

Submitted to: United Kingdom Open Standards Consultation, Cabinet Office  
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Date: 3 June 2012

## Chapter 1: Proposed open standards specification policy

### **1) How does this definition of open standard compare to your view of what makes a standard 'open'?**

For a standard to be considered open from KDE's point of view (and probably any other Free Software community), it needs to fulfill the following requirements:

- The standard needs to allow and encourage implementations according to the "Four Freedoms of Free Software", as defined by the Free Software Foundation: the freedom to run the software (without restrictions to developers or users), the freedom to study it (without limitations due to copyright or non-disclosure requirements), the freedom to redistribute it (without licensing requirements or fees), and the freedom to modify it and redistribute these modifications (without the occurrence of royalties).
- While the standard is being developed, the process of standard setting needs to be transparent and documented, disallowing any confidential consultation or influence, and open for participation of all stakeholder groups and the general public.
- Once the standard is published, it must be publicly available, documented and redistributable, accessible to all interested parties in full, and royalty free.
- The standard may only reference, build upon or include other open standards under the same definition.

From the current UK definition: "are published, thoroughly documented and publicly available at zero or low cost;"

The standard document should be available at zero cost and it should be possible to distribute an unmodified copy of the standard document to anyone. Some standards include computer readable descriptions of the standard that can be re-used in the implementation. Ensuring the possibility of free distribution of the document text will enhance adoption of the standards and hence benefit all users, including the government.

From the current UK definition: "owners of patents essential to implementation have agreed to licence these on a royalty free and non-discriminatory basis for implementing the standard and using or interfacing with other implementations which have adopted that same standard."

The patents that are licensed in this way should be licensed to everybody. This is the only way in which the licence can, in general, be compatible with most popular open source licences such as the GPL.

Coverage of the subject that is being standardised is an important aspect that is not currently addressed. For example, the HTML standards do not specify the data format for the images that can be included in a web page. For a long time, web pages contained GIF images, for which it was impossible to implement an open source viewer without violating software patents in some regions. It is important that the government adopts open standards in such a way that for all components in the standard for which there are choices, the choice that uses an open standard is chosen. The open standard should not be used to be a thin wrapper around a closed standard.

**2) What will the Government be inhibited from doing if this definition of open standards is adopted for software interoperability, data and document formats across central government?**

The government will have fewer inhibitions when changing to the use of open standards. Transparency and cost efficiency are important aspects of the daily operation of government. Open standards are essential for achieving these aims.

If the patent rights are not licensed properly, the current definition might inhibit the government in distributing software that uses these standards to its citizens. This kind of software includes not only desktop software but also websites or apps for mobile devices. Effectively, a failure to obtain broad royalty-free licensing might force the government to shut down websites when a patent complaint comes in.

**3) For businesses attempting to break into the government IT market, would this policy make things easier or more difficult – does it help to level the playing field?**

Having well documented and agreed upon terms about the exchange of information is beneficial to all that want to participate. If one wants to be at his best in society, one needs to speak the language. The same holds true in a digital society, where standards define the way one communicates digitally. Closed standards can be compared to a secret language or, when patents are involved, forbidden thoughts. In a democracy, open communication is essential and open standards define the way in which we communicate in the digital age.

To participate in government IT markets, anyone with reading and programming skills will be able to participate. This makes it easier for entrepreneurs to enter this attractive market. The closed standards and proprietary technologies currently in use form legal and practical barriers of entry for new competitors, and may eventually lead to market failure.

In turn, having truly open standards means that for incumbent businesses, competition for government IT contracts will become stronger. Open standards reduce lock-in to technologies. Existing suppliers of IT to the government will have invested in building such lock-in. Opposition from incumbents should be expected, since the adoption of an Open Standards policy will devalue these investments.

**4) How would mandating open standards for use in government IT for software interoperability, data and document formats affect your organisation?**

KDE is a community dedicated to developing Open Source end-user desktop solutions and applications. It operates solely using Open Source tools and infrastructure. KDE would benefit greatly from such a mandate, since the software solutions developed by the community will be compatible with

other solutions deployed by the UK government. It would also alleviate current communication barriers where contributors are using open standards document formats that at the moment are not accepted by government agencies.

### ***5) What effect would this policy have on improving value for money in the provision of government services?***

An open standards policy will increase competition between alternative software solutions, and in some cases change the focus of competition itself. Previously, suppliers competed for selling solutions to the government in a winner-takes-all fashion, encouraging lock-in effects. With this policy, suppliers need to compete within the market created by the government against other interoperable solutions. The cost of switching to a competing supplier or solution born by the government will be greatly reduced. In the long term, there will be economies of scale, since re-use of existing implementations will increase, and duplication of development efforts within the different government bodies should decrease. Additionally, future products will be based on previously existing ones more than before, making it easier for companies to develop incremental innovations.

### ***6) Would this policy support innovation, competition and choice in delivery of government services?***

An Open Standards policy will allow companies to compete for improved functionality and service, while keeping interoperability with other existing and new solutions. With that, an Open Standards policy will improve competition and choice, as well as incremental innovation.

Revolutionary innovations depend on the standards being updated to reflect the progression of the state of the art.

A slow update process may lead to the standard becoming adverse to innovation (by forcing implementors to support outdated technology), but this argument is not specific to Open Standards.

### ***7) In what way do software copyright licences and standards patent licences interact to support or prevent interoperability?***

Free Software licences generally favour the adoption of Open Standards, since they allow the re-use of code implementing data formats or communication protocols amongst different and even competing solutions. This requires that the standards need to be free of licensing requirements that are incompatible with Free Software licences.

Proprietary software licences generally pose no barrier to interoperability, but cause inefficiency due to duplication of implementation efforts. Multiple implementations of the same standard may also cause more technical errors and practical lack of interoperability. Such effects will reduce over time, at the cost of multiple parties maintaining implementations of the same functionality.

Patents can restrict the freedom for a standard to be implemented, or the implementation to be distributed. Stealth patents where patent holders do not publish their claims to a field of functionality governed by an Open Standard can encumber standard adoption and incur hidden cost. From a

legislative point of view, the government could require patent holders to disclose their claims during the consultation phase of the standard setting process. Models where patents become royalty and restriction free once the standard is accepted are also possible. Legal instruments are necessary for involved parties to enforce non-assertion promises and licensing requirements of standards.

## **8) How could adopting (Fair) Reasonable and Non Discriminatory ((F)RAND) standards deliver a level playing field for open source and proprietary software solution providers?**

It is a common assumption that FRAND terms support the Free Software definitions of freedom. This is not the case, FRAND and Open Source are mostly unrelated concepts supported by independent groups of proponents.

For FRAND terms to provide a level playing field for Open Source teams, the terms need to ensure the freedoms guaranteed by Open Source. Specifically, the terms need to free the standard from restrictions in redistribution of implementations, in studying it and in modifying implementations and redistributing the modifications. There is no common definition of FRAND that ensures those freedoms guaranteed by the Free Software definition.

For example, FRAND does not exclude royalties on redistribution, it only requires such royalties to be "fair and reasonable". If royalties are due on redistribution, no implementation of the standard can be considered to be Free Software or Open Source. Essentially, such terms are neither "Fair" nor "Reasonable" for Free Software, and we consider them discriminating against Free Software. Open Source communities including KDE benefit most from standards that only reference patents that are freely licensed once the standard is ratified. Freedom in this regard refers to the "Four Freedoms of Free Software", as defined by the Free Software Foundation: the freedom to run the software (without restrictions through patents), to study it (without limitations due to copyright), the freedom to redistribute copies (without licensing requirements or fees), and the freedom to modify and redistribute modifications.

Another problem with FRAND terms is that the definition of FRAND is blurry, and that "fair and reasonable" is in the eye of the beholder, in this case, the rights holder.

Instead of accepting FRAND conditions, KDE encourages the UK Government to enforce more specific terms of standard licensing freedom that are verified to be compatible with the freedoms of Open Source. Such a "standard of standards" would help resolve the lack of definition of FRAND terms, and support the development of truly Open Standards.

## **9) Does selecting open standards which are compatible with a free or open source software licence exclude certain suppliers or products?**

Standards are supposed to define protocols, formats and interfaces, not to describe implementations. Commercial suppliers are free to implement proprietary implementations of open standards, if a business model for doing so can be found.

Compatibility with a Free Software licence will not cause a requirement for commercial solutions to adopt the license as well. From this point of view, open standards compatible with free software licenses should not restrict suppliers or products.

**10) Does a promise of non-assertion of a patent when used in open source software alleviate concerns relating to patents and royalty charging?**

It does, as long as such an assertion can be enforced by the potential infringer through affordable legal actions. It should not be possible to revert such an assertion after the fact in any way, which means a legal instrument is required as a defence for users of the patent. The assertion also needs to cover both implementors of the patent (the Free Software communities) and end users.

**11) Should a different rationale be applied when purchasing off-the-shelf software solutions than is applied when purchasing bespoke solutions?**

The fundamental requirements should be the same - software products need to support Open Standards based file formats and communication protocols to be able to communicate with other solutions and to facilitate the exchange of data across the boundaries of organisations. Allowing off-the-shelf solutions to circumvent Open Standards requirements will encourage entry level pricing strategies by solution providers with the goal to create a new form of lock-in in the long term.

**12) In terms of standards for software interoperability, data and document formats, is there a need for the Government to engage with or provide funding for specific committees/bodies?**

To the extent that the government needs to ensure interoperability for its own use, the government is well advised to take part in the standardisation process and provide partial funding for relevant standards bodies. Preferably the standards bodies are international organisations, since international standards increase positive network externalities also in the UK, and Free Software solutions are developed by international communities. It should be investigated if concentration of standards bodies should be encouraged, maybe by communicating a selection of well accepted standards bodies that are considered influential to the government, in combination with ensuring the effectiveness of their operation and procedures.

**13) Are there any other policy options which would meet the described outcomes more effectively?**

Since the goals of improving UK government IT operations and procurement breaks down to a set of potentially conflicting political implications, a single alternative policy option is probably not viable. The government's primary interest is in operating its own IT, but it will have to reflect on goals of innovation, growth effects in the local economy and efficient functioning of markets for software solutions. Open Standards are expected to support these goals overall in a well-balanced manner.

One alternative policy would be the option to strictly only deploy Free and Open Source Software (FOSS), relying on service providers to perform the necessary adaptations and maintenance. Suppliers should then be required to contribute all improvements made to the used software solutions back to the

software projects. It can be expected that this approach would cause strong opposition by proprietary software vendors, as it effectively reduces the market from a mix of products and services to solely services.

Such a policy would induce a shift from investment in products to investment in services. It would reduce software license cost to a minimum, and provide close to optimal competition by service providers due to minimal costs of entry. Total cost of ownership for solely FOSS based solution is found to be considerably lower than that of proprietary solutions (<http://eprints.lse.ac.uk/39826/>).

The possibility of such a policy being adopted by the UK government depends on the availability of FOSS solutions for all the required fields of functionality, and other factors. Market dynamics affect FOSS to cover functionality defined in Open Standards, which means it will also be possible to sequentially implement an Open Standards policy first, and migrate to Open Source solutions at a later point in time.

## **Chapter 2: Proposed open standards mandation policy**

### ***1) What criteria should the Government consider when deciding whether it is appropriate to mandate particular standards?***

In its own interest, the Government should strive to minimise lock-in to specific solutions, and to ensure interoperability of solutions and processing of collected and archived data in the very long term. This will ensure that only standards should be mandated that can be freely implemented by both commercial software developers and by Free Software communities. Standards encumbered with licenses that restrict competing implementations or indirectly put similar restrictions on end-users should not be mandated by the Government. This means that FRAND terms may not be sufficient and need to be evaluated carefully, since even "fair and reasonable" license fees or requirements that are incompatible with licences or values of Free Software communities will effectively form a new barrier of entry, reducing the choices available to the government.

### ***2) What effect would mandating particular open standards have on improving value for money in the provision of government services?***

Mandating a specific open standard for a field of functionality causes two opposing effects.

The beneficial effect is that it will improve interoperability and the quality of the implementations, leading to reduced cost of operations.

On the other hand, it will also potentially reduce the number of competing solutions for that field of functionality, temporarily increasing service or product prices through a reduction of supply.

Which of the two effects dominate depends on the implementation and other factors. These and possibly other effects cause mandating a specific standard to be indeterministic and experience based. Choices need to be made very carefully, based on transparent criteria of evaluation, and revisited on a regular basis.

### **3) Are there any legal or procurement barriers to mandating specific open standards in the UK Government's IT?**

There should not be legal barriers to mandating open standards. If such barriers exist, legislation would need to remove them in the process of establishing an open standards policy.

Procurement barriers may exist in the form of existing policies or certification requirements. Such factual barriers need to be evaluated for their goals, since in many cases, they are around for historical reasons. Such reasons can and probably need to be revisited or re-evaluated under a new policy.

### **4) Could mandating of competing open standards for the same function deliver interoperable software and information at reduced cost?**

In the long term, duplication both of standardisation and implementation efforts does not provide for an optimal allocation of resources. Suppliers will effectively be encouraged to support all application standards for the same field of functionality, leading to a duplication of effort.

For the process of adopting an Open Standards policy however, mandating competing standards can be beneficial to enforce interoperability, providing a migration path for incumbent suppliers to supporting truly Open Standards.

The Government should only endorse competing Open Standards to aid in adopting an Open Standards policy, and reduce such duplication in the long term. Special care needs to be taken if one of the competing standards is predominantly developed by a proprietary vendor, as studies have shown that the effort of ensuring compatibility is mostly born by the Open Source communities, benefiting the proprietary vendors due to the bandwagon effect.

### **5) Could mandating of open standards promote anti-competitive behaviour in public procurement?**

It is hard to imagine a case where this could happen. Open standards allow for open source and proprietary implementations, increasing the potential number competitors and the number of exchanges in the market.

Suppliers could decide not to bid on solutions where high quality open source solutions exist. In this case, service vendors should step up to help deploy existing open solutions.

Entities will be motivated to influence the governance of open source projects with the goal to undermine their success in the market. Such behaviour has already been observed and needs to be legally considered equivalent to unfair competition between companies, and subject to anti-trust enforcement.

**6) How would mandation of specific open standards for government IT software interoperability, data and document formats affect your organisation/business?**

The KDE community as one supplier of open source solutions would benefit greatly from such a policy. On a technical level, the policy would increase the potential number of contributors and users, causing the process of peer production to become more productive. On a social level, an open standards policy would be a huge motivator to contributors, since they will know that their work is valued.

**7) How should the Government best deal with the issue of change relating to legacy systems or incompatible updates to existing open standards?**

Updates to existing standards or solutions pose a demand in the market for software services. Through that, it is very likely that solutions will be provided, if the requirements are sufficiently transparent. The government should rely on open standards, transparency and market forces to solve such problems.

**8) What should trigger the review of an open standard that has already been mandated?**

Any standard needs to be regularly reviewed once mandated to see if it still reflects the technical state of the art. Indicators for sub-par standards include growing market shares of competing free or proprietary solutions, discontent amongst users or increasing interoperability problems.

**9) How should the Government strike a balance between nurturing innovation and conforming to standards?**

The Government should restrain itself to use deployed and previously mandated standards, and at the same time drive a process of incremental (or drastic, if needed) updates. Ideally, the Government gains significant influence on the standards definition, based on its aggregated user base and leverage effect. Updates should be frequent enough to be hardly noticeable by users, and allow for efficient feedback. It is possible that existing approval processes at formal standard setting bodies need to be accelerated for standard updates (not initial mandation), provided the proposed update gathered community and industry approval.

**10) How should the Government confirm that a solution claiming conformity to a standard is interoperable in practice?**

Since important standards are not that numerous, the Government could rely on public feedback about interoperability, potentially through an open call for review. Presumably, interested citizens are

motivated enough to provide such feedback. Such a process is more efficient than reviews by selected individuals, but requires the solution to be available to the public.

The Government could involve itself in contribution to a certification of the solutions that claim to conform to the open standard or it could employ services of independent companies that provide such certification and validation tools. For many standards there is active collaboration between competitors to ensure conformance. Such collaboration is a sign of a healthy standard.

Standards often allow embedding objects in a document. These objects can be images, video, audio or other data structures entirely. The standards often contain recommendations on what objects to use but usually do not restrict what data formats can be used. For example, the HTML standards allows videos to be embedded, but does not specify what file format the videos can have.

A solution claiming conformity to the standard can only be interoperable if all documents created with the solution only contain embedded objects that are also defined in an open standard (i.e. no royalties needed for distributing an implementation, etc). If a solution can create documents whose contents is not completely covered by open standards, the solution is not interoperable.

***11) Are there any are other policy options which would meet the objective more effectively?***

See answer to Chapter 3, question 3.

## **Chapter 3: Proposed international alignment policy**

***1) Is the proposed UK policy compatible with European policies, directives and regulations (existing or planned) such as the European Interoperability Framework version 2.0 and the reform proposal for European Standardisation?***

The KDE community is in no position to answer this question.

***2) Will the open standards policy be beneficial or detrimental for innovation and competition in the UK and Europe?***

The open standards policy will enable competitions and reduce lock-in. It should be beneficial for innovation and competition. The arguments are to a large extent the same for the UK and Europe.

**3) *Are there any are other policy options which would meet the objectives described in this consultation paper more effectively?***

To our knowledge, there are no alternative policy options that promise to cause similar or better effects to the Government, society and economy compared to consistently adopting Open Standards.