

# Public Procurement Electronic Platforms Assessment: Legal Requirements



Sandra Cunha , Isabel Ferreira , Luís A. Amaral   
and Pedro J. Camões 

**Abstract** Electronic public procurement (EPP) has been considered an important tool for promoting competition, simplifying procedures, and ensuring transparency in decision-making processes. In Portugal, EPP replaced paper-based pre-contractual procedures for communication and processing. Addressing this general issue, the authors designed and proposed TrivPlat, a free access tool for monitoring, managing, and evaluating electronic platforms of public procurement. This paper presents the TrivPlat project, reporting its development so far: the identification and characterization of legal requirements that electronic platforms for public procurement are required to follow in Portugal. Legal requirements may be grouped into four types: general operating rules, functional requirements, technical requirements, and safety requirements. The first phase of the TrivPlat project diagnosis is expected to result in the development of an aggregate evaluation framework for public procurement platforms in order to reach the fundamental principles: equality of treatment, confidentiality, traceability, effectiveness, compatibility, interoperability, security and general availability.

**Keywords** E-government · Electronic public procurement platforms · TrivPlat project

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S. Cunha (✉) · I. Ferreira  
IPCA, Barcelos, Portugal  
e-mail: [scunha@ipca.pt](mailto:scunha@ipca.pt)

I. Ferreira  
e-mail: [iferreira@ipca.pt](mailto:iferreira@ipca.pt)

L. A. Amaral · P. J. Camões  
Universidade do Minho, Braga, Portugal  
e-mail: [amaral@dsi.uminho.pt](mailto:amaral@dsi.uminho.pt)

P. J. Camões  
e-mail: [pedroc@eeg.uminho.pt](mailto:pedroc@eeg.uminho.pt)

# 1 Introduction

Public procurement is increasingly regarded as an important potential instrument for achieving the goals of policy innovation strategies at the European Union level and in a range of European countries, namely as a technology policy instrument (Haugbølle et al. 2015; Georghiou et al. 2014; Edler and Georghiou 2007).

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

With a focus on transparency, governments have made efforts to implement electronic public procurement (EPP), assumed as an important tool of digital governance and a key driver for innovation (Edler and Georghiou 2007). Among other advantages, public procurement has the potential to promote competition, more open decision processes, reduce corruption and reduce administrative burdens. 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 result 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.

Thus, the authors designed and presented TrivPlat, a free access tool for monitoring, managing and evaluating electronic public procurement. Trivplat is the result of a project approved for financing by the Portuguese Foundation for Science and Technology. The TrivPlat project is briefly presented in Sect. 2.

In essence, this paper aims to present the TrivPlat project and its contributions to the discussion of 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 fight against corruption.

The relevance of these outputs is more prominent if we consider the current legal framework which allows the free choice of platforms, not only by public entities (as was previously the case) but also by economic operators. As part of 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, the construction of the reference model, which, currently, 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 Sect. 3.

Finally, the main conclusion is presented in Sect. 4.

## **2 TrivPlat—A Tool to Monitor, Manage and Evaluate Electronic Public Procurement**

Effective use of EPP entails the development of technological tools, namely EPP platforms, which are an IT infrastructure that supports pre-contractual procedure phases legally envisaged for public expenditure. The development of Public Procurement Platforms (PPP) is handled by platform 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.

In Portugal, all technological development tasks are undertaken by private entities, which assume all risks of the technological project development. However, the performance of management entities is not always adequate (Oliveira and Amorim 2001; Ferreira 2016).

The introduction of PPPs has led to organizational changes and adoption of new procurement methods and strategies. There are also constraints caused by limitations on existing platforms in the Portuguese market (Ferreira and Amaral 2016). Limitations such as: (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.

Notwithstanding the advances already achieved in Portugal, some problems persist that are symptomatic of the fragility of the public procurement 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 and Myers 2002; Peffers et al. 2006; Livari 2007; Ferreira et al. 2011, 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 manner, 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.

### **3 TrivPlat: 1st Phase—Diagnosis**

#### ***3.1 Background***

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

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](http://PortugalGov.com).

### ***3.2 Research Plan, Methods and Activities***

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: (i) collection and systematization of legal rules that govern public procurement procedures; (ii) 15 structured interviews with key players in the procurement process; and (iii) collection and comparative analysis of public procurement data in EU countries.

In the first phase, diagnosis, four activities are planned (A):

- A1. Characterization of the public procurement process and electronic support platforms. This activity, at first, through a review and documentary analysis, will result in a report on the public procurement process as an instrument for implementing public policy aimed at improving the economic and social reality. Moreover, in a second moment, through a case study, it will also result in a report on public procurement platforms existing in the Portuguese market, focusing in, among other aspects, the description of support functionalities to

the procurement process, technological specificities and associated costs for different stakeholders. A1 is decisive for definition of the evaluation benchmark of platforms, that is, for completion of A2.

- A2. Based on results obtained in A1, through analysis and interpretation of these results, the criteria underlying the definition of the dimensions that will support the evaluation benchmark of electronic public procurement platforms are defined. After this task, in a second moment, the benchmark is constructed. This activity will result in a set of platform comparison indicators. Completion of A2 will also generate decisive information, in part for construction of electronic public procurement measurement instruments, as defined in A3.
- A3. The objective of A3 is to construct measuring instruments for electronic public procurement. Thus, in a first stage, literature is reviewed around the network of concepts: electronic public procurement; transparency, corruption, electronic public procurement indexes; as well as the survey of existing indicators related to the subject under study. This activity will result in a set of indicators of electronic public procurement useful for: (i) researchers, making the accomplishment of empirical studies possible; (ii) government officials and civil servants, to substantiate decisions; (iii) private companies, that provide services, and suppliers of goods to the public sector, in order to delineate their market strategies; (iv) the general population, as a source of information and awareness of public procurement issues. The results obtained during A3 are, in part, inputs to A4.
- A4. Based on the results of previous activities (A1, A2 and A3), through analysis and interpretation, A4 aims to define the benchmark of good practices in electronic public procurement. This activity will result in the establishment of a collaborative and benchmarking network, which aims to stimulate dissemination of good practices in public procurement and to promote open innovation among the main players involved in the processes of electronic public procurement.

In this way, 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. With that information we intended to reach the first activities objectives.

### ***3.3 The Actual Regulatory Framework***

Public procurement rules in Portugal approved by Decree-Law 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 Decree-Law 143-A/2008 of 25 July, which transposed the principles and general rules that should be followed by the presentation of proposals and applications, Ordinance 701-G/2008 of July 29, which established the requirements and defined the functionalities to which the electronic platforms should follow and Ordinance 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 CCP entry into force, 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 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 Decree-Law 143-A/2008 and Ordinance 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 follow; (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 Decree-Law 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 procurement platforms. This decree also revokes Ordinance 701-E/2008 of 29 July.

Recently, Ordinance 57/2018 of February 26, regulated the operation and management of the Public Procurement Portal (BASE 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.

The portal BASE is designed to publish information regarding public contracts that are established under the Public Contract Code, which make it also a centralized tool to produce statistical information and public reports submitted to the European Commission. The information filled in the electronic platform for public procurement is transmitted to BASE. In this regard, they should follow a set of interoperability conditions with the Portal BASE in the following domains: (i) technical characteristics; and (ii) synchronization rule necessary to transfer data.

Thus, currently, the operation and management of electronic platforms follow, in legal terms, Law 96/2015 and Ordinance 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.

### ***3.4 Legal Requirements for Electronic Public Procurement Platforms: A Framework for the TrivPlat Project***

The CCP's commitment to dematerialization 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, electronic platforms constitute a technological infrastructure consisting of a set of applications, means and computer services, which serve as support for public procurement procedures, by rolling out the various phases under direct command of 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) sending of electronic mail messages to all of those involved at the stage of the ongoing public procurement procedure and, 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 be accessible.

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 (Decree-Law 96/2015).



The legislation makes reference to 18 General Rules of Operation of 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, list competitors, knowledge about the content of the proposals, making them available to jury members, among others, are some of the rules introduced by the legislator.

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);

**Table 1** Operating general rules

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)

(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; (j) allowing the use of authentication mechanisms and electronic signatures with qualified certificates issued by entities of the Trusted-Service Status List, namely the content of the ID card; (k) allow the realization of electronic auctions; (l) to ensure the possibility of auditing at any moment; (m) to ensure the verification of the characteristics of the qualified certificate in the electronic signature of documents; (n) allow the access, by the part of the Concorrence Agency, to data regarding the bids offered by economic operators.

It is worth noting that public adjudicators are free to introduce additional requirements in the documentation that supports the acquisition of electronic platforms, namely: (i) make available the pre-production environment for tests and initial training; (ii) allow the platform to be sheltered in a domain and sub-domain of the managing entity defined by the adjudicant; (iii) allow, through the Public Sector interoperability platform, the collection of information regarding the procedures under the National System of Public Procurement in order to monitor the bids offered by economic operators, in accordance with the terms to be defined later.

Another functional requirement is having a system that documents the various phases of the procedure, which provides the necessary functionalities to fulfill this

**Table 2** Functional requirements

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
	FR3.2. 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)	

obligation and keeps chronological information up to date until the contract act. This system should allow the identification, among other information, of: (i) the entity and the user that accessed the documentation that supports the proceeding; (ii) the exact date and hour of submission; (iii) the document sent, as well as the identification of the entity and the user that sent the information; (iv) the elapsed time of the communication. This system should be kept reliable and actual, including chronological information regarding the steps of the procedure until the adjudication stage.

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

In order to allow the generalized exchange of data, namely between different formats and applications or between different levels of performance, the established and updated requirements must be respected, 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) assurance of the integrity and confidentiality of communications in the integration of two or more interagency information systems of Public Administration; (iv) the security of communication authentication in the integration of two or more interagency information systems of Public Administration; (iv) the type of electronic signature that all electronically signed documents must use. These, 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) 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.

**Table 3** Technical requirements

Technical requirements (TR)
TR1: Interoperability and compatibility (Article 34)
TR2: 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)

One of the major technical challenges for the platform 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 (TR3).

The electronic platforms for public procurement should transmit data to Portal BASE with regard the formation and execution of public contracts. This information and data should be codded and allow automatic treatment and is aimed to: (i) archive; (ii) perform statistical treatment; (iii) monitorization of information.

Finally, Table 4 highlights the necessary requirements in terms of security implementation and management.

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

In sum, with respect to safety requirements, it is worth mentioning that public platforms for public procurement should support different access profiles for different users with different privileges, including at least: (i) safety administrator; (ii) systems administrator; (iii) systems operator; (iv) systems auditor. The platforms should be able to associate users to these profiles. They should also ensure that a specific user is not allowed to be associated to multiple profiles, according to

**Table 4** Security requirements

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)

the following criteria: (i) a user with profile of safety administrator is not authorized to assume the profile of systems auditor; (ii) a user with profile of systems administrator is not authorized to assume the profile of systems auditor.

## 4 Conclusion

EC (2010) considers that EPP technology has not provided expected solutions, however, investments in technological capacity for public procurement, like development of electronic platforms, have increased (EC 2010).

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 amendments, that establishes free choice of electronic platforms by 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 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).

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