Part I: High-Level Report

Contents

1. Summary

In January 2012 the European Commission has established the Expert Group on e-Tendering (eTEG) to provide advice and expertise to fully reap the benefits from wide-spread use of IT technology in public procurement. The eTEG met 8 times in 2012 and in November 2012 has issued the present report.

The report's starting point is the definition of an ideal e-tendering operation, a "blueprint" to which e-procurement platform managers and services providers should consider converging in the medium term so as to set out streamlined, under-friendly, interoperable, SME-inclusive and widely accessible across borders e-procurement procedures. A system so designed would enable overcoming the major barriers to e-procurement take-up, i.e. on the one hand market fragmentation, and on the other players' reluctance to embrace e-procurement.

e-TEG's advice targets all the business parties concerned: contracting authorities when choosing a platform to use, platform managers when shaping up their operations, economic operators when using platforms to submit tenders, as well as policy makers at EU and national (and regional) level when taking strategic decisions affecting e-procurement rules.

In particular, Part I of the report includes high level strategic advice, targeting policy makers; Part II provides operational and technical advice on how to design, run, choose and use of e-procurement systems.

E-Teg experts have focussed their work on users' needs, considering in particular those actors who currently face problems (i.e. small companies and small contracting authorities). E-procurement platforms and portals will have to be readily accessible to users, easy-to-use for non-technically skilled people and based on commonly available technology and methodologies not needing large investment on equipment, services and skills. At the same time, though, the eTEG has kept its focus on issues such as security, transparency, and interoperability that cannot be traded off for the sake of simplification. The key to achieving an optimal balance is to reconsider procedures and tools to avoid replicating the paper-based world in the electronic one, in order to meet the same legal requirements as the paper-based procurement but taking advantage of technology capabilities.

It not just about technology and methodology of e-procurement systems. Change management plays a strong role. The transition to e-procurement needs to be supported at all levels by policy makers – and the eTEG report provides specific guidelines in this regard.

The eTEG recommendations are meant for voluntary reference by those concerned. They should be seen as just authoritative advice from business experts in the procurement domain coming from several EU countries. As such, they do not represent an official position of the Commission, which is just one of the intended recipients of the report.

2. Introduction

2.1 Background

It is widely recognised that electronic procurement (e-procurement) can generate significant benefits for both buyers and suppliers. For example, according to a report issued by Deutsche Bank, a full transition to e-procurement could produce savings of between 50 billion and 70 billion Euro.[1] Similarly, the European Commission has estimated that every 5% saved on public procurement expenditure could return about 100 billion Euro to the public purse (total public procurement expenditure in the EU accounts for over 2000 billion Euro). Beyond these economic savings, e-procurement offers several tangible practical benefits to both Contracting Authorities (CAs) and EOs (EOs):

- promoting more visibility of procurement opportunities, opening-up tender procedures to a broader range of EOs, increasing the number of offers received by CAs and driving competition, innovation and value-for money in procurement;
- reducing the time and effort invested by CAs to prepare, publish and process tenders, while also reducing the time and effort invested by EOs to identify and respond to tender procedures;
- avoiding procedural mistakes by providing practical tools (guidance, warnings) to assist both CAs and EOs during the procurement procedure;
- providing CAs with business intelligence and monitoring tools to plan and execute procurement procedures in the most cost-effective manner;
- supporting greater transparency in procurement and thus avoiding corruption;
- simplifying and standardising different local tendering procedures and documents to reduce risk and improve interoperability

However, despite these significant potential benefits, usage of e-procurement in many European countries remains far below the targets the EU set itself in the 2005 Manchester Ministerial Declaration (100% availability and 50% use by 2010).

In April 2012, the European Commission published a Communication "A Strategy for e-Procurement"[2] setting out a range of legislative and non-legislative measures to achieve a transition towards the full use of electronic means of communication in procurement across the EU.

2.2 The Expert Group on e-Tendering

One of the measures included in the April 2012 Communication is the establishment of an e-Tendering Expert group (e-TEG)[3] to advice on policy initiatives relating to the architecture and design of e-procurement. The e-TEG is composed of 22 experts from IT service providers, CAs, academia, and independent experts. The e-TEG met eight times between January and November 2012. The e-TEG mission includes:

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[1] http://www.dbresearch.de/PROD/DBR_INTERNET_DE-PROD/PROD0000000000269867.PDF
[2] http://ec.europa.eu/internal_market/publicprocurement/e-procurement/index_en.htm
[3] http://ec.europa.eu/internal_market/publicprocurement/e-procurement/expert/index_en.htm

- defining a blueprint for e-Tendering as a basis for the adoption of "best of breed" solutions. The objective is to promote solutions that achieve the optimal balance between usability and other attributes such as security. Due to e-submission becoming mandatory an essential task for the e-TEG is to define an effective model for e-submission. On-going standards work, such as that carried out by the CEN BII workshop, will also be leveraged by the e-TEG;

- using this blueprint as its reference model, the e-TEG will also present recommendations on actions to be taken by the EU institutions and Member States (hereafter MS) to ensure the roll-out of e-Tendering platforms that enable cross-border access and facilitate use by all EOs in particular SMEs, whilst nonetheless preserving MS autonomy to adopt solutions that best fit national requirements and can be integrated with existing platforms.

This report is the result of e-TEG's work. It is organised in two parts, which can be accessed on the Internet at [insert URL]:

- Part I (this document) sets out e-TEG's overall vision for the evolution of e-Tendering in the EU, including the business objectives to be achieved, key issues to support the roll-out and effectiveness of e-Tendering and the evolution of the architectural model of e-Tendering.
- Part II sets-out technical/operational recommendations to achieve "best of breed" e-Tendering solutions. This part of the report also includes a few horizontal recommendations. The interactive version of this report available on the Internet may be navigated by using the embedded tags, for example by business objective, by addressee, by procedure, etc.
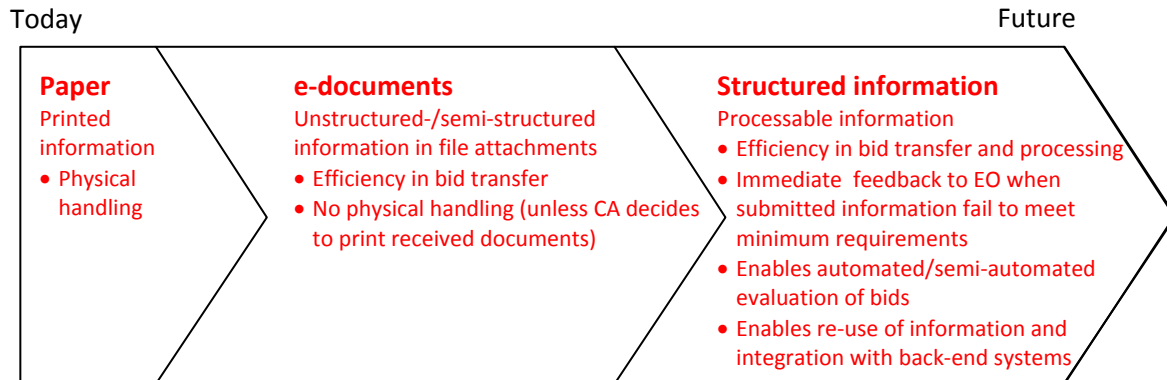
e-TEG's vision and recommendations emphasise the need for a more standards-based approach to e-Tendering in order to achieve the business objectives identified in this report. The latter therefore builds on the work carried out by the CEN workshop on Business Interoperability Interfaces for Public Procurement in Europe (CEN BII),[4] whose results have already been used in a number of European and national projects. In particular, e-TEG has used CEN BII's process model in order to develop the technical recommendations set-out in Part II of the report. More generally, e-TEG foresees the need for further standardisation work in a number of areas; CEN BII could therefore continue to play an important role in implementing the recommendations set-out in this report – see Standards, 4.2.

e-TEG's proposals have been developed taking the Commission's legal proposals of December 2011 as a reference point. However, these proposals remained under negotiation at the time that this report was issued and may therefore further evolve. e-TEG has therefore avoided referring to the specific deadlines proposed by the Commission for the use of electronic means of communication.

Instead, this report sets-out a transition path from a predominantly unstructured document-oriented approach towards a structured information-oriented model. The overall objective is to provide EOs with enhanced ease-of-use through a standards-based way of interacting with e-Tendering platforms, while also enhancing the functionality for CAs, for example automatic processing and

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[4]   See http://www.cenbii.eu/. 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.

evaluation of tender information. This development could be implemented within the current platform-oriented architectural model, and facilitate system-to-system information exchange.

Today   Future

Paper
Printed information
- Physical handling

e-documents
Unstructured-/semi-structured information in file attachments
- Efficiency in bid transfer
- No physical handling (unless CA decides to print received documents)

Structured information
Processable information
- Efficiency in bid transfer and processing
- Immediate feedback to EO when submitted information fail to meet minimum requirements
- Enables automated/semi-automated evaluation of bids
- Enables re-use of information and integration with back-end systems

In addition, e-TEG's report is not limited to the scope of the EU Directives. This reflects the fact that existing e-Tendering solutions are used to manage procedures that fall within the scope of the Directives and those that do not. Moreover, the challenges to the implementation of e-Tendering are the same in both domains.

2.3 Current state of play

Many technical solutions are available on the European market for e-Tendering and many examples of successful e-Tendering implementations exist, which are today delivering tangible benefits for both buyers and suppliers. However, many CAs have not yet adopted any solutions. This is commonly due to factors such as:

- Concerns that they will receive fewer tenders, especially from SMEs; fears about potential litigation; uncertainty about the legality and security of e-Tendering solutions
- Business case and benefits not yet fully understood or uncertain compared to benefits of other initiatives competing for budgets and attention.
- High cost to acquire solutions compared to the perceived benefits (except for where framework agreements or centrally available and funded solutions are available).

CAs which already have solutions readily available to them may also still have low internal adoption levels, for example due to:

- Low commitment from authority management, and limited interest in operations to drive adoption if direction not clearly set and followed up on by the management.
- Generally too little focus on change management, training and other support compared to complexity of and legal risks of mistakes in tender management.

Those who have adopted a solution may face functional limitations or lack of ease of use preventing the users to carry out all tasks that may be needed (collaboration, changing decisions, controlling versions, multi-lot bidding, etc), leading an organisation to revert back to traditional methods.

From the EO perspective, where eTendering still has been implemented and adopted by CAs, EOs feel they have to incur unnecessary problems, complexity, costs and risks. It is generally felt that:

- the visibility of tender opportunities below the thresholds of the EU Directives is poor, as tender notices below thresholds are not certain to be available in any central source, and there is no guarantee that any portals will include the complete list of opportunities;
- a multitude of e-Tendering platforms exist across Europe, each requiring that EOs undergo separate and often cumbersome registration procedures and learn the specific rules for using the individual applications;
- the use of digital signatures vary widely between MS, while problems with the mutual recognition of digital certificates remain;
- the practices implemented in existing e-Tendering solutions are still widely based on legislation written for the paper-based world and do not fully exploit the opportunities that e-Tendering could offer;
- the lack of standardisation of documents and templates used in e-Tendering does not allow the potential efficiency gains of e-Tendering to be fully exploited.

These and other sub-optimal processes and poor deployment of resources mean that e-Tendering is not delivering the full benefits that it could generate in the EU. They are a particular handicap for SMEs, which generally have limited expertise and resources to learn the ins-and-outs of divergent e-Tendering systems.

3. The e-TEG vision

3.1 The user needs

The e-TEG's vision for a best of breed e-Tendering solution is driven by a clear articulation of the needs of both EOs and CAs.

The EO perspective

For an EO, an e-Tendering solution must allow it to access and respond to tender opportunities in a manner that minimises costs and delays, that ensures the confidentiality of its offer and that provides legal certainty about the validity of its offer.

An ideal e-Tendering process from the EO perspective would enable any EO to more easily respond to any tenders in the EU, regardless of platforms used by the CAs. First of all, there should be greater visibility of opportunities within and across borders. An EO should be enabled to easily spot calls for tenders corresponding to its business interest and capabilities.

Once the EO decides to respond to a call and prepare the tender response, they should be able to choose a method that best suits them, yet do so in a manner that is acceptable to CAs. The e-Tendering solution should promote increasing re-use of information to prepare its tender response while also facilitate the sharing of such information across systems. Examples would include the reuse of information building blocks into tender responses such as qualification information/Virtual Company Dossiers, eCatalogues/Price Schedules, and responses to other structured qualification and tender requirements. This could also allow such building blocks to be prepared in the EO's systems,

potentially allowing different applications, conceived as independent modules, to be used at the two ends (CA's and EO's).

The preparation of administrative and qualification documents should no longer pose problems to them. There should be standard format templates to prepare a self-declaration that would be the only information strictly required by the CA for the EO to take part in the tendering process.

Finally, if the CA requires that the tender is accompanied with qualified digital signature to provide legal value equivalent to handwritten signature, the EO should be able to use its own national certificate and the common signature software it uses in any other business domains.

The CA perspective

For CAs, an e-Tendering solution is a means to obtain the best value-for-money by maximising the transparency of its tender procedures and thus the number of offers it receives, while also minimising the cost and complexity of managing the procurement process from the preparation of call for tenders to the award of the contract. E-Tendering solutions should also minimise the scope for legal challenges and litigation.

The e-Tendering platform should guide the CA through the procurement stages, setting adequate process controls (phases, deadlines, etc.) to comply with legislative requirement, helping the CA prepare the contents (for example Tendering specifications), supporting the interaction with the EOs (for example questions and answers) and enabling various submission mechanisms to accommodate the need of the potential tenderers. In particular, it should make it possible for an EO to work on-line or to download structured documents onto its own independent tendering preparation system.

The platform should support evaluation and award of the tenders, by handling tender contents as a set of itemised, comparable data structures rather than a traditional free-text document, potentially offering support for automatic evaluation when procuring common products or lines of services.

The platform should also support contract preparation and signing, and on conclusion provide data for the post-awarding phase, irrespective of whether the post awarding functionality is implemented on the platform itself or entrusted to specialised platform (for example an ERP system).

Finally, the system should produce business statistics, using standard EU formats to gather, aggregate and share the information, in order to provide the stakeholder (i.e. the system management but also, at a higher level, planners and policy-makers) with requisite governance information.

3.2 Implementing the vision: business goals

The vision from e-TEG is based upon specific business goals which are briefly illustrated in this section. Each e-TEG recommendation is designed to meet one of more of such business goals, as indicated by logical tags in the body of the recommendations themselves.

Support change management

Supporting change management is key to implementing e-Tendering. Paper based processes that might have been efficient for decades must be transferred to electronic based processes in order to make the most out of e-Tendering. This cannot be done in one go and there are both objective and psychological factors that cause resistance to change from procurement actors. Transition to e-Tendering is not just an IT project. Rather, it is about rethinking procurement as a whole relying on the IT as the mainstream foundation for the process. It takes a strategy at policy level and adequate communication and support initiatives targeted at the procurement players.

Ensure legal certainty & confidence

Ensuring legal certainty and confidence is essential in order to achieve wide spread acceptance and use of electronic tendering processes among CAs and EOs. Recommendations range from the need for national information campaigns, clarifying e-Tendering solution characteristics and choosing standards enabling interoperability. Ensuring legal certainty involves removing ambiguity, increasing security and providing guidance on how to understand and implement the regulations on use of electronic means in the procurement directive. Confidence can be built through the examples of leading public procurement organisations and professionals within MS using electronic solutions in their day-to-day operations.

Remove barriers to cross-border tendering

One of the key objectives of e-Tendering systems is to allow and encourage EOs to submit their offers for tenders launched in regions and countries different from the ones they usually operate in. Cross-border bidding will avoid the fragmentation of the market, will increase market transparency and facilitate competition, resulting in better quality of services and lower prices.

Promote transparency & accountability

Promoting transparency and accountability is required not only to allow better and equal access to public procurement but also to secure paper-free processes and allow CAs to build procurement strategies based on analysis of past events.

Improve usability and efficiency

E-tendering means increased efficiency for both the CAs and the EOs, as described above under the vision. To foster wide e-Tendering take up it is necessary to show concrete benefits to the players in terms of effectiveness and efficiency gains. IT technologies enable procurement players to meet the general procurement requirements (transparency, accountability, confidentiality, etc.) with more efficient control mechanisms. It is necessary to come up with tools that are efficient, designed to be easily used by the procurement actors in a new coherent process that does not unnecessarily replicate paper-based procedures.

Enhance accessibility for SMEs

e-Tendering solutions need to be efficient and easy to use for the small and medium enterprises. This is a prerequisite to allow the participation of all stakeholders to public procurement procedures. To date SMEs are largely left out of the public procurement dynamics for the investment that is required

of them in terms of keeping up with appropriate business opportunities and gaining access to resources that are needed to submit a tender.

4. Key issues identified by e-TEG

To implement the vision described above, the e-TEG believes there are key strategic elements that the procurement stakeholders – policy makers, platform managers, CAs - should take into account in their activities.

4.1 Establish a clear governance framework

The successful implementation of e-Tendering requires a comprehensive set of actions addressing the governance of e-Tendering, including a well-defined legal framework, the need to promote effective change management and a clear path to complete the transition towards e-Tendering to avoid the lengthy co-existence of paper-based and electronic procedures (which represent an additional source of costs to EOs). Only such comprehensive action will give both CAs and EOs confidence to wholeheartedly commit to e-Tendering.

4.1.1 Coordination of e-Tendering activities in Europe

The European Commission should consider the following:
- Promote the dissemination of e-Tendering across the EU through the development of know-how, standards, guidance notes and good practices helping each MS to achieve best results;
- Monitor and evaluate the performance of e-procurement to assess its impact on fulfilling the EU Policies on market integration, SMEs, low carbon society, innovation and employment;
- Allocate appropriate resources within several Commission Programs to support the development, training and the implementation of e-Tendering;
- Fulfil the action included in the Digital Agenda to lead by example on e-tendering, reporting the evolution of its own system of procurement;
- implement the required infrastructure to govern, deploy and operate the cross border services needed for an effective internal market. The proposed "Connecting Europe Facility" (CEF), the Commission plan for strategic infrastructure investment in transport, energy and internet, would provide the mean to achieve this.

4.1.2 National-level action

Policy-makers at national, regional and local level should define comprehensive national strategies including the legal, organisational and technical aspects of a transition to e-Tendering.

Ensuring wide availability of e-tendering services

Each MS should review its current regulations and processes to ensure that any CA at any jurisdiction level (central, regional, local) may access an e-tendering platform to procure goods, services and works meeting its specific procurement requirements. This may require removing potential legal obstructions to the provision of services by the private sector and incentivising the emergence of such services.

Supporting contracting authorities in accessing e-tendering services

Establishing a contract with an e-Tendering services provider may be a daunting task, especially for small CAs. CAs should rely on guidelines and support services (including functional requirements) to choose the appropriate platform, to establish the required services contracts and to set up effective service level agreements. CAs may benefit from national or regional framework agreements established by Central Purchasing Bodies.

Encourage contracting authorities to set out a change plan

Change management is key to transition to e-Tendering. Each MS should create a transition plan blueprint, and provide this to CAs. The CAs can then customise this to their own specific needs to enforce e-Tendering by a target date. The plan should define a training plan for the CAs and contain measures to be taken by top management to monitor follow up, and define sanctions or other helping measures in case of deviations.

Training and dissemination activities for procurement managers

Taking best practice in mind, all MSs should undertake promotion on the benefits of the e-Tendering amongst both its CAs and the business fabric. Hands-on training initiatives should be launched to ensure appropriate theoretical and practical education to CA's users, EO's users and related 3rd parties. Each MS should provide support to the CA's and EO's users in order to ensure assistance and guidance on operational legal, administrative and technical matters. Such support should be delivered, in line with the transition plan, through a network of distributed competent centres in order to provide local assistance to CAs and EOs with special focus on SMEs.

Establishing a network for e-Tendering performance monitoring

One of the necessary conditions for EU and national policy-makers to be able to steer the take-up of e-Tendering is the capacity to track developments and measure the impact of change. This information is relevant to actors at EU, national or regional level who are involved in the development, management or use of e-Tendering capacity such as CAs, coordinating bodies dealing with procurement matters and the government at large. These actors need up-to-date, reliable and comparable data as a basis for making policy decisions.

This data should automatically be generated by the platforms and shared, to different levels of aggregation, by those interested.

The Commission should pursue defining a set of e-Tendering indicators that should be progressively introduced on a European basis. Work should go as far as pilot-testing the ability of the existing systems to generate these indicators, and defining a phased plan for the establishment of a European, standards-based process of generating and reporting these indicators, indicating the appropriate periodicity for their collection.

Key Recommendations:

The Commission should establish an appropriate form to effectively co-ordinate the different (policy, standardisation, technical, etc.) actors at EU level. This should draw in a broad range of stakeholders.

Actions should include the development of the infrastructure for cross-border e-tendering within the Connecting Europe Facility (CEF).

MSs should adopt a national governance strategy which includes:

- Ensuring wide availability of e-tendering services

- Supporting CAs in accessing e-tendering providers

- Encouraging CAs to set out a change plan

- Training and dissemination activities for procurement managers

- Establishing a network for e-Tendering performance monitoring

- encourage the usage of the European Infrastructure

4.2 Use of standards

The use of standards is a key enabler to promote inter-operability of e-Tendering platforms and to simplify procurement procedures. The e-TEG recommendations consistently indicate the need to implement certain standards, if available, or the need to launch specific standardisation projects in areas that are not currently covered by standards.

There is a great deal of standardisation under way that needs to be progressed, such as work of the CEN BII in the pre-awarding domain. The objectives of the CEN BII workshop are to provide a basic framework for technical interoperability in 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 is focusing on implementation facilitations and co-ordinating pilots implementing the technical specifications output. The requirements and final specifications are input into UN/CEFACT and OASIS (UBL). The e-TEG has largely built upon CEN BII 2[5] and UN/CEFACT[6] work to date to draw up the recommendations.

Key recommendations:

e-Tendering players should refer to European and International standards whenever available. Platform managers should refer to such standards in designing their solutions. CAs should consider standards compliance as a key factor when choosing an e-Tendering platform.

CEN BII workshop should continue its activities in e-Procurement standardisation. The Commission should mandate CEN and ETSI to progress standardisation and profiling activities in domains such as:

- e-notification;

- qualification of suppliers (eAttestations/certificates/Virtual Company Dossier);

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[5] http://www.cen.eu/cwa/bii/specs/
[6] Link to be included to UN/CEFACT

- tender structures, e-catalogues and product/services classification;

- accessibility standards for user interfaces;

- registration / authentication;

- digital signature and use of public key infrastructure;

- data models and processes for e-Tendering performance measurement.

The Commission should continue in the effort to identify, recommend and promote standards which currently support (or could be developed to support) end-to-end interoperability of the various elements of the e-Tendering platforms.

The Commission should use the e-TEG recommendations as a basis for launching co-funded projects to drive standardisation and adoption in the procurement field.

The Commission should consider activities for the dissemination of best practice examples, training opportunities (including the development of necessary skills and competencies of experts, consultants and managers involved) as well as supporting vendor independent certification schemes for ensuring compliance with the standards.

4.3 Improving current e-submission models

4.3.1 Enabling re-use of structured information

The most cumbersome task for an economic operator responding to a call for tender is to prepare a tender response in compliance with the tendering specifications. Innovative e-Tendering solutions offer a high degree of support in terms of helping the economic operators generate the information required of a response, under control mechanisms to reduce incompliance risk as a minimum. Assistance is given by the platform defining a tender as a structured set of data, as itemised as possible, so as to enable programmatic control of what a tenderer is allowed/advised to insert (via the keyboard but also by reusing pre-defined data e.g. in catalogues held by the EO).

The increased use of structured information would therefore pave the way for significant further efficiency gains in e-Tendering, especially via re-use of information. But the EO is not the only party to benefit from that. In fact, while conceptually design of procurement specifications becomes more complex, there is a great deal of efficiency gains for the CAs in re-use of materials from past calls for tenders and in handling evaluation processes.

Overall, improvements include:

- saving time preparing responses (EO)
- reducing cost of supplying qualification information (EO)
- reducing risk of omissions and errors in tender responses (EO)
- improving clarity and quality of tender requirements (CA)

- saving time in preparation of tender requirements (CA)
- increasing degree of automation of evaluation (CA)
- reducing risk of inconsistent evaluations (CA)

While current e-Tendering systems offer substantial efficiency gains compared to the traditional paper-based tendering, in most cases they still require EOs to supply different tendering information in different formats and do not allow the re-use of information. This requires users to undergo a learning process for each platform they use and to prepare tailor made responses meeting the requirements for tender specific information and formats. While this is generally not a significant problem for CAs (which generally only have to use one platform), it is a disadvantage for EOs which have to use the platforms chosen by all the CAs with which they intend to do business.

Therefore the e-TEG, while welcoming continued development of the structured tender concept and the related tools to help with tendering preparation, invites the Standards-making bodies to come up with accessibility standards for e-tendering platforms, setting best-practices interface behavioural specifications. This way, designers would remain free to engineer their own solutions but would converge towards an interface model that is accessible to all EOs, thereby requiring a reduced investment on their part in terms of skill development.

4.3.2 Define a system-to-system e-submission model

Another way to deal with the issues of a plurality of interfaces and the related problems for the EOs is to decouple the submission platform from the tendering preparation platform.

In this model, the platform used by the CA collaborates with independent "tendering preparation" platforms used by the EO, by sharing a unique view of the process and document structures being exchanged as part of the e-Tendering transactions. This model is implemented in x-Vergabe[7], a project by Federal Ministry of the Interior in Germany (FMI). This would enable the EOs to work in the same application environment each time they respond to a call, bringing a great deal of efficiency at the EO side in terms of reduced need for training, faster tender preparation and less chance of errors.

Additional benefits from increasing system to system information exchange:

- allowing EOs to use systems under their own control for tender response preparation; (EO)
- further lowering cost of tender preparation by allowing re-use of tendering information across "instances" (installations) of CA applications; (EO)
- allowing the use of central repositories of qualification information; (EO)

Therefore the e-TEG recommends that, in addition to improvements that could lead to short-term benefits within the currently predominant platform-oriented model ("quick wins"), an alternative architectural model promoting system to system information exchange should also be explored.

Evolution towards the described model involves extensive definition of standards in the areas of:

- Legal interoperability

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[7] http://www.xvergabe.org/confluence/display/xv/XVergabe+Whitepaper.

- Organisational interoperability
- Semantic interoperability
  - Information and document level
  - Signature interoperability level
  - Information packaging level
  - Platform communication level
- Technical interoperability

It is recognised that the development and deployment of enabling standards will be done gradually.

Therefore the current centralised platform-oriented model will prevail for years as a service oriented architecture enabling interoperability that may lead towards a model based on system to system information exchange.

MS and CAs establishing e-Tendering solutions should prepare a roadmap for the transition towards systems re-using structured information and enabling system to system communication. Priority should be given to establish solutions enabling re-use of structured information in parts of the procurement process where standards and open source software already exist at a European level. The results from the PEPPOL project and CEN BII work on building blocks for e-Signature validation, qualification of suppliers (VCD) and e-Catalogues should be utilised. Each recommendation in Part II may well be applicable to one or the other model or both, as indicated in a specific TAG (i.e. "timeline").

Key recommendations:

The COM and MSs should drive the development of accessibility standards for user interfaces of e-Tendering platforms offering a tendering preparation environment to EOs.

The COM and MSs should drive the development of tendering contents and process standards to allow the definition of structured tendering transactions. Work should take account of existing developments such as x-Vergabe in Germany and results achieved under PEPPOL and SPOCS[8] in piloting use of structured documentary standards; further work in this area should continue under the proposed e-SENS[9] and other EC co-funded programmes in close relationship with standards-making.

4.4 Transparency of procurement opportunities

The great majority of companies in Europe are SMEs. Procurement systems should therefore be designed from the ground up to cater to the needs of SMEs. While a single portal (*Tenders Electronic Daily*) exists aggregating all notices for procurement procedures covered by the EU Directives, no

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[8] PEPPOL and SPOCS are Commission co-funded projects under the CIP ICT PSP programme
[9] E-SENS is a proposal currently under negotiation under the CIP ICT PSP programme

easy way currently exists of aggregating information about procurement opportunities falling below the thresholds. This is an important limiting factor, as SMEs typically do not have the means or resources to look for and identify the best business opportunities published at a local, regional, national and European level. The e-TEG has therefore developed recommendations on access to tender notices based on the following principles:

- e-Tendering platforms should make access to basic information (notices) about procurement opportunities available to end-users (EOs) for free and without imposing registration requirements;
- all notification data should be generated by the e-Tendering platform in a standard/structured format to facilitate notification distribution to multiple portals even by system-to-system processes;
- the aggregation of notification data should be encouraged, such as by establishing Single Points of Access at national or regional level. Private services providers should be given the possibility to offer added value information services on top of the basic notice that should be free in its basic format, for example Open Data;
- standardisation of search interfaces should be promoted, allowing EOs to re-use search profiles across platforms and portals.

Key Recommendations:

The Commission should encourage MSs to promote the development and use of notification standards to allow aggregation of notices by public and private (added value) organisations so as to enable seamless access and search of public contract information by any interested party. This should build upon the work carried out by CEN BII and UN/CEFACT to ensure international interoperability.

Specific recommendations on how to achieve the above are provided in Part II.

4.5 Reduce registration and authentication requirements

The business objectives identified by e-TEG aim inter alia to improve usability and efficiency from the EO's perspective and to enhance accessibility by SMEs. Currently, CAs publish tendering opportunities on a multitude of platforms. An EO wishing to respond to a plurality of tenders has to gain access to such platforms and register on each of them.

The following table illustrates the approach proposed in e-TEG's recommendations for the various stages of the tendering process:

Task to perform on platform	Authentication requirements for the EO

Query opportunity, Download specifications, Submit Q/A	EO opt in for light registration (or stay anonymous)
Prepare Tender	• Username + password OR • two-factor authentication (e.g. SMS-based token) if imposed by CA
Submit tender	• Username + password OR • digital signature if imposed by CA
Contract signature	Digital signature

Based on the above table, the following approach is recommended:

- No registration should be required for access to tender notices and related tendering specifications – it may be questionable whether it is necessary for submitting enquiries on tendering specifications;

- Light registration may be used if clearly flagged as optional and where it adds value to the EO perspective, for example to receive notices of interest to a particular buyer or to receive updates (tender documents, Q&A) about particular tender.

- Digital signature should be requested on submission only, if the CA, on its own decision or in application of national rules, establishes that the tendering documents must be accompanied by such a signature in order to have the same legal value as a signed paper document.

- Moreover, in order to avoid the need for EOs to separately provide registration information to multiple e-Tendering platforms, e-TEG recommends that platforms allow the re-use of registration information. In the short-term, this could involve allowing registration based on services implementing standards such as Oauth, while in the longer-term the e-TEG recommends the development of a single sign-on service based on a Federated ID Management System (FIDM).

Key Recommendations:

MSs should encourage CAs to provide free access to all tender notices and documents without registration.

The Commission should promote the development of single sign-on services. That requires defining a legal framework for collaboration plus the definition of standards. The COM should continue piloting

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in the area of ID management under the proposed e-SENS and Stork2[10] and promoting their outcome into standards.

Specific recommendations on how to achieve the above are provided in Part II.

4.6 Simplify qualification and other evidentiary requirements

Qualification

The CAs must be able to receive or have access to evidence documents so that the EOs can be qualified in the procurement process.

This is traditionally an area of concern for e-Tendering as there are not yet fully mature and/or widely supported solutions to ensure that evidence is sent electronically in a secure and non-repudiable manner.

The Commission's legislative proposal encourages CAs to accept self-declarations in the preliminary phase of the process (i.e. up to awarding) and ask for evidence only from the EO to which the contract will be awarded. The e-TEG blueprint recommends this approach is taken by the CA to enable smooth completion of procurement process prior to award using exclusively electronic means.

Another simplification is expected on the legislative side by the prospect that e-CERTIS[11], the Commission's web information system providing indicative guidance to the certificates and statements commonly required in procurement, becomes a "clearing house" for evidentiary documents that CAs may actually require in practice. This would simplify to a great extent the current complex scenario where there is often uncertainty, particularly in cross-border submission cases, as to whether a particular evidentiary document may be accepted against the evidence requested in the tendering specifications. However, should e-CERTIS maintain its "voluntary-use" value, CAs may commit to using it as a reference information source to decide which evidentiary documents should be requested to demonstrate a particular status of the EO submitting a tender.

Even if submission of electronic evidentiary documents is postponed until the contract award stage and the list of evidentiary document is limited for a CA to a restricted agreed number, there is still a need for the winner(s) to provide this information electronically at some stage.

To do so, it is recommended using the standards enforcing the model successfully tested under the EC co-funded CIP ICT PSP large scale pilot project PEPPOL, called the Virtual Company Dossier (VCD). VCD is a set of guidelines and specifications for EOs to gather electronic certificates and attestations from national issuers and submit these to the CA.

More information on PEPPOL VCD can be found at the following link:

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[10] Stork2 is a Commission co-funded project under the CIP ICT PSP programme
[11] Please visit http://ec.europa.eu/markt/ecertis for extensive information on the service and access to the e-CERTIS database itself

http://www.peppol.eu/peppol_components/virtual-company-dossier

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Key recommendations:

CAs should ask for electronic evidence only at contract preparation stage, permitting use of self-declarations at tendering submission stage. They should select evidentiary documents to be asked out of the e-CERTIS database.

The Commission and MS should progress, supported by the PEPPOL community, the development of VCD under the proposed e-SENS and other co-funding work programmes, to promote the transition of all the MSs to the highest level of maturity.

CEN should continue standardisation of the VCD specifications to make it possible to use such specifications directly in procurement.

Specific recommendations on electronic evidence management are provided under Part II.

4.7 System integrity/Security and availability

The use of public internet technologies to provide accessible, inclusive and interoperable e-Tendering tools creates a different security risk profile that should be considered during the design and operation of such tools.

Security is a key issue in e-Tendering. All the security dimensions (authentication, integrity, service availability, non-repudiation) are relevant to both the CA and EO for the impact that a breach of security in each of such dimensions cause to both parties. Should platforms not meet acceptable levels, this will at best create barriers to uptake and use and, at worst, expose CAs to legal challenges arising from system failures during the procurement workflow.

However the challenge is to introduce appropriate levels of security that allow the securing of data, the identification of users, protection of confidentiality and improvements to procurement neutrality, without becoming too expensive to implement and/ or cumbersome for the user.

The key issue is to enforce best security practices that protect both users and data but do not create unnecessary overheads or barriers to use.

Platform operations should conduct a process-based risk analysis and design an Information Security Management System (ISMS) that defines the scope of service, details of who has access to what data, details of support channels, details of the service maintenance and development. It is important to:

- Consider different security requirements in the different phase of the e-Tendering process. Up to tendering preparation, the platform should aim at maximum accessibility and therefore avoid security measures that may hinder the EO capability to access information. As soon as business data starts to flow in the system, protection of this data becomes key to transparency and business confidentiality.

- Address all potential risks. Staff vetting procedures are often neglected, while it is apparent that the threat posed by unreliable staff with privileged access to data (for example for system administration, for assistance services, etc.) causes a major permanent risk.
- Address external relevance of the risk. A solution may ensure top level of security, but in the procurement domain that is to be demonstrated to the third parties. The measures used to counter the risk should be designed to provide evidence to the external world.

CAs should establish Service Level Agreements that comprise best security practice in the running of High Availability business critical systems. It is important that the national strategy outlined above comprises guidelines to assist CA.

In addition, the availability of clear and readable log data is a key success factor in participants claim management.

Key Recommendations:

Platform operations should enforce best security practices (such as penetration testing) that protect both users and data but do not create unnecessary overheads or barriers to use.

CAs should perform preliminary risk analysis and use wide-spread security standard ISO 27.001, potentially certified by an accredited body. Security issues must be dealt with by experienced personnel in information systems security matters.

Member States should provide guidelines to define risk sources and actors.

CAs should ensure complete traceability (e.g. System and application logs) of the users' actions in order to prove after the tender completion the users' behaviours into the system during the tender phase. This will be very important in case of claim/litigation.

CAs need to require stringent SLA from platform operators.

Specific recommendations on security and digital signature are provided under Part II.

4.8 Digital signature

To remove barriers to SMEs, improve cross border trading and reduce technical/ operational complexity to CAs, the Commission should encourage MS to re-evaluate if digital signatures are strictly necessary at the tendering stage, and to shift the signature to the stage of signing the contracts.

Where digital signing of bids is deemed unavoidable, as per a preliminary risk analysis, CAs are invited to enforce an e-submission model accepting all Qualified Electronic Signatures using certificates included in the EU Trusted Lists of Certification Service Providers[12]. These should be seen

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[12] http://ec.europa.eu/information_society/policy/esignature/eu_legislation/trusted_lists/index_en.htm

as a "passport" signature across border: every e-submission platform in the EU supporting digitally signed tenders should accept this type of signature whatever the country of origin of the certificate.

Verification of the electronic signature on the bids is greatly simplified: once the verification tools available on the platform verifies the validity of the certificate (i.e. not expired nor revoked) and its nature as a qualified certificate listed in the EU trusted list, the tender should be accepted without any further consideration on security levels.

Key Recommendations:

The Commission should ensure robustness and reliability (availability, currency) of the List of Trusted lists accessible for signature verification.

Each MS should keep up to date its own national list and its subset of the list of lists maintained by the Commission.

The Commission should continue the development of open software for signature and validation that can be used by the EU e-Tendering platform to ensure certainty, transparency and reliability of the process.