/service descriptions the Study suggests to utilise existing product description and classification schemes, dedicating effort in resolving gap among different schemes;
- For standardisation of content related to other information included in a prospectus (i.e. not related to product/service descriptions) the Study suggests to further extend UBL and c-Catalogue (or their converged standard) to cover all information required in the pre-award phases of public procurement.

In short, the Study identifies that the standardisation of eCatalogues in public procurement relates to the standardisation of six conceptual levels, as in the figure. Levels 1, 2 and 3 relate to the standardisation of product description and classification schemes. Level 4 relates to the creation of eCatalogues (format, presentation, and content), which requires both the use of product description and classification schemes for standardising product descriptions and the use of eCatalogues standards such as UBL and c-Catalogue for standardising eCatalogue content not related to product/service descriptions. Levels 5 and 6 relate to the standardisation of processes and messages



making use of eCatalogues. These two levels could be addressed by the use of UBL and c-Catalogue (or their converged standard).

The Study makes the following recommendations to Stand. Bodies, Member States, European Commission:

1. **Standardise the use of eCatalogues:** Endorse the convergence of UBL and c-Catalogue to establish a suitable framework for the use of eCatalogue standards for the creation, management and exchange of eCatalogues, including standardisation of eCatalogue content/format in the pre-award phases. Promote the converged standard both in the private and public sectors. Further extend the two standards to standardise content not related to product/service descriptions.
2. **Standardise product/service descriptions within eCatalogue prospectuses:** Establish suitable standards as regards eCatalogue contents for describing products/services, including for a more interoperable use of product classification and description schemes.
3. **Enhance existing systems towards using eCatalogues in both pre and post-awarding purposes:** Review existing eProcurement systems with a view to establishing "eCatalogue stock management systems" which utilise standardised, interoperable "eCatalogue prospectuses"
4. **Perform the "punch-out" respecting the rules of non-discrimination and equal treatment:** Establish appropriate procedures for the "punch-out" as an alternative submission technique. The current use does not always meet all the requirements set by the EU Directives on the receipt of tenders
5. **Establish specifications for Dynamic Purchasing Systems (DPS):** The exact operation of such systems still remains unclear for many procurement actors.
6. **Establish a framework for the electronic submission of proof documents:** Support current EC initiatives aimed at establishing a suitable legal, organisational and technical framework for the submission of proof documents in electronic format.
7. **Educate both the public and private sectors on the new eProcurement rules:** Particular attention should be given to training on standards and the efficient use of eCatalogues, to allow a better understanding of the potential benefits in conducting business with the public sector and through eCats.

A.1.6. CWA15236-00-2005-Feb: "Analysis of standardization requirements and standardization gaps for eProcurement in Europe"

At the time of its delivery, the declared goal of the CWA was to help policy makers, business men, researchers and any interested party to have an overview of the state of art, activities and possible actions to undertake to promote and facilitate the use of inter-operable private and public eProcurement solutions in Europe, based on recognized standards.

The CWA has been prepared by a project team reporting to the CEN/ISSS Workshop on eProcurement (WS/ePRO) in the period December 2003 to December 2004. The decision to produce this CWA was taken at the Workshop kick-off meeting on 14 October 2003. The CWA went through the usual path for its endorsement, which was decided officially by the CEN/ISSS Workshop eProcurement members in January 2005.

The CWA carries out two analyses on the following aspects:

- organizational and procedural issues: business processes (tendering; ordering; despatching; invoicing) and related issues
- technical issues: technologies used to implement eProcurement
- legal issues

The first analysis is on the **framework for procuring electronically**; in particular, the CWA analyses which are the differences in doing eProcurement in the public and private sector and between large companies and SMEs and which are the resulting different requirements.

The second analysis on the three aspects is called in the document "**standardization gap analysis**", and focuses on existing standards/specifications for each stage of eProcurement, and on the differences

between Member States in the European Union that could cause problems for cross-border eProcurement. The CWA contains recommendations to avoid the creation of such problems, aimed mainly at IDA, CEN, UN/CEFACT.

The document represents a cornerstone in eProcurement standardization process. The scope of the analysis was very wide, and therefore eCatalogues have been only incidentally mentioned.

A.1.7. Business Requirements Specifications for Cross-Industry catalogues (CEN/ISSS WeBES)

The purpose of the study was to define globally consistent catalogue exchange processes for worldwide supply chains and e-Procurement, using the UN/CEFACT Modelling Methodology (UMM) approach and Unified Modelling Language to describe and detail the business processes and transactions involved.

The report describes the process how to structure information in electronic catalogues, so they can be sent to potential Customers, in whole or part, and be the basis for the ordering of the goods or services defined in those catalogues. Customers may ask for catalogue data ad hoc, or they may subscribe to parts of the catalogue data.

The processes analyzed are:

- The new catalogue on request
- The new catalogue publication
- The new catalogue subscription
- The update catalogue
- The update catalogue on request
- The remote catalogue data exchange

A.1.8. IDABC functional requirements

The goal of the document was to assist public administrations in building eProcurement systems in compliance with the directives, a public eProcurement project was launched in 2003, under the Interchange of Data between Administrations programme (IDA) with a twofold objective:

- to develop functional requirements and suggest technical solutions for the implementation of electronic public procurement systems in compliance with the new legislative framework
- to create eLearning demonstrators simulating the public eProcurement functionalities described by the new directives, allowing administrations and suppliers to familiarise themselves and to experiment with it.

This study analyses procedural aspects of the eProcurement procedures described by the directives and includes functional and non-functional requirements for implementing them electronically. In addition it provides technical solutions for their implementation, enriched with good practices resulting from the two deliverables of the “analysis phase” of the project:

- State of the Art case studies on European electronic public procurement projects
- Description of electronic public procurement systems in non-European countries.

The report is structured in two volumes.

- **Volume I:** the current document, presenting information and activity flows for all eProcurement procedures, functional requirements, non-functional requirements, an overview of technical specifications with a conceptual model and high-level Use Cases, and open issues related to eProcurement
- **Volume II:** presenting an in-depth technical analysis (Use Case analysis) for the main actors and functionalities of an eProcurement system supporting all eProcurement procedures. It also provides scenarios for interested parties to experiment with the dynamic demonstrators, developed in the context of the current project, so as to further understand the concepts described in the Functional Requirements report.

A.1.9. CWA 15045:2004 "Multilingual catalogue strategies for eCommerce and eBusiness"

The CWA was a survey on eCatalogue usage in eBusiness on processes, departments, product classifications (nomenclature), formats, product classification schemes (IT), existing standards, software vendors, multilingual issues, general requirements on interoperability etc (BBG).

It has been recognized that products and services must be sold in the language of the target market. There are strong indications that eCommerce and eBusiness can only function well, if the virtual marketplaces and all their major elements (such as product classification schemes, user interfaces, product catalogues etc.) are multilingual from the outset.

The extensive report gives an overview and guidance in the usage of existing electronic product catalogues for eBusiness (2004). On one hand an overview of relevant eCatalogue formats are given on an quantitative level. On the other hand a qualitative comparison of existing catalogue formats has been done to show differences of the content in detail. In addition, the report shows future directions in eCatalogues and points out areas of standardization for eCatalogues.

As the conclusion, the need for harmonization and standardization of electronic catalogues is stated. Success will be much dependent on the fact **if it is possible to get consensus on the technical issues and get support from the system vendors**.

A.1.10. The CWA156672007 "Business requirements specification - Cross industry catalogue process"

The purpose of the document was to define globally consistent catalogue exchange processes for worldwide supply chains and e-Procurement, using the UN/CEFACT Modelling Methodology (UMM) approach and Unified Modelling Language to describe and detail the business processes and transactions involved.

The objective of the report is to standardise the business processes, the business transactions and the information entities of the exchange of catalogue and price list data used by industries in the supply chain. The report is based on the Cross Industry Catalogue in 2005/2006 work by eBES.

The processes cover:
- Exchange of multi language catalogues or parts of catalogues
- Exchange of multi Supplier catalogues or parts of catalogues
- Customer specific items and prices, including contract prices.

The CWA describes the process how to structure information in electronic catalogues, so they can be sent to potential Customers, in whole or part, and be the basis for the ordering of the goods or services defined in those catalogues. Customers may ask for catalogue data ad hoc, or they may subscribe to parts of the catalogue data.

A.1.11. The CWA 15294:2005 - Dictionary of Terminology for Product Classification

The document identifies the most commonly used terminology in product classification considering product description and classification and meta-modelling with reference to other international standard (e.g.: ISO, IEC, XML, UML)

The CWA explains the reasons why a common terminology in the area of product classification is important for understanding different concepts and approaches. Various product description and classification systems use different terms for the same concepts, which leads to misunderstandings. The basis for standardization of product description and classification systems is a harmonized terminology.

The problem in harmonizing a terminology is first to understand the different levels the terminology applies to. Three levels of abstraction can be distinguished. First, the meta model level defines the language or modelling technique to be used to express the required functionality of a (classification) system. Second, the model level presents a (conceptual and logical) model of a product classification system, using the language of the meta model level.
The third level is the instance level, where we have instances of a product classification system, according to the model of the model level.

Standards can use a combination of different models on these different levels.

A.1.12. ePDC project: CWA 15295:2005 - Description of References and Data Models for Classification

The CWA is one of the deliverables of the ePDC project (Product Description and Classification). It provides guidelines to harmonize and maintain existing standards for product description and classification (eCl@ss, UNSPSC and GPC) into a common horizontal, cross-industry product classification and description schema (Reference Model of Business Processes in Scope, Workflow for Maintenance, technical requirements on an information model and for a maintenance toolkit of schemas); how to maintain it, promote it and make it available to the public.

The CWA introduces the background of why Product Classification is important for doing trade in today's eBusiness environment, what are the basic requirements for a classification and shows a vision of how the ideal model should look (principles and methods). It contains pieces of the most important definitions, specifications, models, as long as analysis of their suitability to the specific analysed context.

The CWA document was released in 2005, but introduced use cases, requirements and methodology are still valid.

The CWA document can be divided into the following parts:
- Classification use cases
- Data model requirements
- Methodology for data exchange
- Requirements for a system to access and maintain product classification.

A.1.13. Gen-ePDC project: CWA15556-1:2006 - Product Description and Classification - New Property Library,

The CWA “New Property Library: Property Definition Schema’ is a part of deliverables of the Gen –ePDC project (Product Description and Classification).

The CWA “New Property Library” contains a conceptual description of a property definition schema as an extension of the current PLIB dictionary model (ISO 13584). ISO 13584 is an International Standard for the computer-interpretable representation and exchange of part library and catalogue data.

In ISO 13584 (PLIB), a property defines a specific aspect of a product. Products are described by specifying values for these properties. The goal of the introduction of property templates is to support the management of big sets of properties. For this purpose, an administration level for properties is supposed to associate similar properties to a common “abstract property”. If all properties are linked to their abstract properties and these abstract properties possibly are organised in a hierarchy themselves, then it should be possible:

- to identify similar properties and potentially unify them;
- to easily spot if newly registered properties have duplicates which are already in the data dictionary;
- to identify specific kinds of properties which have to be handled in a similar way in processing systems.

A.1.14. Gen-ePDC project CWA 15556-2:2006 - Product Description and Classification - Product Classes with sets of Properties

The CWA document is one of the deliverables of the ePDC project.

ISO 13584 distinguishes two basic levels for data exchange:

- The level of parts libraries, where information about products is exchanged. Here basically property values and relationships to classes of products are described.
- The level of data dictionaries (nowadays also called ontologies), where the meaning of property values and property classes is defined. This includes definitions of properties, definition of data types and units, relationships with other classes (components), etc.

The CWA document is an attempt to gather all the information about data dictionaries in a comprehensive document. It collects all schemas of ISO 13548 Parts 24 and 25 and puts them together with the whole Part 42 into a single document.

Since PEPPOL is concerned with the creation and maintenance of a product classification, to support electronic catalogues, the CWA document is interesting to PEPPOL as a whole and in particular in the definition of a classification standard, to support the post-awarding eCatalogue, and to facilitate the definition of pre-award eCatalogue templates.

A.1.15. Gen-ePDC project CWA 15556-3:2006 - Product Description and Classification - Results of development in harmonization and product classification and in multilingual electronic catalogues and their respective data modelling

ePDC 'Global Multilingual Product Description and Classification for eCommerce and eBusiness' is a project within the CEN/ISSS/WS/eCAT 'Multilingual catalogue strategies for eCommerce and eBusiness'.

The analysed CWA document is one of the deliverables of the ePDC project, which goal is to harmonize existing standards for product description and classification into a common horizontal, cross-industry product classification and description schema; how to maintain it, promote it and make it available to the public.

The CWA document presents an attempt to do the harmonisation of the most common classification systems, using the ISO 13584 as common data model. Therefore it can be used as basis for the definition of a catalogue standard of the post-awarding phase as a whole and as an XML schema for the data exchange; considering also the fact that for the built schema the Catalogue concept only contains classification information and doesn't contain contract information, logistics, etc.

Even if the CWA approach is interesting and can be followed, the results must be verified in a broader market segment: the defined schema was defined only taking into account the "goods" market.

The CWA document was released in 2006, but proposed schema (the result of the integration), which is the real value of the document, is still valid.

Since PEPPOL is concerned with the creation and maintenance of a product classification, to support electronic catalogues, the CWA document is interesting to PEPPOL as a whole and in particular in the definition of a classification standard, to support the post-awarding eCatalogue, and to facilitate the definition of pre-award eCatalogue templates.

A.1.16. Standard Product Classifications

EXTRACTED FROM THE EC STUDY "ELECTRONIC CATALOGUE IN ELECTRONIC PUBLIC PROCUREMENT"

Efficient exchange of product data between companies and organizations can only be achieved if the products are structured in a common way. Within the last years major efforts were undertaken in Europe, to setup and develop a common and industry-spanning product classification system which delivers a classification structure and also includes a description of products by its product properties.

1.1.7 CPV

The Common Procurement Vocabulary (CPV) constitutes a neutral, buyer-driven scheme providing a single classification system used in public procurement. In relation to supplier-driven schemes, CPV is less detailed, including almost 8.000 product and service terms and is translated in the 22 EU official languages. Its purpose is to standardise the method by which contracting authorities and public entities in Europe describe the subject of their procurement contracts. The CPV is used by the EU electronic publication board SIMAP ("Système d'Information pour les Marchés Publiques") [46]. The CPV is used to classify products and services to be procured into a structured hierarchy, through the following vocabularies:

- Main vocabulary: It is tree-structured and contains up to nine-digits codes attributed to a description of the products, services or works reflecting the subject of the contract. Each one of the last three digits provides a more detailed description within the main category. The last digit validates all the previous as shown in **Figure 20**.

Figure 20: CPV structure

- Supplementary vocabulary: It is used in order to expand the description of a contract by entering extra qualitative information, such as the destination of the products. This is implemented with the use of a two level alphanumeric code. The first level contains a letter corresponding to a section. The second level contains four digits, three for the identification of a subdivision and the check digit.

The Table below presents the structure, the CPV codes and the corresponding names for the division, group, class and category of the item "Photographic film".

Table 10: Example of CPV

Structure	CPV Code	Name
Divisions	25000000-1	Rubber, plastic and film products
Groups	25300000-4	Film products
Classes	25320000-0	Cinematographic film
Categories	25321000-7	Photographic film

The CPV was created by the European Commission in 1996. Its current version is laid down in the annexes to EC Regulation No 2151/2003. Use of the CPV was made mandatory as from February 1st 2006 at the latest according to the new EU public procurement directives, making part of the EU policy to enforce transparency and efficiency in eProcurement. CPV is geared towards helping suppliers to detect interesting contract opportunities through the Tenders Electronic Daily (TED), the web-based electronic version of supplement "S" of the Official Journal of the European Union (OJEU).
The supplement "S" of the OJEU (also referred to as OJS) contains invitations to tender for contracts of public and utilities sectors across Europe. Moreover, apart from assisting suppliers in detecting interesting contracts, CPV greatly simplifies the processes for the translation of procurement notices (e.g. contract notices). One of the great advantages of the CPV is its translation into all the 22 official EU languages (except Gaelic) which facilitates economic operators' search for business opportunities, and thus

participation in a public procurement procedure, especially for SMEs. The CPV exists also in other languages, e.g. in Norwegian.
Since the CPV is intended to be used by public authorities to describe their purchases, its structure is essentially buyer-driven, i.e. it orders goods and services according to the needs of the purchaser and not according to suppliers' production processes, as is the case for some of the other classifications. Moreover, the CPV serves as the reference public procurement nomenclature and in particular, for advertising contracts electronically (notification) on the EU electronic publication board TED. For this reason, it provides the most neutral and broad approach to description, in respect of the principles of non-discrimination and equal treatment. Therefore, by definition, it does not provide the same level of detail as other nomenclatures.
In particular, CPV presents uneven granularity on the provided hierarchies and, in its 2003 version only supports a small array of attributes and properties. In order to use the CPV in parallel to another classification scheme, a mapping between them is required. Thus, while the CPV may be sometimes less suited to cover all needs arising in the use of eCatalogues, i.e. unambiguous and detailed description of catalogue products, its use is mandatory in public purchases. Most importantly it should be remembered that buyers' needs might be best served by using a classification that allows for competition between substitute goods and services. The buyer-driven and neutral character of CPV may render it more suitable for the buyer in comparison to supplier-driven standards as it may leave more room for competition.
The CPV is currently being revised by the Commission in close cooperation with the Member States and CPV users (a public consultation was organised in March-July 2006). The revised version of the CPV is planned to be released at the end of 2007; it will include new and revised CPV codes, as well as new descriptions for existing CPV codes. In particular, it will substantially increase the number of available product attributes (which already exist in its current version), thus considerably enriching the vocabulary and making it more versatile.

Table 11: Outline of CPV

Outline of CPV
Classifies products and services to be procured into a structured hierarchy
Mandatory use in public procurement notices
4-level hierarchical structure
Available in 22 EU languages
Buyer-driven and neutral

1.1.8 GPC

The Global Product Classification (GPC) is the result of an agreement between a number of large multi-national manufacturers, retailers and service providers. This agreement entails the business rules for setting up a globally standardised and acceptable model/scheme for the identification of products. The GPC provides a granular hierarchical structured scheme and rules for the consistent categorisation and identification of products and their consistent mapping between existing internal classification systems. The GPC scheme is owned by the GS1 US Technology Services (formerly known as Uniform Code Council) and covers the classification and description of consumer goods. ACNielsen is responsible for its management on behalf of the industry.

The GPC consists of a four-level classification hierarchy organised in Segments, Families, Classes and Bricks, where only the latter is mandatory. The Bricks represent category group of similar products. Each Brick is characterised by up to seven generic attributes/properties that can take a unique attribute value from a normalised and comprehensive code list.
The GPC scheme is currently available only in the English language. The need of localisation and multilingual support of the GPC scheme has been identified and the necessary localisations and translations are currently in process from the GS1 Member Organisations.

Access to the GPC standard is available at the GS1 website [51] to anyone without any fees, restrictions, or contractual arrangements. The information and the hierarchical sheets of the GPC standard can be downloaded in the form of an excel file, whereas the scheme files and the delta reports in XML format.

GPC has an efficient classification hierarchy and additionally supports a limited set of generic attributes. In order to be used for supporting eCatalogues in eProcurement systems, the set of attributes should be significantly extended. This would render GPC an efficient tool for both product description and classification. GS1 has taken steps towards expanding the current support of GPC. In collaboration with the eCl@ss association, GPC has been extended to cover the automobile after-market sector.

Table 12: Outline of GPC

Outline of GPC
Developed by the biggest multi-national manufacturers, retailers and service providers
Owned by the GS1 US Technology Services
ACNielsen is responsible for its hosting and management
Access to the GPC standard is free of fees, restrictions, or contractual arrangements
Four-level hierarchical structure
Support of seven generic attributes/properties
Currently available only in English

1.1.9 UNSPSC

The United Nations Standard Products and Services Classification (UNSPSC) [47] is a coding system for the classification of products and services throughout the global eCommerce marketplace. The UNSPSC code is an open, global and cross-industry standard, publicly available for free with no use restrictions or licensing fees. It is a joint initiative of Dun & Bradstreet Corporation (D&B) and the United Nations Development Programme (UNDP). The cooperation between them concluded in 1998 with the development of an open international standard for the classification support in eBusiness sector. UNSPSC covers various applications including electronic catalogues, search engines, procurement and accounting systems. According to own estimates, its use has been expanded worldwide, with over 4,000 members in more than 80 countries.
UNSPSC is currently available in 11 languages and can be localised in any language upon request. The current version consists of more than 18000 terms. The code is often updated and adjusted to be in line with market evolution. Feedback from the user community is used to improve the UNSPSC code, as well as to keep it up-to-date, by the addition of new products. Codes for covering new requirements may also be added upon user request. UNSPSC does not support any attributes or synonyms.
Every UNSPSC code is represented by a controlled 8 digit numeric code, which can be extended up to 10 digits in order to also describe a business function. UNSPSC supports a five-level hierarchy, and each code is structured as follows:

- XX Segment: The logical aggregation of families for analytical purposes
- XX Family: A commonly recognized group of inter-related commodity categories
- XX Class: A group of commodities sharing common characteristics
- XX Commodity: A group of substitutable products or services
- XX Business Function: The function performed by an organisation in support of the commodity

Example: “Colour film”
“Colour film” is part of the broader class “Still picture film”. “Still picture film” is then a member of the “Photographic and recording media” family, which belongs to the “Printing and Photographic and Audio and Visual Equipment and Supplies” segment. “Colour film” can be found under UNSPSC: 45131501. UNSPSC codes can be further extended by adding a ninth and tenth digit. The last digits (Business Function) indicate relationships to the supplier, such as rental/lease, wholesale, retail, manufacturer or repair.

Table 13 presents the classification structure of UNSPSC for the entity “Colour film” as well as the codes and names for the respective class, family and segment.

Table 13: Example of UNSPSC

Structure	UNSPSC Code	Name
Segment	45 000000	Printing and Photographic and Audio and Visual Equipment and Supplies
Family	4513 0000	Photographic and recording media
Class	451315 00	Still picture film
Commodity	451315 01	Colour film

In May 2003, UNDP selected the Uniform Code Council (UCC) as code manager, responsible for a series of activities. The code manager has to guarantee the compliance with the policy of UNDP and the integrity of the code structure. Additionally, UCC controls the requests for code modifications and the industry revision projects. It is responsible for the code updates, communications with members and the plans defined by UNDP and its members.
UNSPSC is funded through member fees. Membership is open to anybody and membership application may be completed online. Being a member includes the advantages of business-building benefits, including continued participation in UNSPSC maintenance, development and related activities, including the right to ask for code modifications. There are several membership categories (i.e. individual, corporate, public sector/government, educational, etc) to apply for with differing fees and rights. However, the latest version of the code is always available free of charge to the general public.
UNSPSC standard is an open and widely spread classification system, which is offered free of charge for use from everybody in the supply and demand chain. It provides a hierarchical product classification scheme with a high level of detail (five-level hierarchical taxonomy), which can possibly allow contracting authorities to map them into their internal classification system and get customised views of their data. Its multilingual support assists on promoting cross border trading between contracting authorities and suppliers from different Member States.

Table 14: Outline of UNSPSC

Outline of UNSPSC
Open, global and cross-industry standard
Free and publicly available with no use restrictions or licensing fees
Five-level hierarchical structure
Available in 11 languages; can be localised in any language upon request
The current version supports more than 18000 terms
Lack of attributes and synonyms
Neutral (open standard)

1.1.10 eOTD

The ECCMA Open Technical Dictionary (eOTD) is a dictionary for the cataloguing of concepts, used to describe -independently of the language - individuals, organisations, locations, goods and services. It is “an open standard for encoding product data through the life cycle of a product – from design through disposal”. eOTD is a collection of terminologies for cataloguing that allows the creation of standard descriptions. It is an Open Standard that can be freely used, copied and distributed.
eOTD is developed and maintained by the Electronic Commerce Code Management Association (ECCMA), a non-profit trade association for electronic commerce. Established in April 1999, ECCMA’s purpose is to develop and maintain international open standard dictionaries for the consistent labelling of information. Specifically, regarding cataloguing, ECCMA supports the development of Open Source cataloguing tools and aims at the cataloguing quality improvement and cost reduction. Indeed, ECCMA has developed the following Open Source implementation tools: eOTD Open Source Catalogue Builder; eOTD Open Source Query Builder; Open XML Catalogue Syntax.
Any individual or organisation may contribute to the eOTD. However, voting rights on requests for extension or modifications to the eOTD content is limited to ECCMA members. ECCMA Members include public and

private sector buyers, manufacturers, suppliers, application providers, consultants and industry associations from 42 countries. ECCMA plans to harmonise eOTD with ISO standards that contain terminology, which could be used for cataloguing. ISO has recognised eOTD as a draft standard and assigned it ISO Standard 22745.
eOTD is based on the NATO Codification System (NCS) and incorporates all the basic elements of the NCS. Specifically, eOTD includes:

- Table of ECCMA Noun Qualifiers: Naming items are not free choice but rather reflect the assignment of particular properties to particular families of parts. On this basis, any product can only appear once in the hierarchy. It contains approximately 60,000 Standard Item Names.
- Table of Attributes: Provides the properties of characteristics of an item (e.g. dimensions, colour and materials, etc.). Approximately 30,000 Standard Attribute Names are available.
- Table of Response Codes: Used to validate attributes for a given noun qualifier. Over 150,000 codes are available for use. For instance, if the attribute is "colour" the response code explicitly defines the colour.

Most of the Item Names and attributes supported by eOTD are defined and translated in seven languages (English, Spanish, French, German, Dutch, Polish, and Czech). Unlike classification schemes, eOTD does not include a class hierarchy. However, eOTD concepts can be assigned to several external class hierarchies, including eCl@ss, CPV and UNSPSC. Therefore, eOTD could be integrated into a catalogue system whether an external classification scheme such as eCl@ss, UNSPSC or CPV is utilised. It is updated in a regular monthly cycle and is supported and endorsed by NATO AC/135 and National Governments.
The eOTD is a standard descriptive language that attempts to prevent duplication of products descriptions; hence to eliminate the uncertainty and ambiguity in the description of terms. The existence of the eOTD linked to the NATO codification system enables existing and potential suppliers to specify their goods and services. The eOTD standard table of attributes and definitions is expected to render creation of product specifications and catalogues easier, as data should be readable by any computer application. Its use should contribute to the simplification of global electronic commerce efforts by making it much easier to save money in the cataloguing of new equipment. It enables production of catalogues that can be searched over the Internet and imported into sourcing, procurement and Enterprise Resource Planning (ERP) systems with minimal data transformation costs.

Table 15: Outline of eOTD

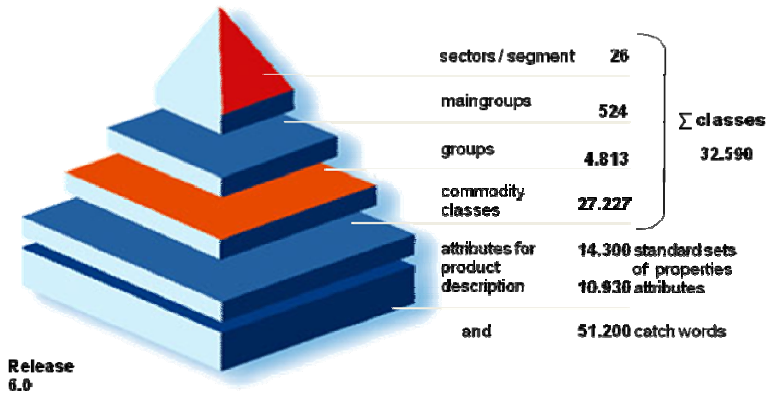
Outline of eOTD
Is the commercial representation of the NATO Codification System (NCS)
Is an open standard for encoding product data through the lifecycle of a product
Can be freely used, copied and distributed
Does not include a native hierarchical structure, but rather uses external schemes (e.g. CPV)
Supports approximately 30,000 Standard Attribute Names
Translated in seven languages (English, Spanish, French, German, Dutch, Polish, and Czech)
eOTD concepts are assigned to several external class hierarchies, including eCl@ss, CPV and UNSPSC

1.1.11 eCl@ss

The eCl@ss association is an open, international and forward-looking community which was founded 2000 in Germany by big industry companies. It is a non-profit organization, which defines, develops and distributes the eCl@ss classification standard and is supported by members from companies, associations and institutions. eCl@ss cooperates with well-known strategic partners from standardization, information technologies and associations and it is represented in national and international standardization organizations. Currently eCl@ss has offices in Germany, France, Austria, the Netherlands, the USA and China.

Picture 1 eCl@ss Members

The eCl@ss classification system is a hierarchical system for grouping materials, products and services according to a logical structure with a level detail that corresponds to the product-specific properties that can be described using standards-conforming properties.



Picture 2 Overview eCl@ss Release 6.0

Products and services can be allocated to the four-stage, numeric eCl@ss class structure. Search terms and synonyms permit targeted sourcing of products and services within the classification. Property bars with standardized properties and value tables enable accurate description and subsequent identification of products and services.
eCl@ss is a leading international industry spanning classification system with more than 32.000 classes in the latest release 6.0. The classification is currently available in 15 languages including Chinese and Japanese language. It is also adopted the ISO 13584-42/IEC 61360-2 data model.
eCl@ss started cooperation with DIN in 2004 to be able to use standardized properties from DIN within their lists of properties describing products. eCl@ss lists of properties can also be exchanged using the BMEcat 2005 catalogue data exchange format.

Property-ID	Property					
ECL-BAA001-002	Manufacturer name	HP Elite Book 6930p	HP Compaq 6910p	HP Compaq 6735b	HP Compaq 6530b	HP 550
ECL-BAE636-001	Type of processor	Intel® Core™2 Duo processor	Intel® Core™2 Duo processor	AMD Turion™ X2 Ultra Dual-Core Mobile processor	Intel® Core™2 Duo 9000 and 8000 series	Intel® Core™ Duo processor
ECL-BAE830-001	Display format	14.1" WXGA	14,1" WXGA	15,4" WXGA	14.1" WXGA	15,4" WXGA Bright View
ECL-BAF580-001	Performance Characteristics	2,53 GHz	2,40 GHz	2,3 GHz	1,8 GHz	1,6 GHz
ECL-AAC860-001	Capacity of hard disc storage	160 GB	120 GB	120 GB	160 GB	120 GB
ECL-BAF128-001	Average elapsed time	8 hours	6 hours	3 hours	4 hours	4,5 hours
ECL-BAE604-002	Operating system	Windows Vista® Business 32-Bit	Windows Vista® Business 64-Bit	Windows Vista® Business 32-Bit	Windows Vista® Business 32-Bit	Windows Vista® Home Basic 32-Bit
ECL-BAE156-001	Dimensions	3,1 x 33,1 x 24,3 cm	2,9 x 33,0 x 23,9 cm	3,2 x 35,8 x 26,7 cm	3,3 x 33,5 x 24,3 cm	3,2 x 35,8 x 26,7 cm

Picture 3 Product catalogue based on eCl@ss list of properties

A benchmark between classification systems potentially useful for PEPPOL WP3

Classification System	CPV	UNSPSC	eCl@ss	GMDN	eOTD	GPC
Responsible Organization	EU Commission, in cooperation with EU Member States	United Nations Development Programme (UNDP)	Cologne Institute for Business Research	GMDN Agency (financed by EU Commission)	Electronic Commerce Code Management Association (ECCMA)	Global Standards One (GS1)
Purpose/objective	Public procurement notification	Designed for commercial procurement purposes	Designed by the eCl@ss association, founded by enterprises within the fields of their research for the development of a classification system that could fully describe their products	Medical Device experts from around the world (manufacturers, healthcare authorities and regulators) compiled the initial GMDN nomenclature based on the standard ISO 15225. Within CEN/ISO. Standardize at Global level Medical Nomenclature	Dictionary for the cataloguing of concepts, used to describe individuals, organizations, locations, goods and services (eOpen Technical Dictionary)	Designed within the fields of an agreement between the biggest multi-national manufacturers, retailers and service providers on the business rules for setting up a globally standardised and acceptable model/scheme for the identification of products
Open Source /Open Standard	No/ Available for free	Yes/ Available for free	Yes / Available for free for supporting members (for the other up to 400 euro)	No (from 500 to 2000 euro)	Yes/ Available for free	Available for free
On line Availability	Yes	Yes (in PDF)	Yes	Yes (CD Rom)	Yes	Yes
Hierarchy Levels	4 Divisions, Groups, Classes, Categories	4-5 Segment, Family, Class, Commodity, (Business Function)	4 Segments, Main Groups, Groups, Commodity Classes	3 Device Category, Generic Device Group, Device Type (ISO 15225)	Assigned to several external class hierarchies (eCl@ss, CPV, UNSPSC)	4 Segment, Family, Class, Brick
Mapping/correspondence tables	CPC (United Nations)	Not Available (e.g. for Healthcare link to GS1)	Yes Mapping tables for all updates starting with eCl@ss version 4.0 are distributed using the classification tool w.e.b. eCl@ss Upgrade created by the company w.e.b. Wirth EDV Beratung. Available to ordinary member for internal usage	No other alternative nomenclatures for medical devices in EU (correspondence with ECRI UMDNS)	Not Available	Not Available
Frequency of Updates	Less than once a year	Quarterly	Version every 2 years and release every 6 months	Annual	Monthly	Quarterly
Most recent update	2008	11.0501	6.1	2005.1	6 October 2006	1.0
Supported Languages (Multilingualism)	22 (All Official EU Languages)	14 (DA, DE, DU, EN, ES, FR, IT, NO, NL, PT,SW, ZH, JA, KO) Further on demand	6 for 5th release (DE, EN, ES,FR, IT, CH)	Oxford and US English, EU has embarked upon translation to the 22 languages	7 (CS, DE, EN, ES, FR, NL, PL)	1 (EN)
Number of Supported	10.847	21.000	96.000 research	Not available	60.000	Not Available

Items			items			
Integration of Attributes	No (New version will provide attributes)	No	Yes		NO	Yes
Number of Attributes	Not Applicable	Not Applicable	Not Available	Not available	30000	Not Available
Terminology & Synonyms	No	No	Synonyms	Synonyms/ Multiple-linked synonym term	Synonyms	No
Users / Geographical focus	All MS	Global (USA)	Global (Europe)	EU/Global	Global (USA)	Global
Suited for use in eCatalogues	Only in combination with other nomenclatures	Only in combination with other nomenclatures	In combination with GPC	Only in combination with other nomenclatures	Only in combination with other nomenclatures	In combination with eCl@ss

ANNEX 2: Description of existing solution of the WP 3 participants

A.2.1. Consip and MEF (ITA)

Consip sets up eCatalogues in two contexts: 1) Framework contract's electronic shops; 2) Italian Public Administration Electronic Market (MEPA).
In the first case, eCatalogues are "static" and reflect the Framework Contract's (one buyer, no second stage competition) pre-negotiated conditions; buyers can select some options, quantity, indicate delivery dates and place and issue their orders.
In the second case (MEPA), the system is more complete and "dynamic", and is based on structured eCatalogues.
The Consip questionnaire only focuses on MEPA eCatalogue system because, it is more complete and complex.

The **Italian PA Electronic Market (MEPA)**[11] is a public *eProcurement* marketplace managed by Consip on behalf of the Ministry of the Economy and Finance. It is a dynamic tool (in that it allows suppliers to register, post and change their **items**, services and prices at any moment in time) in which products and services are presented in structured catalogues and described according to standard formats.

The sellers are suppliers/service providers who responded to public Call for Qualification issued by Consip, inviting all economic operators interested to supply a certain category of goods/services to the PA to apply for registration (i.e. being registered as authorised sellers; hence, hereinafter register/registration will be used as synonyms of qualify/qualification). In order to register, economic operators must comply with personal criteria on their "honourability" (non-conviction, etc.), and with some basic capability criteria regarding turn-over and past experience (criteria are usually very low, in order to encourage participation from SMEs).

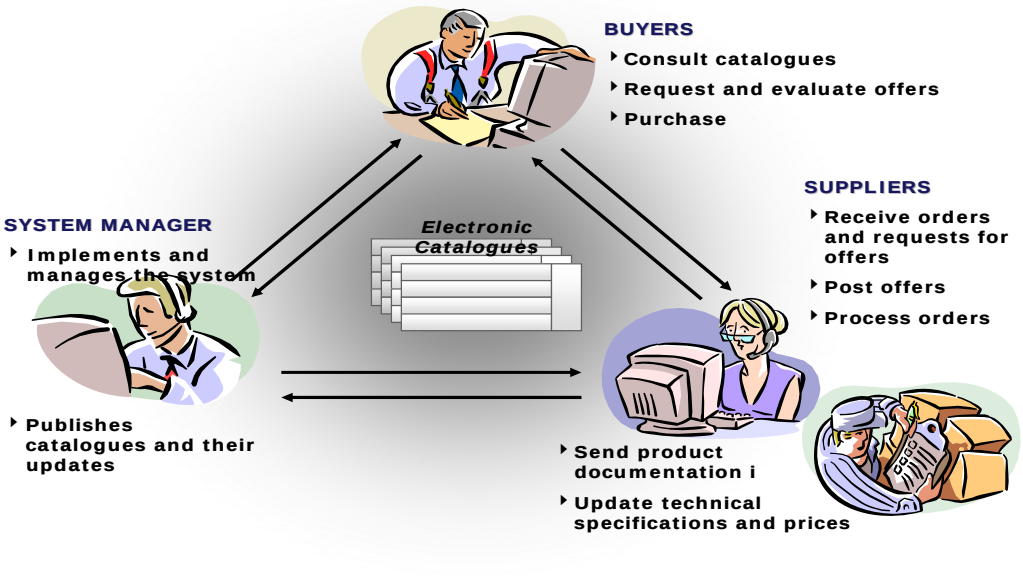
There is no pre-negotiation on prices by Consip: anyone who meets personal and capability criteria is admitted to have his catalogue published, provided that minimum product quality criteria set out in the Qualification notice are respected. As a result, an identical product/service may be sold by various suppliers at different conditions (as in the *real* market).

The purchasers are registered Authorities that, after a search and comparison of the products being offered, may implement purchases directly through orders from the catalogues, or by requesting preliminary offers.

Since no public notice is requested to purchasing administrations to issue orders, the MEPA is allowed only for purchases below the EU thresholds; however, the respect of all Public Procurement Legislation provisions for each single purchase is not enforced by the system, and public officials are accountable to ensure that all legal requirements (publicity, minimum number of offers, etc.) are complied with.

[11] For more detailed information, also in the eLearning modality, please refer to www.acquistinretepa.it

How Consip eMarkeplate operates



The main eCat management functionalities comprises:

1. Defining eCatalogue templates
Consip **Category Manager Unit** define (according to Public Administration requirements and Offer side trend and roadmaps) items "macro-category" and design MEPA eCatalogues.
An **"eCatalogue Factory"** (specialised unit within Consip responsible for producing eCatalogue spreadsheet templates and for control over uploading eCatalogues in the system) is responsible for creating appropriate spreadsheet templates for the various products/services.

2. Disseminating eCatalogue documentation information
Calls for Qualification are made available at www.acquistinretepa.it, providing digitally signed documents which define general MEPA access/use rules, general conditions, general certificates and documents to be provided and specific technical documents (including eCatalogue templates). Calls are divided by good/services categories.

3. Creating eCatalogues
Suppliers are responsible for the creation of eCatalogues, based on predefined eCatalogue spreadsheet templates. eCatalogues take the form of spreadsheet files, which are digitally signed. eCatalogue templates are in MSOffice .xls format.

4. Assuring eCatalogues Quality
As a first level check, suppliers are provided with tools helping them to make automatic quality checks.
Suppliers send eCatalogue to Consip by uploading on the ePlatform. As a second level check, the **"On Boarding Factory"** (**OBF**, specialised unit within Consip responsible for managing supplier first steps qualification and eCatalogue uploading, control and integration at operational level) reviews the content of eCatalogues in order to improve their quality (i.e. normalise items, standardise descriptions, etc.) and to ensure that items described in the eCatalogue meet in full the criteria set out in the technical specifications attached to the Call for Qualification.

5. Automatic Tool
The quality check activity is supported by a back office application. It is a web application called **K-KAPPA** (owned and developed by Consip) that assure:
- items database design and management (that constitute the eCatalogue);
- eCatalogues workflow management;

- automatic check and control over the respect of editing and formatting rules (decided in the defining eCatalogue phase – items DB design - and published in the technical documents on the website) of values and data. At the moment this control is limited to basic fields.

6. Submitting eCatalogues
Once eCatalogues have passed quality checks a **Consip eMarketplace Evaluation Commission** (composed also by legal resources) approve the eCatalogue and (in the case of a new firm) the qualification on MEPA. Consip **Chief Executive Officer** sign the qualification document (under the Treasury Minister control). After this step, they are digitally signed by suppliers, and submitted to the system. The eCatalogue constitutes the "public offer" of a supplier that requests qualification in the eMarketplace. Traceability of actions for submission is supported by the system.

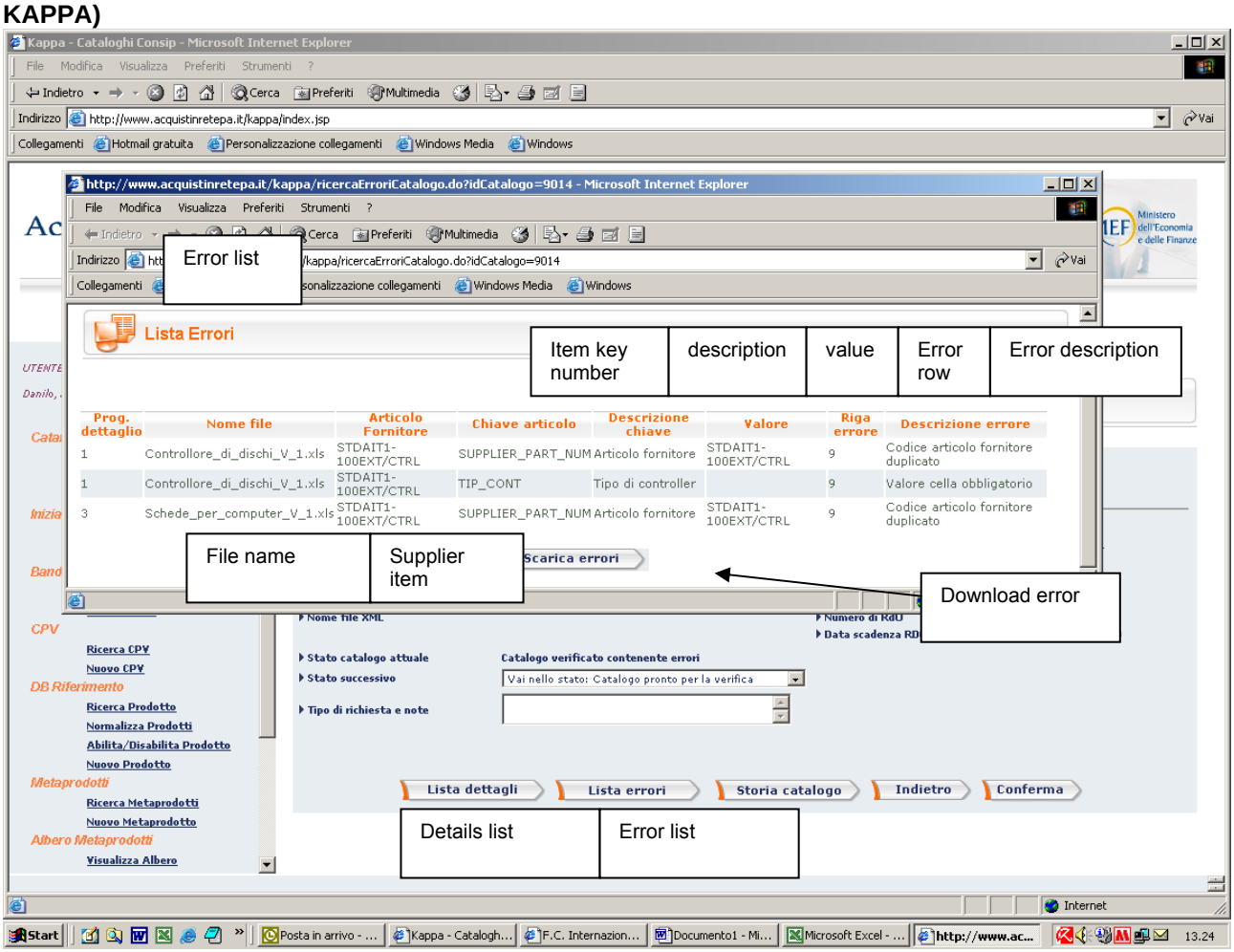
7. Receiving eCatalogues and Uploading eCatalogues in the system
Only in case of new firm or new firm or new eCatalogue Consip is responsible for verifying and approving it.
Automatic evaluation of eCatalogues
No particular support is provided, because the eCatalogues are not competing tenders: any supplier meeting qualification criteria set in the Call for Qualification can publish an eCatalogue, provided minimum standard requirements set in the same Call are respected.

8. Maintaining eCatalogues
We have to differentiate the process followed for maintaining eCatalogues in two cases: 1) modification or updating of commercial values; 2) integration of new products/eCatalogue. The first case is totally managed by the supplier directly on ePlatform. eCatalogue updating activity depends totally on suppliers that can access 24h to the ePlatform and modify commercial values in real time (e.g. price). The second case is managed both by Consip (On Boarding Factory unit and Evaluation Commission) and supplier.

9. Ordering through eCatalogues
Buyers have two options: 1) place a direct order (digitally signed) to one supplier - in that case, the supplier is bound to deliver according to price and delivery conditions published in the catalogue; or 2) launch a sort of mini-tender, by sending a Request For Quotation (RFQ) to some suppliers, compare offers received, and place the order to the one which is most advantageous according to the criteria set out in the RFQ. In case of RFQ, suppliers can choose whether to reply or not to RFQs. If suppliers choose to reply, they send a Quotation (digitally signed) in the form of an eCatalogue. The offer is digitally signed and stored in the system. When the opening time is reached, the system unlocks the tenders. Buyers then can compare the eCatalogues received and evaluate them, in order to select the winner.

10. Online invoice and payment
These functionalities are not supported at the moment.

Graph: Consip eCat control, error verify and XML generator automatic tool (web application called KAPPA)



Consip creates “eCatalogue drafts”, in the form of spreadsheet templates composed by a set of “fields” describing the related meta goods/services. These spreadsheets are design first in web application with the use of KAPPA (and translated in XML and PDF versions), and after in xls format (that suppliers use like a worksheet to fill in value off line). The eCat is composed by Basic (Common) fields and Specific fields (e.g. Notebook eCat has 35 fields).

After Consip disseminates information on the portal (www.acquistinretepa.it), designs and creates the eCat, supports suppliers (in filling in the goods/services list files also providing .xls files with curtain menu with correct values from which select functional requirements), assures eCat quality, the supplier can submit its eCat.
All MEPA suppliers have also to maintain eCat. They can manage own eCatalogues 24h/7 days with some on line functionalities directly on the eProcurement system. We can say that eCatalogue may be updated in two ways: offer extension, offer modify or cancel.
Buyers can use MEPA eCat to see and to have detailed information about service/products, to sort and benchmark offers, to request for quotation, to do direct order.

System generates a pdf file stored in the document management system with legal time stamping. In the Document management system is possible to search the order according various parameters as for instance order number and date, supplier etc.

A.2.2. CSI Piemonte (ITA)

CSI-Piemonte sets up eCatalogues in two contexts:
1) Electronic Framework contracts
2) CSI-Piemonte Electronic Market

In the first case, eCatalogues are "static" and reflect the Framework Contract's (one buyer, no second stage competition) pre-negotiated conditions; buyers can select some options, quantity, indicate delivery dates and place and issue their orders.
In the second case eMarketplace, the system is more "dynamic", and is based on structured eCatalogues.
The CSI assessment only focuses on eMarketplace Catalogue system because, they are more standardized, complete and complex.

The CSI-Piemonte eMarketplace is a regional public *eProcurement* marketplace managed by CSI-Piemonte. All public bodies members of CSI-Piemonte consortium can operate in the Electronic Market directly and managing autonomously their purchases. Members are local bodies belongs to geographical area of Piedmont region.

It is a dynamic tool where products and services are presented in structured catalogues and described according to standard formats. In this area is allowed to suppliers to register, post and change their goods and services prices at any moment in time.

Sellers are suppliers/service providers who responded to public Call for Qualification issued by CSI-Piemonte, inviting all economic operators interested to supply a certain category of goods/services to the local PA in Piedmont. Supplier qualified are hence registered on the eProcurement platform. In order to register, economic operators must comply with personal criteria on their "honourability" (non-conviction, etc.), and with some basic capability criteria regarding turn-over and past experience and financial capacity.

CSI-Piemonte doesn't pre-negotiate prices, in fact the feature of an eMarketplace in Italy, is to let negotiation free to buyers and suppliers: anyone who meets personal and capability criteria indicated in the notice is admitted to have his catalogue published. As a result, an identical product/service may be sold by various suppliers at different conditions.

Supplier evaluation is carried out by an appointed commission that, through an authorization statement, informs suppliers in what goods and services categories they met the requirements needed for qualification.

CSI-Piemonte can periodically verify the permanence of the requirements declared.

During the authorization period suppliers can request to extend its eCatalogue to other goods/services categories present in notice.

Standard eMarketplace duration is 2 years and possibility to apply for qualification is available

Buyers registered the systems are civil servants able, after a search and comparison of the products being offered, to issue directly orders from the catalogues, or to request preliminary offers.

Since no public notice is requested to purchasing administrations to issue orders, the eMarketplace catalogues can be used only for purchases below the EU thresholds; however, the respect of all Public Procurement Legislation provisions for each single purchase is not enforced by the system, and public officials are accountable to ensure that all legal requirements (publicity, minimum number of offers, etc.) are complied with.

The CSI Piemonte Marketplace operates like the Consip MEPA one's.

Buyers (i.e. the civil servants who have purchasing power within their administration), who:
- Consult catalogues (search for products, compare quality, price and commercial conditions)
- Request offers from suppliers (only to have better conditions than those officially published)

- Purchase (placing a direct order to one supplier, or launching a sort of mini-tender by sending a Request For Quotation to some Suppliers, comparing offers received, and placing the order to the one which is most economically advantageous according to the criteria set out in the RFQ)

Suppliers, (i.e. enterprises authorized to display their catalogues within the system), who:

- apply for registration, sending documentation on their personal standing and on the products/services to sell, committed to respect the constraints on minimum quality, delivery conditions, etc. set out in specific Qualification Notices published by Consip
- update regularly their offer

Suppliers may decide the geographical area where they will sell, the minimum range being a Province.

System Manager (CSI-Piemonte), who:

- Implements and manages the system (Issues Qualification Notices on different products and services categories, setting out qualification criteria for sellers, minimum quality standards for products services, eCatalogues formats, security levels, verifies and approves regularly that the eligibility conditions are still met by qualified suppliers, etc.)
- Publishes Catalogues received by Suppliers

The main eCat management functionalities comprises:

1 Defining eCatalogue templates

Catalogue templates are defined by the collaboration of different offices belonging to Procurement Directorate and Technical Directorates in order to create standard content / info requested for supplies and services.
Spreadsheet created (mainly excel files) has to respect the IT system data model for catalogues as well.

2 Disseminating eCatalogue documentation information

Calls for Qualification are published at website www.csipiemonte.it providing all the electronic documents needed to suppliers to submit a qualification: notice, general rules and conditions, general conditions, certificates and documents to be provided and technical documents, instruction for users registration on the eProcurement system. Calls are divided by good/services categories as requested by law.

3 Creating eCatalogues

Suppliers are responsible for the creation of eCatalogues, based on predefined eCatalogue spreadsheet templates. eCatalogues take the form of spreadsheet files.
Together with the templates economic operators has a guide for compiling the file where they can find the information to fill in all the required fields.
Catalogues set up could be realised by the Service Manager or directly by suppliers on the eProc platform.

4 Assuring eCatalogues Quality

All checks are made by the System Manager who review the content, to ensure that items described in the eCatalogue meet in full the criteria required in the technical specifications attached to the Call for Qualification, and the structures of data provided by suppliers.

5 Submitting eCatalogues

Catalogues can be submitted using secure certified e-mails (Service Manager and Economic Operator) or they can be uploaded on the system directly by the supplier. Traceability of actions for submission is supported by the system. In particular in the latter case automatic e-mail notifications are sent by the system to the Service Manager and PA responsible of the eMarketplace (in our case is CSI-Piemonte)

6 Receiving eCatalogues and Uploading eCatalogues in the system

This is performed only if the economic operators prefer to send catalogues via e-mail. In this case receiving and upload on the system is performed by the Service manager.

7 Automatic evaluation of eCatalogues

No particular support is provided, because the eCatalogues are not competing tenders: any supplier meeting qualification criteria set in the Call for Qualification can publish an eCatalogue, provided minimum standard requirements set in the same Call are respected.

8 Maintaining eCatalogues

The process followed for maintaining eCatalogues is identical to the process for creating them. There is no specific control on when the updating of eCatalogue data can take place. Suppliers must create a full eCatalogue prospectus.
In this case catalogue update or new catalogue creation is notified by the system to the Service Manager and PA responsible of the eMarketplace (in our case is CSI-Piemonte)

9 Ordering through eCatalogues

Buyers have two options: 1) place a direct order (digitally signed or not) to one supplier - in that case, the supplier is bound to deliver according to price and delivery conditions published in the catalogue; or 2) launch a sort of mini-tender, by sending a Request For Quotation to some suppliers, compare offers received, and place the order to the one which is most economically advantageous according to the criteria set out in the RFQ. In case of RFQ, suppliers can choose whether to reply or not to RFQs. If they choose to reply, they send a Quotation (digitally signed) in the form of an eCatalogue. The offer is digitally signed and stored in the system. When the opening time is reached, the system unlocks the tenders. Buyers then can compare the eCatalogues received and evaluate them, in order to select the winner.

10 Online invoice and payment

These functionalities are not supported at the moment.

Suppliers find on-line the Calls for Qualification tenders divided by good/services categories. Every call presents some attachments in which suppliers find technical documents (list of goods/services for which they can apply with their features), general conditions, access/use rules.
Documents are file in different format (mainly pdf format) necessary to prepare the eCatalogue.
Standard spreadsheet template in excel format are instead send only to the qualified suppliers after qualification results.
File are not digitally signed.
In fact, during the on line registration phase, supplier has to upload the goods/services list too, signed with electronic signature. In conclusion this list in .xls format is the earlier eCatalogue draft and it has a binding value because it represent a public offer (Italian Civil Code article n. 1336).

The system allow to the supplier to upload and manage eCat. A first check quality (on the completeness of the offering documents and eCat) is given by the eProc platform.
The second check quality is assured by CSI with an offline handwork on the suppliers eCat.
Buyers can use MEPA eCat to see and to have detailed information about service/products, to sort and benchmark offers, to request for quotation, to do direct order.
System generates a pdf file stored in the document management system with legal time stamping. In the Document management system is possible to search the order according various parameters as for instance order number and date, supplier etc.

A.2.3. Intercent-ER (ITA)

Intercent-ER sets up eCatalogues in two contexts:
1) Electronic Framework contracts
2) Intercent-ER Electronic Market

In the first case, eCatalogues are “static” and reflect the Framework Contract’s (one buyer, no second stage competition) pre-negotiated conditions; buyers can select some options, quantity, indicate delivery dates and place and issue their orders.
In the second case eMarketplace, the system is more “dynamic”, and is based on structured eCatalogues.

Intercent-ER assessment is only focused on Framework Contracts eCatalogue.

Intercent-ER is a regional public *eProcurement* Agency owned by Emilia Romagna Region which operates for Health Service Regional Administrations and Local Public Administrations.

Intercent-ER performs preliminary studies on regional public expenditure to survey and to rank goods and services categories. Afterwards, in order to meet local public administration's needs, Intercent-ER chooses the categories which will be object of Framework Contract.
As far as these categories are concerned, Intercent-ER analysis is focused on:

- local public administration's requirements;
- goods and service features;
- market analysis.

Intercent-ER works the strategy out, when all information are well-known, and publish the tender notice and documents in which seller can found all criteria required by Intercent-ER, goods and services description, etc. Sellers who meet personal and capability criteria indicated in the documents and are interested to supply goods or services object of Framework Contract, in respect of all Public Procurement Legislation, send the documentation to Intercent-ER on their personal standing, on the products/services technical specifications and the price they offer.
Subsequently, Intercent-ER analyses all seller documents, awards the best offer received and draws the Framework Contract up.
At this point Intercent-ER publishes the eCatalogue available for local public administration which are able to buy specific goods/services paying on prices negotiated by Intercent-ER.

Intercent-ER periodically verifies the permanence of the requirements declared.

Actors and roles involved in the eCatalogue publication are:
Buyers (i.e. the civil servants who have purchasing power within their administration), who:

- Consult catalogue (search for products, value quality, price and commercial conditions negotiated by Intercent-ER)
- Purchase (placing an order to supplier)

Suppliers, (i.e. enterprises authorized to display their catalogues within the system), who:

- committed to respect the constraints on quality, delivery conditions, price, etc. defined by Framework Contracts

System Manager (Intercent-ER), who:

- Implements and manages the system (eCatalogue formats, security levels, verifies and approves regularly that the eligibility conditions still belong to qualified suppliers, etc.)
- Publishes eCatalogues received by suppliers.

Intercent-ER eCat functionalities are:

1 Defining eCatalogue templates

Catalogue templates are defined by Intercent-ER System Manager in order to create standard content / info requested for supplies and services.
Spreadsheet created (mainly excel files) has to respect the IT system data model for catalogues as well.

2 Creating eCatalogue

Catalogue template is sent by e-mail to seller who inputs all information based on predefined eCatalogue spreadsheet templates. Together with the templates economic operators has a guide for compiling the file where they can find the information to fill in all the required fields.
Compiled catalogue is sent to System Manager Intercent-ER who reviews the content of eCatalogue.

3 Submitting eCatalogues

Catalogue is uploaded on the system by the Service Manager. He connects to catalogue same further information as: Framework Contract total value, expire Contract date, etc.

4 Ordering through eCatalogues

Buyers can just place a direct order (digitally signed or not) to supplier who is obliged to deliver according to price and conditions published in the Frameworks Contract and in the catalogue. Seller can accept the order or refuse it.

In the first case seller provides to deliver goods and services. In the second case seller has to explain the refusal motivation; buyer can place another new correct order.
If order isn't digitally signed, buyer has to sent his order also by fax within two days.

5 Maintaining eCatalogues

In case of eCatalogue modifications (prices review, change of product, etc.) the process followed is the same as the creation one.

6 Online invoice and payment

These functionalities are not supported at the moment.

The fields are divided into basic fields and specific fields:

- **common basic fields,** consisting of all the elements that exactly identify goods/services offered by supplier during tender (item code, brand, commercial name, etc.) and price. Generally these fields are mandatory.
- **common voluntary fields**: can be used in addition to the common ones, to describe in details each good/service. Generally these fields are not mandatory.
- **specific fields**, can be used by Intercent-ER System Manager proposal, in addition to the common and voluntary ones, to describe same details about good/service. These type of fields are different from a good/service to another. If included in a eCatalogue, these fields are mandatory.

During the Contract availability supplier can propose to Intercent-ER to change own eCatalogues in same particular cases:

- update technical item specification;
- update price (always respecting minimum features described in notice published)
- extend catalogue validity (always respecting what described in notice published)

All changes are proposed to the Intercent-ER (they has a specific status) who need to evaluate it and consequently approve or reject them.
In case of approve seller sent to Intercent-ER a new catalogue for submitting on the system by System manager.
Functionalities to perform changes from supplier side are the same described for catalogue creation in addition they can select manually one item when they have only a good to be updated.

A.2.4. BBG (AUS)

BBG sets up eCatalogues in the context of framework contracts and agreements after the contract awarding. So they are just used in the **post awarding** phase. The ordering process is done by the e-Shop, the electronic ordering system of the BBG. In the pre awarding phase BBG uses templates in different procurement categories. They are manually transformed to eCatalogues (creation of eCatalogues by the supplier) after the acceptance of the bid. The spreadsheets are complex, variable and include price and criteria evaluation, which is one reason why they haven't been transformed to a standardised eCatalogue format.

The managed infrastructure e-Shop (e-shop.gv.at) is an eProcurement system that allows BBG's customers (central and regional government institutions, state-owned organisations, universities, schools, …) to order goods and services out of public contracts. The purchasing process - from raising a purchase requisition, approval workflows, completing the purchase order to dispatching the PO to the supplier – is covered within the e-Shop. It also comprises a staging tool to manage eCatalogues and a reporting tool. On a federal level, the e-Shop application is connected to the ministries finance and controlling systems.

The system provides purchases out of framework contracts and agreements. After the acceptance of the bid the supplier gets an access to the so called "Staging", a platform to manage catalogues.
Within this platform suppliers are able to upload, revise and approve relevant catalogue data. Furthermore, the staging platform enables the users to create as well as rework catalogues online. Due to firmly defined

processes – within the platform and its interaction with the relevant stakeholders - the platform is capable of assuring the correctness of the imported or created catalogues, in respect of content and form as well as commercially and technically.

Although BBG mainly has framework contracts and agreements there is a frequent upload routine in case of product specifications, prices, availability, … updates.

The BBG doesn't provide a marketplace system with many suppliers for one product category by now. This will be part of the future activities.
Nowadays the e-Shop is a platform for the awarded framework contracts and agreements.

Purchasing departments of the BBG define the catalogue in spreadsheets, but they are not used in the way of eCatalogues. After the acceptance of the bid the contractor (supplier) starts with the eCatalogue creation. The BBG gives them a handbook for "How to create an eCatalogue".

In synthesis, BBG follow up the process (often in an offline way) with the following functionalities:
1 Catalogue creation
The most time consuming part is the preparation of the catalogue, which is done by the Suppliers. The BBG e-Shop catalogue management team, however, supports them during this process. It is also possible for suppliers to pre-transmit catalogue data for supervision and feedback.

2 Quality Assurance

Catalogue import
After a catalogue has been made it is uploaded and processed. The supplier's login/access is created and administered by BBG. Therewith the suppliers can access their framework contracts to conduct catalogue updates.

Technical approval
The supplier can test the import of a catalogue almost unlimited times, before he submits the final version. Only after the supplier has technically approved the catalogue, it is transferred into the domain of the BBG. During this transfer, the data is closely tested by the system via stored rules, which have been created to ensure the defined quality standard. After the successful quality inspection (i.e.: no rule violations) a positive clearance status is set and the domain transfer is completed.

Content approval
The content approval is the next step in this process. The catalogue management team examines the catalogue for errors and mistakes that can not be detected automatically, before it approves the imported catalogue.

Commercial approval
After the "content approval" the respective division is requested to examine the new catalogue commercially. Among others, the following questions are raised: Are the prices correct? Do the articles offered correspond to the initial tender?

At any Point of this process, the catalogue can be sent back to the contracting party for revision.

Activation of the catalogue in the system
After the successful completion of the clearing process, the catalogue will be activated in the staging portal. In the course of this activation, the catalogue is transferred into the e-Shop system, where it has to undergo some adaptations prior it's "go-live".

Order handling over Catalogues
Now, the e-Shop users are able to purchase products/services comprised in this catalogue too, depending on the authority-set the user has been granted.

Shipment and Invoicing

Shipment and invoicing don't have to, but can be, handled by the system. The receiver of a shipment has the opportunity to confirm the delivery online. Otherwise the delivery status will be changed (completed) by the system, after the delivery period has been expired.

Maintaining eCatalogues
The process followed for maintaining eCatalogues is identical to the process of creating them.

A.2.5. NITA - SKI (DEN)

Denmark representatives in PEPPOL WP 3 are from **NITA**. National IT and Telecom Agency (NITA) has the mission of the growth of the knowledge economy and the vision to create the groundwork of the Denmark digitalisation. To realise the vision NITA has adopted five strategic objectives:

- Denmark should have an electronic communications infrastructure ranking among the best in the world.
- The Danes should obtain the necessary competencies to utilise this infrastructure optimally.
- The Danes should feel secure and confident when using the infrastructure.
- The Danes will use the infrastructure in practice because it offers valuable and useful content.
- The National IT and Telecom Agency will contribute actively to the reduction of energy consumption and environmental hazards in Denmark.

In Denmark is the **SKI** National Procurement Ltd. that is delegated to procure. SKI is owned by the State (Ministry of Finance, 55%) and the National Association of Local Authorities in Denmark (45%). NITA negotiate large framework contract with tenders for public buyers and sellers. Since the 2007 the mandatory framework contract are accessible for the public buyers on the public procurement portal (www.doip.dk).
The **Public Procurement Portal (DOIP)** is an electronic market place accessible to all public buyers and suppliers in Denmark.
The DOIP is based on a framework agreement with Gaterade (an economic operator that run an eMarketplace for private companies). This agreement implies that the public sector defines their demands to the system/portal and that Gaterade provides a system/portal based on these demands. The portal is a platform for B2B and B2G trade and any company can join the portal. It is not necessary to have an office in Denmark or even speak the language.
The DOIP Team is comprised of human resources from different governmental agencies and the business communities (The Agency for Governmental Management, The Ministry of Science, Technology and Innovation, National Procurement, Gatetrade)[12].

As we say, SKI negotiates framework procurement agreements with suppliers. The contracts are in fact eCatalogues and they are used in Post awarding phase. In the Pre awarding/Procurement phases SKI gets a percentage of all procurement done within the procurement agreement, it makes quality assurance of eCatalogue data. SKI supplies several eProcurement platforms with content and them are using many different formats.

A.2.6. TILHA (FIN)

TILHA is the centralized Public Procurement Solution used be the State offices.
The TILHA solution is based on software applications and services provided by the Basware Corporation. As such, this document predominantly describes the catalogue management and catalogue-based purchasing processes provided by the Basware Procurement Solutions.

This assessment focuses on the catalogue related processes. These include the following key topics:

- on-boarding suppliers,
- enabling suppliers to create catalogues,

[12] http://www.gatetrade.net/uk/about.asp

- submitting catalogues to customers,
- routing catalogues to customers
- catalogue evaluation

Ordering based on catalogues and invoice processing that follows are also briefly discussed, but not in great detail.

With this solution, organizations get built-in best practices to effectively manage, control and automate the complete purchase to pay process: Purchase Management, RFx Management, Contract Lifecycle Management, Order Matching, Supplier Portal and Catalogue Feeder solutions.

The main eCat functionalities are:

1. Defining eCatalogue templates

When using Basware Supplier Portal to create products and catalogues, these can be uploaded using predefined Excel templates. Templates are available to suppliers for download from Basware Supplier Portal supplier personal pages.

2. Disseminating eCatalogue documentation information

Basware Supplier activation service activates the Customer's suppliers to send electronic catalogues to the customer Purchase Management solution. This service ensures the selected suppliers are aware of all the customer approved methods of submitting the catalogues to the customer Purchase Manage solution. The service also helps the selected suppliers to choose and implement the right means of submitting the catalogues. The service collaborates with Customer-defined suppliers to ensure the catalogues are produced in the right format.

3. Creating eCatalogues

The Basware Supplier Portal can be used by suppliers to create electronic product catalogues to be used by customers in Basware Purchase Management. Suppliers are able to create catalogues that contain detailed product information, including product details and attachments.

Supplier can create a catalogue in two different ways 1) offline creation or 2) online creation. In offline creation supplier generates catalogue content e.g. from ERP system on site and then imports the catalogue into Supplier Portal. In online creation the catalogue content is created in Basware Supplier Portal web-based user interface.

Medium to large products suppliers often generate their catalogues as an export directly out of the ERP system. Basware provides suppliers with support in creating an interface that generates catalogues in xCBL or UBL formats.

In addition to internal catalogues, Basware allows organizations to create requisitions based on products from external catalogues (punch out). External catalogues are actually websites of selected suppliers or marketplaces from which product information can be retrieved. When supported by the supplier site, the external catalogue can be searched locally in Basware Purchase Management without the need to browse the supplier webshop.

4. Assuring eCatalogues Quality

Technical validity of a catalogue is checked at two separate stages: at the upload of a catalogue via Basware Supplier Portal as well as upload of a catalogue to the Basware Purchase Management system. In case of invalid catalogue content the user is given an error message telling the reason for failure. After getting an error message the user is able to correct the errors in online in the web-based user interface and then save the catalogue into the catalogue storage.

Basware Catalogue Management service is an optional value-added service responsible for ensuring that the submission of the catalogues to the Purchase Management solution is successful and the catalogues are available for the customer agreed people for catalogue inspection and acceptance into production.

5. Submitting eCatalogues

Suppliers are able to submit a catalogue to the customer of their choosing through the Basware Supplier Portal. A prerequisite is that the customer has approved the supplier.
When an XML catalogue is created out of the supplier's ERP system directly, it can be automatically routed to the customer's Basware Purchase Management system. Customer and its' suppliers can be integrated through Basware Business Transactions –service delivering catalogues directly to the buyer's Basware Purchase Management solution.

6. Receiving eCatalogues and Uploading eCatalogues in the system

All internal catalogues are subject to customer approval before they are made available to customer end-users. Once a product in a catalogue has been approved, it automatically becomes visible to the end-users and it can be included in a purchase requisition.

7. Automatic evaluation of eCatalogues

Catalogue Admin capabilities in Basware Purchase Management allow all internal catalogues to be evaluated down to the level of product details. All differences of the new catalogue as compared to the current offering of the same supplier are highlighted and can be pinpointed with filters. Drill-down allows all product details to be inspected.

8. Maintaining eCatalogues

Suppliers are able to maintain product and catalogue content in Basware Supplier Portal at all times. Suppliers are also able to send updating or replacing catalogues to the customers at any time. Nevertheless, all catalogues are subject to customer review and approval before publication.

9. Ordering through eCatalogues

Requisition creation is performed in Basware Purchase Management using employee self-service tools. An easy-to-use wizard guides employees through the process of creating a requisition in a few simple steps. Depending on the employee's needs, requisitions can be created based on catalogues or as free text. With catalogue buying, products are collected into a shopping basket using powerful search tools or by navigating an intuitive product hierarchy.

Basware's versatile default value functionality ensures that requisitions are posted with the correct cost allocation information. Attachments and comments can also be added as needed in each step of the requisition creation process.

Once a requisition is complete, it can be sent to the approval workflow via a manual or automated process based on business rules.

Once the requisition is fully approved, a purchase order is created. Basware Purchase Management supports both automatic and manual ordering methods. With this method, Basware automatically sends orders to suppliers following requisition approval, with no need for further action by professional buyers. The system also supports manual ordering of products or services not suitable for automatic ordering.

10. Online invoice and payment

Basware Invoice Automation is a suite of off-the-shelf invoice processing and matching solutions. Built-in best practices help customers improve business performance, reduce costs, increase control and automate the entire Purchase to Pay process. Basware lets customers automate the entire invoice-handling process, including paper-based and e-Invoice data capture, to match purchase orders with invoices, identify contract-based and recurring invoices, review and approve workflow and transfer invoices to payment.

A.2.7. KSZF (HUN)

The Central Services Directorate General (CSDG/KSZF) of the PMO in the republic of Hungary is the owner of the Centralized Public Procurement, this program has some business functions that have been shared between the following actors:
- National Advertising Agency (Közbeszerzési Értesítő): the National Advertising Agency as the official partner for TED is in charge to publish the national and the EU regime advertisements, also providing electronic support;
- Ministry of Law Enforcement and Justice (IRM): the ministry is in charge for the legislative regulation of public procurement, the primer and secondary legislations and the harmonisation of the act on PUP with the EU directives;
- Prime Ministers Office (Meh): the PMO performs the administrative control on KSZF and is in charge to manage the state normativa in the form of ministerial guideline;
- Central Services Directorate General, Directorate of Public Procurement is in charge for the management of the secondary legislation for centralised public procurement, providing the services as central contracting agency for the institutes belonging to the scope of services plus doing the procurement for the PMO. Central Services Directorate General is operating the "PORTAL" application to provide electronic support to broadcast information for partners and to manage the preparation and running of contracts (typically framework agreements);
- Institutes (customers) belonging to the scope of services of centralized public procurement as stipulated in the corresponding government decree as mandatory partners and as voluntary collaborators;
- Prosperous suppliers of centralized public procurement procedures.

The Central Services Directorate General (CSDG/KSZF) manage eCatalogue along two main aspects:

1.) Classification and MASTER (or META) catalogue management (referred as: "Catalogue Factory");
2.) Catalogue management (Referred as "PORTAL");
a.) As part of the offer;
b.) As part of the contract.

The main elements of the related activities are being regulated at secondary legislation. The collection of data electronically in the format of a catalogue is stipulated in government decree, dedicated to the issues of "Centralised Public Procurement". This legal document is defining the subjects and objects of centralized public procurement, the obligatory of parties, the processes to follow, the services provided by CSDG and the compensation of the services. The objects of centralized public procurement procedures are given as a description of product groups. The other legal document is the guideline of the prime minister, called as "State Normativa" which actually gives the detailed, hierarchy of the classification in five layers (two digits per layer) with properties and value of properties at each block of the system.

The electronic support is being split along the two applications: the Catalogue Factory on the one hand (for classification and meta-catalogue) and the handling the physical catalogues at the PORTAL on the other hand.

Both applications are tailored to support the Centralized Public Procurement, which means that there are limitations in flexible use of the applications in "general" PUP procedures, without the modifications of the software itself (especially the PORTAL).

The **classification model** is mainly based on the UNSPSC/ACNielsen principles, (classification linked attributes) with the utilisation of the layer for local extensions.
The categories in the first (upper or higher) layer are predictable exported from the government decree, defining the objects of activity of centralized public procurement (CPUP). Further – conservative - building of the hierarchy is being made from upside down. The creation and management of categories is based on the product attributes (or properties) that are to be linked to the category at the certain layer it is being created. There should be minimum one new property introduced at a layer to create a new category. Categories at the lowest level should consist of minimum five attributes.

KSZF PORTAL is the frontline web application of electronic support for CPUP. Beside of numerous other functions it is the application where the preparation of procedure and the management of running contracts take place.

Procurement expert of KSZF should create the template for the procedure, including the classified product categories, with attributes evaluated, attribute values and weights for evaluation online on the main application and when finished the system creates the EXCEL template to be downloaded by the economic operator (or supplied offline on CD-s) with macros helping the bidder to create a "formally" acceptable offer, closed down with a checksum code.

The eCat main functions managed by the KSZF are:

1. Managing the META-catalogue or classification system.
The classification – called as "state normative" – are managed in the catalogue factory. Valid classification versions are exported to the PORTAL with interlinking present statistical categories with formal ones, providing continuous statistical figures of historical data.

2. Catalogue templates
The catalogue templates are being designed as part of the procedure along the procedure-LOT- contract (FA, FC) – individual contract – transaction cycle in the PORTAL application based on the categories of actual classification version. (Planned upgrade in catalogue factory will allow procurement officials to create "buyers catalogue", also based on the actual version of classification. From the structured LOT hierarchy the PORTAL creates the spreadsheet (EXCEL) with macros enabling supplier to create a catalogue as part of the offer without formal errors. Although catalogue templates are downloadable from PORTAL and can also be uploaded when being filled out both versions are communicated as part of "traditional paper-based" offer on CD.

3. Disseminating eCatalogue documentation information
Since KSZF procedures are always above the EU threshold level, calls and advertisement first appear on TED then on the National Gazette. To avoid confusion tendering documents are only published at KSZF website (www.kozbeszerzes.gov.hu) after advertising the final result.

4. Creating eCatalogues
Suppliers are responsible for the creation of eCatalogues, based on predefined eCatalogue spreadsheet templates. eCatalogues take the form of spreadsheet files, which have been closed with a checksum code.

5. Assuring eCatalogues Quality
As a first level check, suppliers are provided with tools helping them to make automatic quality checks. Completed catalogues can only be closed down with checksum when all categories have been offered and there is no formal mistake in the offer. Technical details and macros have been supplied together with the spreadsheet. Changing and modification of the spreadsheets are not allowed.

6. Submitting eCatalogues
eCatalogues on CD formats are part of traditional offers.

7. Receiving eCatalogues and Uploading eCatalogues in the system
After opening the traditional, paper-based offer, KSZF procurement officials check the offers, and upload the catalogues of prosperous bidders' into the system.

8. Automatic evaluation of eCatalogues
Automated evaluation is provided during the "filling in" procedure and as part of the uploading procedure.

9. Maintaining eCatalogues
The catalogues as part valid contracts can be maintained with regard to the original call (as of master catalogue) and in logically separated sub-phases like:
- price maintenance
- item withdrawal

- new item upload (as changing catalogue item)
- correction of textual errors

Catalogue maintenance is to be followed by using spreadsheet templates, Strict content control is being performed as part of the upload procedure. Although catalogue maintenance at system level is being performed automatically there is a “manual acceptance” status is inserted which is to be concluded by the procurement officials.

10. Ordering through eCatalogues

Legally valid orders can only be done on paper form, so PORTAL application is to be used to provide help in preparing the order form as it can be downloaded from the system and attached to conventional offline communication between buyer and supplier. The procedure of creating an order:

- Create a customer basket
- Put products into the basket
- Assign the required peaces of product (no other modification is allowed)
- Complete basket (any number of baskets can be created).
- Place the order

When procurement is to be performed as a result of reopening the competition under running FA-s the modification of prices of catalogue items is also enabled.

Online invoice and payment (transaction procedure)

Order, confirmation of order, invoicing and confirmation of payment are forming the transaction procedure; actually by simple changing the status of the same record. The procedure basically should be completed online, real-time in a handshake mode. Customer sis placing the order, supplier confirms the order but might change the number of delivered items and the delivery deadline (within the range given in the contract). Customer confirms the delivery by the reception of the invoice (actually the invoice is not communicated only the reference number of the invoice and the date of issuing the invoice. as part of transaction procedure

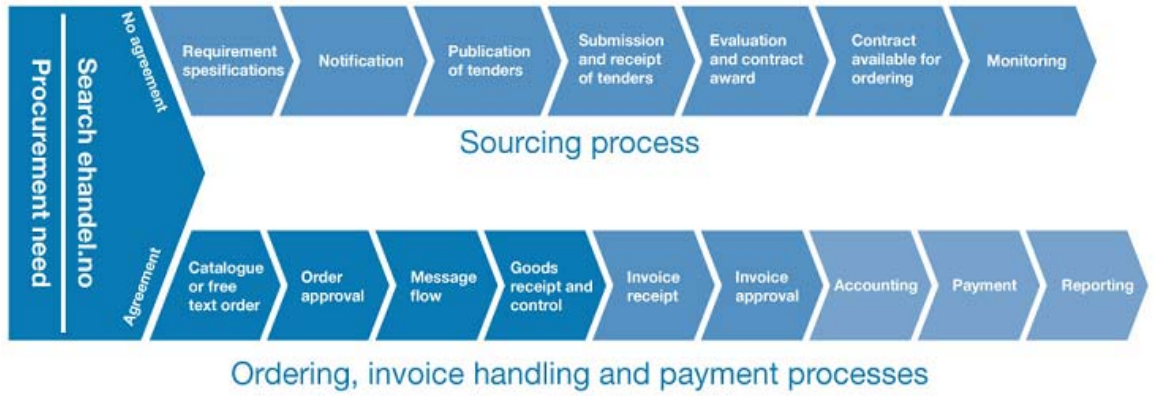
A.2.8. DIFI (NOR)

The Agency for Public Management and eGovernment (Difi) is in charge of renewing the Norwegian public sector and improve the organisation and efficiency of government administration. The agency is overseen by the Ministry of Government Administration and Reform (FAD). The promotion of solid procurement process and eProcurement is one of their tasks.

Norwegian public procurement is highly decentralised in the sense that public sector entities on all authority levels can decide quite freely from whom to purchase their goods and services, as long as the purchase is made within the EU-based Norwegian procurement regulations. However, the use of framework agreements internally established or created as a result of co-operation between local and/or regional authorities, is quite common for all entities and on all levels. To improve standardization and integration the Norwegian e-commerce initiative was approved by the Cabinet in 1999 and the Programme for Electronic Commerce in the Norwegian Public Sector was established with the creation of The Electronic Public Procurement Portal www.ehandel.no

There are two subject that are managing procurement activities: Doffin and Ehandel.

Doffin manages Electronic notification and Publication of tenders, Ehandel.no manages i) eTendering/eSourcing including use of eSignatures ii) eOrdering including eCatalogue management iii) eInvoicing iv) Integration with ERP systems and suppliers sales systems.



In Norway under framework agreements:
Pre-Award: 2 National systems (Mercell, Visma/eu-supply)
Post-Award: 5 National systems

Ehandel.no manages the new eProcurement Platform EPP.
The EPP II tender process should result in a framework agreement that gives easy and affordable access to a comprehensive range of e-procurement related services to the many potential users through the entire contract period. Through the framework agreement, the Operator shall provide a complete and value added set of solutions for e-procurement and accompanying services that cater for the widespread introduction of e-procurement between contracting authorities and their supplier market. Based on the existing EPP-solution.

Background and objective for procurement of a new platform
The background for the procurement is the expiry (November 30 2009) of the existing EPPI contract that entered into force June 1st 2002. The scope of the contract requires that the procedures in Regulations on public procurement part I and part III is pursued. EPPI will in its entirety be replaced by the new platform services.

EPPII will:
- Contribute to the fulfilment of the objective in Stortingsmelding nr 17 (2006-2007).
- Introduce standardized business processes, information contents and message formats (CEN/ISSS WS BII).
- Support cross border electronic public procurement through the PEPPOL interoperability infrastructure.
- Contribute to better, simplified and more secure procurements in the public sector.
- Secure buyers and their sellers access to a EPPII service that is at least as good as EPPI.
- Implement important improvement needs identified through the use of EPPI.
- Deliver a secure transition for buyers and their sellers from the services offered under the EPPI contract to the services offered under the EPPII contract.

The purpose of the procurement of new services is to connect buyers with their sellers of goods and services on a common infrastructure built for the future needs of the Norwegian public sector. Such an infrastructure should support implementation of standardized business processes, information contents and message formats and enable cross border electronic public procurement.

The buyers is very heterogeneous, both regarding the organizational size, the prioritizing of the procurement function, the maturity in the procurement function, procurement areas, maturity regarding use of electronic procurement tools etc. Some buyers are using EPPI very frequently in a rather large scale, while other buyers use EPPI less frequent in a smaller scale. A few have chosen other solutions than EPPI and many do not buy through electronic channels at all. It is assumed that the sellers have the same form of heterogeneity (sizes, branches, products nature etc). The services to be offered must be adapted to this reality to what extent possible.

There have not been performed a clearly expressed calculation of what share of the public procurements that fits this category, but according to SSB public procurement statistics some 130 billions NOK is procured to support public sectors own production of goods and services. The objective in 'St. Melding nr 17 (2006-2007)' is that 25 % of all operations related public procurement should be completely or partly procured through competition based on electronic processes for cooperation with the seller market.

EPPII shall support the execution of electronic business processes between buyers and their sellers.
Whether the end user places the purchase order or receives the order in their own application through SBA or directly through EPPII, EPPII should have the functionality to support the following situations, not limited to:

- Order/order handling of standard products from an electronic product catalogue
- Order/order handling from electronic product catalogues with a simple configuration of the products, e.g. statement of size, information about subscriptions etc. through eForms or similar solutions.
- Order/order handling of products from catalogue, parallel framework agreements, DPS, open marketplace or other non-contracted sellers, where a dialogue is required to produce an order.
- Order/order handling of products that typically need so advanced configuration that the seller's online store shall be used instead of the electronic product catalogue

The users (buyers and sellers) must be able to use the EPPII services efficiently and with a low entry level. The Tenderers must also describe a set of adoption and increased use services.

Tenderers are further asked, as input to the dialogue, to suggest quality objectives and measuring methods (KPIs) for their concepts within the area of quality assurance. The objective of this exercise is to ensure the users' needs for a stable and high quality service.

High level description of today's platform - EPPI
Ehandel.no and the Electronic Procurement Platform (EPPI) serve buyers in the Norwegian public and utilities sector (Subscribers) and their sellers. EPPI is accessible to all on a non-discriminatory basis. EPPI is accessible as part of the Ehandel.no service on the internet and it holds high security- and integrity standards. The EPPI is efficiently trading products and services. The EPPI provide the users with a variety of ways to interact, thus enabling them to decide the level of integration and involvement appropriate for their requirements, skills and ambitions. The functionality of EPPI is adjusted to fit the Participants' needs. To enable this, the EPPI has a robust and flexible structure, with regards to functionality and operational stability. The EPPI-platform components are illustrated in the figure below.

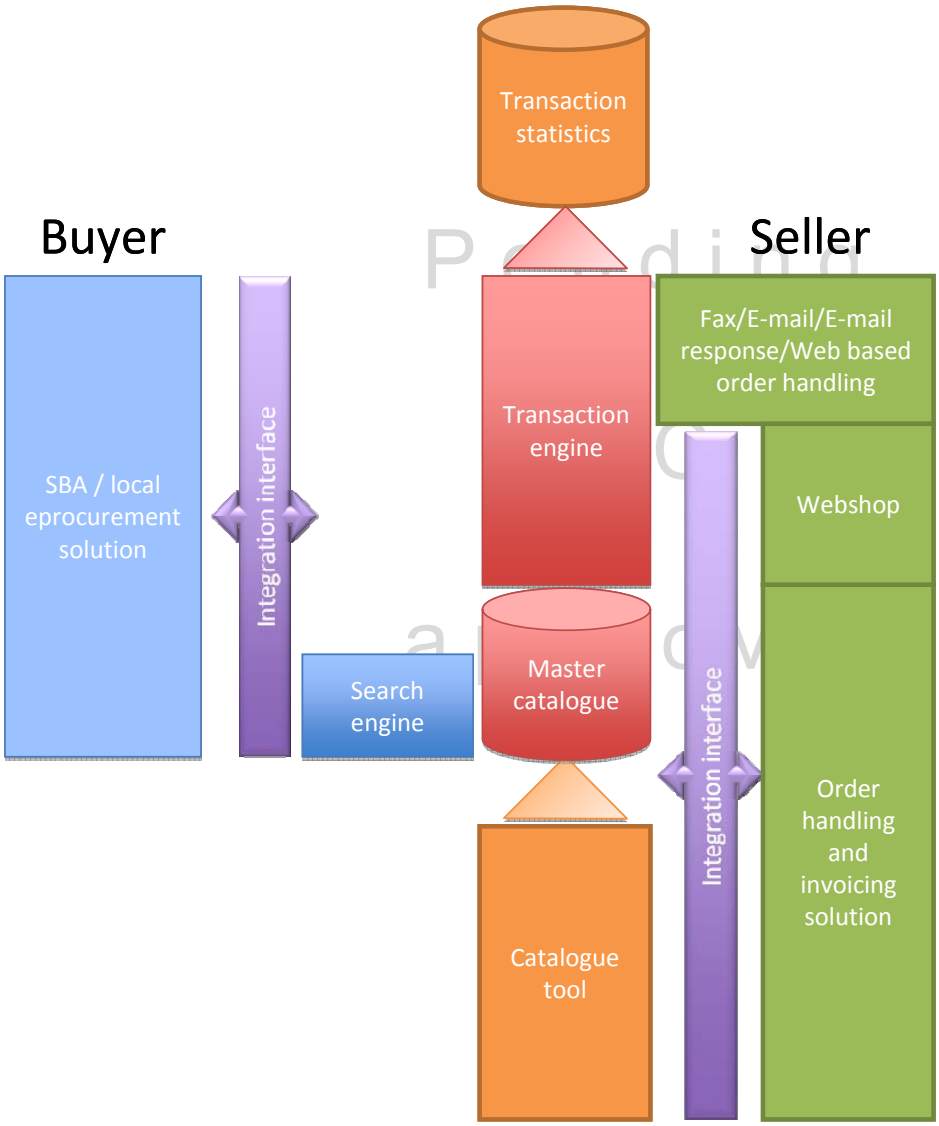


Figure 1 - Ehandel.no

Buyers can connect to Ehandel.no in different ways and to different extents. Some connects their ERP/financial system to the platform and make use of the purchase application in the ERP/financial systems to generate purchase orders. Others use a stand alone purchase applications that is connected to the platform. ERP, eProcurement solution (except EPPII webshop) and eSourcing tools are not part of the scope of this competition.

Supplementary information about Ehandel.no and the EPPI could be found at www.ehandel.no/ehp.

The above mentioned high level description of today's solution is for informational purposes only and is not meant as a guidance for the Tenderer's' solutions for EPPII.

Integration services

The purpose of the Integration services is to ensure the exchange of electronic business information between buyers and the sellers of goods and services. The procurement process is based on collaboration between buyer and seller and is thus depending on an effective and reliable information exchange. The

exchange can either be in the form of unstructured data (e.g. excel sheet catalogues), structured documents or shopping baskets.

Supported processes
The figure below shows the different types of integrations that must be supported on the buyer and seller side. These integrations will support the following processes:

Buyer side:
- Catalogue Management
- Order placement and administration either done in a SBA, a local eProcurement solution or in the procurement module in the ERP-solution
- Fulfilment
- Invoicing

Seller side:
- Catalogue Management
- Exchange of shopping baskets via punch-out/roundtrip
- Order management either done manually in a web-solution or automatically via the ERP-application
- Fulfilment
- Invoicing

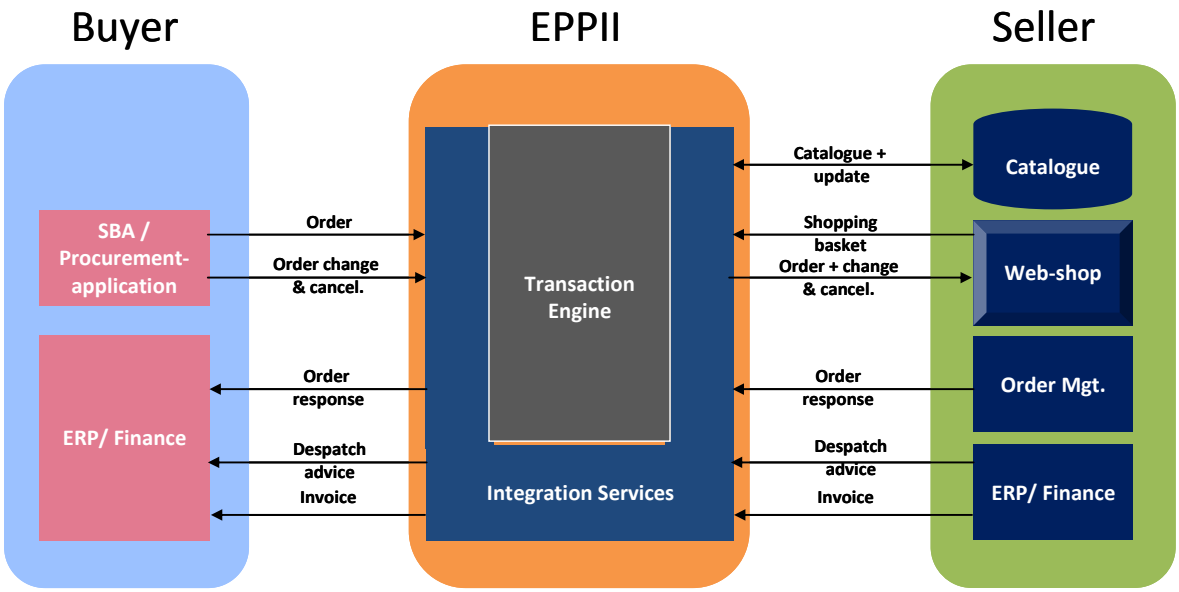


Figure 2

Buyer front-end services
Figure 3 below describes the relationship between the different maturity levels on the buyer and seller side. This illustrates that that the EPPII webshop is a simple solutions for low volumes, and the EPPII order handling solutions handle low to medium transaction volumes. The seller services support the buyers at any level.
On the buyer side, only the EPPII webshop is covered by this contract. On the seller side both levels are covered by this contract

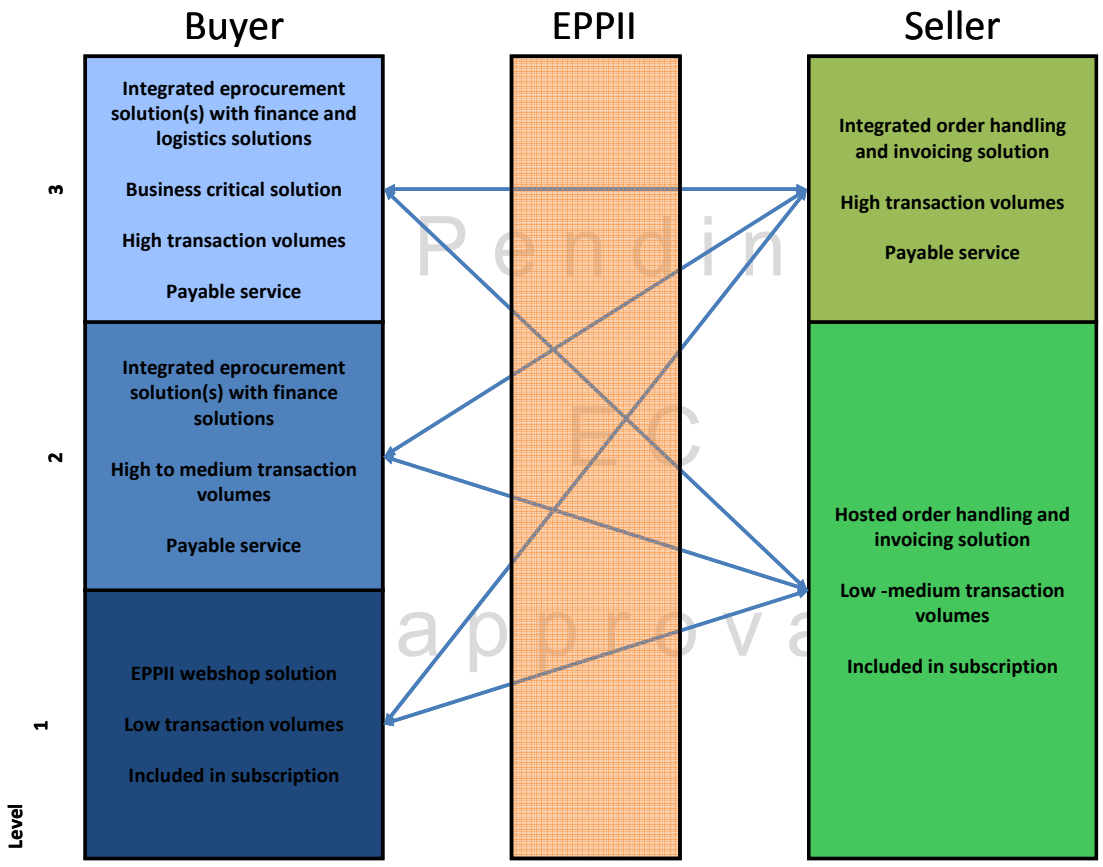


Figure 3 - Buyer and seller maturity levels

EPPII Webshop:
EPPII Webshop is a simple, low cost and threshold eProcurement solution were public entities can generate all types of orders.

The Webshop should lead to minimal administrative extra effort and we want a system that mostly let the end user do his own administration.

The EPPII Webshop shall not include integrations, or options for integrations, with general ledger, finance solutions, logistic solutions or any other related solution. The only integration the EPPII Webshop should support is the integration with the RFx module and the Open Marketplace.

The EPPII Webshop must support purchase from multiple frame agreement seller based on electronic product catalogues.

EPPII Webshop is to be used to conduct all kinds of goods, services and investment purchases, and combinations of these, including the use of RFx functionality.

EPPII Webshop should as a minimum support the following functionality:
- Advanced search for the base of electronic product catalogues.
- Simple and structured presentation of search result.
- Filter, drill-down, comparison and other advanced value added functionality for enhanced search result.

- Add to shopping cart from search result and punch-out/round trip to the RFx.
- Generate order(s) from shopping cart.
- Manual pre-approval of order by authorised personnel*
- Order routing through EPPII to multiple sellers is mandatory.
- Support electronic order response messages.
- Support simple goods receipt**.
- Free-text field for additional order information, like accounting information.
- User friendly front- and backend.
- Support user and catalogue access administration.
- Support standard ehandel.no catalogues.
- Support Norwegian calendar.
- Support standard reports.

* The manual pre-approval: The user has to add the mail address of the person authorised to approve the purchase. There is no logic or workflow to be linked to this functionality. It must be possible to set up the functionality to be mandatory or not.

** The simple goods receipt: The user chooses a predefined goods receipt status from a drop down menu, like “Fully delivered”, “Partial delivered” or “Damaged”. Linked to this drop down field is a free-text field where more detail can be added.

The EPPII Webshop must be easy and self explanatory to use. This means that there will be no need for training to use the service. The solution must be web based or ASP.

The EPPII Webshop must be included in the basic subscription and it is essential that the cost of EPPII does not affect the subscription fee more than slightly.

Search engine
The operator shall offer a user friendly and powerful search engine with advanced search options to buyers to be able to retrieve information from the electronic product catalogues.

The search engine is a platform service and is directly linked to the master catalogue. All searches are done in the individual buyer’s master catalogues.

The search engine is not an eProcurement solution, but offers shopping cart functionality. The search engine must be integrated with a host eProcurement solution. These solutions could be EPPII Webshop, SBA’s, local eProcurement or ERP solutions. The integration interface must be well defined and simple to integrate towards. The search engine should support the RFx functionality. It must support punch out/roundtrip to seller webshops .

The search engine is triggered from the host solution through the integration. The searches are carried out and a shopping cart is generated. The shopping cart content is then fed back to the host solution as order lines. The order splitting and processing is to be carried out in the host solution.

The basic functionality is to carry out precise searches in the master catalogue. The search engine must be best of breed, powerful and support advanced search options. By advanced search options we mean:
- Open ended searches
- Multi parameter searches
- Search filters, drill-down
- Contextual dynamic navigation for exploring related data
- Advanced linguistics and relevancy management capabilities

The presentation of the search results must be quick, precise and simple/user friendly. The search result must contain the key information as price, product name, unit etc., be structured according to relevance and preference. Preferred product tagged articles are to be presented first. The search result must offer sorting and product comparison functionality.

The search engine must be easy and intuitive to use, and support all current and future catalogue attributes and functionality in the EPPII catalogue templates. It must be able to present all catalogue attributes. It must also support user and catalogue access administration.

Simple RFx
The Simple RFx solution is a supplement to the EPPII webshop, search engine, SBA and local eProcurement solutions. The solution is a dialogue tool to identify articles, and generate required order information and its intention is to reduce or eliminate the need to use free text orders, e-mail, telephone etc. in the ordering process. The RFx is believed to be used on tree different communication levels:

- One-to-one communication with sellers.
- One-to-several communication with contracted and/or qualified sellers.
- One-to-several communication with sellers in the open marketplace.

The solution is stand-alone, and shall be integrated with the Webshop and search engine delivered by the EPPII operator. It must have a well defined integration interface to facilitate the RFx functionality as a part of the SBA and local eProcurement solutions.

Simple RFx – One-to-one communication

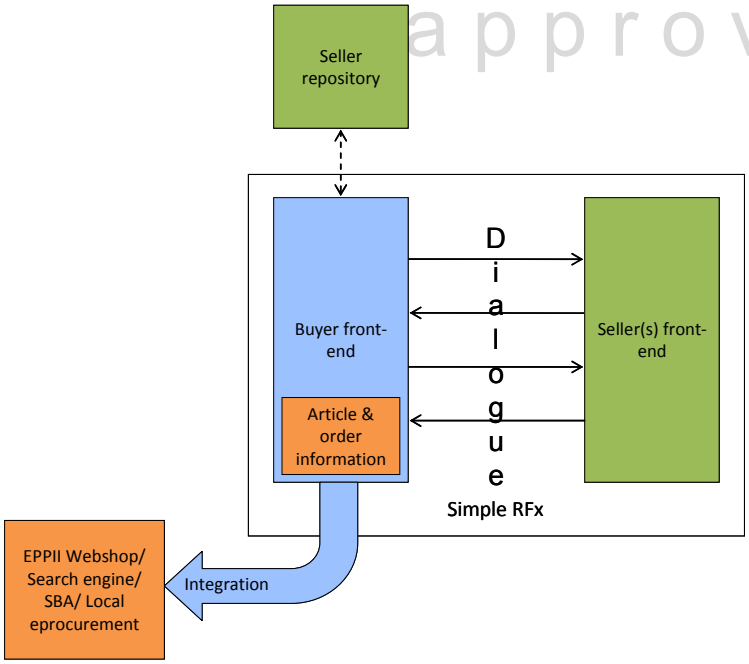


Figure 4 - Illustrates the Simple RFx -communication.

The RFx solution with direct communication to one seller can be used for the following processes:

- Replace Free-text orders to selected seller.
- Confirmation of commercial conditions of purchase
- Request for detailed article information.
- Inventory check.

These processes could be opened by entering a valid e-mail address for the seller or by selecting seller through use of the seller repository.
There are no requirements regarding the dialogue between the buyer and the seller, but the dialogue should result in “draft” order, which can be imported into the ordering system (SBA, search engine, webshop etc).

The draft order with its line(s) are then validated and uploaded through an integration interface to the webshop, search engine, SBA or local eProcurement solutions, for order processing. The validation must be automated, and check that all fields are filled out, and if possible whether the content consist of valid values. It is desirable that the order line(s) can be implemented in the shopping cart with the other products, if this does not have a cost impact.

If possible this log is saved with the order or dialogue if no order is generated. The log should follow the communication as an attachment:

As a minimum the draft order shall contain the following information:

- Article information
  - Article number
  - Article short description
  - Unit
  - UNSPSC – level 4
- Order information
  - Quantity
  - Price
  - Lead-time
  - Inventory status

There should be no demands of maximum time for the dialogue phase, but there can be a time limit for the draft order after it has been exported to the ordering system. The RFx solution should be free for the sellers, and part of the subscription fee for the buyers.

The user interface must be very simple and self-explaining, and the necessary support information must be available in the tool.

Simple RFx - One-to-several communication - Optional

The simple RFx to multiple suppliers is a desired supplement to the standard RFx functionality. This functionality build on the standard RFx functionality but facilitate more advanced communication.

The simple RFx can be used for the following processes:

- Mini-competition for parallel frame agreement orders.
- Mini-competitions between buyer qualified sellers.

This process could be opened by entering a valid e-mail address for the sellers, or by selecting from the seller repository. The buyer must be able to ask multiple sellers. The buyer then generates a description of the equipment, services, works he wants a quotation on, and the sellers respond with suggested products in accordance with the buyers request.

When the Mini-competition /dialogue are finished, the buyer selects the draft order from on of the sellers. The order line(s) are then validated and uploaded through an integration interface to the EPPII webshop, search engine, SBA or local eProcurement solutions for order processing. The validation must be automated and check that all fields are filled in, and if possible if the content consist of valid values.

The structured result of the dialogue contains the following parameters:

- Article information
  - Article number
  - Article short description
  - Unit
  - UNSPSC – level 4
- Order information
  - Quantity
  - Price
  - Lead-time

- Inventory status

As the sourcing activities are covered by the public procurement act and regulations, certain functionalities are required:

Wanted but requirements are:

- All seller bids must be inaccessible until the predefined quotation deadline.
- It is possible to require two set of eyes to open the quotes, meaning that two persons must be logged on and perform the opening. It is not required that this must be simultaneous.
- The process must be documented in a log and saved for later use.
- If necessary, the dialogue is continued with the winning seller to complete all article and order information.

The dialogue can take as long as it takes. The buyer and seller are informed of dialogue activity through e-mail notification messages. The simple RFx functionality must be free for the sellers, but can be offered as an optional payable service to the buyers.

The user interface must be very simple and self-explaining, and the necessary support information must be available in the tool.

"Advanced" RFx - One-to-several communication to the Open Marketplace (or other not-qualified or not-contracted sellers) - Optional

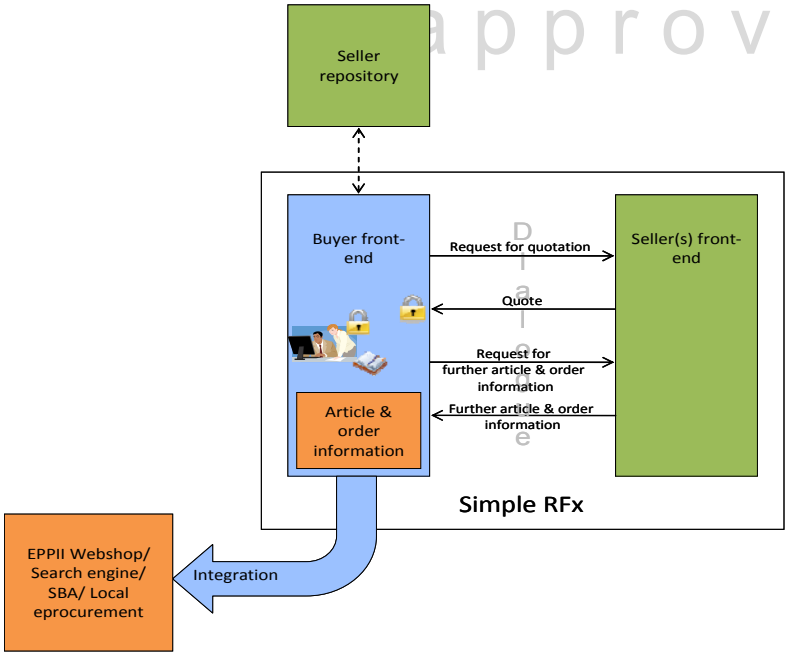


Figure 5 - Illustrates the advanced RFx process

Seller repository

The seller repository is a register of different category sellers, commercial conditions for trading with the sellers, available eProcurement processes with the seller and other relevant information which can help the buyer identifying and selecting the correct seller.

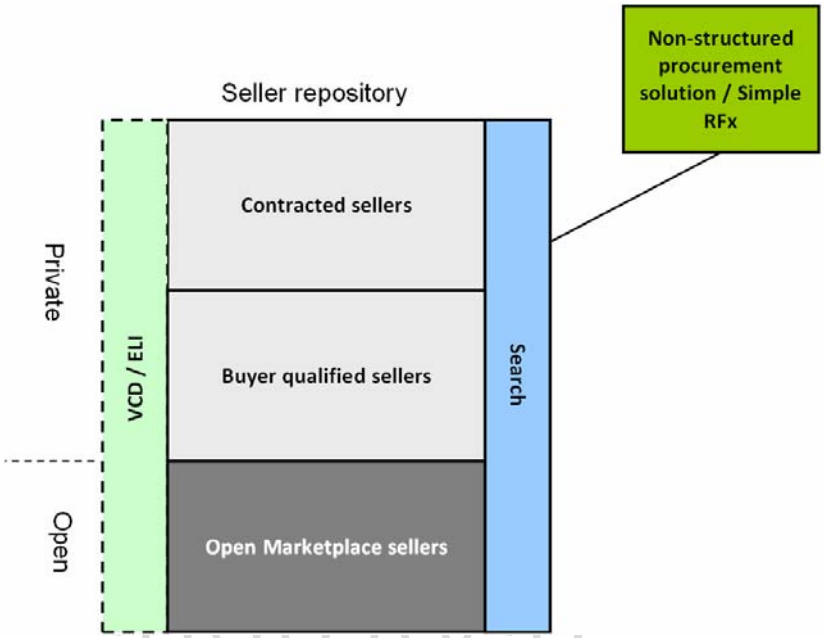


Figure 6 - Seller repository

The seller categories at the start are:

- **Contracted sellers**: Sellers under commercial contract with the buyer. These sellers are private for each buyer
- **Buyer qualified sellers**: Buyer has qualified the seller, but the seller has no commercial contract with the buyer
- **Open Marketplace sellers**: Any seller registered as a supplier to the public sector.

The general information elements in the register should be:

- Seller information: name, address, order e-mail address, phone number, organization number etc.
- Contact information: Contact person and contact information.
- Company presentation: Text presentation maintained by the seller
- Seller product categories: UNSPSC/CPV listing of offered product group, with opening for further indexed free-text information linked to each node.
- Geographic area the Seller can deliver equipment/services
- Other restrictions regarding trade with seller
- Sellers general terms and conditions
- Sellers implemented eProcurement dialogues/processes

The repository shall if relevant include Buyer specific information for the seller regarding

- Listing of assortment contracted with the seller including commercial contract information and information regulated by “samhandlingsavtale”
- Listing of assortment seller is qualified to deliver including and information on possible e-processes regulated by “samhandlingsavtale” or any other document.

The responsibility to maintain Buyer specific information rests with the buyer. The rest of the information is maintained by the seller. Once the virtual company dossier (VCD) / Electronic Seller Information Register (ELI) is approved and implemented (end of 2010) it is required that the seller repository is integrated in order to provide information regarding Public procurement act requirements like HSE statement, VAT Certificate and Tax Certificate, Attestations for registry in trade registers, Proof of Economic and Financial Capacity or Approved Credit Rating.

The seller repository must include a search engine to search, filter and drill-down on any of the registered information.

Most likely use of the Seller repository is a buyer search for a product and the search engine responses with:

- Contracted sellers and products available from Contracted area
- Qualified sellers and possible products on Qualified are
- Possible sellers and products available on the Open Marketplace

The buyer then selects from catalogue or initiate a RFx- process in order to generate an order.

Catalogue tools, services and master catalogue

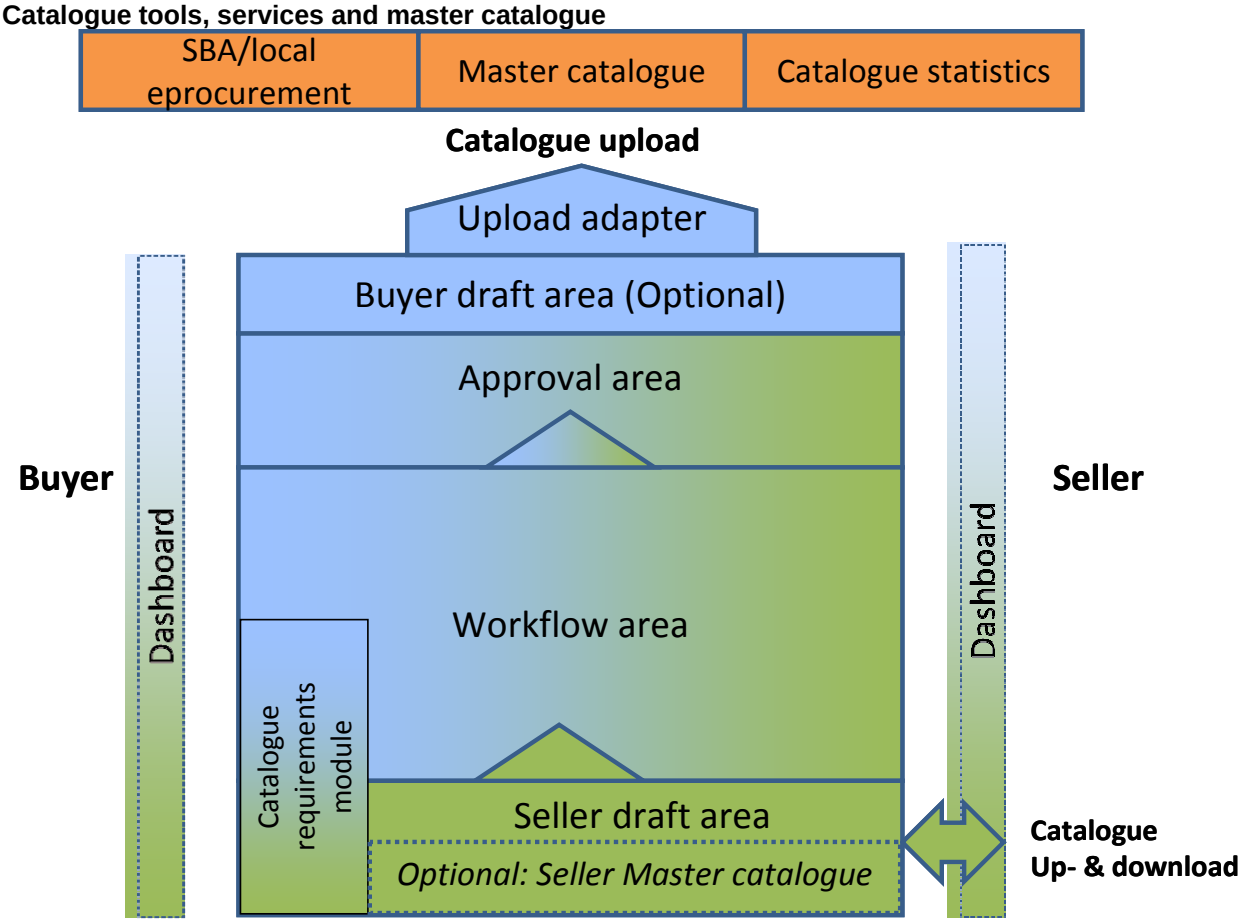


Figure 8 - Illustrates the full catalogue processes to be covered by the catalogue tool and service.

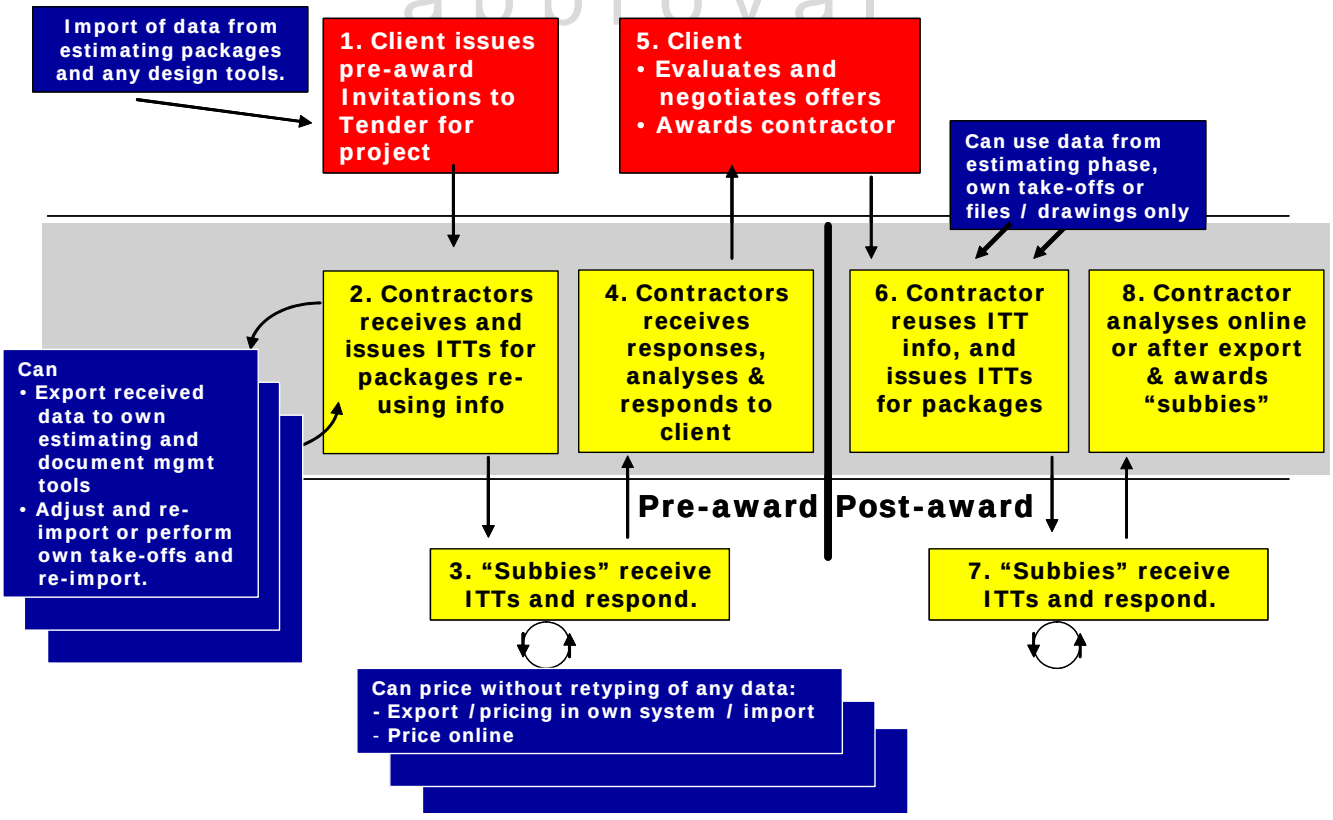
The catalogue tools and services are expected to cover the full process from seller draft catalogue, through catalogue workflow between buyer and seller and approval, to catalogue upload to the relevant application or service. All processes from upload to the workflow area until final catalogue upload must be transparent and possible for the buyer and seller to monitor in a dashboard. This dashboard must show time stamping on activities in the workflow, and stamping in and out of activity responsibility with buyer and seller.

The catalogue tools and services must at all times support the EPPII catalogue template and functionality.

The figure below outlines the different areas of the catalogue tools and services. In the following chapter each of these areas will be addressed.

Pre Award

In one of the Norwegian eProc systems, the Mercell system, E-Catalogues can be imported, broken up into packages, included in relevant tenders, estimated (budgeted) rates later available for comparison. The graph below describe the typical supply chain.



ANNEX 3: Description of the situation in other Countries – Countries Sheets

Who's who: 12 non PEPPOL countries answered the Questionnaire on eCat management

Country	eCat solution	CPA
Belgium	yes	Service fédéral e-Procurement SPF Personnel et Organisation
Czech Republic	no	Administration of the State Material Reserves
Ireland	no	eProcurement Initiative National Public Procurement Policy Unit (NPPPU) Department of Finance
Lithuania	yes	Central Project Management Agency
Luxemburg	no	Ministère des Travaux Publics
Malta	no	Ministry of Finance and Economic Affairs - Contract Department
Romania	yes	Agentia pentru Serviciile Societatii Informationale Ministerul Comunicatiilor si Tehnologiei Informatiei ASSI
Slovakia	no	Office for Public Procurement - Department of European Affairs and International Cooperation and Electronic Public Procurement Department - Slovak Office for Public Procurement
Spain	yes	Ministero de Hacienda, DG Compras
Sweden	yes	Swedish Administrative Development Agency, VERVA
Switzerland	yes	Federal Department of Finance FDF Swiss Federal Strategy Unit for Information Technology FSUIT
UK	yes	OGC bs

The following Countries sheets are only for those who implements eCat solutions.

A.3.1. Belgium

eProc **set up** year: 2000 / **Led by**: Federal public service personnel and organization, with Electronic Budgetary and Financial Control Program FEDCOM (that develop ePayment and eInvoicing projects)
Main Goal: Manage eProc project, helpdesk, account / **Main projects**: eNotification, eTendering, eCatalogue (pilot) /**Web site**: https://enot.publicprocurement.be

Public procurement legal framework	EU Directives not implemented, xls worksheet based on UBL2.0, digital sign and eID implementation data matching against Belgian National Registry and Belgian Social Security
Operations and processes followed for the use of eCatalogues through existing ICT systems	eCat for FA; support users profiling (e.g.Viewer, Prepare Order, Purchaser, Delivery receiver); post awarding; supplier fill out catalogue eSign and upload it; CA check (manually), approve and publish (also new eCat and changes in substantial attributes); interface FEDCOM
Technical aspects of eCatalogues systems	.xls worksheet, no formatting standards, web application, use of: MSQL, Jboss, Java, Apache
Content of eCatalogues	Some mandatory fields, not uploadable if not filled out
Statistics	Still in pilot stage
eProcurement programmes and initiatives	2009: Filling in off-line tools, eAuctions, eAwarding; training

A.3.2. Lithuania

eProc **set up** year: 2007 / **Led by**: Central Project Management Agency CPMA **Main Goal**: pilot project on centralized public purchases/ **Main projects**: on line purchasing model /**Web site**: www.cpo.lt

Public procurement legal framework	Fully compliant with EU Directives; no requirements or special product description for eCat (CPV); 3A class eSign;
Operations and processes followed for the use of eCatalogues through existing ICT systems	eCat for FA; post awarding; supplier can withdraw products, change description, up to date price, accept RfQ calculating on line the price; purchasing authorities can create "purchase basket" (also from different suppliers) to RfQ; CPMA verify with instant worksheet and eTools, registered users
Technical aspects of eCatalogues systems	Web based, various web forms and .pdf, eSign and SSL connection, use of: MSQL, Apache, Joomla, PHP,OS prods
Content of eCatalogues	Data fields filled when registering users in Catalogue
Statistics	106 CA, 29 suppliers, n. 509 trans for 2,5 million euro
eProcurement programmes and initiatives	Purchasing of services, eInvoices, GPP, training

A.3.3. Romania

eProc **set up** year: 2002 / **Led by**: Agency for Information Society Services (ASSI) **Main Goal**: Manage eProc and eGov programme / **Main projects**: eNotification, eCatalogue, RfQ, eAuction /**Web site**: www.e-licitatie.ro

Public procurement legal framework	EU Directives implemented, CPV compulsory, eSign (applicant received it by ASSI certification authority)
Operations and processes followed for the use of eCatalogues through existing ICT systems	Direct acquisition, pre awarding (creating eCat, submitting eCat), post awarding (RfQ, supplier acceptance/rejection, CA acceptance/rejection), no verification, CA access by digital certificate
Technical aspects of eCatalogues systems	ASSI PKI interoperability project, eCat manual upload process, web based, .net, mix proprietary/OS
Content of eCatalogues	Product defining, product availability, picture
Statistics	10.853 CA, 11.927 suppliers (1.478 with eCat), 52.534 products, 131.000 transactions,
eProcurement programmes and initiatives	Open and restricted procedure and DPS

A.3.4. Spain

eProc **set up** year: 1997 (fully procurement cycle 2005) / **Led by**: Subdirection General de Compras, Ministry of finance and economy **Main Goal**: Contracting central body / **Main projects**: eProcurement / **Web site**: http://contrataciondelestado.es

Public procurement legal framework	EU Directives implemented, CPV, eSign, user ID
Operations and processes followed for the use of eCatalogues through existing ICT systems	eCat Based on FA, CONECTA information systems (implement verification processes too), secure access, no specific rules for eCat
Technical aspects of eCatalogues systems	Buyers access eCat through CONNECTA, use of xml with possibility to attach doc (.pdf, MsOffice),eCat generated by PROTEO application, web based, .net, J2EE, management workflow system,web service for external application integration, doc storage
Content of eCatalogues	Company data, general attribute, specific technical features
Statistics	1.700 CA, 800 suppliers, 15 eCat, 25k transactions, 900mln euro
eProcurement programmes and initiatives	Other tools based on FA, manuals, contact center, training

A.3.5. Sweden

eProc **set up** year: 2000 / **Led by**: Full autonomy of local authorities, Swedish Administrative Development Agency, VERVA / Main **Goal**: Manage eProc project, helpdesk (VERVA coordinate IT FC procurement)/ **Main projects**: no national eCatalogue /**Web site**: www.verva.se

Public procurement legal framework	EU Directives implemented partially (not yet DPS), no requirements,
Operations and processes followed for the use of eCatalogues through existing ICT systems	There are many solutions; we mainly use catalogues for post-awarding processes
Technical aspects of eCatalogues systems	many different vendor or third-party driven solutions; in the Northern European UBL 2.0 Subset Working Group; no established standard, many agencies in Sweden use the UNSPSC product classification scheme (there is now a Swedish translation of the UNSPSC scheme, inline with the translations made in other Nordic countries), also take part in the CEN/ISSS BII workshop and catalogues is one of the work items
Content of eCatalogues	many solutions
Statistics	
eProcurement programmes and initiatives	Fully implementation of Directives, training, adopt a standard

A.3.6. United Kingdom

eProc **set up** year: referring to Zanzibar pan government program 2005 / **Led by**: OGC Buying Solutions **Main Goal**: Manage eProc project, helpdesk, training / **Main projects**: eMarketplace, P2P, data warehouse /**Web site**: http://online.ogcbuyingsolutions.gov.uk

Public procurement legal framework	For eCat EU Directives not implemented, UNSPSC mandatory, single sign on portal, no eSign, punch out (from buyer P2P system to Zanzibar, then to supplier enabled website)
Operations and processes followed for the use of eCatalogues through existing ICT systems	eCat for FA and FC; post award contracts cat are update in a cat management system and then released on Zanzibar Mkt, support OCI punchout, purchase order and eInvoicing, a macro verify and convert in XML; Zanzibar re-check; eCat "profiling" (public, multi-buyer, private)
Technical aspects of eCatalogues systems	BMEcat standard, UK gov security accreditation, web hosted service on demand, buyer P2P may be hosted by Zanzibar
Content of eCatalogues	Spreadsheet
Statistics	2005, 5 Central Dep, 20.000 schools, Xchange Wales; 1k supplier, 750 eCat for 1,5 mln lines, 200k orders for 3 mln £
eProcurement programmes and initiatives	eCat provision, collaborative contract with other gov, training

ANNEX 4: Analysis of the categories for the Pilot tenders

Category	Consolidated Nomenclature	Volumes	Cross-border Potential	Familiarity eProc	Legal Constraints	Overall judgement	Other Comments
ICT **- PC Desktop**	**OK** Comments: Attributes would require some work, but overall it looks feasible.	**OK**	**Low ?** **To be investigated further.** Comments: "Producers" are essentially non European. Some European "Assemblers" exist. However, if no post-sale service is included, they typically rely on national subsidiaries or dealers, and cross-border potential looks limited. If a service component is included, then "pure distributors" hardly have the capacity to follow-up the contract performance without a local subsidiary. There might be a potential cross-border interest from those large national distributors interested in expanding their presence abroad. However, even if confirmed, this looks a narrow segment, and the cross-border potential does not seem high overall.	**High**	**Ok**	**Medium interest** (Mainly because of cross border potential)	
ICT **- Printers**	**OK** Comments: Attributes would require some work, but overall it looks feasible.	**OK**	**Low ?** **To be investigated further.** Comments: see PC Desktop	**Low**	**OK**	**Medium interest** (Mainly because of cross border potential)	
Furniture **- School furniture**	**OK**	**OK, Medium**	**OK, Medium**	**OK, Medium**	**NOK?** **To be investigated further.**	**Medium interest**	

Category	Consolidated Nomenclature	Volumes	Cross-border Potential	Familiarity eProc	Legal Constraints	Overall judgement	Other Comments
	Comments: Attributes would require some work, but overall it looks feasible. There is a part relating to aesthetical aspects that might be complex, but it can be managed.				Comments: Some national certifications, e.g. for safety (fire resistance) could be a problem.		
Furniture - Office furniture	**OK** Comments: Attributes would require some work, but overall it looks feasible. There is a part relating to aesthetical aspects that might be complex, but it can be managed.	**OK, Medium**	**OK, Medium**	**OK, Medium**	**NOK?** **To be investigated further.** Comments: Some national certifications, e.g. for safety (fire resistance) could be a problem.	**Medium interest**	
Furniture - Common spaces furniture	**OK** Comments: Attributes would require some work, but overall it looks feasible. There is a part relating to aesthetical aspects that might be complex, but it can be managed.	**OK, Medium**	**OK, Medium**	**OK, Medium**	**NOK?** **To be investigated further.** Comments: Some national certifications, e.g. for safety (fire resistance) could be a problem.	**Medium interest**	
Medical equipment - Echo tomographers	**OK**	**OK**	**Low ?** **To be investigated further.** Comments: "Producers" are very few, and tend to operate directly or through international distributors.	**OK**	**OK?** **To be investigated further.** Comments: Some national certifications, e.g. for safety (fire resistance) could be a problem.	**Medium interest** (Mainly because of cross border potential)	

Category	Consolidated Nomenclature	Volumes	Cross-border Potential	Familiarity eProc	Legal Constraints	Overall judgement	Other Comments
			"Pure distributors" hardly have the capacity to follow-up the contract performance without a local subsidiary.				
Medical equipment - Incontinence products	**OK**	**OK - Medium**	**To be investigated further.**	**OK**	**OK?** **To be investigated further**	**Medium interest**	
Medical equipment - Laboratory Diagnostic Systems	**OK**	**OK - Medium**	**To be investigated further.**	**OK**	**OK?** **To be investigated further**	**Medium interest**	
Medical equipment - Ambulances	**Limited, not very standardized**	**OK**	**OK** Mainly assemblers	**OK** **To be investigated further**	**OK?** **To be investigated further**	**Medium interest**	
Medical products - Ambulances	**Limited, not very standardized**	**OK**	**OK** Mainly assemblers	**OK** **To be investigated further**	**OK?** **To be investigated further**	**Medium interest**	
Drugs - Antiseptics and disinfectants	**OK** **To be investigated further**	**OK**	**OK** Dealers can afford a "simple supply" service to a foreign buyer.	**OK**	**Not OK?** **To be investigated further** Some accreditation to national Health systems could be required.	**High interest**	
Drugs - Generic principles	**OK** **To be investigated further**	**OK**	**OK** Dealers can afford a	**OK**	**Not OK?** **To be investigated further**	**High interest**	

Category	Consolidated Nomenclature	Volumes	Cross-border Potential	Familiarity eProc	Legal Constraints	Overall judgement	Other Comments
			"simple supply" service to a foreign buyer.		Some accreditation to national Health systems could be required.		
Combustibles - Fuel	**OK** Doubts exist whether a catalogue would be a very helping tool for such standardized	**OK**	**To be investigated further**	**OK**	**Not OK?** **To be investigated further** Some accreditation to national Health systems could be required.	**Medium interest** Doubts exist whether a catalogue would be a very helping tool for such standardized	
Combustibles - Oil	**OK** Doubts exist whether a catalogue would be a very helping tool for such standardized	**OK**	**To be investigated further**	**OK**	**Not OK?** **To be investigated further** Some accreditation to national Health systems could be required.	**Medium interest** Doubts exist whether a catalogue would be a very helping tool for such standardized	
Sustainable Mobility	To be investigated further	To be investigated further	To be investigated further	To be investigated further	To be investigated further	To be investigated further	
Rubbish compactors	To be investigated further	To be investigated further	To be investigated further	To be investigated further	To be investigated further	To be investigated further	
Rubbish bins (Refuse skips)	To be investigated further	To be investigated further	To be investigated further	To be investigated further	To be investigated further	To be investigated further	
Safety clothing	To be investigated further	To be investigated further	To be investigated further	To be investigated further	To be investigated further	To be investigated further	