Essential Patent Blog

The Source for Standard-Essential & Other Patent Litigation Issues

FTC v. Qualcomm: Part One–Where is Denzel?

By David Long on February 7, 2019

This is the first of a couple posts we intend to make on the FTC v. Qualcomm litigation that recently concluded a bench trial last week and is awaiting decision by Judge Koh in the Northern District of California (San Jose Division) federal court. This case occurs at a historical point of opportunity and transformation brought by the opening stages of the 5G communication revolution. The theories and targets of the FTC case have caused many to raise concerns about how the case will cause upheaval in long-established industry licensing practices as well as national security concerns about the United States leading the 5G revolution.

This first post will provide background and set the stage for why you may care about what is going on in this case and U.S. innovation law generally. The next post in the series will discuss developments in the FTC v. Qualcomm case itself that led up to and molded the parties' presentation at trial. This will be followed by a post discussing the bench trial. And, of course, the final post will discuss Judge Koh's decision when it issues (guesstimate about four to six weeks from now).

This first post admittedly will mix both objective discussion and opinion that departs from the typical objective case analysis that is our core goal and strength (our last post like this was our **May 2, 2013 post** "The Patent Forest" during legislative efforts that threatened to harm the U.S. patent system). As always, we recommend reading for yourself the sources we cite and other sources to determine whether this is something we all should care about or just a tempest in a tea pot. But perhaps you too will find this is not your typical case and you too may wonder: **"Where is Denzel?"**

Background on Standard Essential Patents

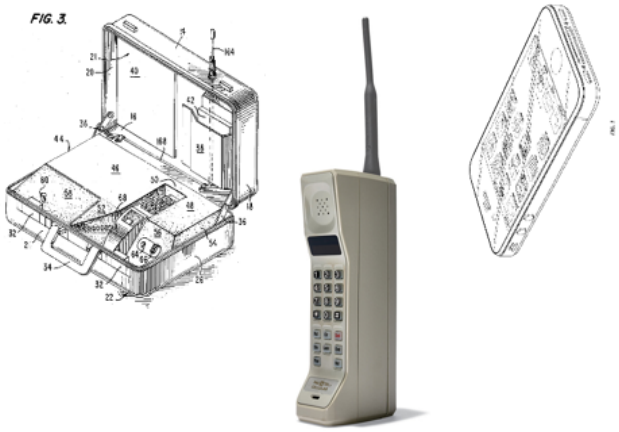
Following is a summary of technical standard setting, standard essential patents, licensing and other issues that underlie the FTC v. Qualcomm case.

What is a Technical Industry Standard?

In its most simplistic form, a standard is an agreed upon way of doing things among several people to facilitate a smoother interaction between them. For example, we may set a standard unit for measure for doing transactions or computations – e.g., measure distance in hands, yards, meters, miles, etc. In some cases, people are choosing between several simple, well-known options with little, if any, innovation involved. For example, people may agree to drive on the left side of the road or right side of the road. Either may work equally well, but we agree on a specific side of the road so that cars do not crash if drivers simply drove on whatever side they felt like.

In a technical industry standard, those in related areas of industry may form a voluntary standard setting organization (SSO) to develop technical standards that will increase the compatibility of devices made be different companies in that industry. For example, an SSO may consider many existing options and agree upon the shape of a wall plug and socket so that blow dryers and televisions made by different companies can plug into wall sockets made by different companies. This is technical standard setting in its simplest form.

But standard setting also occurs in a higher form where, rather than selecting between equal known options, new technology is created or "developed" (what occurs in what some call a standards development organization or SDO). In the wireless communication industry, for example, SDOs seek to develop technology that does not currently e



xist in order to create the next generation of wireless technology—e.g., 1G, 2G, 3G, 4G and now 5G wireless communication. This has been highly successful in the wireless industry where mobile phones have transitioned from bulky suitcase-sized devices owned by the elite few that could only do phone calls (and not very well) to pocket-sized personal data assistants owned by everyday people that are used more to do amazing data-intensive services than simply make phone calls.

An SDO will have many participants in a related industry that have different roles in developing or setting the standard. Some companies take huge risks in investing money, time and resources to create innovative technologies to propose for the next generation of wireless systems and technical standards, which is risky because not all technical designs and proposals are adopted. These are sometimes called the Innovators and patents covering their innovations that are adopted into the standard are called standard essential patents (SEPs). Other companies do not develop the technology, but are interested in setting a standard with technology that best matches there interest in implementing the standard in a product or service. These are sometimes called the Implementers. Many (perhaps most) SDO participants are some mixture of both Innovator and Implementer, but at the end of the day a particular company usually leans more on the Innovator or Implementer side.

Most SEP disputes concern standard development in creating new technologies, because the effort to create the next generation of technology naturally leads to

innovations and patents thereon. In contrast, SEPs typically do not arise from simple standard setting of just choosing between two equal and already existing alternatives.

The most prominent and influential SDO for mobile wireless communications is the European Telecommunications Standards Institute (ETSI), which has overseen development of generations of mobile wireless standards, including 5G. Hundreds of companies participated in developing the mobile wireless standards, but only a small number of them serve as the R&D arm of the industry to actually develop and make technical contributions to the wireless standards. That's not to say that the other companies are not innovators in other areas, its just that they either do not innovate in the wireless area or they have chosen not to submit their innovations to a standards body so that others may use them. Apple, for example, is no doubt an innovator with hundreds of patents, but not in the foundational wireless technologies of the wireless standards. Estimates are that Apple made a little over a hundred technical contributions to the 3GPP mobile wireless standards as compared to tens of thousands of contributions made by each of Qualcomm, Nokia, Ericsson and Huawei. Some say that Apple tends to keep its innovations proprietary to sell at premium prices, rather than invest in developing and contributing technology that others may use (ask anyone who has paid over $20 for a special Apple cord to charge their iPhone that was not compatible with the prevalent and inexpensive USB standard cords used by other mobile phone manufacturers).

What is a FRAND Commitment?

The term FRAND stands for "fair, reasonable and non-discriminatory" and is often used by SDOs to describe terms and conditions that a patent owner may agree to in licensing its standard essential patents (SEPs) under an SDO's intellectual property rights (IPR) policy. Under U.S. law, the essence of the patent right is the right to exclude and a patent owner generally can refuse to license its patents (there is no compulsory licensing in the U.S., unlike in some other countries). The patent owner can decide not to license the patent at all, can limit to whom it is willing to license the patent, and can set whatever terms they want for the license.

1990 Trabant

1990 BMW

Given that fundamental patent right to exclude, SDOs considered how to address concerns that a patent owner may charge unreasonable royalty rates if their patent covers the standard—i.e., concern about what's often called "patent holdup." One way to avoid that concern would be to avoid using patented technology in the standard or only use technology that the patent owner is willing to give away for free. But how good would such a standard be if it did not have valuable innovations? SDOs don't want to simply burn effort to develop a standard they hope will be widely adopted; they want their efforts to produce a standard that is **worthy** of widespread adoption. And that requires incentives and rewards to participants to take risks, make investments and develop patented innovations to contribute to the standard. Sure: We could and would have standards without valuable innovations, but would we want them? East Germans had cars—the Trabant—but the superior cars that the world wanted to drive were on the other side of the wall developed in a system that rewarded the risk takers and investors in innovation.

Rather than drive a Trabant, SDOs welcome premium innovations and address patent holdup concerns by asking its participants to disclose whether they have patents that may cover the standard and, if so, whether and on what terms they would be willing to license the patent—e.g., FRAND. A FRAND commitment, therefor, does not raise patent holdup concerns, but addresses it. If the licensing terms for an SEP with a FRAND commitment are fair, reasonable and non-discriminatory, then there is no holdup; if the licensing terms for that FRAND committed SEP are not fair, reasonable and non-discriminatory, then there may be a

remedy for breach of contract such that there still will be no holdup. In sum, there could be patent holdup for an SEP where the patent owner maintains its full patent rights to exclude because it has no standard-setting commitment. But the FRAND commitment imposes enforceable contractual limits to resolve the patent holdup concern.

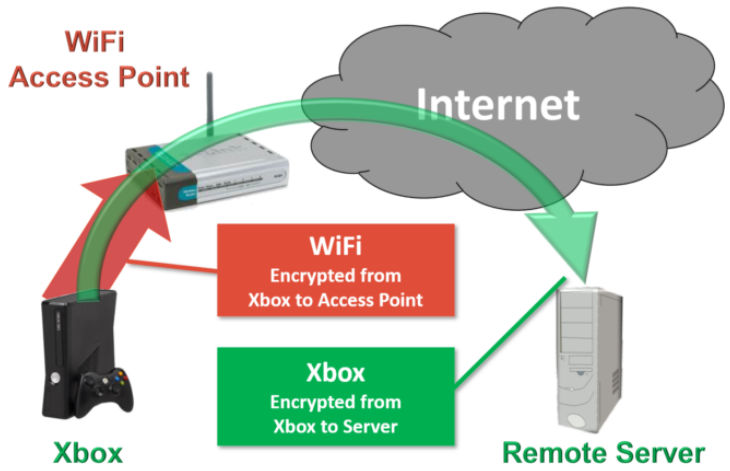
Who to License?

Who to license and under what terms is one of the current hot topics and a subject of the FTC v. Qualcomm litigation—e.g., grant a license based on the "end product", a "component" in the end product or elsewhere. Wireless communication standards involve technology that is implemented at many different levels and portions of the wireless system. Most people are familiar with the mobile phone part of the wireless system. But that's just the tip of the iceberg. The mobile phone will communicate with cell phone towers (or "base stations") that involves many complex technologies. If someone is using the mobile phone in a car and driving past the range of one cell phone tower, there are complex processes executed by the mobile phone and cell phone towers for "handing-off" the communication between the phone with that one tower to a closer tower. And there is prioritization of traffic between a cell phone tower and the many other mobile phones that it is in communication with to maintain balance and optimize communications with all mobile phones as a whole. Wireless communication to a single phone is relatively easy, but not very beneficial if there were only one phone in the world. The magic resides in communicating with a massive amount of differing communication needs from the extraordinary number of mobile devices that exist today.

The cell phone tower also communicates with other network infrastructure so that calls, video streams or other data communications are exchanged with the person who is being called, website being accessed, etc. So patented technology for implementing a standard often is not limited to just a single component in a mobile phone or elsewhere, but involves technology that is intertwined and distributed throughout the system. Innovative patented technology spanning a system may, for example, have a mobile phone transmit/receive data a certain way or at a certain time to the cell phone tower that is executing some of that patented technology to receive/transmit data. The cell phone tower is communicating with further

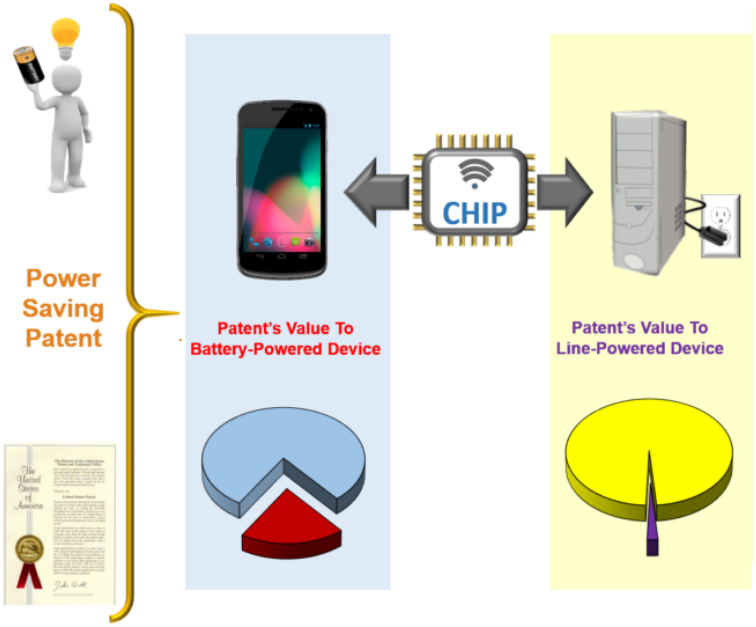
equipment implementing other parts of the technology to make the entire system as a whole functions efficiently in dealing with innumerable mobile phones. Looking at a mobile phone in your hand and saying "This is the whole standard" would be like looking at your hand itself and saying "This is the whole person." It all operates together as a complete system.

So there typically is not a single component of the entire network one can point to and say "That's where the invention resides." The general norm in licensing patents in the wireless industry is to license the end product (the mobile phone) where benefits from use of the invention typically is realized. This is consistent with damages awards under the patent statute that are required to be "no less than a reasonable royalty for the **use** made of the invention." How an invention is **used** often depends on the ultimate end product. In the context of SEPs, for example, Judge Robart ruled that patented encryption in the WiFi standard had little value to Microsoft's Xbox even though it implemented the standard. The WiFi signal was encrypted using the patented technology for transmissions between the Xbox and a nearby WiFi access point. But the Xbox had its own encryption technology so that the signal was encrypted before WiFi transmission so that it was encrypted all the way to and through the WiFi access point and through the Internet until it reached and was unencrypted by a remote server. So the patented encryption in the WiFi standard had little, if any, value to the Xbox that used its own encryption.

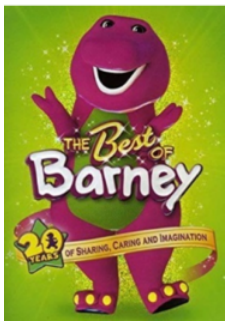


In some instances, a chip (i.e., component) may implement a significant part of the portion of the standard performed by the mobile phone (i.e., the end product). Consider, for example, patented technology in a wireless standard that reduces the power consumed by the transmitter and receiver of the end product (e.g., perhaps a protocol that allows the transmitter and receiver to be turned-off for longer periods

of time). A chip implementing that patented protocol may be used in either a battery-powered mobile device (e.g., mobile phone) or a line-powered stationary device plugged into a wall (e.g., a desktop computer). Power savings is crucial for mobile devices, so the patented technology has substantial value to the battery-powered device. But power savings is not crucial for the desktop device that's plugged into the wall, so the patented technology has little, if any, value to that device.



Considering the value of the patented technology in a standard to the end product device will be even more acute in our 5G future where the same components and patented technology may be used in different end products. A wide variety of end product devices will use 5G wireless communication and each will benefit differently from that standard and the patented technology therein. Consider, for example, patented technology that reduces lag time in transmitting data. That can be very valuable to devices that stream real-time data, such as video or audio calls, because the human ear cannot tolerate delays of more than 150 ms. In contrast, a 150 ms delay in receiving an alert from your toaster that your toast is done probably will not be an issue. So licensing at the end product level will continue to be—if not more so—an efficient way to place a value on the use made of a patented invention in a standard.



Further, the price structure in existing wireless technology eco-systems relies on the value of the patented technology being accounted for at the end product level, not at the component level. So it may be difficult to properly account for the value of patented technology if required to do so at the component level. Let's consider DVD movies as a loose analogy. A movie distributor may have a manufacturer make the physical DVD. The DVD manufacturer does not incorporate the cost of the intellectual property (IP) being imprinted on the DVD into its price, but charges the same amount (about 50-cents or so) based on material and other costs regardless of whether it is imprinting the DVD with the "Crimson Tide" movie starring Denzel Washington or "The Best of Barney" starring a purple dinosaur. The distributor then sells the DVD at a much higher price (e.g., $2 to $30) based on that cost, marketing and other costs including the cost/value of the IP. Even though the cost of the component is the same (i.e., the physical DVD materials with 1s and 0s stamped into it), the value of the DVD varies drastically based on the IP within it, with movies ranging in price from a few dollars to thirty or more dollars. Plainly one would not value the IP based on the cost of making the DVD or some percentage of the price that the distributor paid the DVD manufacturer for making the DVD. You would not likewise value patented technology based on the cost of a component, particularly where that cost does not account for the value of the IP. (see post of **July 28, 2014** citing Judge Davis book analogy).

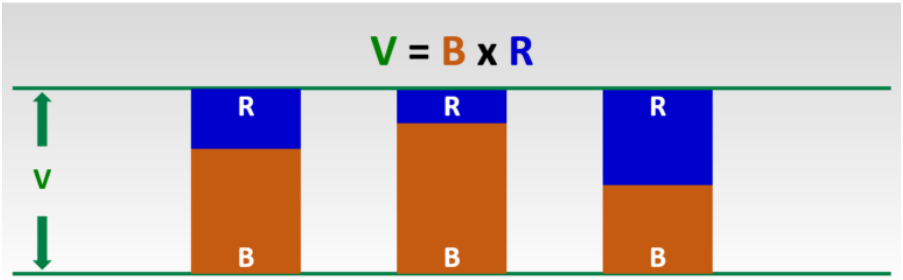
We also can carry that analogy a bit further to understand the problem with "patent counting" that the FTC is accused of doing in its case against Qualcomm to evaluate

the value of a large patent portfolio—i.e., where every patent is assumed to have the same value and the value of the portfolio is assumed to be based on counting the number of patents within it. If I had 10 DVDs of Denzel Washington's best movies and you had 10 DVDs of Barney the purple dinosaur's best shows, we probably would not work-out an equal trade even though it would be easier to simply count each DVD the same. That's because we know that IP has different value: you can buy some movies on DVD for a couple dollars, but others sell at a premium price. Similarly, not all patents have the same value and taking a short-cut by simply counting patents to value them is fundamentally flawed and fraught with error.

If a patent is to be licensed at the component level, the value paid for the IP should not change. The Federal Circuit made this clear in its first decision on determining a FRAND royalty (See post of **Dec. 5, 2014** on Ericsson v. D-Link). In one of the few patent cases to give us a mathematical formula as guidance, the Federal Circuit explained that either the end product or a component theoretically can be used as a royalty base as long as a corresponding royalty rate is used so that the ultimate value attributable to the patented technology does not change—i.e., if you chose a lower value royalty base (B), than you also must chose a higher value royalty rate (R) so that multiplying the base (B) times the rate (R) maintains the same value (V) of the patented invention to the end product:

"[T]he governing rule is that the ultimate combination of royalty base [B] and royalty rate [R] must reflect the value [V] attributable to the infringing features of the product, and no more."

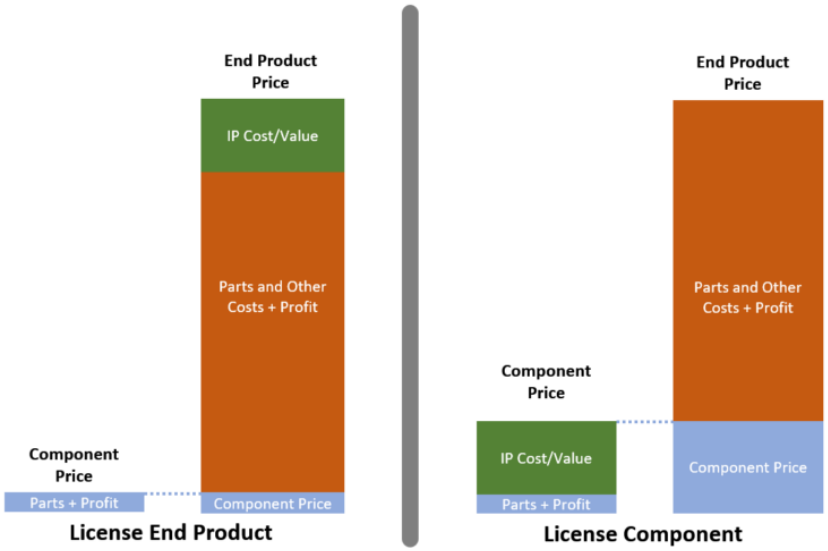
Ericsson Inc. v. D-Link Sys., Inc., 773 F.3d 1201, 1226 (Fed. Cir. 2014)



So a theoretical change of the royalty base in a licensing scheme from licensing at the end product level to the component level would require a corresponding change of the royalty rate (R)—i.e., the royalty rate (R) must be higher so that the ultimate value (V) paid for the patented technology remains the same.

But it is far from practical or even feasible in an established eco-system such as DVD movie sales or wireless products to change the entire industry from paying for the

cost of IP at the end of the product chain to somewhere in the middle of the chain. For example, the IP costs may exceed what can be borne by the current price at which a DVD manufacturer sells a DVD. A DVD manufacturer who had to pay the cost of the IP would need to raise the costs of the DVD from pennies to several dollars and then pass that cost along to the distributor.



Let's put that in perspective for mobile devices. In its case against Samsung, Apple argued and was awarded a "reasonable royalty" of $7.14 for each Samsung mobile phone using three Apple patents on pinch-to-zoom, bounce-back and tap-to-zoom touchscreen features. If a couple of touchscreen features are worth $7.14, then patented technology probably is worth many times that for enhancing data rates, lag time, etc. in a mobile standard that allow seamless streaming of video, email access, internet browsing, real time location tracking, and countless mobile applications, such as Uber, that such patented features make possible. But a mobile chip set in a mobile phone has an average cost of about $20-25. That current mobile chipset price plainly does not and could not account for the value of that patented technology on top of the other costs of the chipset on which the current price was based.

For these and other reasons, the long-established and prevalent practice in licensing patents in the wireless communication industry has been on a mobile device end product basis, not a component basis. And that prevalent practice existed all along the way of the stunning transformation we have seen so far in wireless communication since we started that journey with 1G. It works. To force a sudden change of that settled industry practice at this critical stage of 5G development could be disastrous and, at best, seems imprudent. There certainly should be sound

conviction and consensus before doing so. But that's a change that the FTC appears to be forcing now in its case against Qualcomm.

What is 5G?

5G stands for "Fifth Generation" wireless communication technology. But it is more than a simple generation upgrade. It is a revolutionary new platform for wireless communication that enables technological growth never seen before. Prior generations (1G, 2G, 3G and 4G) were about connecting communications between people through voice, video, email, texts, etc. 5G advances this much further and concerns connecting not only people, but appliances, cars, city infrastructure, health care equipment, first responder equipment, etc. Basically, connecting anything that has data to share with other machines, databases, people or who knows what else. It is fascinating and the world is rightfully excited about this new communication age.

Importantly, 5G is just at its birth stage. It is not done so that we can just sit back, relax and enjoy it. There will be a lot of learning, growth, enhancements and revisions of the 5G standard from its current infant stage now. This is a very unique and historical opportunity. Whoever leads this design and development in these early stages will have a long term impact on the future of this technology throughout the world. Indeed, this is so important that countries consider expertise and a strong presence in 5G to be of vital national security interest. Just last year, President Trump followed the **advice of the Committee on Foreign Investment in the United States (CFIUS)** and blocked a hostile takeover of Qualcomm by foreign interests because "reduc[ing] Qualcomm's long-term technological competitiveness and influence in standard setting would significantly impact U.S. national security" given this 5G transformation:

> **Reduction in Qualcomm's long-term technological competitiveness and influence in standard setting would significantly impact U.S. national security. This is in large part because a weakening of Qualcomm's position would leave an opening for China to expand its influence on the 5G standard-setting process. Chinese companies, including Huawei, have increased their engagement in 5G**

> **standardization working groups as part of their efforts to build out a 5G technology. For example, Huawei has increased its R&D expenditures and owns about 10 percent of 5G essential patents. While the United States remains dominant in the standards-setting space currently, China would likely compete robustly to fill any void left by Qualcomm as a result of this hostile takeover. Given well-known U.S. national security concerns about Huawei and other Chinese telecommunications companies, a shift to Chinese dominance in 5G would have substantial negative national security consequences for the United States.**

The FTC lawsuit against Qualcomm

In early 2017, the U.S. Federal Trade Commission (FTC) had only three Commissioners to guide FTC on policy issues, including which enforcement law suits to file (FTC usually has five Commissioners). Following the 2016 elections, the federal Administration was set to change on January 20, 2017 when Donald Trump would be sworn-in as President, signaling a significant change in U.S. policy. On January 17, 2017—just three days before that change—the FTC filed its lawsuit against Qualcomm. The lawsuit was filed despite significant division between the three Commissioners. Commissioner Ohlhausen provided a "rare" **dissent** in what she considered "an extraordinary situation" given the lawsuit's "flawed legal theory" in an action that "will undermine U.S. intellectual property rights in Asia and worldwide," stating:

> **"I do not depart from that policy [of dissenting only on rare occasions] lightly. Yet, in the Commission's 2-1 decision to sue Qualcomm, I face an extraordinary situation: an enforcement action based on a flawed legal theory (including a standalone Section 5 count) that lacks economic and evidentiary support, that was brought on the eve of a new presidential administration, and that, by its mere issuance, will undermine U.S. intellectual property rights in Asia and worldwide. These extreme circumstances compel me to voice my objections.**

And its probably no coincidence that, on January 20, 2017—just three days after the FTC's filing—Apple sued Qualcomm alleging antitrust violations. The FTC and Apple are known to have a Common Interest agreement between them that allows them to secretly coordinate their strategy and share information toward a common goal in these litigations.

We will cover the FTC's theories in more detail in a later post. At a top-level, among other things, the FTC argued that Qualcomm was overcharging for the price of its patented technology and that Qualcomm's practice of licensing the end product (e.g., mobile phones) violated alleged standard setting non-discrimination obligations that required licensing makers of chipsets used in those end products. That argument goes against the long established practice of licensing end products followed by almost everyone—if not everyone—in the wireless industry. Basically, there was no discrimination because similarly people were treated similarly—e.g., all the end product manufacturers were licensed, and all the component manufacturers were not licensed (they would not need a license if the end product is licensed). Even if licensing chipset makers were required, that might be the basis for a chipset manufacturer to bring a breach of contract action for violating a contractual FRAND commitment to the SDOs. But the FTC antitrust mission does not have jurisdiction to enforce a breach of contract action. So the FTC alleged that this was part of activity that together raised an antitrust violation.

A key part of the FTC's theory is an alleged "No license, no chips" policy where Qualcomm would not sell its mobile chipsets to mobile phone manufacturers if they did not have a license from Qualcomm to use patented technology in those chips (Qualcomm disputes whether it actually has declined to provide chips to someone who did not have a license). If true, that's rather unremarkable in the patent world. Someone who wants to use patented technology is supposed to obtain authority from the patent owner before selling products using that technology. (see our **July 2, 2014** post re Judge Essex stating implementer should obtain a license to an SEP before using that technology). In contrast, under U.S. patent law, it would be extraordinary to force a patent owner to help someone infringe their patent—e.g., to force the patent owner to sell an unlicensed infringer the components it needs to infringe the patent.

What has happened since the split-decision by an incomplete set of Commissioners to bring the action against Qualcomm is further troubling. Only a couple weeks after the case was filed, one of the three Commissioners who voted to bring the case left the FTC. That left one Commissioner who was against the case and one who was for it. It appears that, because there was a stalemate among the Commissioners, the FTC Staff would continue to pursue the lawsuit without any substantial policy guidance from appointed Commissioners. About a year and a half later, the FTC finally had all five Commissioner slots filled. However, one of the Commissioners recused himself from participating in the FTC case against Qualcomm. This again left an equal split over the case with two Commissioners against the lawsuit and two Commissioners for it. So, again in the face of a Commissioner stalemate, the FTC Staff apparently continues forward without any substantial policy guidance from appointed Commissioners.

Further, as discussed above, after the case was filed President Trump followed the CFIUS advice and precluded a hostile takeover of Qualcomm by a foreign entity given national security interests that specifically singled out concern that the U.S. could lose its lead in 5G technology to Huawei. And during the course of this trial Huawei has come under fire for stealing U.S. technology, including charges filed just last week following intellectual property theft investigation by the **Federal Bureau of Investigation**. Yet the FTC Staff continues its lawsuit that relies substantially on Huawei as what some call the FTC's "star witness" to make its case against Qualcomm. This has not gone unnoticed by mainstream media. (See **The U.S.'s Star Witness in the Qualcomm Antitrust Suit: China's Huawei**; **Trump allies warn Obama-era FTC suit against US firm giving boost to China**; **The Chinese government will have eyes and ears on all of us someday if the FTC gets its way**; **The U.S. government shouldn't partner with Huawei**)

Also within the past week or so, Makan Delrahim, the Assistant Attorney General for the Antitrust Division of the Department of Justice, criticized the theory underlying the FTC's case against Qualcomm, indicating that disputes over patent-licensing rates should not be subject to antitrust law. (See **DOJ's Delrahim criticizes 'theory' underlying FTC's Qualcomm case**).

Of course, there is more to one side to any issue. There will be excuses and arguments from all points of view. But, taking a step back and looking at this broadly, it is plainly troubling to see an agency staff unguided by administration policy makers seek such sweeping and disruptive action against long-established industry licensing practices at a very important historical point of wireless communication development with the birth of 5G. And doing so against a company whose continued vitality in this wireless technology was deemed a national security concern. And basing that case on a "star witness" that is the specific foreign company identified in the national security concern and that the U.S. government recently indicted for stealing U.S. technology.

Where is Denzel?

Several years ago there was a thrilling action movie called "Crimson Tide" starring Gene Hackman as the Captain of the U.S.S. Alabama submarine and Denzel Washington as his new Executive Officer. A political group took control of a nuclear missile base and threatened to launch them. As tensions grew, the U.S.S. Alabama received a message ordering them to launch a preemptive strike of nuclear missiles at the facility. After that initial message, another message was received but it was incomplete. It might have said don't launch or it might have said something else. The Captain said an incomplete message is meaningless and protocol required following the last fully received and authenticated message: Launch the nuclear weapons. The Executive Officer disagreed and refused to launch the missiles until the submarine surfaced to a level where it could receive confirmation that circumstances had not changed and the launch was still a go. A lot of things happened, it was very tense and exciting—you have to watch it. But [SPOILER ALERT] it turned out that, when they finally got back in communication, they were told [AGAIN – SPOILER ALERT] not to launch the missiles.

We all may be best served if a Denzel stood up to take pause and ensure that the FTC staff's lawsuit filed by a divided and incomplete Commission under a different administration is a prudent course under current circumstances.

Essential Patent Blog