Response to IEEE Standards Association Board of Governors Request for Public Comments

Submitted October 15, 2021

Option i: No Change to the Text of the IEEE-SA Patent Policy

Pros:

Cisco engineers regularly participate in standards development at IEEE-SA, across a range of working groups. Cisco has been a leading contributor to 802.1 (network security), 802.3 (Ethernet), and 802.11 (Wi-Fi), among numerous other IEEE-SA Working Groups. Cisco engineers also regularly participate in a wide variety of other standards development organizations across computing, networking, rich media, and telecommunications. Those organizations vary in formality and in the IPR policies they use.

Cisco thanks the BoG for the opportunity to share our views with the BoG and the broader community of participants in standards development at IEEE.

Cisco was a strong proponent of the 2015 Patent Policy Updates. As many BoG members will recall, the 2015 Patent Policy Updates were approved following super-majority votes at multiple levels within the Standards Association and at the IEEE Board of Directors, and in the face of aggressive lobbying by opponents (see, for example, the website www.advancingengineering.org) as the Updates were discussed at different levels within the Standards Association and, ultimately, by the IEEE Board of Directors. The companies that opposed the 2015 Patent Policy Updates, most of which have business models reliant on patent licensing, responded to the decision to approve the 2015 Patent Policy Updates with an ongoing campaign to attack the process that led to the adoption of the updates and to disparage IEEE-SA.

Part of the campaign to disparage IEEE-SA has been the creation of a false narrative that the 2015 Patent Policy Updates have led to less innovation within IEEE-SA. The facts introduced to support this narrative invariably focus on the increased use of "negative LoAs", particularly in relation to IEEE 802.11. This line of argument is misleading in a number of respects:

- First, we should recognize that this argument is an exercise in circular reasoning. The same small group of companies both submit negative LoAs and point to the negative LoAs they submit as "proof" that the 2015 Patent Policy Updates have deterred "innovators" (a category in which they implicitly include themselves and exclude companies that do not have the same business model they do) from licensing patents under the updated policy.
- Second, even a casual review of LoAs submitted in relation to IEEE 802.11, IEEE 802.3, and other IEEE standards reveals that the great majority of participants take advantage of the option under the IEEE-SA Patent Policy to provide LoAs that do not identify specific patents. Just looking at LoAs submitted in connection with IEEE 802.11 since March 15, 2015 reveals

numerous blanket LoAs that commit to license essential patents, submitted by (among others) Apple, Broadcom, Cisco, ETRI, Intel, Korea Telecom, Mediatek, and NXP. Focusing the analysis of LoAs covering IEEE 802.11 to just negative LoAs, submitted by a small group of companies with business models based on patent monetization, biases the sample in a way that no responsible engineer would permit in any technical analysis he or she submitted to support a technical contribution made to the Standards Association.. Companies with patent licensing models, the same companies that opposed the 2015 Patent Policy Updates, have submitted a variety of LoAs refusing to license. Their refusal to license says nothing about the behavior of the many other participants in the IEEE 802.11 WG, to say nothing of the interests of most implementers of Wi-Fi. Of course, once we move beyond Wi-Fi, to other families of LAN/MAN standards, the number of negative LoAs submitted is near zero. Notably, there is not a single negative LoA in relation to IEEE 802.1, a fundamental standard that describes core networking technologies implemented across both terrestrial and wireless networks.

- Third, the "research" attempting to link negative LoAs with a purported decline in "innovation" in the IEEE 802.11 WG is opposed by rigorous analyses showing the opposite. Notable in this regard is a 2019 report from IPlytics that finds, among other things, that "[t]he number of technical contributions submitted in IEEE 802 working groups has continued to increase since the IEEE patent policy updates, and was in 2018 at the highest level in IEEE's history." https://www.iplytics.com/wp-content/uploads/2019/01/IEEE-contribution-anaylsis_IPlytics-2019.pdf (at page 2).

More generally, academic literature examining the impact of changes to IPR policies on participation or contributions has not shown a strong effect one way or the other. For example, reviewing the impact of a 2007 change to the patent policy at the VME Bus International Trade Association (VITA), a standards development organization active in the area of computer bus technology, Professor Jorge Contreras surveyed participants at VITA and found that more than 80 percent found the reforms to the policy, which included mandatory *ex ante* disclosure of maximum licensing terms, helpful. Jorge Contreras, *Technical Standards and Ex Ante Disclosure: Results and Analysis of an Empirical Study*, 53 Jurimetrics 163 at 193 (2013) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2249926). Professor Contreras concluded that the predictions of participants at VITA that adoption of the *ex ante* disclosure requirement would harm innovation at VITA had not come true.

Similar predictions made by opponents of the 2015 Patent Policy Updates have also proven inaccurate. Following the February 2015 vote of the IEEE Board of Directors approving the 2015 Patent Policy Updates, opponents of the Updates predicted (on www.advancingengineering.org) that the Updates would "undermine the incentives to invest in R&D and participate in IEEE standardization." To the contrary, the period since 2015 has seen increasing membership in IEEE-SA's Corporate Advisory Group and a steady increase in new Project Action Requests (PARs) submitted to initiate standardization projects. Unlike critics of the 2015 Updates, we would not presume to say definitively whether the Updates are or are not responsible for the increasing popularity of the IEEE-SA as a forum to create new standards. What we can say is that, more than six years later, predictions made by opponents of the 2015 Patent Policy Updates that they would cause innovators to flee the IEEE-SA's standardization activities have been proven wrong.

If any negative effect on innovation could be discerned, the place where one would expect to see it is IEEE 802.11, where the negative LoAs opponents of the 2015 Patent Policy Updates have submitted

have been concentrated. Yet the period since the 2015 Updates has seen the launch of a highly innovative new Wi-Fi standard, IEEE 802.11ax (also known as Wi-Fi 6) that contains numerous technical advances and is (not coincidentally) enjoying widespread adoption. The Wi-Fi Alliance predicts that over 3.5 billion Wi-Fi 6 compliant devices will ship in 2022. www.wi-fi.org/beacon/the-beacon/wi-fi-6-shipments-to-surpass-52-billion-by-2025. Despite the unfortunate recent efforts of companies hostile to the success of Wi-Fi (perhaps not coincidentally, many of the same companies that opposed the 2015 Updates) to hinder IEEE 802.11ax's ratification by ISO/IEC, the standard enjoys widespread support from key industry stakeholders.

More generally, looking at the broader world of collaborative technology development inside and outside formal standards development, more and more fundamental standards development work is happening in open-source based groups that have gone beyond the effort to define RAND reflected in the 2015 Patent Policy Updates to require royalty-free licensing. In addition, the pervasive adoption of royalty-free standards in areas like cable broadband (DOCSIS), web services (HTML), personal area networking (USB and Bluetooth) and datacenter computing (Kubernetes, Prometheus, Kafka, and other projects) should suggest that the availability of royalty-based patent licensing is hardly necessary for innovation. Given the proliferation of royalty-free standards development beyond IEEE-SA, it is difficult to argue that anything in the 2015 Patent Policy Updates harmed innovation at IEEE-SA. Rather, the scale of innovation happening today in collaborative development efforts governed by IPR policies that go far beyond the 2015 Updates in limiting royalty-based licensing suggests that the IEEE-SA must maintain its future relevance by providing a hospitable forum for open-source standards development using Apache 2.0 and other widely recognized open-source licenses. That work that is far more advanced at IEEE-SA than it is at, for example, ETSI.

We hope the discussion above is helpful to the BoG as it considers whether it should reverse a decision that was taken with super-majority approval by IEEE-SA PatCom, IEEE-SA Standards Board, IEEE-SA BoG, and the IEEE Board of Directors, and thus reward a small number of loud critics who continue to question the benefits of the 2015 Patent Policy Updates to IEEE-SA and to participants in IEEE-SA standards development. As a company that implements numerous IEEE-SA standards in the products we make, we value the increase in transparency and predictability of royalty expenses that the 2015 Patent Policy Updates have brought. We will further address specific benefits of the Updates in more detail in other parts of our response. For now, we will conclude by noting our continued and strong support for the 2015 Patent Policy Updates. They continue to make the IEEE-SA a better place for Cisco to join our industry peers to create innovative standards.

Cons:

The only disadvantage that we can see from the BoG's decision to retain the 2015 Patent Policy Updates is that a small group of companies that refuse to reconcile themselves to the Updates will continue to take advantage of the possibility provided in the current Letter or Assurance form to submit LoAs in which they decline to license patents that they own.

Given the likelihood that opponents of the 2015 Patent Policy Updates will continue to use negative LoAs, the BoG should carefully consider whether the Standards Association should initiate discussions to modify the Patent Policy to limit the availability of negative LoAs by adopting common-sense rules changes that would move the IEEE-SA Patent Policy closer to patent policies used in numerous informal standards development organizations. One example would be a prohibition on the use of negative LoAs

to refuse to license any Patent Claim that is essential to implement a contribution that the negative declarant makes or causes to be made. The BoG may also consider requiring negative LoAs to be made before a particular point in time in the development of an IEEE-SA standard, so that working group participants have the benefit of knowing early in the standards development process that a particular patentee is planning to refuse to license patent claims it owns.

Please provide comments regarding the ongoing use of the Custom LoA form under this option

No further comments.

Option ii(a): Remove all of the Patent Policy provisions regarding Prohibitive Orders

Pros:

None. Cisco does not support removal of the provisions in the current Patent Policy that limit the availability of Prohibitive Orders to patentees claiming to own Essential Patent Claims.

Cons:

We begin with what we hope is an uncontroversial point: by submitting an LoA to IEEE-SA, unless it selects option 1(d) in the current approved Letter of Assurance form, the declarant is committing that it will make Essential Patent Claims available for license. As was noted by the US Department of Justice in its 2015 Business Review Letter concerning the 2015 Updates,

"a patent holder that makes a RAND commitment agrees that licensing its essential patent claims on reasonable rates and other reasonable terms and conditions is appropriate compensation for their use in implementing the standard. Inherent in such a RAND commitment is a pledge to make licenses available to those who practice such essential patent claims as a result of implementing the standard-in other words, not to exclude these implementers from using the standard unless they refuse to take a RAND license."

2015 Business Review Letter at page 9 (available at https://www.justice.gov/atr/page/file/1386871/download).

Participants in standards development at IEEE-SA and implementers of IEEE-SA standards rely on the commitment to license in making decisions whether to participate in standards development at IEEE-SA and whether to implement IEEE-SA patents. It would be unwise to implement an IEEE-SA standard if any of the dozens of entities that submit positive LoAs could nevertheless seek to prevent the continued sale of a product that implements an IEEE-SA standard. It would also be unwise to implement an IEEE-SA standard if any of those patentees could seek to coerce the would-be implementer into paying royalties based on the total cost it would avoid by not having to abandon a product (for example, a smartphone, or a complex networking device, or even a motor vehicle) it had spent millions or billions of dollars to develop because it was prevented from selling that product because a court or agency had issued a Prohibitive Order.

These are the principles that explain the limitation on the use of Prohibitive Orders in the 2015 Patent Policy Updates. The participants in the drafting process that supported limiting availability of injunctions well understood that patentees claiming to own Essential Patent Claims had sought to enjoin distribution of products implementing IEEE 802.11 and other IEEE-SA standards. Indeed, during the internal discussions that led to the 2015 Patent Policy Updates, Cisco and other Wi-Fi implementers were litigating a case involving a Patent Assertion Entity called Innovatio that had acquired patents that it claimed were essential to IEEE 802.11. Innovatio contacted end users of Wi-Fi, for example hotels and coffee shops that offered Wi-Fi services, and threatened to sue them and seek an injunction unless they paid several thousand dollars per Wi-Fi access point. Cisco and other Wi-Fi access point vendors intervened in the case, and Innovatio was ultimately awarded less than one tenth of one percent of the amount it sought to extort from Wi-Fi users. *In re Innovatio IP Ventures, LLC Patent Litigation*, 956 F. Supp. 2d 925 (N. D. Ill. 2013). Earlier, a non-practicing entity had successfully persuaded a US District Court judge to enjoin the implementation of Wi-Fi by the defendant in a patent infringement case. *Commonwealth Scientific Industrial and Research Org. v. Buffalo Technology, Inc.*, 492 F. Supp. 2d 500 (E.D. Tex. 2007).

The Justice Department also recognized that the limitations on Prohibitive Orders contained in the 2015 Patent Policy Updates were consistent with the position that US courts, then and now, were taking as they were called upon to decide cases brought by patentees claiming to own patents they had voluntarily committed to license when they participated in standards development. For that reason, the Justice Department wrote, the limitations contained in the 2015 Patent Policy Updates "will not be significantly more restrictive than current U.S. case law" (2015 Business Review Letter at page 10). As the Justice Department noted, patentees remain entirely free to seek reasonable royalties for patent infringement.

Removing the limitations on Prohibitive Orders contained in the 2015 Patent Policy Updates would return IEEE-SA, and implementers of IEEE-SA standards, to a time when they were susceptible to being held up by patentees, often, at least in Cisco's experience, by companies like Innovatio that had purchased or received patents from participants in IEEE-SA standards development. There is no reason for IEEE-SA to take that drastic step.

Please provide comments regarding the ongoing use of the Custom LoA form under this option:

The use of negative LoAs to evade the limitations on Prohibitive Orders contained in the 2015 Patent Policy Update is a concern that IEEE-SA should address by limiting the availability of negative LoAs, as discussed in our response to Question (i).

Option ii(b): Remove all optional factors included in the definition of Reasonable Rate

Pros:

None. Cisco does not support removal of the optional factors set out in the definition of "Reasonable Rate" in Section 6 of the IEEE-SA By-Laws.

Cons:

We first note that the factors identified in the three bullets contained in the definition of "Reasonable Rate" are recommended, not mandatory. The language introducing the bullets says that the determination of what a "Reasonable Rate … should include, but need not be limited to" the points identified in the three bullets. The use of the word "should" implies that this is IEEE-SA's recommendation, but is not a requirement. While Cisco would have preferred that at least the first two bullets had, in fact, been made mandatory, this was one of a number of places in which proponents of the 2015 Patent Policy Updates compromised with opponents. Another compromise was the inclusion of the last bullet, which permits the use of comparator licenses, subject to some restrictions.

We believe that each of the three bullets should be retained. As to the first bullet, like the limits on the use of injunctions in the text on Prohibitive Orders, discussed in our response to Question ii(a) of this Request for Comments, the limitation of the value of the patented invention to what additional value it contributes to the smallest salable patent-practicing unit is consistent with current US law on patent damages. As the US Court of Appeals for the Federal Circuit, the appeals court primarily responsible for patent cases, wrote in 2014, when damages are awarded for infringement of the claims of a patent, and infringement occurs "in one component of a multi-component product, it is the exception, not the rule, that damages may be based upon the value of the multi-component product." *VirnetX, Inc. v. Cisco Systems, Inc*., 767 F.3d 1308, 1326 (Fed. Cir. 2014). In that case, the Federal Circuit not only reaffirmed the default rule that damages be based on the "smallest salable patent-practicing unit" (SSPPU) but also noted that allocation of the SSPPU was appropriate where the SSPPU was itself "a multi-component product containing several non-infringing features with no relation to the patented feature." Id. at 1327.

It is the nature of product design in technology for more and more functions to be integrated into smaller and smaller products. So a Wi-Fi access point may implement hundreds or thousands of inventions reflected in hundreds or thousands of essential patents. The wisdom of the SSPPU language contained in the first bullet of the optional text in the definition of "Reasonable Rates" is that it focuses the analysis of what royalty is reasonable on the component in the Wi-Fi access point that implements the invention the patentee owns. It thus helps prevent over-rewarding patentees for innovations that they did nothing to create, namely the potentially many, many innovations other than the patentee's essential patent that may be included in the same device. Innovation should certainly be rewarded, but the effect of awarding damages based on something other than the SSPPU is to unjustly enrich patentees by awarding damages for inventions someone else created. The first bullet strikes a thoughtful balance between rewarding patentees for the innovations they provide and preserving the ability to implement IEEE-SA standards.

Turning to the second bullet, it is intended to address the problem of "royalty stacking", the phenomenon of multiple patents that are alleged to be infringed by implementation of the same standard or standards, leading to a royalty stack that is inconsistent with implementation of a standard in a product that consumers will be able to afford. The problem of royalty stacking is heightened by the decentralized nature of patent litigation, in which multiple patents describing inventions practiced in the same standard or product may be asserted against an implementer over time, with no coordination between the different patentees and no single authority, such as a judge, keeping track of the multiple damages that the implementer may be required to pay to the different patentees.

In that system, every patentee has an incentive to describe the patent it owns as critically important, when, in truth, not all patents describe fundamental inventions. As different patents claimed to be essential to the same standard are asserted, and implementers enter into multiple RAND licenses, this raises the risk that the result of the individual profit-maximizing decisions each patent licensor makes will, taken together, result in a "stack" of royalties that is inconsistent with the implementation of an IEEE-SA standard in a product that consumers can afford.

As leading academics have recognized, concerns with royalty stacking reflect nothing more than the application of classic microeconomic theory to royalty-bearing licensing where multiple licensors owning patents essential to the same standard seek to license those patents to the same implementer. See, for example, a chapter co-written by Nobel laureate Jean Tirole and Harvard Business School Professor Joshua Lerner titled "Public Policy Toward Patent Pools" in the National Bureau of Economic Research publication *Innovation Policy and the Economy* (2008) (available at https://www.nber.org/system/files/chapters/c5304/c5304.pdf. The phrase used in the second bullet in the definition of "Reasonable Rates", "in light of the value contributed by all Essential Patent Claims", is a reminder to courts to consider stacking concerns as they award damages to each individual patentee, so that the sum of all royalties the maker of the SSPPU must pay does not come to comprise so large a share of the price of the SSPPU that the implementer finds it economically irrational to continue selling it.

As noted previously, the inclusion of the third bullet reflected a compromise with opponents of the adoption of the 2015 Patent Policy Updates, who sought to permit the unbounded use of comparator licenses, reflecting the resolution of past licensing disputes, even those that reflected the use of Prohibitive Orders like injunctions issued by US or non-US courts or the exclusion of products from the US by the International Trade Commission. Recognizing that courts regularly use the results of past license negotiations as a guidepost for the resolution of new disputes, proponents of the 2015 Patent Policy Updates agreed to the use of comparator licenses, but with the caveat that only comparators where the accused infringer was not coerced into a super-competitive settlement by the threat of a Prohibitive Orders would be valid. This caveat was intended to prevent the de facto resurrection of Prohibitive Orders in contravention of the text in the 2015 Patent Policy Updates limiting their use by permitting them to serve as benchmarks for the resolution of new disputes. The need for that safeguard is just as clear today as it was in 2015.

Text for "Please provide comments regarding the ongoing use of the Custom LoA form under this option"

Please see previous responses.

Option iii: Offer more options than before by: Allowing an LoA filer the ability to choose whether it may seek or not seek Prohibitive Orders in accordance with the current wording of the Patent Policy; and clarifying the optionality of the factors included in the definition of Reasonable Rate

Text for Pros:

None. Cisco does not support the creation of the options discussed.

Text for Cons:

For the reasons discussed in our responses to Questions i, ii(a) and ii(b), Cisco believes that the current IEEE-SA Patent Policy reaches the right balance between the interests of patent monetizers in securing a fair return on the investment they make and the interests of implementers of IEEE-SA standards in transparent and predictable licensing costs that are consistent with bringing products that implement IEEE-SA standards to the consumers that want them. As to permitting participants to "opt out" of the restrictions on the use Prohibitive Orders, we have already explained why those restrictions offer valuable protections to implementers who might otherwise be subject to exploitation by patentees that use the threat that they will prevent the sale of products as a way to gain bargaining power in licensing negotiations. As to "clarifying the optionality" of the three bullets in the definition of "Reasonable Rates", that language is understood today to be a suggestion to courts called upon to resolve licensing disputes involving patents claimed to be essential to implement IEEE-SA standards, not a requirement.

As we have pointed out earlier in this response, the "problems" that some have claimed are raised by the 2015 Patent Policy Updates are not inherent to the Updates themselves, but instead reflect the unwillingness of some participants in standards development at IEEE-SA to conform to the decision of the majority, indeed the super-majority, of those involved in the review and approval of the 2015 Patent Policy Updates at multiple levels within IEEE-SA and, ultimately, by the IEEE Board of Directors. In addition to making specious allegations regarding the process that led to the 2015 Patent Policy Updates (allegations that were conclusively rejected by the Justice Department in the 2015 Business Review Letter, though that has not stopped opponents of the 2015 Updates from continuing to pose baseless charges that the process was unfair), those companies have expressed their continued opposition by filing negative LoAs, availing themselves of an option that is provided under the current Patent Policy. Given that option, today they have no need for additional "opt-outs", and providing such opt-outs would move IEEE-SA further from the goals of transparent and predictable patent licensing outcomes that motivated the proponents of the 2015 Patent Policy Updates. Indeed, as noted in the response to Request (i), it is time for IEEE-SA to consider whether to continue to make available the "negative LoA" option in the form in which it exists today.

Text for "Please provide comments regarding the ongoing use of the Custom LoA form under this option"

We have no further comments. We thank the BoG for its interest in Cisco's views. We would, of course, welcome the opportunity to discuss any questions BoG members have regarding any of our comments.