

Legal Requirements for Public Procurement Electronic Platforms: The TrivPlat Project

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Abstract

Bad decisions in public procurement processes have two negative effects: overpriced public goods and services – overspending – and detrimental effects on competition – loss of efficiency and reduction in social welfare. Electronic public procurement (EPP) has been considered an important tool for promoting competition, simplifying procedures, and ensuring transparency in decision-making processes, with the corresponding gains in time and money. In Portugal, EPP based on information technologies and systems replaced paper-based pre-contractual procedures for communication and processing.

Addressing this general issue, the authors designed and proposed the TrivPlat, a free access tool for monitoring, managing, and evaluating the electronic platforms of public procurement. This tool is even more relevant if we take into account that the current legal framework establishes the free choice of electronic platforms for contracting authorities and economic operators.

This paper presents the TrivPlat project, reporting its development by now, that is, its first activity: the identification and characterization of legal requirements that electronic platforms for public procurement are complied to obey in Portugal. These requirements may be grouped into four types: general operating rules, functional requirements, technical requirements, and safety requirements. In addition, within the actual regulatory framework, they correspond to a new paradigm for the development and management of electronic platforms.

Keywords e-government: electronic public procurement; electronic public procurement platforms.

1. INTRODUCTION

Literature has pointed the potential of the TIC in the development of new public governance models to promote transparency and accountability [Boehm 2007; Lamsdorff & Nell 2006]. With this regard, public procurement is a critical area of government because it represents a large amount of public expenditure [OCDE, 2016]. With a focus on transparency, governments have made efforts to implement electronic public procurement (EPP), assumed as important tools of digital governance and a key drive for innovation (Edler & Georghiou, 2007). Among other advantages, public procurement has the potential to promote competition, more open decision processes, reduce corruption and reduce administrative burden.

In Portugal, EPP replaced paper-based pre-contractual procedures for communication and processing based on information technologies and systems. The organizational gains are recognized, particularly in the European context. However, e-procurement platforms have limitations, which results in a number of constraints to evaluate the impact of public procurement in the creation of public value. Additional efforts are still necessary to efficiently promote a more transparent and accountable governance, enhancing thus the creation of public value through ICT. These topics are discussed in section 2.

The authors designed and presented the TrivPlat, a free access tool for monitoring, managing and evaluating electronic public procurement. This is the result of a project approved for financing by the Portuguese Technology and Science Foundation. The TrivPlat project is briefly presented in Section 3.

In a nutshell, this paper aims to present the TrivPlat project and its contributions to the discussion the additional efforts necessary to implement a tool that efficiently promotes a more transparent and accountable governance, one that effectively secures public interest. It aims to contribute to the provision of information related to electronic public procurement and its perception, increasing transparency, promoting rational management of public resources and fighting corruption.

The relevance of these outputs are more salient if we consider the current legal framework allowing the free choice of platforms not only to the public entities (as was previously the case) but also to economic operators. As part of the TrivPlat, it is developed a benchmark model for the evaluation of public procurement platforms operating in Portugal, in order to compare the various supporting functionalities and the technical requirements, safety, usability and general rules of operation. This article aims to present the work in progress to build the reference model, which, by now, is focused on the study and analysis of the legal framework. The main results of the legal requirements for identification and characterization of electronic public procurement platforms are presented and discussed in section 4.

Finally, the main conclusions are presented in Section 5.

2. ELECTRONIC PUBLIC PROCUREMENT

Public procurement in Europe accounts for around 1/5 of EU's GDP (EU, 2014) annually. In the OECD it represents 12% of the GDP and is estimated to be around €4.2 billion in 2013 (OECD, 2016 and Ferreira et al, 2016). Poor management of public procurement harms competition and increases prices of goods and services, affecting public expenditure and taxpayer revenues (EU, 2014, EC 2003, OECD, 2009; Ferreira et al., 2016).

The European regulation of Member States' public procurement and harmonization has its roots in the desire to implement a free single market. The expectation has been that the regulation of

public procurement could provide substantial savings through three effects: 1) a direct trade effects as a result of lower prices; 2) a competition effect through improving the competitiveness of enterprises, and 3) a restructuring effect due to changes in the business structure (Haugboll et al., 2015; Edler & Georghiou, 2007; Uyarra et al., 2014).

Public procurement is increasingly seen as an important potencial instrument for furthering the goals of innovation policy strategies at the European Union level and in a range of European countries, namely as a technology policy instrument (Haugboll et al., 2015; Georghiou et al. 2012; Edler & Georghiou, 2007).

Electronic Public Procurement (EPP) is a crucial initiative of Governments' strategies given its impact on economic development (Ramanujam, 2012, EC, 2010, Amaral et al., 2003; Ferreira et al., 2014; Schoenherr & Tummala, 2007, Tavares, 2009, EC, 2004; Haugbolle et al., 2015). Europe 2020 strategy includes EPP as one of the key policy instrument for smart, sustainable and inclusive growth (European Commission, 2010).

Relevant investments are made by Governments to implement EPP, a tool to promote competition, foster more transparent decision-making processes, reduce corruption, diminish bureaucracy and allow time and money gains (Ferreira et al, 2016).

Benefits related to the use of information technologies in public procurement are: (i) simple and efficient method of purchase, allowing reduction of costs; (ii) more efficient identification and negotiation with suppliers; (iii) automation of workflows that can be extended to allow sharing of information and integration; (iv) processing of orders, monitoring and control of acquisition activities; (v) transformation of the method to conduct pre-contractual processes; (vi) enhancement of transparency between public bodies and the market; (vii) support in decision-making; and (viii) creation of open markets where suppliers can compete taking advantage of the government's ability to obtain dynamic prices of goods and services, improving efficiency (Schoenherr & Tummala, 2007; (1998) and Kassim and Hassin (2010). These benefits may be financial gains and organizational gains, with impacts on governance refinement.

The EC (2010) identifies a set of problems that create barriers to EPP adoption and to transnational participation (EC, 2010): (i) inertia and fear of contracting entities and suppliers; (ii) lack of regulations in EPP processes; and (iii) costly technical requirements.

Effective use of EPP involves development of technological tools, namely EPP platforms, which are an IT infrastructure that supports pre-contractual procedure phases legally envisaged for public expenditure. Development of Public Procurement Platforms (PPP) is handled by platforms managing entities, which are in charge of technical management of system and computer apps necessary for electronic formalities, guided by vectors of security and confidentiality, safeguarding public interest. They may be public, private or public/private entities.

The costs of technological development include the costs of adopting EPP platforms by contracting entities and costs of adhesion by suppliers, plus maintenance costs, which may vary (EC, 2010). Also, costs of licenses, internal and external resources, security systems, implementation and maintenance, integration solutions, process design, configurations and customization, training and communication (Ramanujam, 2012). Financial risk, development risks and legal issues are crucial factors in EPP projects (Oliveira & Amorim, 2001). Amaral et al. (2003) identify a set of factors for EPP to minimize the impact of those obstacles: (i) implementation of a purchasing reengineering model to achieve cost savings; (ii) integration of electronic purchasing systems with back-office systems; and (iii) business process redesign.

EC (2010) considers EPP technology has not provided expected solutions, however, investments in technological capacity for public procurement, like development of electronic platforms, have increased. Portugal is an exception on complete dematerialization of contract formation processes (EC, 2010).

In Portugal, EPP introduction has brought gains (Ferreira, 2016): (i) transparency; (ii) competitors trust; (iii) construction of organizational memory; (iv) competition; (v) information management; and (vi) cost reduction.

All technological development tasks are undertaken by private entities, which assume all risks of technological project development (Oliveira & Amorim, 2001; Ferreira, 2015). However, performance of management entities do not always act adequately.

The introduction of PPPs has led to organizational changes and adoption of new procurement methods and strategies. There are also constraints caused by limitations in existing platforms in the Portuguese market (Ferreira and Amaral, 2016). Limitations like: (i) restricted view of organizational competency "managing public procurement"; (ii) lack of a cross-cutting view of the "managing public procurement" competence; (iii) fragile organizational culture and understanding; (iv) disarticulation between legislation and platform functionalities; and (v) technological solutions. The technological pitfalls are: (i) direct adjustment procedure and transparency paradox; (ii) case of qualified digital signatures; (iii) unqualified digital certificates; and (iv) high costs in access of platforms, diversity of work environments and functionalities of support to proceedings.

The limitations create problems for the competition principle, with particular impact on small and medium-sized enterprises. Who loses is the public purse and public interest. When a contractual procedure is initiated there is public interest to be guaranteed. There must be instruments that allow better management of public resources, crucial for decision-making.

It is critical to implement measures capable of technologically develop solutions more appropriate to the real needs of contracting entities and suppliers, eliminating technological limitations and pitfalls. These are also the objectives of the TrivPlat Project. Changes introduced by CCP should

also be assessed, which is relevant especially at a time when Portugal is transposing the new Community Directive on EPP to a national level.

3. TRIVPLAT - A TOOL TO MONITOR, MANAGE AND EVALUATE ELECTRONIC PUBLIC PROCUREMENT

Notwithstanding the advances already achieved in Portugal, some problems persist that are symptomatic of the fragility of the public purchasing platforms market. The promotion of a more competitive and transparent market for platforms is therefore decisive for a more open competition and its direct consequences on the economy.

The objective of this project is the development of an electronic tool, of free access, to monitor, manage and evaluate electronic public procurement, TrivPlat, structured in the following aspects: (i) to compare and evaluate public procurement platforms operating in Portugal, based on pertaining information, namely the functionalities and services provided, usability, turnover, costs for contracting entities and suppliers, users degree of satisfaction (a form of a trivago of public procurement platforms); (ii) to provide information on public procurement (electronic public procurement observatory), namely: who buys; what one buys; how regularly one buys; types of procedures adopted; proposal evaluation models; suppliers evaluation; (iii) to create an index of electronic public procurement (electronic public procurement measurement instrument); and (iv) to establish and stimulate a network of good practices (case studies and tutorials).

To achieve the desired result, and in order to guarantee discipline, accuracy and transparency, it is adopted the design research as the research methodology (Carvalho, 2012; Baskerville & Myers, 2002; Peffers et al., 2006; Livrari, 2007; Ferreira et al., 2011; Ferreira et al., 2012). Design Research is a form of research that aims to add knowledge associated with artifacts created, oriented to a purpose, answering to a felt necessity in real context (Carvalho, 2012). Offermann et al. (2009) formalized a research process, structured in three stages: (i) identification and understanding of the phenomenon; (ii) solution design; and (iii) evaluation and construction of the artefact.

Thus, based on (i) the motivations for the study in this project; (ii) the objectives; and (iii) the expected result; and in order to guarantee accuracy and practical relevance following the guidelines presented by Offermann et al. (2009), the research project is structured in three main phases combined to obtain empirical evidence: a qualitative multi-method approach, information collection and analysis techniques. In a simplified way, TrivPlat platform development will occur in 3 major activity phases that will follow each other during the period of 36 months: (i) diagnosis of the public procurement process in Portugal with focus on public procurement platforms; (ii) platform conception; and (iii) its implementation.

4. TRIVPLAT: 1ST PHASE – DIAGNOSIS

4.1. Background

Electronic public procurement generally means substituting paper-based pre-contractual procedures for communication and processing based on information technologies and systems (EC, 2010, EC, 2004).

However, there are also potential problems that may hinder electronic public procurement adoption and, hence, transnational participation in electronic public procurement procedures (EC, 2010): (i) inertia and fear by contracting authorities and suppliers; (ii) lack of standards in electronic public procurement processes (suppliers confronted with an electronic public procurement architecture composed by different platforms and devices); and (iii) costly technical requirements, especially for tenderers authentication.

In December of 2016, *Jornal de Negócios* reported the suspension of one of the largest public procurement platforms, *Gatewit*, managed by *Construlink*, for not complying with legally established requirements, namely improper collection of services to suppliers, which by law are free of costs. It should also be noted that the Portuguese Institute of Public Markets, Real Estate and Construction (IMPIC) and the National Security Office (GNS) notified the company of detected nonconformities after a first audit. The suspension decision follows a second audit, in which two authorities mentioned that the company had not taken the necessary corrective actions. As can be observed, performance of management entities is not always adequate. In addition to this problem, there is an emergence of platforms operating in the market without GNS accreditation nor licensing from IMPIC, as is the case of *PortugalGov.com*.

4.2. Research plan and methods

Considering the objectives of *TrivPlat* (a monitoring, management and evaluation tool), the construction of an evaluation benchmark for platforms operating in the market is decisive at this stage of the project. For this, it is necessary to make an analysis of the legal framework, focusing on the legal requirements regarding the development, management and licensing of existing platforms in Portugal. Thus the goal of this diagnosis phase is to achieve detailed knowledge of public procurement procedures, on the one hand, and of electronic platforms effectiveness to achieve their ends, on the other. In methodological terms, this knowledge will pass by the usage of 3 methods:

- Collection and systematization of legal rules that govern public procurement procedures;
- 15 structured interviews with key players in the procurement process;
- Collection and comparative analysis of public procurement data in EU countries.

Qualitative research interviews are presented as a specific form of conversation on a particular topic. They are one of the most crucial data collection techniques in qualitative research. Interviews allow, through human interaction, the attainment of information on what interviewees think about a real specific subject and/or organizational subject, which allows learning from their descriptions and experiences. It is the researcher's responsibility to interpret and to respect the meaning associated with their descriptions and language. The role of the interviewer is to listen, encourage, register and interpret (Kvale, 1996; Kvale & Brinkmann, 2009; Moreira, 2007; Myers, 2009).

The following subsections are intended to present the main ideas and changes resulting from the new legal framework, identifying and summarily characterizing the main criteria to which the platforms must obey.

4.3 The actual regulatory framework

The CCP, approved by Decreto-Lei n.º 18/2008, of January 29, expressing a clear option for the dematerialisation of pre-contractual procedures and the adoption of other mechanisms that allow the optimization of electronic tools and Directives 2004/17 / EC and 2004/18 / EC, which promoted the progressive implementation of electronic contracting, have led to the creation of regulations for the operation of electronic platforms.

It was in this context that several diplomas were adopted in our country, of which we highlight the Decreto-Lei no. 143-A / 2008 of 25 July, which transposed the principles and general rules that should be followed by the presentation of proposals and applications, Portaria n.º 701-G / 2008, of July 29, which established the requirements and defined the functionalities to which the electronic platforms should obey and Portaria n.º 701-E / 2008, of July 29, which approved the models of the technical data block, contract formation report, annual summary report and contract performance report.

Seven years after the entry into force of the CCP, with a view to transposing into national law the provisions of Article 29 of Directive 2014/23 / EU of the European Parliament and of the Council of 26 February 2014, Article 22. and Annex IV to Directive 2014/24 / EU of the European Parliament and of the Council of 26 February 2014 and Article 40 and Annex V of Directive 2014/25 / EU of the European Parliament and of the Council Of February 26, 2014, the Law n.º 96/2015, of August 17, was published, regulating the availability and use of public electronic contracting platforms. This Law adds requirements that were dispersed in the legal system and revokes Decreto-Lei n.º 143-A / 2008 and Portaria n.º 701-G / 2008. It also introduces a sanctioning framework. Thus, in Law 96/2015, the following are defined: i) the requirements and conditions that electronic platforms must obey; (ii) the obligation of interoperability with the

Public Procurement Portal and with other systems of public entities; and (iii) the supervision and sanctioning regime in case of breach of the stipulated legal rules.

In 2017, a further review of the CCP was made, through Decreto-Lei n.º 111-B / 2017, of August 31. This revision introduced a number of amendments, including, among others, the system of certain contracts, contract criteria, deadlines for submission of tenders, and provision of collateral, notably an extension of the use of public electronic purchasing platforms. This decree also revokes Portaria n.º 701-E / 2008, of 29 July.

Recently, Portaria n.º 57/2018, of February 26, regulated the operation and management of the public procurement portal and approved the data models to be transmitted to the BASE Portal. This decree shall enter into force simultaneously with the last revision of the CCP.

Thus, currently, the operation and management of electronic platforms obey, in legal terms, Law 96/2015 and Portaria 57/2018. These diplomas include the functional, technical and security requirements, as well as the general rules for the operation of electronic platforms in procedures for the formation of public contracts.

4.4 Legaly requeriment for electronic public procurement platfomrs: a framework for TrivPlat Project

CCP's commitment to the dematerialisation of public procurement procedures and the consequent use of electronic tools in the formation of contracts is largely based on the role of electronic platforms, an essential part of the global architecture of the procurement process.

As defined in Law 96/2015, the electronic platforms constitute a technological infrastructure consisting of a set of applications, means and computer services, which serves as a support for public procurement procedures, by rolling out the various phases under direct command the contracting authority and the interested parties or competitors, under the terms and within the limits previously established.

The free choice of electronic platforms for contracting entities and economic operators and the freedom of access to the pieces of public procurement procedures are freedoms enshrined in Law 96/2015, implying profound changes in the development, management and licensing of platforms. The interconnection and interoperability between electronic platforms, the technical credentials of the electronic platforms by the National Security Office and the licensing of the management entities of electronic platforms by IMPIC, I.P., are new challenges that arise.

As a result of this new understanding of the legislator, there is still another relevant aspect. The establishment of basic services provided by electronic platforms to economic operators is also defined: (a) access to procedures and parts of the procedure that have been published; (b) sending

messages through the electronic platform; (c) the sending of electronic mail messages to all those involved at the stage of the ongoing public procurement procedure where, under the terms of the CCP, such communication is mandatory; (d) requests for clarifications and lists of errors and omissions; (e) the submission of applications, proposals and solutions; (f) pronouncements in prior hearing; (g) complaints and objections; (h) the contract decision; (i) the delivery of qualification documents; and, finally, (j) the visualization of all messages and notices created by the contracting entities which, according to the law, should have access.

The management entity (a legal entity that is able to exercise, under the terms of the Law, the activity of management and operation of electronic platforms) is responsible for making available the functionalities necessary for the application of legal provisions, in relation to electronic contracting in good conditions requirements, registration, reliability and sustainability. It also enhances the same legal diploma, that the interface with the users and all the communications and procedures carried out on the electronic platforms are written in Portuguese language, and an additional interface can be made available in other languages. These are the only references to the interface criteria and usability. That is, communications, data exchange and information processed through electronic purchasing platforms, as well as the respective archive, must comply with (i) the rules, (ii) requirements and (iii) technical specifications provided in the referenced law (Decreto Lei n.º 96/2015).

The legislation makes reference to 18 General Rules of Operation of the Platforms, as evidenced in Table 1. It is important to point out that each of the 18 identified rules aggregate a set of sub-criteria, Given the complexity of the information, and extension of the same, in this article, we identify the rules by the maximum level of aggregation. This criterion was adopted in all the other tables presented in this article.

The General Rules are related with a set of fundamental rules to the procedure of purchasing process. The definition of a process manager on the platform, communication and notification rules, aspects related to the reference dates, loading of proposal documents, requirements for encryption of confidential documents, provision preliminary information sheet and list competitors, among others, are some of the rules introduced by the legislator.

| OPERATING GENERAL RULES (OGR) |
|--|
| OGR1: Conduct of procedures on electronic platforms (Article 60) |
| OGR2: Communications and notifications (Article 61) |
| OGR3: Documents provision (Article 62) |
| OGR4: Providing information on reference dates (Article 63) |
| OGR5: Requirements for proposal files (Article 64) |
| OGR6: Date and time of solution and proposal submission (Article 65) |
| OGR7: Components of each proposal (Article 66) |
| OGR8: Coding of tenders and identification of competing suppliers (Article 67) |
| OGR9: Upload proposals (Article 68) |
| OGR10: Documents encryption and classification (Article 69) |
| OGR11: Submission of proposals (Article 70) |
| OGR12: Sequence of proposals submission (Article 71) |
| OGR13: Ordering of tenderers and competitors (Article 72) |
| OGR14: Access to the content of applications, solutions and proposals (Article 73) |
| OGR15: Provision of proposals to the jury of the procedure or to the person responsible for the procedure if there is no jury (Article 74) |
| OGR16: Prior sheet for opening tenders and prior list of tenderers (Article 75) |
| OGR17: Opening tenders sheet and list of tenderers (Article 76) |
| OGR18: Negotiation and electronic auctions (Article 77) |

Table 1 – Operating General Rules

In functional terms, availability and free access and non-discrimination are two mandatory pillars that, in functional terms, platforms must obey. For example, the instruments to be used on electronic platforms and made available to economic operators, including products, applications and software, and their technical specifications, in order to avoid discriminatory situations, shall, inter alia: (i) be compatible with products in current use in the field of information and communication technologies, in particular the National Digital Interoperability Regulation (RNID); (ii) indicate how to obtain the computer programs used, as well as their commands and instructions.

Table 2 identifies the fundamental functional requirements for such pillars to be secured. For example, in terms of minimum functional requirements, platforms should, among other things; (a) be based on open standards, in accordance with the RNID; (b) ensure that all messages are automatically available for viewing by those who have access to the phase of the ongoing procedure; (c) ensure the sending of e-mails to all stakeholders; (d) to guarantee the registration of any action carried out by the various registered users; (e) list, sort and export to XML format (Extensible Markup Language) and / or to ODF (Open Document Format), at all stages of the procedure, relevant information for management, reporting and monitoring, including metadata; (f) provide a report for verification and control of the flow of the procedure; (g) allow the parameterization of procedures with different contract criteria; (h) to support the execution of all

procedures for the formation of public contracts, as provided for in the CCP; (i) allow aggregated downloading of all documents attached to messages submitted by economic operators.

Another functional requirement is having a system that documents the various phases of the procedure, which provides the functionalities necessary to fulfill this obligation, which keeps the chronological information up to date until the contract act.

| FUNCTIONAL REQUIREMENTS (FR) | |
|---|--|
| FR1: Availability and free access (Article 28) | |
| FR2: Non-discrimination (Article 29) | |
| FR3: Functional requirements (Article 30) | FR3.1 Minimum functional requirements |
| | FR 3.2. Additional functional requirements |
| FR4: Flow of the procedure (Article 31) | |
| FR5: Denied access to the platform (Article 32) | |
| FR6: Information to interested parts (Article 33) | |

Table 2 – Functional Requirements

Technical requirements, addressed to interoperability, compatibility, interconnection and data exchange between the electronic platforms and the Public Procurement Portal are identified in Table 3.

| TECHNICAL REQUIREMENTS (TR) |
|---|
| TR 1: nteroperability and compatibility (Article 34) |
| TR 2: Interconnection with public platforms (Article 35) |
| TR3: Interconnection between electronic platforms (Article 36) |
| TR4:Data exchange between electronic platforms and the Public Procurement Portal (Article 37) |
| TR5: Data to be transmitted to the Public Procurement Portal (Article 38) |

Table 3 – Technical Requirements

To be able to allow the generalized exchange of data, namely between different formats and applications or between different levels of performance, respecting the established and updated requirements, namely: (i) the scripting language for a web page; (ii) the level of accessibility for public pages; (ii) the protocol for guaranteeing the delivery of messages in the integration between two or more inter-governmental information systems of the Public Administration; (iii) security of the integrity and confidentiality of communication in the integration between two or more interagency information systems of the Public Administration; (iv) the security of communication authentication in the integration between two or more interagency information systems of the

Public Administration; (iv) the type of electronic signature that all electronically signed documents must use; among others, are some of the requirements associated with TR1.

TR2 focuses on the interconnection of platforms with other fundamental platforms, directly and indirectly related to procurement processes, namely: (i) the Public Procurement Portal; (b) the Diário da República electronic portal; (iii) the National Public Procurement Catalog of ESPAP, I. P .; (iv) with the Management of Financial and Budgetary Resources in shared mode (GeRFiP, of ESPAP, I.P.); (v) the solution that may be implemented by the Court of Auditors or by the entities of the National System of Internal Control of the State Financial Administration, within the scope of its competences in the area of auditing and control of public contracts; (vi) the citizen card authentication solution and the central authentication mechanism “autenticação.gov.pt »; (vii) the Protocol for the Standardization of Technical Information in Construction (ProNIC), managed by IMPIC, I. P .; (viii) the platform to be developed by the Competition Authority

One of the major technical challenges for platforms management bodies is to meet the interconnection and interoperability conditions necessary for economic operators to be able to freely choose the electronic platform, regardless of the one used by the contracting entity with which they wish to interact. Finally, Table 4 highlights the necessary requirements in terms of security implementation and management.

| SECURITY REQUIREMENTS (SR) |
|--|
| SR1: Security implementation and management (Article 39) |
| SR2: User management, access profile and privileges (Article 40) |
| SR3: Systems and operations (Article 41) |
| SR4: Application security (Article 42) |
| SR5: Data integrity (Article 43) |
| SR6: Network security (Article 44) |
| SR7: Processing of personal data and free movement (Article 45) |
| SR8: Physical security (Article 46) |
| SR9: Identification and authentication (Article 47) |
| SR10: Access Control (Article 48) |
| SR11: Management of cryptographic keys (Article 49) |
| SR12: Access logs (Article 50) |
| SR13: Archive (Article 51) |
| SR14: Backup and recovery (Article 52) |
| SR15: Information confidentiality (Article 53) |
| SR16: Electronic signatures (Article 54) |
| SR17: Chronological validation (Article 55) |
| SR18: List of electronic certification services (Article 56) |
| SR19: Electronic platform users authentication (Article 57) |
| SR20: Digital preservation (Article 58) |
| SR21: Preservation of electronic documents (Article 59) |

Table 4 – Security Requirements\

Management entities implement an information security management system based on ISO / IEC 27001, ISO / IEC 27002, ISO / IEC 27005 and ISO / IEC 27033.

5. CONCLUSION

The TrivPlat aims to develop a free access electronic tool to monitor, manage, and evaluate the public procurement platforms operating in Portugal. This is a relevant subject if we consider the Portuguese legal framework, and recently amended, that establishes the free choice of electronic platforms to public entities and economic operators.

In this paper we present the results of the work in progress of the 1st phase of the TrivPlat development. The main contributions here lies in the identification and brief characterization of the general, functional, technical and safety requirements for public procurement platforms.

The next step is to consolidate the construction of a platform assessment benchmark, based on the legal requirements and rules previously presented.

The authors are also studying, at this moment, the construction of a benchmark for evaluating the usability of platforms. In other words, the first phase of the TrivPlat project's diagnosis is expected to result in the development of an aggregate evaluation framework for public procurement platforms (based on legal requirements, interface and usability criteria, as well as the overall process cycle from the identification of procurement needs to the evaluation of the execution of the contracts and their suppliers), in order to reach the fundamental principles: (i) Tenderers receive an equal amount of information at the same time (equality of treatment); (ii) Contracting authorities respect the confidential nature of information (confidentiality); (iii) Mechanisms are supported, in order to record all system events and user activities, as well as, attempts to gain access to sensitive information (traceability); (iv) Operation of the system improves competition conditions for the users (effectiveness); (v) Use of interoperable (compatibility) electronic means, generally available on the market or broadly used in MS, thus avoiding the use of country-specific or otherwise discriminatory technologies that restrict access to tendering procedures (interoperability); (vi) Use of technologies to ensure the secure communication of information and its storage in system data repositories (security); (vii) Use of technologies which are widely available and at low cost, as well as, mechanisms ensuring continuous operation of the system (general availability).

ACKNOWLEDGMENTS

This work is funded by FEDER funds through the Operational Program for Competitiveness Factors - COMPETE and National Funds through FCT - Foundation for Science and Technology under the Project: n° 031171, submetido no âmbito do Aviso de concurso n° 02/SAICT/2017.

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Legislação:

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- Decreto-Lei n.º 18/2008, de 29 de janeiro (Diário da República n.º 20/2008, Série I de 2008-01-29): Aprova o Código dos Contratos Públicos, que estabelece a disciplina aplicável à contratação pública e o regime substantivo dos contratos públicos que revistam a natureza de

- contrato administrativo (available at: <https://dre.pt/web/guest/pesquisa/-/search/248178/details/normal?l=1>)
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