Standard Essential Patents and Innovation: Call for views
OpenUK Response

OpenUK's view is that at this stage in digitalisation where Open Technology already forms the basis of much of our critical infrastructure and understanding that the utilisation of Open Technology will only grow across business, industry and the public sector, that the Standard Essential Patent SEP ecosystem is not functioning efficiently and effectively and striking the right balance for all entities involved, particularly Open Technology and believes that intervention is required to facilitate development of the best and most innovative and diverse technology.

In order to support innovation OpenUK would recommend both the adoption where possible of open standards to allow better innovation without barriers to entry and that this is unencumbered by patents. In any case where this is legitimately impossible OpenUK suggests that any unavoidable patents (Standard Essential Patents) are not licensed for Open Technology on a FRAND basis, but rather with a broad licence or alternative structure that allows the free use of these patents in respect of Open Technology. This is explained along with the logic behind this thinking and potential options for this structure below.

This submission should be seen as a response, in particular, to question 2 of the call for views: *"What actions or interventions would make the greatest improvements for customers in the UK"*.

Background and Summary

OpenUK is the industry organisation for the Business of Open Technology, being open source software, open hardware and open data all of which are strongly aligned with open standards. Concerns with SEP utilisation in standards impacts all areas of Open Technology.

Open source software is software that is licensed in compliance with the Open Source Definition and ideally distributed on a licence approved by the Open Source Initiative which ensures that there is compliance with that definition. In open source software, the source code is visible, may be modified and may be distributed on the terms of the applicable licence, see https://opensource.org/osd. Licences may be divided into three categories: (i) strong copyleft licences; (ii) weak copyleft licences and (iii) permissive licences. Some of the licences incorporate explicit patent grants, whereas others do not mention patents at all. Of those with a patent grant there may also be termination provisions, triggered by a licensee instituting patent litigation against a licensor.

The Open Source Definition requires at Definition 7 that "The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional licence by those parties," and of course the addition of a FRAND licence is an extra component. This has been explored by Catherina Maracke.[1]

Open source software is widely recognised as driving diverse and collaborative global innovation, with much of our Enterprise software being based on it (70-85% of codebases being open source software depending on resources used) and increasingly a shift to open source software being seen across the public sector. A great example of this is the Energy Digitalisation Task Force Report in January 2022[2] which recommends open source software.

Prioritising open source software within open standards

Open standards and open source software are different in that:

- An **open standard** is a standard that is freely available for adoption, implementation and updates, and may incorporate different technologies and as a standard creates a reference specification ;
- **Open source software** is software that is licensed in accordance with the Open Source Definition, ideally approved by the Open Source Initiative and is an iteration of an idea.

There may be a convergence of the two where open source software is reference technology for an open standard. The advantages of this are:

- barriers to entry to the market in which the open standard operates can be reduced. Even though SEPs may be licensed fairly, they are still not free. With open technology, licence fees are not payable, which in-turn supports the government's strategies around accessibility, digital inclusion and closing the digital divide; and
- all users can contribute to the technology that is within the open standard so the ability to innovate is facilitated from the outset.

Both standards and open source development are widely adopted in the ICT industry to develop innovative technologies and drive their adoption in the market. Increasingly standards use open source software but for these to work well, they require to be open standards, unencumbered by SEP's. Open source software is often developed at pace and forms de facto standards in the marketplace such as OpenStack and Kubernetes software.

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[1] Free and Open Source Software and FRAND-based patent licenses - Maracke - 2019 - The Journal of World Intellectual Property - Wiley Online Library,
[2] https://es.catapult.org.uk/news/energy-digitalisation-taskforce-publishes-recommendations-for-a-digitalised-net-zero-energy-system/?reportDownload=https://esc-production-2021.s3.eu-west-2.amazonaws.com/2022/01/ESC-Energy-Digitalisation-Taskforce-Report-FINAL.pdf

However some sectors, such as the telecoms sector which are increasingly utilising the benefits of open source software, attract a high level of patents and in turn patent litigation. This sector uses a high level of standards, many of which are encumbered by patents owned by patent licensors with patent licensing business models. Not only is that litigation problematic but as is explained below the requirements for additional traditional patent licensing even if licensed on a FRAND (Fair Reasonable and Non Discriminatory Patent Licensing) basis do not work with open source software licensing. The MNO sector has been a dominant force in patents and standards through organisations such as ETSI[3]. It is currently seeing a shift to Software Defined Networking and increasingly to the use of open source software.

The adoption of open source and the use of this with existing standards that utilise SEP's in the MNO sector is currently causing some friction between the understandable desire of the MNO's to retain their patent royalties model that the sector receives from FRAND licensing (at a time when the royalties are being challenged and other finance models undermined) but also benefiting from the use of open source.

Friction between traditional revenue streams and business models in sectors as they shift to open source software adoption and utilisation is not surprising or new. We have seen this as a sector as open source is adopted and this shift happens. However, it is essential to the values and resilience of open source software to ensure that the OSD is complied with and that this does not shift to suit a sector or a company's business model.

Some work is being undertaken to ensure that the provenance of standards transparent, so that the participants in the standard development process are clear and transparent, and allowing some clarification of where there may be vested interests around any IP included in a standard and also to ensure that royalty generation is not at the heart of standards creation or those influencing this.

With millions of enterprise users across the world utilising open source software, the ability to rely on open source software and its licensing and the OSD is critical. That means that open source software must be generally open to being recycled, reused etc without requiring further licensing even if on a FRAND basis.

The open source software industry is no stranger to attacks from those who wish to receive the benefits of this technology but at the same time to adapt it to their revenue generation and business models. A shift in the definition of open source software - the OSD - to allow for revenue generation models in a particular sector, such as SEP's in the MNO seftor is of course inappropriate and will not happen. On this basis the issues around standards and open source software in these sectors very much need Government intervention and understanding.

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[3] https://www.etsi.org/is

In order to support the use of open source across sectors like healthcare and energy which are increasingly adopting open source software as the "Spine" of the UK's public sector digital infrastructure, the UKIPO should consider steps that would enable access to the patents in a manner that is in compliance with open source software licensing and the Open Source Definition.

OpenUK therefore recommends that UK strategy requires design of open standards unencumbered by patents wherever possible.

More detailed analyses of Standards and Open Source Software

Open Source software may be considered to be incompatible with additional licensing including FRAND licensing of patents or standard essential patents (SEPs) under the Open Source Definition.

Additionally, widely used open source licences like the General Public License (GPL), a copyleft licence, are largely incompatible with SEP's as they required all code reusing or modifying the original code to be licensed on the same, terms - the heart of the principle of copyleft. There are some who believe that open source licences that are permissive such as BSD or MIT might be compatible with open source software, but OpenUK's view is that this is not the case and that the OSD does not work with additional licensing required by FRAND.

Possible solutions that have been considered by Open Source Software Experts with knowledge of Standards

Standards developed with open source software - where any patents associated with the software must be licensed on a royalty free basis and this must be agreed as part of the standards development. This however leaves some concerns around certain copyleft licensing and it may be problematic.

Research by Björn Lundell and Jonas Gamalielsson[4], looks at various structures as well as where Standards are developed with open source software and also considers where open source software is applied to an existing standard, described as implementation-led standardisation. Again, they find that there are issues for open source software.

Applicability of a defensive patent pool. Open Invention Network is the world's biggest defensive intellectual property organisation in history and operates on the basis of a mutual hold harmless in a cross licence. Each participating organisation signs an identical licence, all participation is free and anyone can participate. The licence requires a licence of patents and

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[4] ´On the potential for improved standardisation through the use of open source working methods in various standardisation organisations: How can open source projects contribute to the development of IT standards' in Kai Jakobs, Knut Blind (ed.) Digitalisation: Challenge and Opportunity for Standardisation: Proceedings of the 22nd EURAS Annual Standardisation Conference (Verlag Mainz , 2017) 137-155 (hereafter Lundell and Gamalielsson ´On the potential´)

a commitment not to sue with respect to patents where they read on a definition, made up in this case of many thousands of software packages. A model like this is proven to work well.

Some forward looking standard setting organisations are open to and working with open source software, in particular the OASIS Standard Setting Body[5] and W3C[6]. It can be seen from their work that they take an approach that few cases of close interaction work and that those require open standards unencumbered by patents.

Guy Martin, Executive Director of Oasis Open states[7] *"The internet is a perfect example of what harmony between the open-source and open-standards communities can achieve. When the internet began as ARPANET, it relied on common shared communications standards that predated TCP/IP. With time, standards and open-source implementations brought us TCP/IP, HTTP, NTP, XML, SAML, JSON and many others, and also enabled the creation of additional key global systems implemented in open standards and code, like disaster warnings (OASIS CAP) and standardised global trade invoicing (OASIS UBL)"*.

OpenUK Recommendations and Requests of the Government:

OpenUK recommends that any assessment of SEPs and technical standards should take into account the following principles:

(i) Recognition of the Importance of Open Technologies in particular Open Source Software

Open source software should be prioritised when setting accessible technical standards to ensure that they work with it and avoid lock in wherever possible, and therefore recommends the use of open standards which do not include patents; and

(ii) Alternatives to SEPs where proprietary technology is included within open standards

where the use of patented technology in the form of an SEP is unavoidable (and this must be justified and standard setting parties' vested interests considered) alternative approaches to enabling unhindered access to the SEP should be considered, such an an encumbrance on the SEP in regard to open source software or inclusion of the SEP in a patent pool, rather than defaulting to the traditional paid for SEP model which is incompatible with open source software.

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[5] https://www.oasis-open.org/

[6] https://www.w3.org/
[7]https://techcrunch.com/2021/06/09/a-revival-at-the-intersection-of-open-source-and-open-standards/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAEOP68fW1wr-75Z2vdoKxEkrZ_woRsV4mVzNSbtIIcagQm8SlGAbCoeQy0aZNPlQLlVeD5j7MmI7Zmy0lYtPW1BOYQ3a3T6NCJ7AX2EDyNALSQkxLT6csrrRM0nG6HO5Cqnhx3wxbfeJ25rvdOL9RrizLbyKkX9UuvmqnWB9mLpg

This was in fact undertaken by the US Department of Justice in 2012 in respect of the Rockstar[8] Consortium acquisition of the patents from Nortel. In this instance the solution was to apply both a GPL and Open Invention Network Licence to the patents, thereby creating a model for making patents freely available[9].

OpenUK recommends that, where patented technology is deemed essential for an open standard (and that there does not exist the ability to either shift the technology to an open source licence or use an alternative open technology), patent waivers are considered as an alternative to identifying the patent as an SEP and relying on FRAND-Z licensing.

(iii) Transparency of the Standards Process

The process of creating a standard, particularly an open standard should include transparency as to the history of the standard, participation and a forensic analysis of both participants and any proposed SEPs being included. Simon Phipps of the UK Open Standards Board has written about this[10].

(iv) Governance of open technology within open standards

Clear governance is essential to ensuring a successful strategy for both Open Technology and open standards, as well ensuring harmony between Open Technologies and open standards. It is essential to ensure that the value of innovation and contribution is harnessed by a responsible custodian aligned to the UK's strategic and competitive goals.

OpenUK recommends that the UK considers the government Open Source Program Office (OSPO) model utilised in the European Union, but takes the current model a step further by creating a truly innovative public-private partnership. This public-private partnership could not only be responsible for stewardship and driving innovation, it could also facilitate maintenance and security for Open Technology and would be a route for the UK's world leading position as a centre of excellence in Open Technologies to be recognised.

Questions 4-27

Given that OpenUK's submission promotes alternatives to SEP use to ensure unencumbered utilisation of open source software, it does not seek to explore the challenges associated with SEPs in depth and/or propose potential policy solutions, as outlined in questions 4-27

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[8] https://en.wikipedia.org/wiki/Rockstar_Consortium
[9]https://www.justice.gov/opa/pr/statement-department-justice-s-antitrust-division-its-decision-close-its-investigations,
https://www.google.com/search?q=rockstar+DOJ&rlz=1C5CHFA_enGB824GB824&oq=rockstar+DOJ&aqs=chrome..69i57j0i512.6948j0j7&sourceid=chrome&ie=UTF-8

[10] https://meshedinsights.com/2021/03/14/the-week-in-review-standards/

of the call for views. However, for completeness, OpenUK believes some of the key challenges associated with SEPs (at a high-level) are:

- differences across jurisdictions regarding the meaning of FRAND reduces certainty for users of open standards;
- SEPs within open standards can effectively award monopolies to patent owners, the impact of which which can be unforeseen at the time of creation of the standard;
- open source software is good for competition and innovation, and therefore far more aligned to the goals of open standards than patented technology. In particular, the ability for all users of a standard to collaborate on the technology within that standard makes far more sense than leaving development in the hands of a patent owner.
- The avoidance of SEP's and associated royalties in FRAND licensing also allows for more innovation and new entrants to a market and makes standards more accessible to a diverse community and to SME's.

Whilst OpenUK's submission is focused on addressing challenges to incompatibility of SEPs and open source software through avoiding SEPs where possible, it acknowledges that this may not be feasible in all scenarios and it therefore welcomes the wider call for views on the government's treatment of SEPs at a time when a need for change is evident and when a similar exercise is being undertaken by the European Commission.

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