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Guidelines for Working Groups on Intellectual Property Issues

Status of this Memo

Copyright Notice

Abstract

This memo lays out a conceptual framework and rules of thumb useful for working groups dealing with Intellectual Property Rights (IPR) issues. It documents specific examples of how IPR issues have been dealt with in the IETF.

Table of Contents

1. Introduction

This memo lays out a conceptual framework and rules of thumb to assist working groups dealing with IPR issues. The goal is to achieve a balance between the needs of IPR claimants and the implementers of IETF standards which is appropriate to current times. As part of trying to distill out principles for dealing with IPR in IETF working groups, it provides case studies of working group IPR treatment. In other words, it documents the running code of the IETF process.

This memo does not describe IPR procedures for document authors or IPR claimants. Those are covered in two other memos, on submission rights [5] and IPR in the IETF [6]. Rather, this memo is for working groups that are trying to decide what to do about technology contributions which have associated IPR claims.

2. The Problem

Traditionally the IETF has tried to avoid technologies which were "protected" through IPR claims. However, compromises have been made since before the IETF was born. The "common knowledge" of the IETF, that IPR-impacted technology was anathema, has never recognized that the Internet has run on IPR-impacted technologies from the beginning. Nowadays the majority of the useful technologies brought to the IETF have some sort of IPR claim associated with them.

It will always be better for the Internet to develop standards based on technology which can be used without concern about selective or costly licensing. However, increasingly, choosing a technology which is not impacted by IPR over an alternative that is may produce a weaker Internet. Sometimes there simply isn't any technology in an area that is not IPR-impacted. It is not always the wrong decision to select IPR-impacted technology, if the choice is made knowingly, after considering the alternatives and taking the IPR issues into account.

The IETF is not a membership organization. Other standards-making bodies may have membership agreements that member organizations must sign and adhere to in order to participate. Membership agreements may include strict procedures for dealing with IPR, or perhaps a

requirement that technology must be licensed royalty-free. This is currently not possible in the IETF.

Even if the IETF had membership agreements, they would be difficult to formulate in a way that covered IPR issues, because the IETF's work includes technology from other sources and because the IETF collaborates with organizations that work with different approaches to intellectual property. The IETF can encounter four different IPR situations, at almost any time during the life of a document:

- A document submitter notes their (or their represented organization's) IPR claim regarding the contents of the document.
- A non-submitter IETF participant claims that the contents of a document are covered by their (or their represented organization's) own IPR.
- An IETF participant notes IPR that is claimed by an individual or organization with which neither an author of the document, nor the participant noting the IPR, have an affiliation.
- An individual or organization that does not participate in the IETF, but that monitors its activities, discovers that a document intersects that individual's or organization's established or pending intellectual property claims. It may come forward right away, or wait and let the IETF work progress.

In working group activities, the IETF does not have detailed rules for each situation. Working groups have essentially only one rule they can invoke -- about individuals not participating in activities related to a technology if they do not disclose known IPR. Beyond that a working group can only make recommendations and requests.

Since every case is unique, and there are close to no general rules, working groups need a great deal of freedom in dealing with IPR issues. However, some amount of consistency is important so that both contributors and users of eventual standards can know what to expect.

3. The Approach

The goal of this memo is not to make rules. The goal is to give working groups as much information as possible to make informed decisions, and then step out of the way. The other IPR working group memos [5][6] lay out what needs to be done once a particular piece of technology is selected as a working group draft. However, this doesn't help when a working group is trying to decide whether or not to select a technology in the first place. This third memo is

written to help in making that decision. We want to build a conceptual framework, a new set of "common knowledge", to make it easier for working groups to deal with intellectual property issues.

To do so, we first present "case studies" in Section 4 -- real events that have happened in recent years, and how different working groups dealt with them -- plus notes on possible lessons to be learned. In

Section 5, we expand on these lessons and try to extract general principles.

4. Case Studies

The best way to know what works in dealing with IPR is to look at past attempts to do so. The following are selected as cases from which general lessons might be extracted. Other lessons might be extracted from other cases, but the cases below cover the important ones.

4.1. PPP CCP and ECP

The PPP Working Group adopted technology for PPP's Connection Control Protocol and Encryption Control Protocol about which an IPR disclosure had been received. They indicated to the IESG that they believed the patented technology was the best approach, and was better than no standards at all.

At that time, under the policies documented in RFC 1602 [1] (the precursor to RFC 2026), progress on any standard was to stop at the Proposed Standard phase until specific assurances about licensing terms could be obtained from all IPR claimants. However, as described in RFC 1915 [3], in the case of PPP ECP and CCP, the IPR claimant balked at the requirement for specific assurances.

In the end, with support from the working group, the variance procedure described in RFC 1871 [2] was followed to grant an exception to the RFC 1602 requirements. If it had not been granted, the ECP and CCP standards could have been blocked permanently.

Lessons:

- IPR claimants, even when their intentions are good, may strongly resist being forced to make specific public statements about licensing terms. If explicit statements of licensing terms are required, then the publicly stated terms will probably be "worst-case", which would provide little useful information.

4.2. IPS WG (IP Storage)

The IPS (IP Storage) Working Group evaluated technology developed outside of the working group, "secure remote password" (SRP, RFC 2945 [7]). At the time, there was one known IPR claim, and the proposed licensing terms were apparently reasonable. SRP had become a proposed standard without going through any working group, so IETF participants may have been less likely to notice it in order to make statements about IPR. In any case, two more possible IPR claims were uncovered after the IPS working group had already decided to make SRP required. One of the possible IPR claimants did not make a strong IPR claim itself, and did not want to take the time to determine whether it actually had a claim, though it acknowledged it might have a claim. In both cases it was difficult to obtain concrete information on possible licensing terms, even though words like "reasonable" and "non-discriminatory" were used in the IPR statements. Rumors of what they might be like did not sound good. The working group participants took the claims, potential and otherwise, very seriously, and decided not to use SRP after all, even though they had already chosen it based on other criteria.

Lessons:

- IPR claims may appear at any time in the standards process.

- Take impreciseness seriously. Attempt to get clarification on both IPR claims and licensing terms.

4.3. PEM and PKI issues

The PEM (Privacy-Enhanced Mail) Working Group wanted to use public key technology. In the mid-90s, the basic principles of public key infrastructure had been patented for years. The patent holder had shown a tendency to actively enforce its rights, and to prefer software sales to licensing. This was seen as a significant potential issue, one which could possibly interfere with the easy deployment of Internet technology. However, there was no alternative technology that came close to its capabilities. Adopting an alternative would have damaged the standard’s usefulness even more than adopting a technology with IPR claims. The case was so compelling that the working group participants decided to move forward on standardizing it and even requiring it.

One factor which was noted was that the patents were mature, and would expire within a few years. That meant that although the patents might be significant to start with, they would not be in the long run. This lowered the perceived risk of using the IPR-impacted technology.

Lessons:

- IPR is just one issue in deciding whether to adopt a technology.
- IPR is not an all-or-nothing issue. There are different types and levels of IPR protection.
- The IPR's lifecycle phase can be a consideration.

4.4. VRRP (Virtual Router Redundancy Protocol)

The working group was standardizing VRRP based on a protocol developed outside the IETF. The IPR claimant supported that protocol and stated that it would license its IPR for that protocol if it became the standard, but not for the similar protocol the working group was developing. The working group participants decided to go ahead and standardize the protocol developed in the working group anyway. The IPR claimant has only claimed its patent when someone else claimed a patent against it. There is no evidence that the working group participants actually thought about the implications of the IPR claim when they went ahead with their choice of protocol.

Lessons:

- IPR claims should never be disregarded without good cause. Due diligence should be done to understand the consequences of each claim.

4.5. Secure Shell (SecSH)

This is primarily an unfinished trademark issue, not a patent issue, since the patent issue has been worked out outside of the IETF. The holder of a trademark wants the IETF to stop using "SSH" in the names and bodies of its proposed standards. The working group participants have thought through the details of the claims, and possible implications and risks, and decided to go ahead and continue using the names as they are now.

Lessons:

- Working group participants can evaluate IPR claims not only for their possible validity, but also for the risk of misjudging that validity. The impact of honoring the IPR claim may be major or minor.

4.6. IDN (Internationalized Domain Name)

The IDN Working Group dealt with a number of IPR claims. Several were made which did not overlap with the technology -- the IPR claimants said the patents were being announced just in case the working group decided to go that way. In one case, even though a patent was announced as purely defensive, many working group participants investigated the claims themselves. They concluded that it did not overlap.

In one case, an IPR claimant asserted that the working group's documents, and in fact the IETF as a whole, were infringing on its rights. Individual working group participants consulted with their legal advisers, concluded that the claims would not overlap the working group's developing technology, and decided that they need not be concerned about the claims. This was reflected in the direction the group as a whole decided to take.

In another case, patent claims were asserted that appeared to be derived from working group discussion, rather than vice versa (or independent discovery). The claimants were known to be following the working group's work when the ideas were proposed, and their patent filing was considerably subsequent to that time.

In 2000 the IDN Working Group discovered a patent that some participants thought might apply to one of their main drafts. If it did, it could affect their work profoundly -- to the extent that some suggested that if they could not work out reasonable licensing terms with the IPR claimant they might just disband. As a group and individually, participants corresponded with the IPR claimant in order to get an explicit statement of licensing terms, preferably royalty-free. By doing so they gained a better understanding of just which working group activities were seen as infringing on the patent, and at least some understanding of the IPR claimant's intentions and philosophy. Since the patent holder seemed to have an interest in using the patent for profit, the group discussed the issues on its mailing list. They overtly talked about how they could change their proposed technology to avoid having to contest the patent, and the extent to which the patent might be countered by claims of prior art. Meanwhile, individually they were talking to their legal advisors. Gradually, a collective opinion formed that the working group documents did not infringe on the patent. Since then, the patent has been ignored. However, they are keeping a watchful eye out for continuation patents which might have already been submitted.

Lessons:

- It's sometimes beneficial to push IPR claimants to find out what they think their claims cover and what their licensing terms are.
- Possibilities of prior art should be considered.
- It's all right, and sometimes beneficial, to discuss IPR claims and gather information about possible prior art on the group list. The results of such discussion can be considered when deciding whether to develop a technology (but remember that neither the IETF nor any working group takes a stand on such claims as a body, and the group is not the best place to get legal advice).

5. General Principles

Given the case studies above, there are a few principles that working groups can start with in dealing with IPR. Every working group needs to develop and follow its own consensus, and actual treatments will vary as much as they have in the past. However, every working group also needs to take IPR seriously, and consider the needs of the Internet community and the public at large, including possible future implementers and users who will not have participated in the working group process when the standardization is taking place.

5.1. Types of IPR

A primer on the different types of IPR would be large, unreliable, and redundant with other Working Group documents [4][5][6]. For informal exploration, see those documents and other relevant sources on the web. Readers with more serious concerns should consult their legal advisors. In the United States, briefly:

- Trademarks indicate the sources of goods. Service marks indicate the sources of services. They protect the use of particular marks or similar marks.
- Copyrights protect the expressions of ideas (not the ideas themselves), in almost any form, and allow "fair use". Copyrights expire but they can be renewed.
- Patents protect "inventions". They expire (utility patents expire after 20 years), but follow-on patents can cover similar technologies and can have nearly the same implications for use in the Internet as the original patents.

5.2. When to Think About IPR

This memo does not describe IPR procedures for document authors or IPR claimants. Rather, this memo is for working group participants who are trying to decide what to do about IPR claims related to their work. A working group as a whole needs to think about IPR issues:

- when examining a technology, and deciding whether to initiate work on it.
- when deciding whether to adopt a draft as a working group document.
- when choosing between two or more working group drafts that use different technologies.
- when deciding whether to depend on a technology developed outside the working group.
- when comparing different kinds of IPR protection.

At each of these times, the working group is strongly encouraged to solicit disclosure of IPR claims and licensing terms. A working group's job will be a lot easier if IPR details are discovered early, but it should realize that IPR claims may appear at any time. Working groups should anticipate that an IPR claimant might choose not to participate in the IETF, but instead to monitor from a distance while the relevant technology is being discussed and evaluated. A working group's knowledge of IPR claims may therefore depend upon when a claimant steps forward during the course of a working group's deliberations.

5.3. IPR as a Technology Evaluation Factor

How do you weigh IPR claims against other issues when deciding whether to adopt a technology?

The ultimate goal of the IETF is to promote the overall health, robustness, flexibility, and utility of the Internet infrastructure. We base architectural decisions on our long-term extrapolations of requirements by thinking in these terms. When considering a particular technology, we compare it with other technologies not just for its elegance of design in and of itself, but also for how it fits in the bigger picture. This is done at multiple levels. It is examined for how it fits into the overall design of the working group's output, how it fits into the particular Internet infrastructure area, how it fits with work going on in other areas, and how it fits in the long view of the Internet architecture.

Similarly, when evaluating a technology, working group participants consider IPR claims on it (including possible copyright issues with text describing it). The issue is not whether a particular piece of technology is IPR-impacted -- we use IPR-impacted technology every minute. The question is how much the IPR protection will limit the technology's usefulness in building a robust, highly useful Internet. Thus, the only significant questions are: is the IPR claim relevant, and what are the terms under which the technology can be used? When technology is free from IPR protection the answer is easy. When it is IPR-impacted, some licensing terms make the IPR issues insignificant compared to the engineering issues. Other terms can make a technology unusable even if it is perfect otherwise.

The problem with IPR as a technology evaluation factor is that it is unlikely that a working group, as an entity, can ever claim to have reached consensus on most IPR issues. The IETF as a whole, and a working group as a whole, takes no stance on the validity of any IPR claim. It would be inappropriate for a working group chair to declare that consensus had been reached that, for example, a company's patent was invalid. Individual participants will need to use whatever legal advice resources they have access to in order to form their own individual opinions. Discussions about the validity of IPR may take place under the auspices of the working group, in particular about relative risks of technology choices. Individual participants may take these discussions into account. The working group as a body may not take a stance on validity, but it may make choices based on perceived risk.

5.4. Patents versus Pending Patents Applied For

The IETF does not (cannot) expect IPR claimants to tell a working group specifically how they think a particular patent applies. If a patent has already been granted, the IETF can reasonably expect disclosure of the patent number and possibly the relevant IETF document sections, which will allow working group participants to explore details of the claims. If a patent has not yet been granted (or if knowledge of the patent is restricted, e.g., for security reasons), significantly less information is available. In most countries patent applications are published 18 months after they are filed, but in the USA that can be avoided if the applicant does not also file outside the USA. In some countries applications are a matter of public record, but details of pending claims can be modified at any time by the claim submitter before the patent is granted. It is not known before then what rights will actually be granted. Finally, rights can be contested in court, and nothing is final until the courts decide -- perhaps not even then. All the IETF

can expect regarding a pending patent is disclosure that it exists, the related IETF documents, and possibly the relevant IETF document sections and some statement about licensing terms.

5.5. Applicability: It's Hard to Prove a Negative

Working group participants must make their own decisions about what level of confidence they need as to whether IPR is applicable. However, perfect knowledge is not a worthwhile goal.

In general, a working group should strive to find out about all IPR claims related to technologies it is considering, and at least the general facts about licensing terms for each case -- for example whether the terms will be royalty-free, or perhaps "reasonable and non-discriminatory". Working group participants should also investigate possibilities of prior art which would counter the IPR claims. However, even if the working group participants do exhaustive searches, both externally and internally to their employers, it is impossible to prove that a particular technology is not covered by a particular IPR claim, let alone prove that it is not covered by any IPR claim. Anything a working group adopts may, in the future, turn out to be IPR-impacted, although the IPR claim may not be discovered until years later. Claims are open to interpretation even after rights are granted. Drafts can be very fluid, even up to the time of last call, and IPR issues may unknowingly be taken on at any time. Absolute certainty about IPR claims is rare.

However, the level of confidence needed to consider IPR when evaluating a technology is often not hard to get to. There are cases where risk is high (e.g., where licensing terms may be onerous) and thus a high level of confidence about applicability is needed, but history shows that most of the time "rough" confidence is good enough.

In all cases, licensing terms are a more significant consideration than the validity of the IPR claims. Licensing terms often do not limit the usefulness of the technology. It is difficult to be sure about the validity of IPR claims. If the licensing terms can be determined to be reasonable, then the IPR claims become much less important.

5.6. Licensing Terms

Licensing terms vary across a range from no license required at all to prohibitive. In general, working groups show a preference for technologies with IPR considerations in approximately the following order. This list does not constitute a rule, and every working group needs to take its own circumstances into account.

- License not required.
- IPR licensed with no restrictions.
- IPR licensed with no material restrictions, e.g., no trademark license required.
- IPR licensed for a particular field of use but with no other material restrictions, e.g., licensed solely for implementations complying with a standard.
- IPR licensed under royalty-free terms and reasonable and non-discriminatory restrictions.
- IPR licensed under reasonable and non-discriminatory restrictions. This may include payment of a royalty.
- IPR which is otherwise licensable.
- IPR which is not licensable, i.e., which is only available as an implementation.
- IPR which is not available under any conditions.

Many IPR claimants do not like to publish specific terms under which they will issue licenses. They may use standard terms for many licensees, but they prefer to negotiate terms for some. Therefore, do not expect any IPR disclosure statement to lay out detailed blanket terms for licensing.

If an IPR disclosure statement lists only vague terms, that doesn’t mean the terms that will be offered in individual licenses will be any worse than those offered if an IPR disclosure makes very specific statements. Obviously, if an IPR claimant refuses to suggest any terms at all, the working group is going to have trouble evaluating the future utility of the technology.

There is a class of restriction which involves "reciprocity", in which intellectual property may be licensed if the licensee is willing to license its intellectual property in return. The

specificity of such agreements can vary, and the same or similar terms may be required. Another potential licensing restriction is defensive suspension, where a licensor may revoke or suspend the license if the licensee asserts a patent claim against the licensor. For interpretation of any particular reciprocity or related issue, consult your legal adviser.

Words such as "reasonable", "fair", and "non-discriminatory" have no objective legal or financial definition. The actual licensing terms can vary tremendously. Also, IPR claimants have occasionally asserted that there were already sufficient licenses for a particular technology to meet "reasonable" multisource and competitiveness requirements and, hence, that refusing to grant any licenses to new applicants was both fair and non-discriminatory. The best way to find out what an IPR claimant really means by those terms is to ask, explicitly. It also helps to gather knowledge about licenses actually issued, for that technology or for others, and about other experiences with the IPR claimant.

Despite the fact that IPR claimants often don’t like to publish explicit terms, there are levels of vagueness, and individuals and even working groups can sometimes successfully push an IPR claimant toward less vagueness. Many employers of IETF participants know that the IETF prefers explicit terms, and do feel pressure to produce them.

If working group participants are dissatisfied with the confidence level they can obtain directly about licensing terms for a particular technology, they can possibly extrapolate from history. In order for licensed technology to become a draft standard, at least two independent licenses need to have been issued. If the IPR claimant for the technology the working group is considering has licensed other technology in the past, there is a record of the sorts of terms they are willing to grant, at least in those specific cases. This sort of thing is weak but everything counts, and it may be of some help.

In many jurisdictions that issue patents, inventors are required to file patent applications within 12 months of public disclosure or use of a novel method or process. Since many of these jurisdictions also provide for publication of pending patent applications 18 months after a patent application is filed, the ability to determine whether or not claims have been made at all relating to a particular technology increases 30 months (12 + 18) after the public disclosure or use of that technology.

5.7. Third-Party Disclosure of IPR Claims

It is good to notify the IETF of relevant IPR claims even when they are not one's own, and [6] says to do so "as soon as possible". However, anyone considering such a disclosure should do some preliminary exploration with the affected working group(s) beforehand (see Section 5.7.1). Third-party disclosure is a potential denial of service threat to the working group, and therefore it is good form to proceed slowly at first.

Working group participants should be aware that third-party disclosure can be used, knowingly or unknowingly, to defocus and distract the working group and hinder its progress. They should evaluate third-party disclosures accordingly. Working group chairs should be willing and able to discipline those they think are using the third-party disclosure system inappropriately. Those who think they are being unfairly blocked may take the matter up with the Area Directors and/or the IESG.

All of the criteria for evaluating IPR claims discussed in the sections above apply in the case of third-party disclosures as well, to the extent they can be practiced.

5.7.1. Third-Party Disclosure Advice

This subsection provides advice to those considering making third-party disclosures. While not required, the actions described here are encouraged to aid working groups in dealing with the possible implications of third-party disclosures. In evaluating what (if anything) to do in response to a third-party disclosure, a working group may consider the extent to which the discloser has followed this advice (for example, in considering whether a disclosure is intended primarily to defocus and distract the working group).

In general a potential discloser should exchange mail with the working group chair(s) first, to open the way for discussion. Also, if the potential discloser is not sure if the IPR claim applies, this is the time to reach some kind of agreement with the working group chair(s) before saying anything publicly. After discussion with the working group chair(s), the potential discloser should bring the issue to the attention of the working group, and to the attention of the IPR claimant if doing so is not too difficult. Such discussion should help the potential discloser to become more sure, one way or the other. If the potential discloser is sure the discovered IPR claim applies, and the IPR claimant does not submit a first-party disclosure itself, then the potential discloser is encouraged to submit a third-party disclosure.

Intellectual property often applies to more than one working group. A person thinking of making a third-party disclosure should consider what other working groups might be affected, and communicate with them in the same manner.

Don't bring up IPR issues that are unrelated to the areas where the working group is focusing at that time. Don't bring IPR claims to the working group's attention just in case they might be relevant in a few months, but only if they have implications for current work. Messages to the working group list should be substantive, and a single message should focus on a specific issue. They can reference multiple claims or patents related to that issue.

6. Security Considerations

This memo relates to IETF process, not any particular technology. There are security considerations when adopting any technology, whether IPR claims are asserted against it or not. A working group should take those security considerations into account as one part of evaluating the technology, just as IPR is one part, but they are not issues of security with IPR procedures.

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10. Full Copyright Statement

Intellectual Property

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