CEN

WORKSHOP

AGREEMENT

CWA 16558

February 2013

English version

Business Interoperability Interfaces for Public procurement in Europe - BII Architecture

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword[1]

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties on 2012-09-27, the constitution of which was supported by CEN following the public call for participation made on 2010-02-10.

A list of the individuals and organizations which supported the technical consensus represented by the CEN Workshop Agreement is available to purchasers from the CEN-CENELEC Management Centre. These organizations were drawn from the following economic sectors:

- Evenex

- University Koblenz-Landau

- Flowcanto

- INVINET SISTEMES 2003

- AVCP

- ICEPRO

- SIngle Face To Industry(SFTI)

- Agency for Public Management and eGovernment (Difi).

- University of Duisburg-Essen, Germany

- AITI - Associazione Italiana Tesorieri d'Impresa

- Publications Office of the European Union

- Consip SpA

- Document Engineering Services

- Edisys

Contributors

- WS/BII2 Architecture group:

- Jostein Frømyr, Edisys, NO (Task team leader)
- Sven Rasmussen, NITA, DK
- Kenneth Bengtsson, Alfa1lab, DK
- Martin Forsberg, SFTI, SE
- Douglas Hill, GS1, Europe
- Joao Frade, PWC / EU commission, EU
- Tim McGrath, Document Engineering, AU
- Andrea Caccia, AITI, IT
- Bergthor Skulason, NITA, DK
- Raffaella Migliorini, CONSIP S.p.A., IT
- Giovanni Paolo Sellitto, AVCP   IT
- Didier Hardy, EU Publication Office, EU

Editors

- Oriol Bausà Peris
- Georg Birgisson
- Fred van Blommestein
- Arofan Gregory
- Anders Kingstedt

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[1] In order to ease the reading and review the content of this CWA is also made available on http://www.cenbii.eu/deliverables/cwa-16558-bii-architecture/ . The official version is however the version published on the CEN website (www.cen.eu).

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WS/BII2 built forward on semantic modelling work in UN/CEFACT and UBL.

This CWA is part of the set of CWA's that have been prepared by the second CEN Workshop on Business Interoperability Interfaces for Public procurement in Europe (WS/BII2).

The CWA's that were prepared by the workshop are:

- CWA 16558: BII **Architecture**

- CWA 16559: BII **Tender Notification profile**

- CWA 16560: BII **Use of profiles in the tendering process**

- CWA 16561: BII **eCatalogue profiles**

- CWA 16562: BII **Post-award profiles**

The current document is: CWA 16558: BII **Architecture.**

The CEN Workshop on business interoperability interfaces for public procurement in Europe is established in order 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, developed by taking due account of current and emerging UN/CEFACT standards in order to ensure global interoperability

- Coordinate and provide support to pilot projects implementing the technical specifications in order to remove technical barriers preventing interoperability

The BII architecture comprises a set of technical specifications and other documents. They relate to issues that are not specific for a given business process area. The architectural documents and guidelines have been annexed to this CWA. These documents and guidelines are equally applicable to all other CWAs developed by WS/BII2.

The final review/endorsement round for this CWA was started on 2012-07-01 and was successfully closed on 2012-09-02. CWA's have been officially approved at the final WS/BII2 Plenary Meeting on 2012-12-05. The final text of this CWA was submitted to CEN for publication on 2012-12-06.

This CEN Workshop Agreement is publicly available as a reference document from the National Members of The following countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Comments or suggestions from the users of the CEN Workshop Agreement are welcome and should be addressed to the CEN-CENELEC Management Centre.

Introduction

This CWA is a deliverable of the second CEN Workshop on Business Interoperability Interfaces for public procurement in Europe (WS/BII2).

The objective of the BII initiative is to provide a framework for interoperability in pan-European electronic procurement transactions, expressed as a set of requirements and technical specifications. The requirements are input into UN/CEFACT in order to ensure global interoperability.

The original CEN Workshop on Business Interoperability Interfaces for public procurement in Europe (WS/BII) was concluded in December 2009, and its results, including a set of profiles, were issued as CWA 16073:2010.

Based on user input WS/BII2 has issued a number of new profiles and reviewed and updated a number of the profiles published as part of CWA 16073:2010.

To facilitate the internal market and to achieve the Lisbon Objective of making Europe the most knowledge competitive society, electronic working, based on the development of interoperable public electronic procurement and business (eProcurement and eBusiness) solutions are essential.

On the European level the European Commission made the development of eProcurement an objective in both the 2002 and the 2005 eEurope Action Plans (eEurope 2005: An information society for all[2]). The eEurope Action Plans not only targeted public sector procurement by electronic means, but encourage small and medium size enterprises (SME's) to "Go Digital"[3]. This also included the development of interoperable eBusiness solutions for transactions, security, electronic signature and procurement.

In the coming years an increasing number of eBusiness systems will be using features from XML, striving for interoperability.

The CEN/BII Workshop vision is that all organizations, independently of public or private nature, size, or nationality, should be enabled to make electronic business in an efficient and effective manner and with low transaction costs.

The mission of the CEN/BII Workshop is to spread and facilitate the use of eProcurement standards by suppliers and buyers, including public administrations, by:
- supporting the convergence of commonly applied international standards for electronic procurement;
- providing a general framework for the organizational and semantic levels of the electronic documents;
- identifying the requirements for the eProcurement standards of interoperable tools;
- providing organizational support to ensure the maintenance and governance for those requirements.

The interoperability interfaces are seen on multiple levels. On the business level, it includes agreement of business processes and semantic document models. On the syntax level it includes usages of XML documents compliant with schemas from eBusiness standards like UN/CEFACT XML and OASIS Universal Business Language. On the Technical level, it implies common requirements for document conformance, usage of digital signatures and a document transport infrastructure.

The deliverables of the CEN/BII Workshop are published as CWAs.

The set of CWA's addresses the next step of standardization for the data exchange within an infrastructure shared by business partners. The focus is the semantics of the procurement business processes supported by XML based vocabularies specified by UBL and UN/CEFACT. This is expressed in the CWA profile descriptions. A profile description is a technical specification describing:

- The choreography of the business processes.
- The business rules governing the execution of these business processes.
- The information content of the electronic business transactions exchanged by pointing to a given information requirement model for each of the business transaction.

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[2] European Commission, COM(2002)263, *eEurope 2005: An information society for all*, http://ec.europa.eu/information_society/eeurope/2005/index_en.htm

[3] European Commission, *SMEs Europe's future - eEurope SMEs GoDigital Conference Report*, http://ec.europa.eu/information_society/topics/ebusiness/godigital/docs/conference_report_smes.pdf

The information requirement models in this CWA are syntax neutral, implying that they could be bound against any existing syntax solution. WS/BII2 is providing the relevant syntax mappings to UN/CEFACT XML and UBL. On the other hand WS/BII2 does not provide any XML schemas, but relies on the XML Schemas published by UN/CEFACT and UBL.

The target audience for the BII specifications is owners of public processes, operators and providers of public procurement systems, including public procurement agencies. Operators and providers of B2B procurement systems can take advantage of the specification as well. Some specifications require technical knowledge within the XML and network technology as well as business experience within procurement.

WS/BII2 profiles

A WS/BII2 profile description is a technical specification describing:

- the scope of a business process with its goals, preconditions and the roles of participating parties,

- the choreography of the business process covered, i.e. a detailed description of the way the business partners collaborate to play their respective roles and share responsibilities to achieve mutually agreed goals with the support of their respective information systems,

- the electronic business transactions exchanged as part of the business process, with their information requirements, and the sequence in which these transactions are exchanged,

- the business rules governing the execution of that business process, as well as any constraints on information elements used in the information requirement models of the transactions.

The profiles focus on the standardization on the organizational and semantics interoperability levels rather than on syntax or technical interoperability levels. Consequently the business transactions within a profile can be structured based on different message standards/syntaxes as long as these can carry all the necessary information elements.

Although the profile descriptions and information requirement models provided by WS/BII2 are neutral of syntax, the workshop also published specifications of how the models may be mapped to defined syntaxes. This is done in order to provide implementable specifications.

The main focus of the profile description and the associated information requirement models is to address generally expressed business requirements, applicable throughout the European market. Although the profile description is designed to meet generally expressed requirements, it is still the responsibility of the users to ensure that the exchanges within the actual business transactions meet all the legal, fiscal and commercial requirements relevant to their business.

1   Scope

1.1   General

National and European authorities have been promoting the use of electronic processes in public procurement for decades because increased efficiency and transparency will give improved and more efficient use of public procurement budgets. Electronic processes involving different systems and various partners depend on the use of common standards for information exchange between systems; however, it should be emphasised that there are different levels of openness that can be created by the use of technology standards. Increasing use of electronic systems is calling for higher levels of openness:

Level of openness	Automated exchange of information between different systems	Require shared standards
Internal level	of an owner or a cooperating group	within an organization
National level	of trading partners in a country	and common implementation of standards for national business applications, including national VAT and other excises.
European level	of trading partners in different countries	and common implementation of standards for different national business applications and cross border information to authorities, like VAT and other excises.

Interoperability requires common use of standards; there are several groups, like finance, health insurance, customs, that are maintaining and using agreed versions of standards for pan-European communication between members of the group. Trade is regulated by national legislation on accounting, VAT and other excises, and electronic exchange of trade data been implemented by use of standards that are implemented and maintained on national level. The intention with the BII set of CWAs is to create specifications that can be specified and maintained on European level, and thereby contribute to increased electronic exchange of trade information across European borders.

Increased use of standards for electronic transfer of information in procurement processes meets the following challenges:

- The existence of different standards creates uncertainty about which common one to migrate to.
- Differences between national implementations of common standards.
- Lacking functionality covering cross-border requirements.

WS/BII2 has addressed these challenges by:

- Describing business process profiles in a way that is independent of but consistent with existing e-Business standards within OASIS and UN/CEFACT.
- Examining cross border trade and to open for identification and description of differences between implementations of system elements governed by national legislation.
- Identifying additional specification of requirements and functionality needed for exchange of information used in different countries under constraints of their legislation and procedures.
- Preparing a tool-box for how to use the profiles for implementation.

1.2 Electronic Procurement

Procurement is a complex domain with several key processes, some of which are illustrated in the following figure.
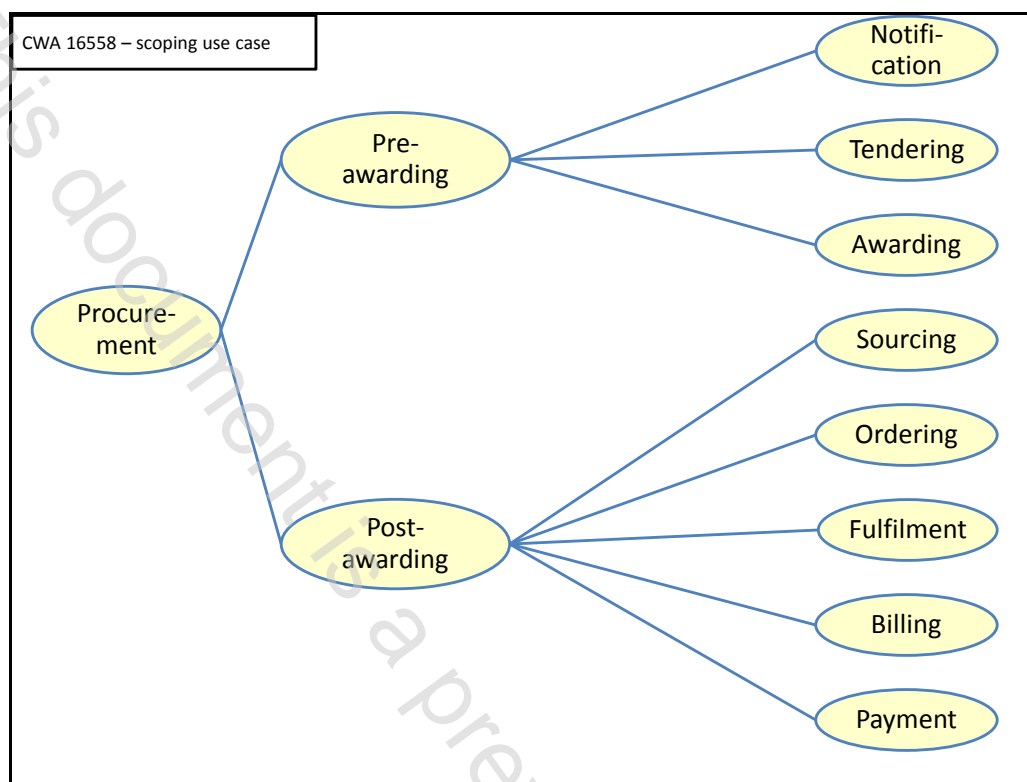

Figure 1

The procurement process can be divided into a pre- and a post-award phase. In the pre-award phase economic operators are invited to offer or tender products, services or works. If the volume of the tender exceeds certain thresholds, the call for tender and subsequently the awarding are publicly notified. In the post-award phase orders are exchanged and delivery takes place. The products delivered are being invoiced and are paid for.

Catalogues may appear in both phases. In tendering and awarding pre-award catalogues may be being exchanged, in order to compare the offers of different tenderers. Such catalogues need to adhere to a template to enable the Buyer to do the comparison. In the post-award phase the catalogue is frequently used as the basis from which orders are composed. Exchange of post-award catalogues takes place in the Sourcing sub-process.

1.3 Process by WS/BII2

The CEN Workshop on eProcurement has produced CWA 15236:2005 "Analysis of standardization requirements and standardization gaps for eProcurement in Europe" (ftp://ftp.cenorm.be/PUBLIC/CWAs/e-Europe/eProc/cwa15236-00-2005-Feb.pdf), and this noted the benefit of a common approach to procurement transactions, albeit in an environment where many potentially relevant standards exist. The document also describes legal issues that remain to be solved; they are especially related to national legislations on VAT and accounting where paper originals still are required (CWA 15236:2005 sub clause 1.1.5); legislated use of paper is unhelpful to the demand for electronic solutions.

One of the main objectives of the WS/BII2 is to contribute to the UBL-UN/CEFACT convergence by providing a standardized approach to the practical implementation of the relevant specifications. This will help to gauge the consequences of this convergence on current projects.

The main task of the workshop teams was to gather and document requirements for processes and documents used in electronic procurement. Requirements were assembled as specified in the WS/BII2 method for capturing of Business Requirements. The specification of that method has been annexed to this CWA. Business requirements and business rules then were translated into Business Requirement models. These models were the source for mapping the requirements to existing syntax solutions.

1.4   WS/BII2 Organization

The workshop is organised around five task teams: one team per process area plus an architectural team. The teams report to the WS/BII2 plenary. Technical editors work across the teams. Each technical editor is responsible for an aspect of the work.
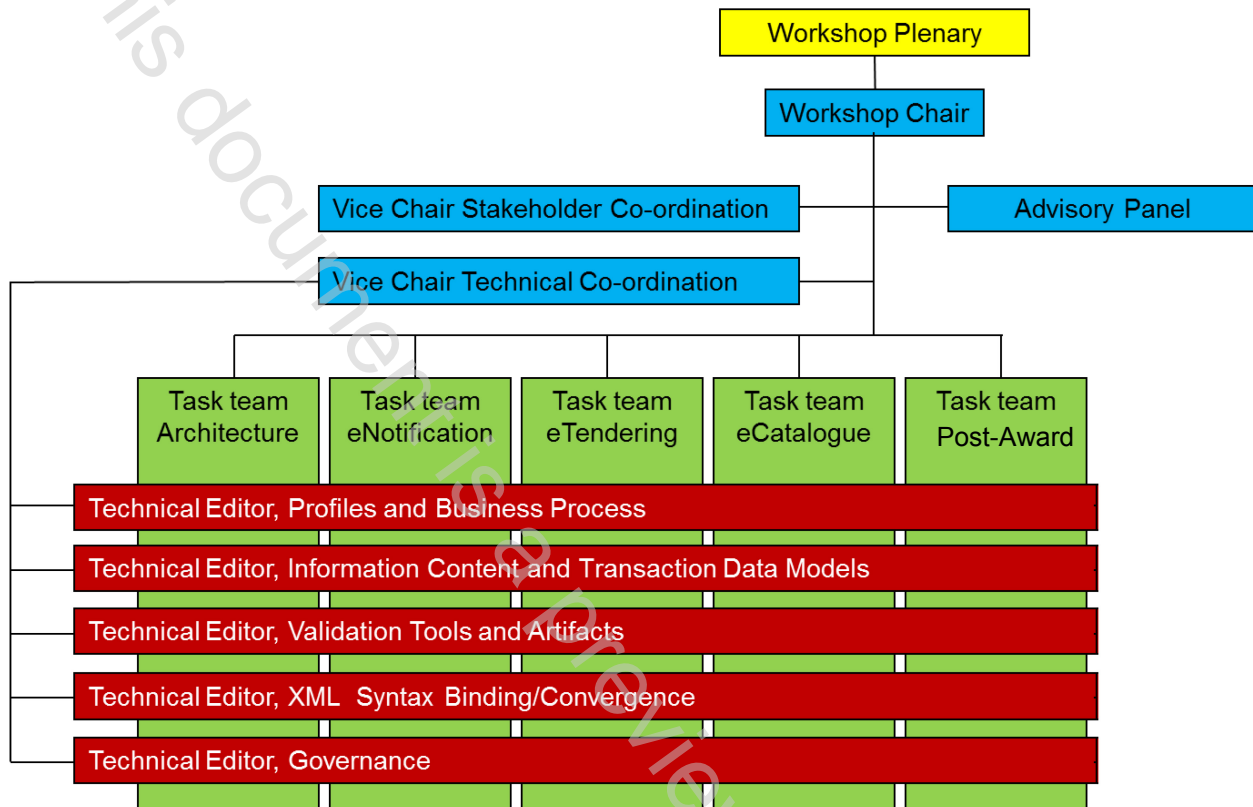

Figure 2