



Guideline on public procurement of Open Source Software

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1. Introduction

European governments are increasingly considering the use of Open Source Software (also known as Free Software or Libre Software, or FLOSS¹) as a means of reducing costs, increasing transparency and sustainability. A number of debates have taken place on the costs and benefits of open source software, and much discussion and interest has been expressed from the perspective of information technologists.

Meanwhile, the European Commission has launched the Open Source Observatory and Repository, OSOR, with the intention of supporting open source software as the epitome of collaborative development of software in the European public sector.

In this context, with this guideline, the authors consider open source software not as a technical topic, but essentially as a matter of public procurement. The authors look at the process of public procurement, its principles and requirements; how public procurement works with software, across EU Member States; and how public procurement approaches open source. The authors explain how open source can be best addressed with public procurement, and provide guidelines for how to acquire open source software through the public procurement processes.

This is *not* a general purpose guide for procurement of software. This guideline is specifically designed in order to clearly and simply explain how and why public agencies can acquire open source.

This guideline draws on the extensive legal analysis conducted by the Dutch government's OSOSS programme resulting in the publication of their

¹ Free Software and Open Source Software, which may be used interchangeably when referring to software, are defined by the Free Software Foundation and the Open Source Initiative. They refer to software that is available under terms that allow users to use the software for any purpose; to study the software source code; to modify the software; and to distribute the software and modifications. See www.fsf.org and www.opensource.org

Open Standards Manual and Open-Source Software in tenders: Open standards and open-source software and tendering rules in 2005. This was followed by a further practical guide² published in 2007 by NOiV, the successor organisation to the OSOSS programme³.

The Dutch guideline was prepared in a context of considerable policy debate around open source software. The Dutch parliament had passed a motion (in 2003) calling for the use of open source software and open standards in the public sector. A number of studies on the attitudes towards and use of open standards and open source software in the Dutch public sector were conducted. Finally, in 2007 the Dutch government adopted a formal policy mandating the use of open standards and a preference towards open source software. The Dutch guideline thus does not need to come with a justification for this policy, since that was already performed by previous studies; and it is rooted in the specific context of the Dutch policies towards open source and open standards.

At the European level, there are no such policies. This guideline is therefore meant to be applicable in any context within EU Member states, regardless of the existence of any policy. Indeed, *the purpose of this guideline is to allow individual public agencies at the regional, national or local level to acquire open source software, even if there is no policy in place regarding open source*. This guideline shows public agencies' procurement officers, policy makers and IT managers how to do this following European procurement regulations alone, with no need for any specific open source policies.

One might ask: what is the justification for this guide? With the launch of the OSOR, it is natural for public agencies to want to try to use open source software,

² Dutch Government's Programme Office NoiV, 2008. *The acquisition of (open-source) software: A guide for ICT buyers in the public and semi-public sectors*. Available online at: http://www.ososs.nl/files/acquisition_of_open-source_software_-_text.pdf

³ There are other official publications that provide guidelines on the procurement of open source software, including France (the Ministry of the Budget), Italy (the Region of Toscana), Denmark and Finland. However, the Dutch guidelines are the oldest with the most detailed legal analysis and thus suited the structure and purpose of this document.

starting with the software that will be published on the OSOR. Many public agencies are unclear how to go about this, and need advice and guidelines. One important feature of the OSOR is a space for the publication and sharing of advice and guidelines related to open source in the public sector. This guideline responds to the needs of OSOR users.

A further justification for this guideline is provided by the existence of widespread "poor practices" in public procurement that lead to non-transparent, anti-competitive discrimination in software procurement. This discrimination is in favour of proprietary software, and typically, in favour of specific proprietary products and their vendors.

Such poor procurement practices occur, at least partly, because public agencies may not be aware of better practices; and because they may not be aware that it is possible to acquire open source software - or how to do so. There is a need for information, and the goal of this guideline is to meet that need.

The main part of this guideline, following this introduction, is intended for a broad readership. It is intended to provide practical guidance to policy makers, IT managers and procurement officials at the level of national, regional and local government. It is therefore intended to be readable, without too many legal technicalities, and (relatively) short.

The main part of this guideline can be distributed, and read, without further details. However, further details are provided in the two Annexes:

- Annex A: "template" text that can be easily adapted for use in actual tenders that are intended to express a preference or requirement for open source software or open standards.
- Annex B: legal guideline, providing the legal basis behind the practical guidelines, intended for lawyers and procurement officials while still accessible to policy makers and IT managers. This

annex may also be read without the main part of the guideline.

Disclaimer: Not legal advice!

These guidelines seek to provide practical information regarding the law covering procurement. However, such law is interpreted by the courts: and very little European case-law exists for the public procurement of software. These guidelines, including the legal guideline in Annex B and the template texts in Annex A, should not be considered legal advice, or a substitution for the normal procedures of legal consultation that may be used in the preparation of procurement, tenders and contracts.

2. Guideline for open source procurement

This practical guideline shows how open source software can be acquired by public agencies. It also describes how to procure software compliant to open standards. It is meant to be read by IT managers, policy makers and procurement officers, without including too much legal detail or analysis, which are provided in an annex.

2.1 Public sector needs: transparency, sustainability, cost-effectiveness

The ministers expressed concern about dependence on single ICT service providers and producers, and called for more competition. Ministers [...] asked the Commission to stimulate the development of open-source alternatives where necessary. Interoperability [...] and open standards and "technology-neutral" regulation are vital.

- Brussels Ministerial Declaration, 29 November, 2001

Ministers encouraged their administrations to redefine systems and processes in order to coordinate better the actions of different levels of government, by using open standards.

- Como Ministerial Declaration, 7 July, 2003

Member States will promote awareness and the adoption of open standards in public administrations

- Manchester Ministerial Declaration, 24 November, 2005

Continuous attention shall be given to the definition and openness of technical standards and publicly available specifications

- Lisbon Ministerial Declaration, 19 September, 2007

"The award of contracts concluded in the Member States on behalf of the State [...] is subject to [the] principle of equal treatment, the principle of non-discrimination [...] and the principle of transparency. [It] is advisable to draw up provisions of Community coordination of national procedures for the award of such contracts which are based on these principles so as to ensure the effects of them and to guarantee the opening-up of public procurement to competition "

- Recital 2, Directive 2004/18/EC

Public sector consumers of software have an obligation to support interoperability, transparency and flexibility, as well as economical use of public funds. When it comes to

public procurement, the principles applied to the public sector require them to support (and certainly not to harm) competition through their procurement practices.

They are obliged to avoid explicitly harming competition in the market of private consumers. Thus, public agencies should not require citizens to purchase or use systems from specific vendors in order to access public services, as this is equivalent to granting such vendors a state-sanctioned monopoly.

They are also obliged to ensure the best costs to service ratio over the long term.

These principles are not only the basis for policy documents such as the *European Interoperability Framework*; they are also implied by the legislative framework governing public procurement, such as Directive 2004/18/EC on public supply contracts and Directive 2004/17/EC on utilities, and Directive 98/34/EC on the provision of information in the field of technical standards and regulations⁴.

Open Standards

Good practice eGovernment services should provide access based on open standards, and in particular, never require citizens to purchase or use systems from specific vendors in order to access public services: this is equivalent to granting such vendors a state-sanctioned monopoly.

Furthermore, for procurement of software in general, it is good practice for public authorities to implement software based on open standards, as defined by their economic effect of fostering a fully competitive market⁵. Supporting technologies without considering their degree of openness and their ability to foster a fully competitive market is harmful to competition and net social and

⁴ These were specifically referred to by the EC in its announcement regarding the investigation on public procurement of computers, concerning tenders specifying "Intel or equivalent". EC Press release IP/04/1210, October 13, 2004.

⁵ Ghosh, R. A. 2005. "An Economic Basis for Open Standards". FLOSSPOLs project, European Commission.

economic welfare. It is thus expensive, by definition, over the long term. While software based on open standards may not always be available, public agencies should encourage its development, and indicate their preference for open standards to vendors through preferential procurement of software based on open standards wherever it is available. Similarly, public agencies should use open standards wherever supported by the software they implement, in preference to any other technologies supported by such software.

The main advantage of open standards is the capacity to be interoperable with other software systems. Thus, a software application based on open standards is fully interoperable with any other application using the same standards, and it is possible for any other application to use the same standard. As a result, software buyers often try to achieve “vendor-independence”, which is to retain the ability to change software products or producers in future without loss of data or significant loss of functionality.

However, this goal can conflict with implicit or explicit criteria for software purchasing, in particular whether new software is compatible with previously purchased software. Buyers who use the latter criterion rather than a general requirement for open standards or vendor-independent interoperability in effect remain locked in to their previously purchased software. Thus, even if they see the benefits of open standards and believe in interoperability, buyers whose preference for new software is based instead on compatibility with previously installed software are not, in practice, supporting or benefiting from interoperability.

Open standards have been described above on the basis of their effects; the term has also been defined by the European Interoperability Framework v1.0 as follows:

The following are the minimal characteristics that a specification and its attendant documents must have in order to be considered an open standard:

- *The standard is adopted and will be maintained by a not-for-profit organisation, and its ongoing*

development occurs on the basis of an open decision-making procedure available to all interested parties (consensus or majority decision etc.).

- *The standard has been published and the standard specification document is available either freely or at a nominal charge. It must be permissible to all to copy, distribute and use it for no fee or at a nominal fee.*
- *The intellectual property - i.e. patents possibly present - of (parts of) the standard is made irrevocably available on a royalty-free basis.*
- *There are no constraints on the re-use of the standard.*

There are a number of other definitions, and as the authors note later in this guideline, the precise definition of the term open standards is less important than a clear expression of the reason why open standards are desired in the first place. These reasons form part of the requirements for any procurement.

Open source software

Open source software, Free Software, or libre software, also called FLOSS, is software that a user can:

1. use for any purpose
2. study, by examining the source code
3. modify and improve
4. distribute, with or without modifications

This basic definition of FLOSS is equivalent to the *Four Freedoms* of the Free Software Foundation (FSF, which officially defines "free software") and the *Open Source Definition* maintained by the Open Source Initiative (OSI).

Open source software is copyrighted by its authors, and is made available under copyright licences that provide the freedoms required by the above definition.

Most major free software or open source licences have gone through a formal process of approval by the Open Source Initiative, and are listed on the OSI website; these licences are OSI certified and authorised to use the "Open

Source Initiative Approved License" mark. Of course, licences that meet the terms of the Open Source Definition but have not been formally processed by the OSI (and thus not listed on their website) are also open source licences.

Relevance to procurement principles and sustainability

Open standards and open source software, as separately outlined above, are both relevant to the procurement principles described previously. When based on open standards, open source software supports the sustainability of government ICT processes and systems through:

1. **transparency:** open source software is available along with its source code which can be studied and modified. This can ensure the security of the software as its processes can be examined in detail. It also allows appropriate stakeholders to understand and monitor the functioning of government processes that are implemented in software - for instance, voting systems.
2. **interoperability:** whether implemented in open source or proprietary software, open standards ensure interoperability, the ability of systems from different vendors to function fully with each other without technical or legal obstacles. Open source software, in particular, provides additional support for interoperability, as its processes can be studied and adapted to work with other systems.
3. **independence:** transparency and interoperability allow current and future vendors to work with, adapt and maintain the software, eliminating the dependence of purchasers or third party support and service providers on the vendors of the original version of the software.
4. **flexibility:** open source software allows systems to be adapted and extended as user needs evolve. It does this without requiring that the user go back to the original vendor - new suppliers can be selected on a competitive basis.

These four properties ensure the **sustainability** of open source software. Sustainability implies lower costs over the longer term, but more importantly, reduces the users' reliance on the original vendors of the software. This means that selection criteria that have traditionally been used to ensure the sustainability of software by ensuring the sustainability of the original vendors (e.g. capital, turnover or size requirements) may not be as important and can be reduced for the procurement of open source software. If, for instance, the original vendor goes bankrupt, users can lose all their investments in that vendor's proprietary software. However, if the software is open source, the user can find another vendor to support the software with no legal or technical obstacles.

2.1 Defining national / European policy

There is, at present, no EU-wide policy regarding the procurement of open source software. There are a number of guidelines and requirements related to procurement in general, some of which touch upon software. As mentioned previously, there are specific EU Directives that relate to procurement and to technical standards. The European Interoperability Framework (EIF) provides guidelines relating to open standards and interoperability between administrations; except where otherwise noted, version 1.0 of this document has been referred to in this Guideline.

Most EU Member States do not have specific policies regarding open source software procurement. Some state general principles that software procurement should not discriminate between business models, open source being more associated with particular business models.

In the Netherlands, the September 2007 government action plan *Netherlands in Open Connection*⁶ expresses an explicit "preference for open-source software in the case of equal suitability". It recognised that public procurement must not discriminate between individual

⁶<http://www.noiv.nl/files/Actionplan%20The%20Netherlands%20in%20Open%20Connection.pdf>

vendors, which is anti-competitive. Studies have shown⁷ that in practice, much software procurement discriminates between individual vendors, typically in favour of specific proprietary software companies.

Such discrimination between individual vendors goes against numerous regulations and procurement principles. However, preference within a particular tender towards a specific *business model* is generally accepted and wide-spread in several areas - such as when a preference is expressed for leasing instead of buying capital equipment in a call for tender. Preference for a specific business model is reasonable if it better meets specific procurement needs. This is, of course, not a preference at all in the sense of the principles of non-discrimination and equal treatment, since any economic operator who is willing to meet the specific procurement needs may bid for such a tender. Thus, it is only a preference for meeting the specific, clearly defined and justifiable needs of the procuring agency.

This is the argument used by the March 2008 Dutch government guideline, *The acquisition of (open-source) software*, prepared in order to implement the Dutch procurement policy. The Dutch guideline, which the authors use as a model for this guideline, explains how specific properties of open source software may be defined and justified as part of the functional requirements for public procurement. A preference for open source by a given public agency, for a particular procurement action, is not implemented by acquiring specific software applications or by favouring particular vendors. Instead, following this guideline, it is implemented through the functional requirements and award criteria specified in calls for tenders. As with any other requirement in a tender, requirements that are met by open source software - such as the acquirer's right to study, modify and redistribute the software - must be justifiable.

⁷ E.g. OpenForum Europe, 2008. "OFE Monitoring Report: Discrimination in Public Procurement Procedures for Computer Software in the EU Member States", December. Ghosh, R. A. 2005. "An Economic Basis for Open Standards". FLOSSPOLs project, European Commission.

The process of defining a national or European policy is lengthy and beyond the scope of this guideline. Instead, the authors assume that for whatever reason, whether as a cause of national policy as in the Netherlands, or due to regional policies (as in Piedmont, Italy⁸), or due to the requirements of a specific local case of procurement, a decision has been made to acquire software with the open source characteristics as defined previously. This guideline explains how to implement that decision. This guideline can also be useful for the procurement of software in general, showing how to ensure the “level playing field” that seems relatively uncommon in today's software procurement practices.

2.1.1 “Off-the-shelf” or custom software?

While precise figures for the European public sector are not available, it is worth noting that the share of proprietary packaged software in European software spending is only 19%. Much more is spent on custom-built software (52%) and internal software development (29%).⁹ As noted by the European Commission *Study on the Economic impact of open source software on innovation and the competitiveness of the Information and Communication Technologies (ICT) sector in the EU*, the economics of custom-built and internal software development are compatible with and usually equivalent to the economics of open source software. I.e. the users of the software, not the developers, control the rights to the software.

In the public sector, a lot of software is custom-built, or developed in-house. This is partly due to the fairly specific application areas typical to the public sector –

⁸ In Italy, Piedmont approved a regional law of 26 March 2009 favouring free or open source software in public procurement. Following the central government's appeal, the Italian Constitutional Court recently confirmed this part of the regional law, stating that the preference given to FLOSS has no link with a specific technology, but expresses a legitimate legal requirement. Corte Costituzionale, 22 March 2010 <http://www.osor.eu/news/it-constitutional-court-says-administrations-can-favour-open-source>

⁹ European Commission DG Enterprise, 2006, *Study on the Economic impact of open source software on innovation and the competitiveness of the Information and Communication Technologies (ICT) sector in the EU*, pp124 (Table 24). Available online at <http://flossimpact.eu>

police records management is not a domain with a large private-sector market. According to another EC study¹⁰ about 10% of local public authorities in the EU had or were in a position to release software they owned (custom-built or developed in-house) as open source.

As such software is generally controlled by the public sector organisation using it, the issues related to open source and open standards are easier to address. There are two issues. First, is the platform, development tools, software libraries etc used to build the software open source, or at least based on open standards? Second, is the developed software to be released as open source?

The second issue is beyond the scope of this guideline as it doesn't really concern procurement. However, several helpful documents, case studies and tools are available, for example on the OSOR website, to help public organisations decide whether and how to release their software as open source (including the European Union Public Licence).

The first issue can be addressed through procurement criteria similar to that used for acquiring off-the-shelf software, which is the main focus of this guideline.

It is for off-the-shelf software that this guideline is most needed, as in that case the *vendor*, not the user, controls the software. Thus, procurement procedures are more important in order to help the procuring public agency exercise its control and choice.

2.1.2 “Level playing field” or open software?

As noted in the introduction to this guideline, current common public procurement practices for software do not provide for a level playing field. They are frequently biased in favour of proprietary software, and specific proprietary software vendors. European procurement law may allow for such bias under specific, exceptionally

¹⁰ European Commission DG Information Society and Media, 2008, *Study on the effect on the development of the information society of European public bodies making their own software available as open source*. Available online at <http://www.publicsectoross.info>

justified situations. In practice, this bias is neither exceptional, nor is justification commonly provided.

The scope of this guideline is the procurement of open source software. However, many of the principles and methods described in this guideline for the procurement of software – whether based on open source or open standards – can be used simply to ensure that procurement of software takes place in a fair environment.

As noted in the respective sections below, *any* software procurement should be based on a clear definition of IT architecture (section 2.2.1), unbiased definition of requirements in *functional* rather than vendor- or brand-based terms (section 2.2.2) and a complete rather than narrow and short-term estimation of costs and benefits (section 2.2.3). In addition, the methods described for procuring software based on open standards may well be relevant for software in general, justified by cost concerns (section 2.2.3).

Software acquired after such a process and with such justification may well be proprietary, and will in that case have been properly acquired. Software acquired *without* such a process may well have been acquired improperly and in a biased fashion; if it provides explicit preference for particular vendors, without justification of exceptional circumstances, such acquisition may even be in violation of public procurement regulations.

Thus, this guideline may be useful for procurement of software *in general*, simply to ensure a “level playing field” and compliance with procurement regulations.

The main focus of this guideline remains, however, the procurement of software in situations where, for justifiable reasons, software with some or all characteristics of *open source* has been found necessary.

2.2 Determining acquisition needs

Public procurement is based on determining needs, identifying the IT architecture in which these must be

implemented, translating these into requirements and evaluating available options through the procurement process.

Interestingly, the acquisition of open source software does not necessarily require the use of the public procurement process (i.e. tenders), as purchases of software and services do. This special case is also discussed below.

2.2.1 Defining IT architecture

Information Technology serves the structure, processes and goals of an organisation. An organisation has its own architecture of processes and systems, in order to efficiently implement its goals. An IT architecture translates these organisational constraints and preferences into set of interconnected IT systems that provides an environment for the smooth integration of specific IT solutions to specific organisational problems.

Public sector organisations have architectures that may differ in some respects from private organisations due to differences in their essential goals or principles. Saving costs is a principle that may be common to public and private organisations. Public organisations may differ in that they are obliged to save costs over the very long term - as they are using taxpayer funds and do not need to respond to short term business cycles. However, public organisations often have constraints in the form of budgets that are set for relatively short terms, and need to balance the short-term and long-term cost savings.

Similarly, private organisations may have different, sometimes more limited goals with regards to transparency, which is a particularly important principle for public organisations.

There is no EU-wide IT architecture for public organisations; Member States do have them, and the European Interoperability Framework provides a high-level structure for many aspects of an IT architecture.

Any IT solution should be designed to fit into the organisation's IT architecture. The IT architecture needs of public sector organisations are strongly linked to interoperability and open standards. As noted in the European Commission White Paper on ICT Standardisation,¹¹ “Public authorities need to be able to define their ICT strategies and architectures, including interoperability between organisations, and will procure ICT systems/services and products or components thereof, that meet their requirements.”

Public authorities do not function in a vacuum, and have particularly strong requirements for the interchange of data: between different departments, different organisations, different levels of government – and stakeholders such as businesses and citizens. Public organisations also have obligations towards building sustainable and transparent systems. The impact of these obligations on their IT architecture is a strong need for interoperability. As the European Interoperability Framework 2.0¹² notes, there is a need for “interoperability standards” or “interoperability agreements” that define the arrangements governing how interoperability is implemented within the architecture of public IT systems. The EIF notes that “these interoperability arrangements at all the levels need to be subject to an appropriately standardized approach that is systematic, formal, detailed and clear”.

Such interoperability arrangements when translated into requirements for an IT architecture justify technical specifications based on open standards, as described in the next section. The need to exchange certain data without barriers and hurdles between citizens and the government, for example, is formalized into a requirement for transparency for those data. This translates into a requirement for transparency in the IT architecture for processes and systems concerned with

¹¹ European Commission, 2009. “White Paper on Modernising ICT Standardisation in the EU - The Way Forward”. COM(2009) 324

¹² European Interoperability Framework v2.0, “Draft for public comments – as basis for EIF 2.0” dated July 15, 2008; although this published draft may differ from any final version yet to be published, the authors find it a useful, relevant text for citation in this guideline.

those data. From this architectural need follows, in terms of technical specifications, the justification for open interoperability standards, as detailed further in the next section.

In addition to open standards, the specific needs of public organisations may also allow open source software to fit into the IT architecture in especially interesting ways, as described below in the section on determining open source requirements.

2.2.2 Determining requirements

Best practice IT procurement is based on defining clear requirements and finding the best match to them. While procurement processes such as calls for tender do, in practice, often ignore this principle to simply specify particular products or even vendors, this is not good practice and may violate procurement regulations. It also makes it more difficult to demonstrate a rationale for the acquisition choices as they are made.

Requirements can come in a number of forms, that are briefly described below. These are not in any way official categories but are only shown for illustrative purposes.

Functional

Functional requirements describe the purpose for which the IT solution is needed, and the functionality which it is expected to provide. Clear specification of functional requirements is essential in order to ensure that procurement follows the principles of transparency and independence, is pro-competitive and cost effective in the long term. An example of functional requirements would be a detailed description of the functionality that a system for maintaining property records is expected to have. Functional requirements should not be defined in IT terms alone, but take in to account the needs to be addressed in the problem domain.

Technical

Technical requirements may also be important, if there are specific constraints or needs regarding the IT architecture and technologies with which the solution must fit. Note that compatibility with previously purchased IT solutions may seem like a very valid technical requirement, but can also be a way of perpetuating the consequences of previous purchasing decisions, perpetuating vendor lock-in and preventing an unbiased procurement based on real organisational needs. Requirements for compatibility with open standards and no proprietary elements, i.e. full compatibility across multiple vendors and producers, increases the freedom of future procurement choices. When compatibility with a previously purchased system requires compatibility with proprietary technologies, it can work against the notion of interoperability across vendors and producers. Such interoperability is essential for the sustainability and long-term cost-effectiveness of software.

In essence, compatibility criteria, when tied to previously purchased proprietary solutions, lock the buyer into that solution indefinitely, making its vendor's one-time win in a single contract effectively a win for a much longer period of future procurements. Since a key principle of public procurement is that a purchase should not have consequences or limit the choice of the buyer after the originally planned lifetime for that purchase, perpetuating such lock-in is a poor procurement practice.

Under certain conditions it may be acceptable for a previous procurement to lead to future procurement with a restricted choice of suppliers, even through a "negotiated" rather than "open" procedure. However, the effect of previous procurement restricting the choice in future procurement should never last beyond the period foreseen in the original procurement. Such long-term lock-in considerations are often not made in the procurement process, resulting in many tenders calling for branded software from named vendors.

Indeed, the European Commission itself has reiterated that *"[under] the EU public procurement rules, contracting authorities may refer to a brand name to describe a product*

*only when there are no other possible descriptions that are both sufficiently precise and intelligible to potential tenderers”*¹³. As a result of this, it is not possible to refer to "Intel or equivalent" microprocessors in public tenders.

Business / service model

The needs of the IT architecture and the organisation determine the best form in which an IT solution should be structured, and this includes how it should be paid and accounted for. As a result, certain business models and service models are a naturally better fit for a given set of requirements that are determined and defined by a public agency prior to procurement.

This is not, in fact, drastically different from other areas of procurement. A public authority may decide that it wishes to buy a car, or lease it; to commission the construction of a bridge for a fixed fee, or on a build-operate-transfer model.

All these choices involve discrimination between business models, and a preference for some business models over others - simply because a defined set of requirements is better (or only) met by businesses adopting one business model rather than another. Businesses that use a business model that cannot meet the needs of the public agency will naturally lose out. Leasing companies will lose out if an agency's needs are best met by buying rather than lease cars. This is not against the principles of equal treatment and non-discrimination. However, favouring a particular *business* (a vendor), goes against the principles of equal treatment and non-discrimination. Defining procurement requirements based on particular needs is, however, fully in line with the principles of equal treatment and non-discrimination - even if those needs can only be met by certain business models.

Similarly, when it comes to IT, public authorities are free to choose solutions that suit their needs. Often, such

¹³ European Commission release reference IP/06/443 dated 4 April 2006; this is also a reference to Directive 2004/18/EC, Article 23.

choice - and discrimination - is made by default. For instance, a call for tenders for the purchase of software licences "discriminates" against businesses that do not offer software as a product paid for at the time of purchase through licensing. A call for tenders for software that can be modified, adapted and redistributed by the procuring agency (such software may well meet the open source definition) "discriminates" against businesses who only work on a model based on proprietary control and licensing that software for a specified number of users or computers. Of course, businesses may use many different models and are free to adapt their business models to better meet customers' needs. There is no obligation on the part of a public body to adapt its requirements to the preferred business models of particular firms.

Open standards

Open standards in the acquisition of IT may be preferred, or required by policy. As the previous section stated, there is no uniform policy on this across the EU. A possible exception is eGovernment services where several Ministerial Declarations, among other public statements, have called for the use of open standards to ensure that citizens have access to government without becoming customers of specific IT vendors.

With or without an explicit policy at a national level, open standards may also be preferred or required by policies specific to local areas, or to particular categories of procurement.

Open standards may take the form of a functional requirement: e.g. it may be an essential function of a new web-based eGovernment service that all citizens have the ability to fully interact with it, without preference to customers of specific software or hardware vendors.

Open standards may take the form of technical requirements: e.g. where specific open standards are being used and with which new acquisitions must work.

Open standards may also take the form of requirements that affect business models: e.g. a public authority wishes

to have the full freedom to use in perpetuity the data files it creates with new software applications, without being tied in perpetuity to the vendor of that software.

Open standards may be essential to interoperability between products and systems from multiple producers and vendors, and are thus essential for an IT architecture that remains within the control of the customer. This is the reason for the emphasis on open standards, and at a higher level, interoperability agreements in the European Interoperability Framework¹⁴.

While open standards requirements can be defined within tenders in terms of these functional, technical or business needs, standards are complex, technical things for which the underlying functionality may be hard to describe. In practice, it is easier in individual procurement actions to refer to standards by name, or refer to a list of standards that have been examined and found to meet the standards requirements. This is required by the Technical Standards and Regulations Directive 98/34/EC (amended by 98/48/EC) with respect to technical standards in general (which may or may not be open). Specifically for open standards, this is also the practice in the Netherlands, where the government maintains a list of open standards.

However, when there is no policy in place, or no list of open standards available for a particular technical requirement, it may be advisable to provide some justification for the properties of the standard (such as its openness) in the functional requirements and award criteria. The use of functional specifications and "openness" requirements allows individual public agencies to procure solutions based on open standards even when they are not able to refer to policies or specific open standards at the local, regional, national or European level.

It is worth reiterating here the distinction between open standards and open source software. *Open standards can be implemented equally well by open source software and*

¹⁴ EIF v1.0 and the draft v2.0 cited in this document and listed in the References

proprietary software – and many proprietary software applications implement many open standards. For the purpose of the guidelines, the main property of open standards is that the associated intellectual property rights (patents, copyright) are licensed in such a way as to make open source implementations possible. Finally, open source software does not imply the use of open standards; nor does proprietary software imply the use of non-open standards.

Open source

As stated previously, there is no EU-wide policy on the procurement of open source software. There are several principles of the functioning of public authorities which may justify the requirement of open source software. The acquisition of open source software can be made on the basis of such justification; a general requirement in a call for tenders for software solutions to be "open source" is not advisable.

As with open standards, open source software can be justified in terms of functional, technical and business model requirements. The examples provided above for open standards can to some extent apply as well to open source. Further justifications specific to open source exist.

As a functional requirement, a public authority may wish to ensure the transparency of government processes. Many of these processes - e.g. for voting systems - are implemented in software, and the only way to ensure its transparency may be to require that the source code be visible for public inspection.

As a technical requirement, a public authority may wish to be able to modify the software (or have any third party of its choice modify it) in the future in order to work with other software, or be adapted to future needs.

As a business requirement, a public authority may wish to be able to distribute the software internally or to other businesses, individuals or agencies with which it interacts, with no additional cost based on the number of users. A public authority may even wish to be able to make adaptations to the software before doing so (or

have any third party of its choice make such adaptations). Such requirements, if justified, are perfectly legitimate, and may be effectively requirements for open source software.

In case software redistribution is a requirement, the public authority should determine whether or not it wishes to allow a third party to appropriate the software, i.e. to modify and redistribute it as if it was proprietary. This will determine the type of licence that should be used in case of redistribution: permissive (in case it is determined that modifications of the software may be made proprietary) or reciprocal (in case it is determined that any redistribution of the software by third parties must remain modifiable and redistributable).

Finally, especially in case the public authority wishes to distribute the software to other authorities, business or citizens, a legitimate requirement is to protect the administration from liability, support and warranty obligations relating to redistributed versions of the software.

The above requirements related to redistribution help determine the licence that will be used for this redistribution. As discussed in section 2.4.1 on "Defining requirements", an early determination of this licence (or of a range of authorised licences) is important.

2.2.3 Examining costs and benefits

Public sector organisations need to keep the public interest in mind, and for procurement this means that public funds should be spent in as cost effective a way as possible. Freed from the obligation of the short term financial cycles of the private sector, public organisations are also obliged to maximise costs effectiveness over the very long term. However, with limited, short-term budget cycles, they need to find a good balance between limiting the initial investments and limiting the overall, long term cost.

Although this may be difficult, it is possible to evaluate spending over a long time horizon to ensure that

taxpayers get the best value for their money. It is important to ensure that decisions that look good for the short term do not result in higher expenses and reduced choices over the long term.

Long-term costs

Open source software licences may be available free of charge. This does not mean that the use of open source software is free, of course. Several costs may be involved in the operation of software, including associated hardware, support and maintenance, training and other services. The *exit cost* is also an important consideration: the cost incurred in migrating to another IT system, which should properly be accounted for as a cost not of the new system being migrated to, but the old system being migrated *from*. After all, if the old system were based on open standards, migration would not be as expensive, thus the cost of migration is imposed by the current, old system.

Even if open source software licences are in fact free of charge (and therefore do not even need a call for tenders in order to be acquired, as they can simply be downloaded by a public sector organisation: see the next section), these other costs need to be estimated over the long term. A decision on the software system to be used needs to be made after evaluating all the long term costs associated with the use of that software system.

Similar considerations could be taken into account for the evaluation of proprietary software, which also has requirements for hardware, support, customisation, training and other services. With proprietary software, though, a long term evaluation of costs could include the frequency and necessity of purchasing upgrades.

In a normal procurement process, a pre-defined period is announced at the beginning of the procurement procedure. It is assumed that all costs related to the procured software that will be incurred during that period, such as upgrades, will be taken into account in the evaluation of the bids. A basic assumption of normal public procurement is that at the end of the pre-defined

period, the procuring public agency has no contractual obligations towards the original vendor.

When software based on proprietary standards and proprietary interfaces is procured, these assumptions of normal public procurement break down. Although no contractual obligations exist towards the original vendor beyond the pre-defined lifetime of the original procurement, the technical and financial cost of moving to a system from another vendor or producer, or even acquiring support from another independent vendor, may be very high.

Software is used to create documents, databases and customised applications that, in the public sector, have a life-time that may be well beyond the originally announced life-time of the procurement procedure for the software. If the software originally purchased makes it difficult to use the documents, databanks and customised applications with similar software from other producers, then there is a high cost in terms of changing from the original software to another software - the *exit cost*. With proprietary software this also means there is a high cost in terms of changing from the original vendor to another vendor.

Thus, the assumption of normal procurement procedures, that all costs and obligations relating to a procurement are completed after the pre-defined period for which the procurement takes place, appears to fail when applied to software. Contractual obligations do not extend beyond the original procurement period for the software; but the need of the public agency to be able to continue to use its own data and applications means that *technical* obligations come into play, as well. Proprietary standards provide technical obligations that result, in effect, in contractual obligations - explaining why so many public agencies publish tenders for software refer to proprietary software simply by brand name. They do this because they find the *exit cost* too high, and may simply not quantify it.

Since an essential principle of public sector IT systems is sustainability and independence, the ability to change

vendors and systems in the future is essential, and the cost of doing so should be included in the evaluation of the cost of the original software purchase. Hence the term *exit cost*, as these costs are essentially a result of the technical and business model choices of the original software vendor.

The initial selection of proprietary software, if it uses proprietary standards or implements standards in a way that is not exactly the same as software from other producers - can limit future software choices.

As an example, a one-time, presumably competitive acquisition of a proprietary system for web server administration can result in a requirement that all future additions to the web site must be made with the same proprietary system. This not only limits the future choice of the public agency that acquired the software in the first place; it forces citizens, businesses and other future contractors developing additions to the public website to become customers of the vendor of the original software acquired by the public agency. Such long-term costs of proprietary software are frequently not included in the evaluation process, but are essential for a sustainable, efficient use of public funds.

In brief, long term dependencies on a particular vendor - extending past the boundaries of individual procurement actions - are not good procurement practice and may even be against regulations. Any decision, such as a further procurement action, that reinforces this dependency on a particular vendor, should be avoided, and will only increase the exit costs.

Note that the argument for the inclusion of exit costs in evaluation is essentially one for open standards, not necessarily open source software¹⁵. Since exit costs may

¹⁵ If open source software is being used without open standards, it may implement interfaces and formats that - while not proprietary - are not widely used; it may limit interoperability with other software. However, open source software does not lock the user into the same vendor, and with the source code available, it is possible to have other software adapted to use the protocols implemented, at a cost. Moreover, open source software can often be upgraded at no cost at all - through free downloads - or by any vendors of the procuring agency's choice at a time of the agency's choice.

be hard to quantify at the time of initial procurement, choosing software that works fully with open standards may be a way of avoiding the lock-in effect discussed above.

Long-term benefits (sustainability), additional services

Like costs, benefits should also be evaluated in the long term. Buying new software because it is compatible with previously purchased software may seem to save on migration and training costs. But when this software is proprietary, and is not fully based on protocols and standards that are fully and freely supported by other independent vendors, exit costs and associated costs may greatly increase over the long term. The agency's dependence on the proprietary vendor is increased. Thus the apparent short term benefit of compatibility is much reduced when considered over the longer term.

Acquiring software that is fully open and sustainable by multiple independent vendors may seem to have less benefits initially, especially if such procurement requires a more detailed study of the market (e.g. for the acquisition of open source software by downloading, or for the identification of appropriate open standards in case of procurement that may be proprietary software). It may require more detailed procurement specifications, such as functional requirements. And the benefits of having independence and sustainability are not always apparent in the short term. In the long term, however, the ability to change to a new vendor independent of the initial vendor is key to the sustainability and independence of the public agency, and the benefit of such a choice when examined in the long term is thus greater.

Total Cost of Ownership (TCO) studies and evaluation

Total Costs of Ownership (TCO) is a term often cited in relation to software purchases. However, there are several different methodologies, and few include all the long-term costs involved in software purchases, such as the costs of required regular upgrades, or the exit cost of

migrating to another software. It is therefore difficult to use TCO studies, or even compare them.

Furthermore, such studies rarely evaluate anything other than quantifiable costs; the benefits of flexibility, independence and transparency while essential to a public organisation, may be qualitative and hard to quantify. Thus, it is advisable to analyse costs and benefits for the needs of the public organisation concerned, over the long term, rather than relying on TCO studies.

2.2.4 Download or purchase?

Procurement regulations, especially European Directive 2004/18/EC, govern when the acquisition of anything, including software, must be put through a public contract, i.e. a formal procurement process such as a call for tenders. As the legal analysis in the Dutch Government's guideline, *The acquisition of (open-source) software*, notes, the acquisition of open source software may not in itself require a call for tenders. This is in the specific situations when this software can be acquired free of charge, i.e. not only free of the licence fee, but also free of any compulsory fees such as for manuals, media or services.

Thus, downloading open source software from Internet repositories free of charge is a means of acquiring software that does not require a public contract. This is true even if the acquiring agency wishes to, in the future, separately acquire paid services or support. For such paid services, of course, a public contract process is required. Regulations *do not* require that the acquisition of software and services be treated as a single acquisition (which would have to be put out to tender), if the software itself can be acquired free of charge, and if this acquisition is independent of and does not require those services.

Of course, a responsible public agency is not going to simply download software from the Internet with no evaluation of its suitability for organisational needs. The choice of acquisition through download, possibly

followed by tenders for services and support, is just one of the many choices that needs to be evaluated in the process of determining requirements.

The next two sections describe the two ways of acquiring open source software, once a decision has been made that open source requirements match the organisation's needs, and a choice has been made regarding the mode of acquisition for the software itself: downloading or procurement through a public contract. The difference between the two approaches in terms of the effort required by the acquiring agency can be summarised in the table below, which is adapted from the Dutch guideline.

Downloading software free of charge	Purchasing software
Large emphasis on market research	Large emphasis on specification
Knowledge to search for the appropriate software to acquire (download) is required by the agency	Bidders provide some of the knowledge, though preparing the tender specifications may also require considerable knowledge
Services must be tendered separately	Software and services can be included in the same tender

2.3 Downloading open source software

When the public agency has decided that open source requirements are particularly important for a specific software acquisition case, the process described in this section can be followed.

This process would end in the agency downloading open source software itself, with no fee paid whatsoever. Separately, commercially provided services and support, if required, may be acquired by putting out calls for tender.

Note that this process can be abandoned at any point - for instance, if the software cannot be found easily, or evaluated, or once downloaded is found unsuitable for any reason. At that point, the other approach described in

the next section can be followed, of putting out a call for tender for open source software.

Furthermore, the authors recommend the method of downloading open source software *as part of the acquisition process*. It is not being recommended here that individuals within the organisation download whatever they wish.

As part of the acquisition process, downloading software comes *after* all the steps described above, i.e. the determination of requirements, and is simply an alternative to the step of publishing a tender for the supply of software. It is not proposed here as an alternative to the process of managed, well justified and monitored software acquisition.

Note that the unsupervised download of software – open source or proprietary – by individuals within an organisation may expose the organisation to a number of risks, both legal (copyright, liability etc) and technical (e.g. security). The well managed downloading of open source software as proposed here is a completely different case, as it is part of a structured process of acquisition.

2.3.1 Sources of software

Open source software can be redistributed by anyone, so there are naturally many sources for download for most open source applications from the Internet. A number of issues need to be taken into account. Although these are not very different from issues that must be considered while selecting proprietary software, it bears reiterating them.

Community & language

While selecting proprietary software, it is useful to get to know about the vendor and support network around the software. Although the evaluation of tenders is based on the documents provided with bids, public agencies may already be aware of solutions available on the market thanks to interaction with vendors, reviewing press

articles, trade magazines, analysts' reports etc. For open source software, the process of "getting to know" is similar, except that it can be more useful to interact with the community behind a particular open source software application, instead of a particular vendor. As open source software applications can be modified and redistributed, each typically has a *community* behind it, of different individuals, companies and other institutions - perhaps even public agencies - providing modifications to the software, service and support.

There is often a community of users and developers that interact, and provide some level of mutual support free of charge. Indeed, one of the goals of the EU Open Source Observatory and Repository (OSOR) is to foster such a community for open source software of particular relevance to the European public sector - so, eventually, the OSOR will also host communities for various open source applications. Similar collaborative platforms for open source software in the European public sector already play this role in countries such as France, Italy, Spain, and Sweden among others.

Moreover, most major open source projects provide easy access to their communities, and local communities are often available in many countries.

Open source software is particularly suited to multi-lingual requirements, as the freedom to modify and redistribute the software makes it easy for people who speak a particular language to freely add support for it. It is useful to investigate the extent of support for local language versions of the software.

Finally, there are local support groups for many open source software applications, and it is useful to identify them.

Support & reliability

Open source software, like any software, varies in the level of support available and in the software's reliability. For open source software in particular, communities can provide a fairly high level of support free of charge. This may not be a practical option for any but the smallest

public agencies (or, at the other end, larger agencies with significant in-house IT skills). However, this does mean that the software can be downloaded and tested, with the help if required of the supporting communities, before any decision is made on whether or not to deploy it (and perhaps acquire commercial support services).

For many open source software applications, having free support via the community is an order of magnitude quicker and more effective than support by a remote supplier. Also, the community can provide updates to software, making error corrections much quicker than is the case for most proprietary software applications. Indeed, even commercial open source support providers often rely on this free community support, combined with their in-house expertise.

There are also a number of quality models, including semi-automated tools, that provide various metrics of the quality of the open source software and its supporting community (e.g. the speed of bug fixes, size and growth of community, etc)¹⁶. Due to the open nature of the software and development process, such metrics can be much more verifiably objective than similar quality metrics for proprietary software¹⁷. However, the authors note that applying such models is a complex task, and public agencies rarely test proprietary software against quality models, so testing open source software against them may not be necessary either, even though it is perhaps easier to do.

Repositories

Open source software is actually downloaded from repositories of software, or via catalogues, such as freshmeat.net, sourceforge.org, opensource.xs.info and

¹⁶ A number of EU funded research projects are examining open source quality metrics, such as QUALOSS and SQO-OSS (www.qualoss.org; www.sqo-oss.eu)

¹⁷ This does not refer to requirements for quality that can be included in the tender as, e.g., performance criteria, both for open source and proprietary software. This refers to quality metrics that can be publicly available for open source projects but are typically not known or verifiable for proprietary software, where there is a lower chance of public scrutiny of internal development processes such as bug fixing.

osalt.com. Communities of practice can often be found attached to such repositories.

An essential aspect of the OSOR portal is to provide a way of easily accessing and locating open source software for various public sector needs. OSOR provides access to purpose-built software for the European public sector, as well as a limited amount of software hosted on other repositories. The availability of communities of peers - IT staff from the European public sector and the vendors that support them - makes OSOR an obvious source for the "acquisition through download" approach. It also makes the process of software evaluation simpler, as the opinions and experiences of several public sector IT managers can be shared.

Note that these tasks do not need to be performed within the public agency itself. They can be contracted out, as described below.

2.3.2 Identifying and selecting software

When a number of open source software applications appear to meet an organisation's needs, an evaluation and selection can be performed. This could, first, act as a filter for general reliability and quality as described above, including issues such as maturity, size of the community, availability of commercial support from various sources, etc. And finally, the selection of the software is based on its matching the previously defined functional requirements.

Functional requirements can be matched to the software documentation - website, software manual, etc. Open source software can simply be downloaded and tested - without deployment, or in pilot deployments - to examine the extent to which it meets functional requirements¹⁸.

Finally, an analysis may be performed of the costs of meeting the functional requirements with the open

¹⁸ Of course, proprietary software can also be included in pilot deployments, although if this involves expenditure it may require a formal procurement procedures.

source software. The solution that is the most cost-effective may be chosen - considering all the various criteria discussed above. If the solutions identified through this process are unsuitable, the procedure of acquisition through downloading can be abandoned, and replaced with a call for tenders for purchasing open source software as described in the next section.

Note that these tasks also do not need to be performed within the public agency itself, and can be contracted out, as described below.

2.3.3 Tenders for evaluation, support, customisation, services

Downloading software free of charge does not mean there will be no associated costs. While in some cases it may be possible for a public agency to provide all the support for a particular software application in-house, it will often make sense to contract this out. This will naturally require a call for tenders.

To begin with the process of identification, evaluation and selection of software to download does not have to be performed (entirely) in-house at the public agency. Depending on skills and resources available, it could be useful to have a public contract for some of these tasks. A condition in such calls for tenders may, if justified, exclude the winning bidder from further contracts (such as for services, support) related to the software selected with their assistance, to prevent a conflict of interest and ensure their role as an honest evaluator of open source download choices¹⁹. Of course, a new tender is not required for every case of software selection. This assistance for evaluation and selection could also be performed by a firm with a pre-existing contract for such on-going consultancy services, although such a firm

¹⁹ An automatic exclusion, according to the case law of the European Court of Justice C-21/03 *Fabricom*, contravenes the EC Public Procurement directive and such exclusion should be operated only on a case-by-case basis, with bidders “given the opportunity to prove that, in the circumstances of the case, the experience which he has acquired [through the execution of a previous contract such as the selection of technologies or software applications] was not capable of distorting competition”

should also be excluded from the provision of services related to the software they help to choose.

When a final selection has been made for the choice of software to be downloaded, with or without the assistance of a contractor, the software has to be installed, maintained, supported. Note that downloading software with no contractual arrangements is free of charge, but also means that the software usually comes with minimal warranties. In fact, this is true also for much proprietary software, especially "off-the-shelf" software, where licences typically disclaim warranties. As with proprietary software, entering into a service or quality assurance contract of some sort is the main method for a public agency to share some of the responsibility for its use of open source software.

The software may be customised - the ability to be customised extensively is a key advantage of open source software, and customisation may be one reason open source was selected by the public agency in the first place. Although limited free support may be available from the open source community, including specialised communities such as the OSOR community in the case of public sector software, a paid contractor will usually have to be selected. For all such additional services, open, competitive calls for tenders should be used to select suppliers. In order to foster the developer community around the selected software, it may be useful to have as a weighted criterion in such tenders the level of interaction and contribution the tenderer has within the appropriate community.

A key property of open source software is that anyone can provide support or other services, depending on their skills. The market is thus fully competitive. No proprietary control or advantage rests with an "owner" or "sponsor", or their dealers and agents. In a call for tender placed for the purchase of specific proprietary software or related services - which works against a competitive market and may violate procurement regulations - only the proprietor itself or dealers necessarily dependent on the proprietor can bid. In a call for tenders placed for the purchase of services related to a specific open source

software system, any independent supplier can bid. The difference is like that between a tender for the supply of Peugeot cars or services for Peugeot cars (for which firms dependent on Peugeot can bid, or have advantages over firms with no ties to Peugeot), and a tender for fuel and tyre service for a car (for which anyone with no ties to a particular car company can bid).

Nevertheless, there may be a situation, because of the location, size of the market for a specific open source software application, or other reasons, where few suppliers of services exist. If so, and there is reason to believe that the competition for supply of such services is limited, the public agency can provide for a tender process that awards contracts in multiple lots over time, allowing time for independent competing providers to develop.

I.e., the public agency can issue separate calls for the evaluation of the software, customisation, installation, and periodic support contracts, accompanied or preferably preceded by appropriate publicity concerning its intended use of that software. This provides a better chance for potential providers to prepare to support the software.

However, if there is a doubt regarding the competitive potential for supply of services for a specific software, then it is better not to acquire that software through downloading; rather the supply of the software and related services should both be through calls for tender, as described in the next section.

2.4 Purchasing open source software

Is it possible to issue a call for tenders to purchase a specific open source software application? The simple, practical answer is yes. The practice of issuing calls for tenders for specific, named *proprietary* software applications is widespread, even though it is explicitly limited to the proprietors of such software and their agents. This may be out of line with regulations, but a tender for a specific open source application is less out of

line, as it is not restricted to a named vendor and anyone can bid. Note that a tender for only the *supply* (not service) of a specific open source software product may be pointless as it can be downloaded free of charge, but the above argument also applies for tenders for the supply and installation, integration or support of a specific open source software product.

This guideline is about promoting good practices that clearly meet procurement regulations and provide for a competitive and transparent procurement process. So the authors do *not* recommend issuing a call for tender for the supply and service of installation of a specific open source software. The authors do not even recommend issuing a call for tender for un-named software, with "open source" as one of the selection criteria.

As discussed in the previous section, the authors recommend best practice procurement based on the definition of *functional requirements* - which may include properties that are equivalent to the characteristics of open source software, or the characteristics of open standards.

2.4.1 Defining requirements

Calls for tenders for open source software - like all calls for tenders - should be based on functional requirements, not on specific products or vendors. Properties of open standards or open source software may be part of these requirements - either as minimum requirements, or as properties that will be favoured.

Functional requirements

The authors recommend that the tender specify the function of the software in detail, to ensure transparency and objectivity in the procurement process. The purpose of the software to be acquired and its essential attributes should be described in a vendor-neutral manner. This is a general principle of public procurement; the authors focus here on the *additional* functional requirements

relating to the open source nature of the software, and open standards.

It is important to distinguish between open standards and open source software. A call for tenders may require or prefer properties relating to either one or both of these. Standards are technical specifications. Open standards also have non-technical properties, relating to the how the standard is controlled and developed. Open source requirements are essentially non-technical, concerned with the licensing terms governing use of the software.

Open standards

Official European standards can be required as part of the technical specification in a call for tenders, as can national standards where no European standard exists. A call for tenders can also include technical specifications of a desired standard.

In practice, since the technical complexity of standards can be high, standards are referred to in tenders simply by name, even if they are not official standards (as is the case with several common standards behind the Internet, such as HTML).

Providing that this is justifiable due to the interoperability needs of the procuring agency (see section 2.2 for a description of interoperability agreements and how they impact IT architecture), open standards can be required just as with standards in general. Open standards can be required referring to the open standards by name, or by referring to an official list of open standards. However, if there is no definition of open standards that has been adopted as applicable to the procuring public agency, or any officially approved list of open standards that can be cited, the standard may have to be defined in terms of functional specifications. In this case, it may be required to explicitly allow bids using technologies that are "equivalent" in technical terms but do not have the desired properties of openness. Thus, these properties of openness could be included among the tender specifications. This way, the openness of standards can be specified as a preference (through the

weight given to it in the award criteria), or a requirement (by making it a mandatory in the specifications).

The openness of standards used can also be useful award criteria where no specific standards are specified in the technical requirements - e.g. because the call for tenders does not include detailed technical specifications and expects these to be proposed by bidders. In such cases, different bids using different technical standards may be provided, and obligatory or weighted award criteria regarding the openness of the proposed technologies can be used to evaluate the price/quality ratio.

Including open standards requirements or preferences in tender requirements is straightforward: the properties of open standards could be described, together with a justification if required. Since the justification is part of the essential needs as determined by the public agency, a specific definition of the term open standards is, while useful, less important. For software applications, the needs of a public agency may typically require that:

- *the standard is implementable by all potential providers of equivalent technologies, ensuring sustainability and full competition with no advantages for some players based on patent or copyright royalties or restricted availability of the technical specifications; in addition, the standard should not discriminate against open source software solutions²⁰.*
- *the development of the standard is open and transparent, so that the public agency is not dependent on one party for the future of the standard, and may even influence its further development*
- *no restriction on re-use, so that the public agency can be certain that other public or private organisations can use the standard, and so that the use of the standard in open source solutions -*

²⁰ The open source non-discrimination requirement is included in the draft version 2.0 of the European Interoperability Framework.

which are often not compatible with re-use restrictions - is possible.

Note that these typical public agency needs can be met by standards that fulfil the open standards definition contained in the European Interoperability Framework and many other open standards definitions.

Open source

As mentioned at the start of this section, it is not good practice to simply state that software should be "open source". Rather, the properties of open source software should be described and justified.

Open source is not part of the technical nature of the software; it applies to the conditions with which the software is provided. Thus, the desired properties of open source could be included in the form of mandatory requirements in the description of the subject matter of the contract, or in the contract documents (*cahier de charges*). Open source can be included as a preference rather than a mandatory requirement by the inclusion of open source requirements as weighted award criteria.

Including open source requirements or preferences in requirements is straightforward: the properties of open source could be described, together with a justification if required. The needs of a public agency may typically require that:

- *the ownership of the software is transferred to the public agency, with no restrictions on what the agency can do with the software; **OR:**²¹*
- *the software may be used for any purpose as the public agency does not want to be restricted in how it can use (or allow others to use) the software*
- *the public agency or a third party of its choice may study the source code as the public agency wants to be sure of the functioning of the software;*

²¹ Note that some of the requirements below may be met by proprietary software under specific licensing terms, but if all of these requirements are met, the software is by definition open source.

alternatively, the public agency may require that any member of the public can study the source code, in order to promote transparency of government processes, or enable other parties to provide support and training associated with the software.

- *the public agency or a third party of its choice may modify the software* as the public agency does not wish to be dependent on the original vendor for bug-fixes, adaptations and other modifications
- *the public agency can distribute the software, with source code and modifications, to anyone of its choice and provide recipients with the same abilities to use, study, modify and redistribute* because the public agency needs to ensure that citizens and firms and other agencies that access its services using the software or variants of the software do not need to become customers of the original vendor in order to do so; for example, a national administration may wish to be able to pass on the software, without extra costs, to other administrations at the local, regional, national or European levels.

When supported by an official policy at the European, national or local level, such requirements may not need explicit justification in each tender. Even otherwise, such criteria need only to be *justifiable* - i.e. if questions are raised - rather than justified in each tender. But there is no harm providing explicit justification and references, and it is always a good practice to (briefly) explain why certain criteria are present. For instance, the explanation for the Dutch government's preference for open source software is "promotion of a level playing field in the software market and promotion of innovation and the economy".

Open source for redistribution

As described in Section 2.2 on Determining Requirements, a public authority may wish to procure software for further redistribution along with other software components. In this case, it is important to

clarify specific redistribution conditions for the component being procured, to ensure that the public authority does not face licensing difficulties combining that component with other, separately acquired software, for further redistribution.

To address such cases, Spain has adopted Royal Decree 4/2010 implementing the National Interoperability Framework planned in the eGovernment Law of 11/2007.²² According to RD Article 16.1, the licensing conditions of applications owned by Public Administrations that can be made available for other Public Administrations or for the citizens, must:

- allow the free use/reuse of these applications
- exclude the software appropriation by a third party
- protect the administration from liability, support and warranty obligations.

Therefore, if the distribution is decided, it must be under open source conditions (combined with strong copyleft conditions for avoiding the exclusive appropriation that would happen if the software could become proprietary).

This means that, by default (and by choice when it is appropriate), the Spanish administration will distribute its software under the terms of the European Union Public Licence (the OSI approved licence which has the same value in 22 European languages)²³.

²²The Royal Decree (text in Spanish) is published at:

http://www.csae.mpr.es/csi/pg5e41_ingles.html. See on ePractice the presentation and comments from Miguel A. Amutio (in English) <http://www.epractice.eu/en/cases/eni> and comments from P-E. Schmitz on OSOR <http://www.osor.eu/communities/eupl/blog/impact-of-the-spanish-royal-decree-4-2010-of-8-january-2010-1>

²³ Similar provisions can be found in other recent policies in Member States, such as the 1 June 2010 directive of the Government of Malta enabling, where appropriate, the distribution of its public sector software under the EUPL - http://ictpolicies.gov.mt/docs/GMICT_D_0097_Open_Source_Software_v1.0.pdf

2.4.2 Other requirements

In addition to technical, functional requirements and the non-technical properties of open source and open standards, calls for tender typically have other criteria for awards and determining the eligibility of bidders.

While most of these, such as criteria relating to criminal offences, bankruptcy and so on do not affect the procurement of open source software, one additional criterion is relevant here.

One property of open source software that distinguishes it from proprietary software is that it can be provided on an equal basis by small, innovative companies, limited only by their skills and abilities rather than their dependence on the software proprietor. However, small companies may have difficulties meeting stringent eligibility criteria with regard to financial sustainability.

Selection criteria for financial sustainability (minimum turnover, capital) should be in proportion to the scope of the tender²⁴. The main justification for financial sustainability criteria for software is to ensure that the supplier will be able to provide support as long as the software is being used.

With open source, the availability of the source code assures interoperability, and there is no dependence on the original supplier. If the original supplier goes out of business, the software can still be maintained by others; if others are not maintaining the software, the public agency can hire a third party maintainer. This increased sustainability of open source is justification for lowering the financial sustainability requirements, or lowering their weight in the selection process for tenders for open source software.

Community interaction and contribution

One of open source software's main strengths is that the development process, at its best, involves a community of

²⁴ Directive 2004/18/EC, Article 44(2).

several firms, individuals and other contributors. Contribution is not limited to actual writing of lines of code, and extends to, for instance, providing detailed reports of requirements and issues. Hopefully, the acquisition of open source software will encourage public agencies to get involved in this process - the OSOR platform is designed to help here.

Public agencies can also provide indirect support for the development community, by asking tenderers for open source software or services to demonstrate their level of contribution to the appropriate developer community - as part of the selection process, and/or as part of the execution of the contract. In any case, this may be a useful way of determining level of knowledge of the open source software and its community available with the tenderer.

Thus, it may be useful to have the level of interaction and contribution the tenderer has within the appropriate community as a weighted criterion in tenders for open source software supply and/or services. This criterion must be applied carefully, however. If it is known that a limited number of firms actively contribute to the development of a particular software application, then the need to support that community by supporting the active contributors must be balanced with the need to foster competition and a diversity of contributors; in such cases it may be preferable not to have community contribution as a selection criteria but as a demonstration of process quality during the execution of the contract.

2.4.3 Tender selection

Bids responding to the call for tenders must be evaluated and the best offer chosen. The best offer can either be determined simply by the lowest price, or the best value for money, where the ratio of the price to the value as determined by the weighted award criteria is evaluated.

In case of a preferential policy regarding open source - such as with the Dutch government's "preference for open-source software in the case of equal suitability" , if

bids have the same price (in case of a lowest price tender) or the same value-for-money, the open source bid is selected. Note that any such preferences must be justified in terms of the functional, technical specifications and must not create obstacles to the *“opening up of public procurement to competition”*²⁵. As open source requirements are put in place in order to meet the needs of the procurement body and do not favour specific vendors, in contrast to procurement procedures requiring specific named brands of software, in general they add to the opening up of procurement to competition.

Any such preferential policy related to open source does not really affect the tender process described in this section, as the likelihood of exactly the same evaluation of two bids is probably not high. Moreover, the inclusion of open source requirements as part of the tender requirements is independent of any policy regarding open source in procurement; *it requires no preferential policies and works within any procurement procedures.*

2.5 Conclusion

This guideline has explained why it may be useful for public agencies to acquire open source software, and more importantly, how they can do so within the current procurement regulations, once a decision is made.

This guideline has shown how open source software can even be downloaded free of charge without a call for tenders, and provided criteria that can be included in tenders to ensure good practice procurement of software.

Today's software procurement is far from a "level playing field", and widespread preferences in public tenders for specific, named, proprietary software and their vendors is one justification of why this guideline is needed.

An annex provides an overview of the legal issues involved in public procurement of software and shows how the procedures outlined in this guideline comply with legislative requirements. Finally, an annex with

²⁵ Directive 2004/18/EC Article 23(8)

"ready-to-use" text for tenders aims to simplify the process of translating the suggestions contained in this guideline into actual calls for tenders.

This guideline is about procurement of software, but the authors note that one of the properties of open source is that it promotes collaboration and participation, rather than just consumption through public procurement. The EU's own Open Source Observatory and Repository (OSOR) provides a platform for collaboration among public agencies in Europe: from finding out about open source; selecting, evaluating and downloading software; getting support from peers and suppliers; and even developing and releasing software. The authors encourage you to participate in the OSOR community at OSOR.eu, to make the most of open source software.

A. Model template texts for tenders

This short annex provides some templates for text that can be used while preparing tenders for the procurement of open source software and software based on open standards. This annex should be read as a source of possible implementation of the recommendations provided in section 2.4 of the main guideline, "Purchasing open source software".

Naturally, the texts here may require some adaptation for inclusion in tenders, depending on the precise policies and requirements applicable to each public agency and each tender. The texts are provided following a checkbox approach, allowing the reader to combine texts as appropriate.

A.1 Functional / Technical specifications

Unfortunately, it is not possible to provide ready-to-use texts for functional specifications - the core component of any tender. The authors can only emphasise here how important it is to further good practices and apply the principles of procurement by using clear and precise functional specifications, rather than brand names or product names, although open standards could be cited by name.

A.2 Open source requirements

Following functional specifications for the software, the authors recommend that open source requirements be placed not in the functional specifications, but as separate requirements in the contract documents (*cahier de charges*) or contract subject matter description, if they are mandatory, and as weighted award criteria, if the open source requirements are preferential rather than mandatory.

Open source requirements

The following text could be included.

The ownership of the supplied software, including all associated intellectual property rights, is to be transferred to the contracting agency with no restrictions on what the contracting agency may do with it²⁶; OR, the software is to be supplied to the contracting agency under the following terms and conditions:

1. the software may be used by the agency for any purpose the agency sees fit
2. *the contractor will provide the complete source code and documentation for the software so that the software can be studied by the contracting agency or any third party or parties of its choice*
3. *the software may be modified by the contracting agency or any third party or parties of its choice*
4. *the contracting agency may distribute the software, with source code and modifications, to any party of its choice, under terms and conditions allowing such parties the same freedoms retained by the contracting agency, as described above, to use, study, modify and redistribute the software.*

If the supplied software is required to be open source

The open source requirements as shown above should be included in the contract documents (*cahier de charges*) or contract subject matter description as mandatory requirements.

If the public authority plans to redistribute the supplied software as an integral entity or in combination with other software components

²⁶ While a transfer of rights to the acquirer is not the same as an open source licence, it fulfils the same procurement requirements; this follows the principle of this guideline that tender terms follow the requirements of the procuring agency, and open source follows from these requirements. Of course, if a procuring agency acquires all rights to the software, it is free to release the software as open source so that other public agencies (among others) share the benefits.

When a complex software application consisting of several components is redistributed as an integral work, it may need to be distributed under a single licence, or require that each component be distributed under a licence that allows the distribution of the component as part of a combined integral work. When the supplied software is intended to be distributed as part of such combined works, the broad requirements of clause (4) above may be insufficient. Specifying the precise licence, or a list of acceptable licences, may be required in order to ensure that the supplied work is provided under terms that allow it to be distributed as part of a larger work – which may include other components supplied under other terms, resulting in potential licensing incompatibilities between components unless steps are taken to avoid them. Therefore, in such cases, substitute clause (4) above with:

4. the contracting agency may distribute the software, with source code and modifications, to any party of its choice, under terms and conditions of licence [INSERT LICENCE NAME/LIST OF NAMES/REFERENCE TO LIST OF NAMES HERE].

Note that recent legislation in certain Member States, such as Spain and Malta, recommend and under certain conditions require the use of the European Union Public Licence (EURL²⁷) for redistributable software being procured by public authorities, and provide detailed specifications of licensing requirements in case the EURL is not possible to specify²⁸.

If the supplied software is preferred but not required to be open source

²⁷ The EURL was created on the initiative of the European Commission, is approved as an Open Source licence by the Open Source Initiative, and is available in official translation in 22 languages of EU Member States, with equal validity in each language. See <http://www.osor.eu/eurl>

²⁸ See rationale in previous section 2.4.1, based on the Spanish policy: Royal decree 4/2010 and Red.es specific requirements.

The open source requirements should be included as a weighted award criterion. A weighting/scoring system should be used. The weight for the above open source criterion should be set to the level of preference for open source deemed appropriate for the tender, depending on the justifications and requirements. For example, suppose the weight for the open source criterion is set at 20%, and that the winner selection formula is the total quality score divided by the total price at a 1:1 price:quality weighting. In that case, if two competing bids, one for proprietary software and one for open source software, exactly match in terms of quality and other award criteria, the open source bid will be selected unless the proprietary bid has a price that is 20% lower. In this case, the public agency believes the value of the open source properties of the software are worth a 20% premium in the immediate price of the tender (e.g. due to presumed long-term cost advantages that are not included in the tender price).

A.3 Open standards requirements

Along with functional specifications for the software, the standards must be described in the technical specifications of the tender. Each standard must be defined by reference (or name), if it is an official standard that is permissible to cite this way, or a widely known specification that is not a formal standards in the European legal sense, but can be described by name: TCP/IP, HTML, XML, SMTP, etc.

It should already be known at the point of preparing the tender whether or not any given named standards meet the openness requirements of that tender. Thus, standards that do not meet such requirements can simply not be listed in the technical specifications.

Although it is preferable to name specific open standards in the technical specifications, if the technical interfaces, formats or protocols cannot be named – e.g. if no named open standards exist – they must be defined in the technical specifications. Each standard thus defined must be clearly identified in the technical specifications, for

example, each defined (unnamed) standard can be numbered, using text such as:

"This specification is referred to in this call for tenders as Open Standard #1"

Open standards requirements

Standards which are named in the functional specifications have presumably been screened for their openness attributes prior to the tender procedure. This may have been done at the European, national, regional or local level, or by the procuring agency itself. Thus, if only named standards are being used, there is no need for the tender to include requirements specifying the openness of standards. The named standards have been assumed to meet any procurement requirements.

If interfaces, protocols or formats are defined in functional terms in the technical specifications, as described above, openness requirements may need to be included in the tender in order to ensure the openness of any implementation. This may also be required if the technical specifications of the tender do not detail all the standards that may be included in a procured solution. For example, the call for tenders may require bidders to propose the standards they intend to use, and evaluate each bid on the basis of the openness of the technologies proposed. In this case, the openness could be specified in award criteria.

There is no universally accepted definition of open standards; this guide has used the definition of the European Interoperability Framework version 1.0. However, a definition of open standards is not required in order to actually have tenders preferring or requiring open standards, if each tender actually includes justifiable requirements or award criteria for the openness of standards.

Here the authors provide text consistent with the EIF v1.0 definition of open standards, but this text stands on its own independent of any external definitions. Thus, the following texts could be included as tender requirements or as a weighted award criterion.

If the technical specification functionally defines unnamed but numbered protocols, interfaces or formats

The following text could be included as part of the requirements for openness of standards:

The supplied solution must implement the technologies referred to in the Technical Specifications as Open Standards #1 [#2, #3 etc]. Each of these technologies, as implemented in the supplied solution, must have the following properties:

If the technical specifications do not include standards, but allow the bidder to propose various technologies and standards in their proposal

The following text could be included as part of the requirements for openness of standards:

The supplied solution may implement a number of standards, interfaces, protocols or formats, each of which, as implemented in the supplied software, must have the following properties:

Openness properties for standards

For either case above, the provided text should be followed by the openness properties for open standards:

- 1. it is implementable by all potential providers of equivalent technologies***
- 2. its past and future development is open and transparent***
- 3. there is no restriction on its re-use***

Note these openness requirements must be justifiable due to the interoperability needs of the procuring agency. Moreover, if it is not seen as essential or justified to be consistent with the EIF v1.0 definition of open standards, it is possible to use some of these properties alone, or to separate them into individual weighted award criteria rather than combining them into a single one. That way, bids that meet some of the properties of open standards

will still get some weighted score, even if they do not meet all the properties.

If the supplied software is required to use open standards

The open standards requirements – or named, open standards, if specified – should be included in the contract documents (*cahier de charges*) or contract subject matter description as mandatory requirements.

If the supplied software is preferred but not required to be implementing open standards

The open standards requirements, or named open standards if specified, should be included as weighted award criterion. A weighting/scoring system should be used. The weight for the open standards requirement should be set to the level of preference for open standards deemed appropriate for the tender, depending on the justifications and requirements.

Weighting and scoring can also be used if not all the properties of open standards as translated into award criteria are seen as equally important or essential. For instance, if it is seen as *essential* that the standards is equally implementable by all potential providers of equivalent technologies, and that there is no constraint on re-use, but the transparency of development while preferred is not essential, the openness attributes could be separately listed with #1 and #3 being obligatory and #2 being weighted.

B. Guideline to legal issues

This annex is intended to clarify, for legal and procurement officers in public agencies, some legal issues relating to the acquisition of open source software:

- Are current software procurement practices in line with applicable rules?
- How do the procurement procedures recommended in the guideline fit with regulations?
- What other specific legal issues should be taken into account while acquiring open source software?

Note that this annex does not aim to provide detailed legal advice on the liability and risks of public agencies *developing* or *distributing* open source software. It focuses on the legal issues related to software *acquisition*.

Legal framework for procurement: Directive 2004/18/EC

The legal basis for procurement in the EU is Directive 2004/18/EC. This states that procurement should be based on principles, in particular the principle of equal treatment, non-discrimination, and transparency, and that procedures should guarantee the opening-up of public procurement to competition²⁹.

These principles and their application are elaborated further in the Directive. Their relevance and application to software procurement is detailed in the next sections. In brief, these principles require that tender specifications and award criteria be transparent so that, in general, any potential tenderer can understand them; and that the specifications and criteria do not discriminate against any economic operator. This guideline shows how certain common procurement practices may not be following these principles, as they appear to favour specific proprietary products and their vendors. This guideline

²⁹ Directive 2004/18/EC, Recital 2

shows how procurement of OSS can be achieved through transparent, non-discriminatory functional specifications and award criteria, allowing all economic operators to meet the justifiable needs of public agencies.

B.1 Current tendering practices: in line with regulations?

As previous studies³⁰ show, a number of activities occur frequently in public procurement of software:

- calls for tender for specific, named companies and products, while using the "open" tendering procedures
- calls for tender for named products, as above, using "negotiated" procedures with the sole justification for these procedures being that the named company "owns the Intellectual Property Rights" for the required software
- calls for tender that do not require software from specific companies, but require compatibility with previously purchased proprietary systems (with proprietary software or proprietary standards)

None of these forms of procurement can be recommended, in general, as good practices. It is clear that they are *prima facie* harmful for a competitive, transparent, sustainable or efficient use of public funds, and provide public funding for specific favoured vendors. The reasons to avoid such procurement practices are the same in software and related services as for the procurement of pencils or cars.

Directive 2004/18/EC states that "*Technical specifications shall afford equal access for tenderers and not have the effect of creating unjustified obstacles to the opening up of public*

³⁰ E.g. OpenForum Europe, 2008. "OFE Monitoring Report: Discrimination in Public Procurement Procedures for Computer Software in the EU Member States", December. Ghosh, R. A. 2005. "An Economic Basis for Open Standards". FLOSSPOLs project, European Commission.

procurement to competition."³¹ The types of procurement shown above clearly create obstacles to the opening up of public procurement to competition; indeed, they exclude competition. This is why such closing down of public procurement to competition, in particular through reference to specific products or sources, is allowed by the Directive only if it is "justified", on "*an exceptional basis, where a sufficiently precise and intelligible description of the subject-matter of the contract [in functional terms or with reference to European standards] is not possible*"³².

While detailed analysis of individual tenders may be required to determine whether or not a given tender conflicts with procurement law, studies show that a significant share of tenders for software specify brand names³³. This suggests that reference to named products and vendors is not a practice taking place on "an exceptional basis". Moreover most of the current procurement "poor practices" the authors identify are for software products (e.g. office productivity software; Internet tools; database systems) that are clearly possible to define in functional terms, rather than by recourse to brand names. Perhaps one of the "functional" requirements is often "compatibility with software X from vendor Y", but that is not a legitimate functional requirement according to the Directive³⁴. Instead, good practice for software procurement suggests that such compatibility requirements should refer solely to compatibility based on open standards.

Meanwhile, the authors note that in the closely related area of computer *hardware*, the European Commission stated in relation to tenders from a number of countries for "Intel-compatible" computers that: "*Reference to a specific brand would, in the Commission's view, constitute a*

³¹ Directive 2004/18/EC, Article 23 (2)

³² Directive 2004/18/EC, Article 23 (8)

³³ E.g. OpenForum Europe, 2008. "OFE Monitoring Report: Discrimination in Public Procurement Procedures for Computer Software in the EU Member States", December.

³⁴ Directive 2004/18/EC, Article 23 (8) allows for the reference to brands only if it is not possible to describe the subject matter in terms of standards or functionality. Software can usually be described in terms of functionality or standards rather than a brand name.

violation of Directive 93/36/EEC on public supply contracts³⁵, while merely specifying a clock rate – which is insufficient for assessing the performance of a computer – would be contrary to Article 28 of the EC Treaty, which prohibits any barriers to intra-Community trade". The EC further noted that "authorities in those countries describe the technical characteristics of the computers they wish to acquire in a discriminatory fashion"³⁶.

Current eProcurement practices

There are several cases of tenders that require bidders to use proprietary software from named vendors in order to access eProcurement services to send an electronic bid, or to receive tender documents in electronic form.

Directive 2004/18/EC Recital 12 states that "*Contracting authorities may make use of electronic purchasing techniques, providing such use complies with the rules drawn up under this Directive and the principles of equal treatment, non-discrimination and transparency.*" Article 42(4) also specifies that "*tools to be used for communicating by electronic means, as well as their technical characteristics, must be non-discriminatory, generally available and interoperable with the information and communication technology products in general use.*" While some proprietary products may indeed be interpreted as a technology product "in general use", requiring bidders to use products from specified vendors is certainly discriminatory, and does not provide for equal treatment. Of course, this issue concerns eProcurement in general, and is not directly related to the procurement of software.

Good practice procurement of software

Good practice procurement of software should, like hardware, include descriptions of technical characteristics

³⁵ amended and consolidated by Directive 2004/18/EC

³⁶ European Commission (2004): "Public procurement: Commission examines discriminatory specifications in supply contracts for computers in four Member States". Press release reference IP/04/1210, October 13, 2004. Available at: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/04/1210&format=HTML&aged=0&language=EN&guiLanguage=en>

that do not favour specific vendors. I.e., software should be described through the use of *functional specifications* as described in the main text of this guideline.

This guideline is not a general guide for good practice procurement of software, but for good practice procurement of open source software. Nevertheless, the authors'd like to note that tenders that use functional specifications, instead of the use of proprietary brand names, would provide for more competition in procurement.

Moreover, procurement regulations provide for the use of *variants*³⁷, allowing for bidders to propose multiple solutions for the same tender. Tenders allowing the provision of variants would allow bidders to suggest, for example, solutions with an open source software or proprietary software alternatives.

Variants may even include different pricing models³⁸, with the price for the open source variant being based on service charges rather than licence fees. Using functional specifications and allowing variants would ensure that the public agency ensures a more transparent and competitive process of procurement, whether the end result is the selection of open source or proprietary software.

B.2 Procurement of OSS: in line with regulations?

The primary regulation governing procurement (including of software) in the EU is the European Directive 2004/18/EC. This conforms to the global regulation, the World Trade Organisation's Government Procurement Agreement. The Directive is in turn implemented by conforming national legislation in each Member State.

³⁷ Directive 2004/18/EC, Article 24

³⁸ A variant may not be rejected on the sole grounds that it will "*lead to either a service contract rather than a public supply contract or a supply contract rather than a public service contract*", Directive 2004/18/EC, Article 24

Good procurement practice is to define software requirements in functional terms, with performance requirements and functional requirements as provided for by Directive 2004/18/EC. Such procurement would not discriminate in favour of specific companies.

There is a prohibition in procurement that results in advantages or disadvantages for named businesses. However, there is no prohibition in procurement following any criteria that match an agency's requirements, even if such requirements result in disadvantages for businesses implementing certain business models.

Since one of the aims of public procurement regulations is to "*guarantee the opening-up of public procurement to competition*" favouring a specific business model that reduces competition may be problematic. But the open source business model supports competition, by allowing an unlimited number of independent vendors the equal opportunity to support, adapt and control the same software.

Thus, it is possible, if necessary to meet the agency's requirements, to favour the open source business model in procurement - by downloading software and putting out tenders for services, say, or by specifying open source compatible terms in the award criteria - as long as it is justified by the procurement principles such as transparency and opening up to competition.

The sections below discuss the legal issues specific to each form of acquisition of open source software.

B.2.1 Acquiring open source software without tenders

Public procurement of goods or services must normally be through a public contract process, typically through a call for tenders. The acquisition of software, however, is often done by downloading this software from websites on the Internet. This is particularly the case for open source software. An obvious question is whether public agencies are in line with procurement regulations if they

too acquire (open source) software simply by downloading it from the Internet.

The legislation covering public procurement is very specific. Directive 2004/18/EC concerns itself with the award of "*public contracts*". In particular, Article 28, which defines procurement procedure, states that "[contracting authorities] shall award these public contracts by applying the open or restricted procedure"³⁹.

The procurement procedures are applicable only to the award of public contracts. Directive 2004/18/EC Article 1(2)(a) defines the term "public contracts" as "*contracts for pecuniary interest concluded in writing between one or more economic operators and one or more contracting authorities.*" When software is downloaded from the Internet, it may certainly involve contracts and fees, and therefore involve a "public contract". When software is made available free of charge for download on a publicly accessible website, there may be no fees involved - this applies to open source software, but also proprietary software when it is freely downloaded, such as several popular applications to read documents, play media files, or browse Internet websites.

Not a contract?

When software requires agreement to specific terms prior to its download, e.g. through the use of a "click-wrap" licence agreement which you must accept in order to download, there is a contract being concluded, even if no fee is paid. When no such explicit agreement is required, as in the case of open source software, there is an argument in legal literature that no contract is concluded. In some jurisdictions (e.g. the US) it is fairly clear that an open source licence provides a permissive grant under copyright law, and contract law may not be involved at all. However, in Europe, the situation is less clear-cut⁴⁰, as any agreement implicit or explicit frequently invokes contract law. Nevertheless, in one of the rare European

³⁹ Additionally, certain other procedures are allowed for particular circumstances.

⁴⁰ See e.g. Thole, E.P.M., Seinen, W., Open-source software licences: a civil-law analysis, in *Computing and Law* 2004/34.

cases considering an open source licence, in 2004 the District Court in Munich ruled that while the open source licence (GPL) *was* a contract, the enforcement of the licence was simply through remedies for copyright infringement⁴¹.

Not being a contract may not, thus, necessarily be a way to exempt free-of-charge downloads of open source software from procurement regulation. Instead, the authors focus on whether the software download implies a contract for *pecuniary interest*.

Pecuniary interest?

The legal framework clearly excludes the download of open source software from the definition of "public supply contracts", which involve the "*purchase, lease, rental or hire purchase, with or without option to buy, of products.*" However, European case law suggests that the absence of payment for a good or service may not automatically mean that its acquisition does not involve a public contract⁴². In the case of downloading open source, it needs to be seen whether any other form of compensation is being provided to the software licensor⁴³ in return for the acquisition of the software. The definition of open source prevents an open source licence from requiring compensation, so if the software is indeed open source, no such compensation can exist.

There may be one exception, in the case of a licence⁴⁴ that requires that the Licensor receive an automatic licence to any changes made to the software by the public agency. This could be seen as compensation. However, this special case applies only when the public agency intends

⁴¹ The court ruled that it was not necessary to decide whether or not a valid contract had been concluded between the licensor and licensee; if the licensee claimed the contract was invalid and had not been agreed to, then the licensee had no licence for the software and was simply infringing the licensor's copyright. See LG München, Az. 21 O 6123/04. English translation available online at: http://www.jbb.de/judgment_dc_munich_gpl.pdf

⁴² For example OJ C 2007/C 56/07 Case C-220/05 (OJ C 193, 6.8.2005), Auroux/Roanne.

⁴³ Any contract implicit in downloading software , in the form of acceptance of the licence, is concluded between the public agency performing the download and the copyright holder(s) of the software who is/are the licensor(s).

⁴⁴ Such as the Reciprocal Public License, see <http://www.opensource.org/licenses/rpl1.5.txt>

to make changes to the software, and does not affect most open source licences, such as the popular GPL⁴⁵, which require that modifications be made available to anyone under the same licence, but not that modifications be made available to the *Licensor*.

If the software is open source it is most likely that there will be locations where free-of-charge downloads are available. However, if a fee is required for the download of the software, then the acquisition of that software is clearly subject to the regulations concerning "public contracts".

Tenders for services

As described in the guideline, most acquisition of software by download is likely to be followed by the procurement of services of some sort, such as software configuration, custom adaptation or development, integration with other software, maintenance and support. The guideline also suggests that the service of evaluating the download options is something that could be contracted out if necessary, prior to the download.

Any such services, being paid for, are clearly subject to the procurement regulations as they are "public contracts" as defined by Directive 2004/18/EC.

For the acquisition of proprietary software, a public agency puts out a tender for a public supply and service contract; or separate contracts for public supply (of the software licences) and services (for support, integration etc). In the scenario of downloading open source software, there is no longer a contract for public supply. Could this be seen as a violation of the prohibition against "subdividing" procurement in order to bypass the procurement regulation?

Directive 2004/18/EC Article 9 (3) states that "*No works project or proposed purchase of a certain quantity of supplies and/or services may be subdivided to prevent its coming within the scope of this Directive.*" Does "subdivided" in this sense

⁴⁵ GNU General Public License, see <http://www.gnu.org/copyleft/gpl.html>

cover the splitting of an acquisition of open source software into a free-of-charge download plus a paid service contract? In fact, the subdivision ban is within Section I (*Thresholds*) and relates to Article 7 which states that the Directive applies (usually) to public contracts above the value of Euro 133 000. Article 9 specifies how the value of a public contract is to be calculated in order to measure if this is above the thresholds and thus within the scope of the Directive. It prohibits the subdivision of a public contract that would fall within the scope of the Directive due to its value being above the threshold into multiple public contracts some of which are below the threshold and thus outside the scope of the Directive. By definition these multiple public contracts must have some value, as they are "contracts for pecuniary interest".

However, even if the software download was included as part of a public contract for services, it could not add to the value of the contract, if the software itself is to be acquired free of charge. The acquisition of software through free-of-charge downloading is without value - not a "contract for pecuniary interest" - and is not a public contract at all in the meaning of Directive 2004/18/EC.. Thus, it does not come within the subdivision ban.

The authors reiterate that the software download must be truly free of charge, with "no strings attached", in order to fall outside the definition of a public contract. E.g., if the download is *conditional* on a particular entity receiving a contract for services, the download is clearly not free of charge, and is thus a public contract, and indeed cannot be subdivided from the public contract for services. The value of the software and of the services must be calculated and if they are together above the threshold they must be procured in line with the Directive's regulations. (If the software and services together are below the Directive's thresholds, they may still come under national regulations for procurement.)

In general, however, the download of open source software is available somewhere without such strings

attached - indeed, this is a consequence of the open source definition⁴⁶.

The subdivision rule may also be relevant if the conditional link between the download and services is not imposed on the source of the software, but is a requirement of the acquiring public agency itself. For instance, if the agency can only use software if it is modified after download, then it may need to combine the contract for the software and the service for modifications.

Finally, the authors note that many services for downloaded software may be performed by on-going framework contracts, and therefore may not need new contracts that are put out to tender. This could apply both to pre-download services such as searching for and evaluating software to download, as well as post-download services such as customisation, installation, maintenance and support.

Supplementary services and competition

A call for tender may be published for services for support of any named product that has been previously acquired. Clearly, this favours firms that provide services for that product. This is not, in itself, against procurement principles. When this happens following the acquisition of proprietary software, this may have an anti-competitive effect. This is because many services relating to or depending on proprietary software previously acquired by the public agency will require that the service provider has a relationship of dependence on the proprietor of that software.

With open source software, there are no software proprietors so service providers are not dependent on

⁴⁶ The open source definition does not require that software be distributed free of charge. However, since it requires that all distributors of software can further distribute it free of charge, the economic consequence is that most open source software is available for free of charge download on a publicly available website on the Internet. For exceptional open source software applications for which the public agency is not able to find a source for free of charge downloads, the scenario described here clearly does not apply. A tender will be required to acquire such software applications.

them. There can be any number of service providers for a given open source software application, and all of them have equal access to the software. Open source software is pro-competitive. Thus, a call for tender for services for support of a previously acquired open source product will not normally lead to anti-competitive effects.

Nevertheless, in specific cases, there may be a situation of limited competition for the supply of services for an open source software application, since open source is defined only by its software licence, not by a real situation of competition. For instance, a vendor may decide to release proprietary software as open source on a public website, in order to supply it to the government. If the software is immediately acquired by the public agency through the download scenario, it may be that the original vendor, or its dealers or representatives, are the only service providers.

In such a situation, a call for tenders for services could have an effect that, while not against procurement principles, is as anti-competitive in effect as a call for tenders for services of previously acquired proprietary software, at least in the short term.

In such cases, the public agency could acquire the software by downloading, and then wait for a period of time prior to launching a tender for services, in order to allow other service providers to develop a competence. If there is any doubt as to the ability of multiple, competing firms to provide services for a given software, the download method of acquisition is best avoided, and software together with services should be procured by tender.

Regulations and practical procedures

While there appears to be no regulatory problem with downloading open source software from the Internet without a public contract process, this does not mean that uncontrolled downloading is a good idea.

The downloading of software, as described in this guide, is a part of the formal process of IT acquisition in a public agency. It should take place as an acquisition option, but

within the framework of the rest of the formal process. I.e., downloading software should occur within the framework of IT decision making, following a determination of requirements and a proper consideration of all options - software, business models, etc - so that it represents the most appropriate solution for the public agency's needs.

B.2.2 Tenders specifying open source software or open standards

As noted in the beginning of this section, while it may be practically possible to publish a call for tenders requiring the supply of "open source software", as this is no worse and perhaps less anti-competitive than the common practice of tenders requiring the supply of specific proprietary software products, this is not recommended.

Good practice requires, as the guideline recommends, that a proper determination of the public agency's requirements is made, and translated into functional specifications for the software to be acquired. In theory, there are two parts of the tender where the choice of open source software could be expressed: the technical specifications, and the award criteria.

Technical specifications

Technical specifications are governed by Article 23 of Directive 2004/18/EC. This states that specifications must be clearly described in the tender, and that they must refer to a defined set of European, national or international standards⁴⁷. Alternatively, specifications may be defined in terms of "*sufficiently precise*" performance or functional requirements⁴⁸.

⁴⁷ Directive 2004/18/EC, Article 23(3)(a): technical specifications must be formulated by reference "*in order of preference, to national standards transposing European standards, European technical approvals, common technical specifications, international standards, other technical reference systems established by the European standardisation bodies or — when these do not exist — to national standards, national technical approvals or national technical specifications relating to the design, calculation and execution of the works and use of the products*". For software, the standards as defined by Directive 98/34/EC would apply.

⁴⁸ Directive 2004/18/EC, Article 23(3)(b)

It is clearly important to precisely define functional requirements in technical specifications, for any tender. However, requirements for open source software do not quite fit in here.

Requirements for open standards do fit, to the extent that the open standards are recognised under the terms of the applicable regulations or have been defined in terms of functional requirements within the technical specifications. But the "openness" criteria of open standards do not fit within the technical specifications. If the standards are named and pre-defined, it will already be known at the time of preparing the bid if they meet openness criteria, and thus the criteria need not be listed in the tender at all – the named open standards are simply included in the technical specifications. If the standards are not named in the functional specifications but are defined in the tender's technical specifications, openness criteria are non-technical and do not fit here. Similarly, if no standards have been listed or defined in functional terms, but may simply be proposed by the bidders in their own proposals, any openness criteria, being non-technical do not fit here.

When interfaces, protocols or formats have been functionally defined in technical specifications, or bidders have been allowed to propose standards, interfaces, protocols or formats of their choice, a bidder could provide a solution using proprietary standards.

Technical specifications clearly refer to the function of the product to be supplied, i.e. the functioning of the software. The "open" properties of both open source software and open standards are essentially non-technical in nature. They refer to development processes and terms and conditions of use (i.e. licensing).

The authors recommend, therefore, that "Openness" for software as well as, when applicable, for standards, be addressed as separate requirements in the contract documents (*cahier de charges*) or contract subject matter description, if they are mandatory, and as weighted award criteria, if the open source requirements are preferential rather than mandatory.

Contract documents and award criteria

Once technical specifications are met, a tender must be selected on the basis of award criteria. The selection must be on the basis either of *"the lowest price"* or *"the most economically advantageous from the point of view of the contracting authority"*⁴⁹. Where quality and not price alone is the deciding factor, it is the second method that is used. This method should be used in order to implement "openness" criteria, whether for open source software or open standards, if they are preferential rather than mandatory

The only constraint on the criteria allowed in addition to price, in order to determine the economically advantageous tender, is that the criteria are *"linked to the subject-matter of the public contract in question."* Several examples of such criteria are provided in the Directive: *"quality, price, technical merit,... functional characteristics, running costs, cost-effectiveness, after-sales service and technical assistance, delivery date"*⁵⁰. "Openness" properties, such as licensing terms of the software, like other terms of use, clearly fit in here. These criteria are obviously related to the subject-matter of the tender, as well as to the evaluation of economic advantageousness from the point of view of the contracting public agency. Of course, the criteria needs to be justifiable - and this guideline indicates numerous justifications for various properties of open source software and open standards. Moreover, the authors note that regulations specifically allow award criteria to contain *"social requirements"*⁵¹ in addition to economic and qualitative requirements, allowing for further justifications for the criteria, such as making available government services to all citizens without requiring them to become customers of specific vendors.

In order to ensure transparency, it is not sufficient to state that "open source software" is an award criterion. Award criteria must be detailed with *"the necessary transparency to enable all tenderers to be reasonably informed of the criteria*

⁴⁹ Directive 2004/18/EC, Article 53.

⁵⁰ Directive 2004/18/EC, Article 53(1)(a).

⁵¹ Directive 2004/18/EC, Recital 46

and arrangements which will be applied to identify the most economically advantageous tender"⁵².

For *mandatory* openness requirements, whether for open standards (unnamed and therefore needing openness criteria) or open source, there is no need to use award criteria. Mandatory openness requirements can be included within the contract documents (*cahier de charges*).

As detailed in the guideline, openness criteria could include (some or all of) the attributes of open source software, ideally with explanations providing justification:

- *the ownership of the software is transferred to the public agency*⁵³ **OR:**
- *the software may be used for any purpose*
- *the public agency or a third party of its choice may study the source code*
- *the public agency or a third party of its choice may modify the software*
- *the public agency can distribute the software, with source code and modifications, to anyone of its choice and provide recipients with the same abilities to use, study, modify and redistribute*

Where these requirements are not mandatory but preferential, and are placed in the award criteria, award criteria must have weightings, so that it is transparent to bidders how the most economically advantageous tender will be evaluated⁵⁴. Moreover, a minimum threshold

⁵² Directive 2004/18/EC, Recital 46. This principle is also supported by case law, such as ECCJ, 29 April 2004, C-496/99 (Succhi di Frutta).

⁵³ While a transfer of rights to the acquirer is not the same as an open source licence, it fulfils the same procurement requirements, i.e. if this first condition is met, then the following four conditions below this one are also met. This structure of criteria follows the principle of this guideline that tender terms follow the requirements of the procuring agency, and open source follows *from* these requirements. Of course, if a procuring agency acquires all rights to the software, it is free to release the software as open source so that other public agencies (among others) share the benefits.

⁵⁴ Where not possible, e.g. due to complexity, a ranking of criteria is permitted in place of weightings. See Directive 2004/18/EC Art 53(2).

score can be set for each criterion or a group of criteria, allowing the exclusion of bids that fall below that score in terms of weightings for individual criteria. Thus, it is possible for public agencies to express a preference for open source software.

A requirement for open source software can be expressed simply by including the open source criteria in the contract documents (*cahier de charges*).

A preference for open source software (or some of its attributes) could be expressed by making some or all of its criteria weighted. For instance, all the open source criteria could together be given a weight of 20%. If the formula used for evaluating the tender is the total weighted score divided by the total price (at a 1:1 weighting for price and quality), this would value a bid using open source software 20% more than an equivalent, equally priced bid using proprietary software.

Whether open source software is required by the tender or only preferred (through a high weighting for the open source award criteria) is up to each public agency for each tender. It depends on the justification, and while European or national or regional policies can be cited as justification for preferring or requiring open source software, this guide has shown how such justification can be provided even when no policy exists, simply at the level of each tender.

When the intention of the public authority is to redistribute the delivered work, solution or application, it is recommended that the tender documents specify the open source licence (or a list of acceptable open source licences) that the public authority intends to use for this redistribution. This is especially important in the case of combined works (in order to avoid licence conflicts between components received under incompatible licences). Issues that may influence which licence(s) is/are acceptable include: the desirability of software appropriation by third parties; how the licence protects the public authority from liability and warranty obligations; compliance with the applicable national law;

specification of the competent court; and licence validity in the applicable judicial language(s)⁵⁵.

Open standards can also be preferred or required through the award criteria or in the contract documents (*cahier de charges*). This can be done when the standard is not included by named reference in the technical specification, but only by its functional description, or when bidders are allowed to make their own proposals for standards, formats, interfaces, or protocols⁵⁶. There is no universally accepted definition of open standards; this guide has used the definition of the European Interoperability Framework version 1.0. However, a definition of open standards, while required in order to define a policy, is not required in order to actually have tenders preferring or requiring open standards - the approach of this guideline.

This is because, as with open source, it is not sufficient to state that an "open standard" is required. Criteria must be clearly and transparently defined. Therefore, the authors recommend that the desired attributes of an open standard - as justifiable by the interoperability requirements of the public agency, for each specific tender - be included as award criteria where a preference is made, or in the contract documents (*cahier de charges*) for mandatory requirements. Criteria consistent with to the European Interoperability Framework (EIF) v1.0 definition of open standards are detailed below⁵⁷:

- *the standard(s) used in the software is implementable by all potential providers of equivalent technologies*

⁵⁵ For detailed analysis of licensing compatibility issues, see: Dusollier, Séverine / Laurent, Philippe / Schmitz, Patrice-Emmanuel: Report on Open Source Licensing of software developed by The European Commission (Advice report: European Commission - Enterprise Directorate General), <http://www.osor.eu/studies/expert-guidance/open-source-licensing-of-software-developed-by-the-european-commission-applied-to-the-circa-solution-2004>

⁵⁶ Inclusion of the open standards *by functional definition alone* in the technical specifications would not prevent a bidder from offering a solution with a closed but technically "equivalent" standard, and such a bid could not be excluded on the grounds of not being open (see Article 23(4) and 23(5) of the Directive) unless the "openness" is defined in terms of award criteria.

⁵⁷ The main text of the guideline, and the first criteria specified here, is drawn also from the public draft v2.0 of the EIF, "Draft for public comments – as basis for EIF 2.0" dated July 15, 2008. Although the final version of EIF 2.0 may differ, the authors find this published draft version useful as a relevant reference for this Guideline.

- *the development of the standard(s) used in the software is open and transparent*
- *no restriction on re-use of the standard(s)*

By modifying the criteria or adjusting weights and minimum thresholds, the public agency can determine the level of preference - or requirement - of open standards for each tender. When a policy exists (such as the Dutch policy mandating open standards), that is a simple justification of minimum thresholds and the above award criteria. When no such policy exists, the criteria for preferring or requiring open standards can be included at the level of each public agency, as justified by each tender.

Other criteria

Tenders for public contracts often require the bidders to demonstrate their financial and technical or professional capacity. Regulations allow the setting of minimum levels for these capacities⁵⁸ - i.e. minimum size, turnover, capital assets etc. Such minimum levels can be set, following the proportionality principle, separately for each tender. Naturally, if the tender is for a very large amount, it may be reasonable to set a higher minimum financial capacity.

As described in the guideline, the main reason for a minimum financial capacity requirement for a supplier of software, in addition to determining the ability of the supplier to meet the immediate requirements of the tender, is to ensure that the supplier will be able to provide support for the duration of the software's lifetime. Proprietary software may become unsupported - and unusable - if the proprietary software vendor goes bankrupt, or has insufficient financial resources to continue to support old software⁵⁹.

However, open source software can be supported by any firm with the necessary skills, not just the original

⁵⁸ Directive 2004/18/EC, Article 44(2).

⁵⁹ Of course, even very large proprietary firms periodically decide that they will not support older software, even if customers are quite happy to continue to use it. So high financial capacity requirements are no guarantee of an increased software lifetime.

supplier to a public agency. Indeed, the supplier to the public agency may have no relation whatsoever to the actual creators or maintainers of the open source software. Thus, open source software can be easily sustainable beyond the lifetime of the original supplier. This provides a justification to significantly lower minimum financial capacity requirements in tenders for software supply when the software is required to be open source.

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