As the FCC staggers unevenly but resolutely toward the Incentive Auction filing deadlines, more and more loose ends are being tied up. We thought it might be useful to summarize where we have now ended up on the “reserved spectrum” issue. Incentive Auction aficionados have observed or participated in the infighting among the big four carriers to limit or expand the availability of reserved spectrum to themselves, and, incidentally, to the other carriers who have mostly watched the fight from outside the ring.

“Reserved spectrum,” you will recall, is the 30 MHz of spectrum that the FCC will, under certain circumstances, “reserve” for carriers who hold less than 45 MHz of below-1 GHz spectrum in a given market. The idea here is that the reservation of some spectrum for bidders who were not already rich in coveted below-1 GHz band holdings would give newer competitors in the market a better chance to acquire some of this spectrum without having to compete against the big guys.

On the other hand, by setting the reserved spectrum band at 30 MHz, the Commission ensured that there would only be enough spectrum for one reserve-eligible bidder to acquire the full 10x10 volume of bandwidth needed for LTE operations. The idea here was that bidders would have to bid against each other to get 20 MHz rather than simply dividing the available spectrum in half, as would be the case if 40 MHz of reserved spectrum were set aside. This seemingly sensible proposition met with a vigorous full court press by T-Mobile to increase the reserve to 40 MHz.

T-Mobile argued in a petition for reconsideration that in

(Continued on page 17)

T he Pope visited the U.S. a month or two ago, prompting extensive preparations in many quarters. Among those who needed to ready themselves: news operations, professional wireless microphone operators and wireless mic frequency planners in several major cities where Francis was scheduled to drop by. They had to figure out how many wireless mics were needed to stage, cover and record the various events … and then they had to figure out how to coordinate the spectrum necessary to make sure all those mics served their various purposes.

Newscasters wanted to be sure that they could deliver clear on-site audio feeds to audiences over whatever medium – broadcast, cable, satellite, the Internet – the audience chose. Those who ventured out to see the Pope in person wanted to clearly hear his every word. And still others – historians, archivists, those who want a permanent record of some (or all) of his visit – wanted to ensure the availability of high-quality recordings. We have come to assume that all of these needs could be met. What we often lose sight of is the fact that event coordinators must struggle to stretch the limited spectrum available for wireless mics to accommodate the various uses.

And with two recent orders (you can find them here and here), the FCC has made their jobs even harder in that regard.

As long-time FHH Telecom Law readers know, traditionally wireless microphones operated in the TV spectrum until 2009. But since then, a series of Commission decisions (including some made at Congress’s direction in connection with the upcoming incentive auction) have reduced the spectrum options for mics. And the reductions continue: With plans to auction 100 MHz or more of the current TV spectrum to wireless carriers – while scrunching TV stations displaced by that into the ever-shrinking portion of the spectrum reserved for TV – the FCC has decided

(Continued on page 12)
The FCC’s licensing and service rules presently provide for use of spectrum up to 95 GHz, an extremely high frequency. Now the FCC is considering requests to go even higher: to open the 102-109.5 GHz band for fixed microwave applications.

Radio waves in this part of the spectrum behave differently from those used for, say, cell phones or broadcasting. These signals travel in short, straight lines. The transmit and receive antennas must be in sight of each other. The signals are easily blocked by building walls, terrain, and other obstacles, and are attenuated or blocked by rain or snow. So-called “space attenuation” is high at these frequencies, which limits the useful range even in clear air. Because the wavelength is very short, less than three millimeters, designing circuits is a major challenge. A device’s internal components typically have dimensions comparable to this wavelength; without appropriate precautions, they act like little antennas transmitting and receiving to each other within the device, and that impairs performance.

Still, this part of the spectrum offers important advantages. Uniquely in the spectrum, there is enough radio bandwidth here to permit data capacities similar to those of fiber-optic cable. A compact antenna just a few inches across can provide a highly directional beam. The same frequencies can be reused nearby. And, unlike nearly all other useful radio frequencies, these are practically empty.

By international agreement, the 102-109.5 GHz band has been set aside, or “allocated”, for fixed service use on a co-primary basis with mobile, radio astronomy and, above 105 GHz, passive space research. But despite that allocation, the band cannot be used domestically until the FCC establishes service rules for it.

Back in February, 2014, Battelle Memorial Institute asked the FCC to adopt service rules for 102-109.5 GHz. Battelle proposed that the FCC carry over the same “light licensing” rules as presently apply to the bands at 71-76, 81-86, and 92-95 GHz: each user first obtains a non-exclusive, nationwide license, and then coordinates individual links using an automated system.

Reaction to the Battelle request was almost entirely supportive. The only dissent came from the radio astronomy community, which split: the National Research Council’s Committee on Radio Frequencies does not object so long as astronomy sites observing at these frequencies are protected, while the National Radio Astronomy Observatory wants the rules to protect radio astronomy frequencies everywhere. After soliciting comments, the FCC has taken no further action.

A few months ago, ZenFi Networks requested a waiver on essentially the same terms as the Battelle proposal. It wants to use the 102-109.5 GHz band for backhaul – i.e., carrying network signals to and from cell sites. Shortly thereafter, McKay Brothers asked the FCC either to move forward on the Battelle rulemaking, with small modifications, or else to grant McKay Brothers a waiver similar to that requested by ZenFi. Both proposals have been “accepted” by the FCC and it has asked for public comment on both the ZenFi and McKay Brothers submissions.

Meanwhile, hovering in the background, is a two-year-old pending petition from the Institute of Electrical and Electronics Engineers (IEEE) asking that any request related to technologies or services using frequencies above 95 GHz be classed as “a new technology or service” under Section 7 of the Communications Act. This...
FCC Adopts Rules to Permit Phase-Out of Copper Wire By Large Incumbents

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In order to meet the public’s seemingly insatiable demand for high speed Internet and related data services, telecommunications providers have had to upgrade their networks, and in many cases, retire “old fashioned” copper plant in order deliver those services. Recognizing that service providers throughout the country are now rapidly transitioning away from the historic provision of time-division multiplex (TDM) services over copper wires to all-IP networks, the FCC has issued new rules that are designed to ease the transition to an all-IP world. In a Report and Order released in August, the FCC adopted new rules that are aimed at making the retirement of copper loops easier for incumbent local exchange carriers (ILECs), while at the same time, protecting the interest of consumers and competitive carriers. Under the FCC’s Order, no approval is required for the retirement of legacy facilities so long as the change of technology does not discontinue, reduce, or impair the services currently provided to customers. According to the FCC, this “hands off” policy will incentivize ILECs to continue to transition their networks to all-fiber environments without undue disruption to subscribers. However, the FCC acknowledged that the transition could impact customers and competitive carriers that rely on ILECs for service and last-mile facilities, and that it needs to ensure that competition continues to thrive, and that customers that rely on traditional telephone and other legacy services are protected.

The FCC clarified that rule revisions regarding the retirement of legacy facilities were not intended to change the nature of the process from one based on notice to one based on approval. The current network change disclosure process applies to situations where an ILEC makes a change in its network facilities, such as when it replaces copper facilities with fiber. If the change does not result in a discontinuance, reduction, or impairment of service, then the carrier does not need to file an application for authorization for the planned network change. Rather, it only needs to provide notice in compliance with the FCC’s network change disclosure rules. However, some changes in network facilities can result in a discontinuance, reduction, or impairment of service for which FCC authorization is needed.

What to ask for, how to ask for it

The FAA’s Drone Drill: An Introduction

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Let’s be honest: you want a drone, just like the rest of us. (True fact: We here in the CommLawBlog bunker have frequently fantasized about flying our own – appropriately branded – drone straight to the FCC to deliver filings from the 18th floor rooftop patio here on the CommLawBlog Tower. We are not optimistic, however. We’ll get to that in a minute.) But, also like the rest of us, you’d probably like to use your drone for something more than purely recreational purposes, and you’ve heard that the FAA expects you to jump through a number of hoops before you can do so.

What are those hoops and how do you jump through them? Read on.

First, though, an editorial observation. The FAA’s current insistence on imposing stringent regulations on “commercial” drone use (as opposed to purely recreational, or hobbyist, drone use) is of dubious legality, as my colleague Kevin Goldberg noted last year. While Congress has implicitly authorized the FAA to impose rules on nonrecreational drone use, the FAA has not to date adopted any such rules. It did, at long last, launch a rulemaking proceeding last February looking to formally codify various policy statements and internal guidelines that it had issued over the years. But until that proceeding results in properly adopted rules, the interim enforceability of the FAA’s earlier policy statements and guidelines could be challenged.

And, indeed, they were challenged, successfully, before an NTSB administrative law judge in 2013. That decision was reversed by the full NTSB on relatively narrow grounds not relating to the FAA’s “commercial v. recreational” distinction, and the case was eventually settled, with the drone operator admitting to no violations of any rules. (For a collection of documents related to the case, including briefs setting out in detail arguments relative to the validity of the FAA’s interim policies, see this site.)

But for now, the FAA is sticking to its guns. And while Congress has directed the FAA to get its new rules in place pronto (the initial target date specified by Congress was September, 2015), all signs are pointing to considerable delay on that front. So let’s take a look at what you would need to do to get the FAA’s blessing, today, to use your drone for commercial purposes.

First up, what kind of drone will you need? While we like the
While it’s an issue that most Americans fortunately don’t have to deal with, the FCC has announced new rules which should provide some relief for people calling from the country’s many jails and prisons. That means that not only will communicating with one of the over two million people incarcerated in the U.S. become more affordable for inmates and their families, but the increased familial communication will benefit the country as a whole.

The system of providing phone service to the nation’s prisons had been largely unregulated by the FCC prior to a 2013 rule which limited the rates charged for most inter-state calls to $.21/minute. Prior to those rules, calls were often in excess of $20 for 15 minutes, the length of time many service providers set as a “minimum call length” (a practice the FCC has now forbidden).

The exorbitant charges obviously cut down on the time that inmates spent talking with loved ones, including children. The Commission has explicitly pointed to studies which link improved contact with family and community to lower recidivism rates, noting that reducing the costs of such contact would have benefits for society as a whole, including reducing the need for additional prisons. Of course, for the almost three million children with a parent in prison, the decreased cost of phone calls would have a more personal benefit.

The Commission was first asked to respond to this problem a decade ago by a Washington, D.C. woman named Martha Wright, but the Commission failed to respond until 2013, when the issue attracted the attention of then-acting Chairwoman Mignon Clyburn.

The latest action was much more comprehensive than the 2013 proceeding. Now the FCC has further reduced inter-state calls (and this time included intrastate calls in the regulations) to a maximum of $.11/minute in prisons (where around 70% of inmates are held). It also set up a sliding scale for jails ranging from $.14 to $.22 based on the size of the jail (figuring that, the smaller the facility, the higher the expense in providing service). Collect calls are slightly more expensive, but are set to be reduced to the same levels as prepaid calls in two years. The rules also eliminated “ancillary service” fees like payment processing and other transaction fees and preempted state laws which are contrary to the Commission’s new regulatory scheme.

The FCC recognized, though, that the prices reflect not just the “captive market” (apologies for the pun) of prison populations, but also the higher cost of these phone systems. Many prisons require advanced security mechanisms, including systems which block calls to certain people (witnesses, victims, prosecutors, etc.), real-time recording, and caller verification, which results in higher costs relative to other landline phone systems. These costs are often reflected in so-called “site commissions,” which can add up to as much as 50% of the cost of a call. While the FCC did not directly limit those fees, it did “strongly encourage” providers to move away from them and “urged” states to take action to reduce or eliminate them as some, including New York, Ohio, and Rhode Island, already have.

Unsurprisingly, providers of these niche services are not happy with the new rules. They have long defended their rates on the grounds mentioned above, and have argued that the extremely high costs of calling are a result of the behavior of the officials in charge of the prisons, not the providers, since they’re the ones setting the site commission rates. Prison officials, for their part, defend the site commissions on the same grounds: these are expensive security measures, and especially as the number of calls increases due to lower rates, the costs of monitoring them will go up as well. As Commissioner Pai pointed out, not all prisoners are loving spouses and parents who simply want to communicate with their loved ones. Some are vicious criminals who use phones (often illegally smuggled in cell phones) to arrange hits on witnesses, conduct gang business, and orchestrate drug deliveries. So security measures are an unfortunate necessity.

Finally, in a Further Notice of Proposed Rulemaking, the Commission sought comments on how to increase competition to keep rates low, whether they should include international calls and “other advanced inmate communications” like video calling in their regulations, and whether they should get into data collection and periodic reviews of this market for purposes of tweaking the rules in the future. Check in with CommLawBlog for more updates.
Regular readers of *FHH Telecom Law* know that the FCC maintains technical rules for radio transmitters and certain other equipment. These rules typically specify power, bandwidth, frequency stability, out-of-band emissions — that sort of thing. They’re intended to minimize the likelihood that a device will cause unwanted interference to others.

When first introduced decades ago, the rules primarily targeted U.S. manufacturers. Today, though, a large fraction of the electronic devices sold in the U.S. are made overseas. Does this mean that foreign-made equipment is creating a greater risk of interference here in the U.S.?

Of course not.

While the FCC has no jurisdiction over foreign factories, it can exert control over imported equipment — and effectively impose its technical rules on such equipment — at their point of entry into the country. This is accomplished through a set of procedural “importation rules” that essentially require that any wireless device (with a few exceptions) imported into the U.S. comply with the FCC’s technical rules. (The importation rules apply not only to devices imported for marketing, but also to not-yet-compliant devices brought in for trade shows and other devices that will not be sold in the U.S. See the various categories here. Don’t forget — other rules also govern the display and operation of non-compliant devices at trade shows!)

Thanks to the influence of unnamed importer brokers and manufacturers, the FCC has already taken care of an issue that won’t arise until mid-2016: waiver of certain import declaration and associated filing requirements.

Section 2.1203 of the rules requires a party (generally the customs broker hired by the manufacturer or importer) to declare that equipment being imported satisfies either the FCC’s technical rules or one of the exceptions. Section 2.1205 outlines how that declaration is to be submitted. While the FCC’s own Form 740 is available for the few occasions when paper filings are necessary, far more often the declarations required by the FCC are reported through an electronic system maintained by U.S. Customs and Border Protection (CBP). But CBP is in the midst of deploying a new electronic system — and, once deployed, the new system won’t accept the required FCC information. CBP expects the old system to be phased out by July 1 of next year.

As matters currently stand, some 20,000 reports are filed each week, almost all through the CBP process. Once CBP’s computerized reporting system won’t be available for collection of FCC-mandated declarations, those declarations will have to be collected through paper filings on FCC Form 740, imposing a major burden not only on importers but also on the FCC, which will have to process all that paper.

What should the FCC do?

The FCC’s conundrum is further complicated by the fact that the FCC is in the midst of revamping its equipment authorization rules. One proposal under consideration: eliminating the importation filing requirement. If that requirement is eventually tossed, there will be no further need to collect the declarations at the border, and the fact that CBP will no longer have the capacity to collect them for the FCC will be immaterial. But if the FCC decides to retain the importation filing requirement, obviously the FCC will have a problem.

The FCC now tells us that it may not resolve the fate of the importation rules by July 1, 2016, when the CBP system is scheduled to go down. So as of July 1, the FCC and importers will have to utilize the old-fashioned, labor-intensive, eco-unfriendly Form 740, at least until the fate of the importation rules is ultimately determined.

The FCC has concluded that this would cause “significant burdens” that will look pretty silly if the FCC ultimately determines to cut back the filing requirement. Accordingly, the FCC has ordered that it will waive the Section 2.1203 and 2.1205 filing requirements, but only for the second half of 2016 (i.e., July 1, 2016 – December 31, 2016), at the end of which period it hopes to be have decided whether to continue those requirements.

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*Forward thinking, through 2016*

**FCC Plans Ahead for Importers, Aims to Saves Trees**

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The waiver does NOT take effect until July 1, 2016. The present filing requirements remain in force until then.
The FCC wants to take us higher: into higher reaches of the RF spectrum. Anticipating the eventual arrival of Fifth Generation (5G) mobile services, the FCC has proposed to open several bands above 24 GHz for 5G: 28, 37, and 39 GHz, and possibly 24, 29, 31, and 42 GHz as well. Also on the table: extending the 57-64 GHz unlicensed band up to 71 GHz, and adding mobile applications to the 71-76 and 81-86 GHz fixed service bands.

The FCC is under pressure to keep the U.S. wireless industry competitive. A 5G standard would be significantly faster than 4G and able to handle many times the volume of traffic. A year ago, the FCC began to look at the issues with a Notice of Inquiry. Now it’s released a new Notice of Proposed Rulemaking (NPRM) which aims at establishing several sets of rules for various potential users, including fixed, mobile, satellite, and “WiGig,” a high-speed unlicensed standard at 57-64 GHz modeled in some respects on Wi-Fi.

The proceeding, titled “FCC Promotes Higher Frequency Spectrum for Future Wireless Technology,” focuses on opening the “upper microwave” bands (here, 28 GHz, 37 GHz and 39 GHz) for more flexible use, including 5G hotspots. The FCC hopes this will lead to deployment of small cells and Wi-Fi-like networks for data backhaul, as well as privately deployed (enterprise) networks.

The NPRM ducks the question as to whether, or how soon, these frequencies could actually be used for mobile applications. Some of the bands under discussion have an unhappy history in terms of getting the spectrum into actual use, particularly 28, 31, 39 and 24 GHz. Each of these bands offered licenses that covered a specific geographic area within which the licensee could provide fixed microwave service for itself or sell service to others. The FCC auctioned 28 and 31 GHz together in 1998-99 for $624 million, and 39 GHz in 2000 for a respectable $411 million. By the time of the 24 GHz auction in 2004, investors had become wary: they bought only seven licenses out of 880 offered, for a paltry $216k. To encourage successful bidders to build and operate their systems promptly, the FCC required the licensee to construct facilities and offer “substantial service” within 10 years. But equipment proved difficult to procure and markets proved slow to develop. As a result, most licenses did not get built out, and their licensees requested and received multi-year extensions. The FCC supplemented its vague “substantial service” requirement with a “safe harbor” option, but that didn’t help: holders of a large majority of licenses still failed to meet the extended deadlines. Ultimately, the FCC rejected further extensions and refused renewals, in effect taking back the licenses. (One affected provider has since recovered at least some of its licenses in a court proceeding.) On the whole, the FCC’s denial of renewals brought about precisely the result the FCC had sought to avoid: large swaths of unused spectrum.

This NPRM is a “Take 2” effort to put the same frequencies to productive use.

The main difference between the mostly-failed earlier regime and the one proposed here is the addition of mobile services. Existing mobile applications, such as 3G and 4G, use much lower frequencies (below about 3.5 GHz, with the sweet spot at 0.5-2 GHz). Mobile (Continued on page 7)
operation above 24 GHz faces new technical and economic hurdles. Radio waves at these frequencies travel in short, straight lines and do not easily penetrate obstacles, including many types of exterior building walls. Outdoor service will need cell sites at least every few blocks. Indoor service in a typical office district will need cell sites inside every building, and because the concrete between stories will severely attenuate the signals, perhaps several on each floor. For Internet service, each of these sites must somehow be connected back to the carrier’s facilities. None of this is impossible, but it will likely prove to be much more difficult expensive than building out a conventional 4G network.

Below is a brief summary of the proposals, with the usual caveat: those interested should take a close look at the NPRM.

37 GHz Band. The Commission proposes hybrid rules for mobile operations in this band: first, for wide area networks, an auctioned geographic licensing scheme, and second, for local area networks, a “license by rule” arrangement designed to allow private industrial or enterprise networks to serve both indoor locations and, possibly, outdoors on a campus or similar facility. (The “license by rule” approach, first used for CB radios, is a legal fiction that simply declares qualified users to be licensed. Congress has okayed this to end-run the Communications Act requirement that all radio operation be licensed. “License by rule” does not extend to so-called “unlicensed” transmitters like Wi-Fi and Bluetooth, which the FCC has, with court approval, long exempted from licensing requirements on the ground that they lack significant potential to cause harmful interference.) The FCC seeks comment on how the hybrid licensing approach should work, the proposed band plan, build-out milestones, and foreign ownership.

28 GHz and 39 GHz Bands. The FCC proposes to authorize mobile services for these bands under its traditional geographic area licensing scheme. It would add mobile authorizations to existing licenses, and, through competitive bidding, assign new licenses that can used for both fixed and mobile operations. As with the 37 GHz band, the Commission seeks comment on such issues as the size of the license areas, the treatment of current licensees, and the proposed band plan. The Commission also is considering a Spectrum Access System similar to that adopted for the 3.5 GHz band to manage the various users, including satellite operators.

64-71 GHz. The FCC proposes to open this band, adjacent to the existing 57-64 GHz unlicensed band, for unlicensed use under similar technical rules. Due to a quirk of physics, however, the newly added spectrum will be much more useful. Oxygen molecules in the air absorb energy at 57-64 GHz. To a 60 GHz radio wave, ordinary air looks like a dense fog that blocks 98% of the energy per kilometer covered. Perhaps in part to compensate for these losses, rules for the present 57-64 GHz band allow a very high (for unlicensed) effective power of 158 kilowatts, if the operator uses a highly directional antenna. But the oxygen effect is greatly reduced in the adjacent 64-71 GHz segment, especially at the upper end, so the high transmitter power available should permit transmission of greater volumes of data over longer distances in that segment.

Satellite. The satellite industry did not fare well in the NPRM. The FCC rejected the proposition that mobile broadband is incompatible with the satellite use, and also found that there are no current commercial satellite operations or even concrete plans to offer satellite services in the 28, 37, and 39 GHz bands. The FCC did propose that fixed satellite operators could acquire 28 GHz flexible-use terrestrial licenses to obtain co-primary status for gateway earth stations.

Other bands. The FCC also invited comments on (but did not propose service rules for) the 24, 29, 31, 32, and 42 GHz bands, plus a possible mobile allocation in the 71-76 and 81-86 GHz fixed service bands. Commissioners Pai and O’Rielly both dissented to the NPRM in part on the ground that it does not open a sufficient number of frequency bands.

If you have a great technology that you’d like to operate above 24 GHz, now is the time to tell the FCC. Comments are due by January 26, 2016, and reply comments by February 23. File at this FCC website using Proceeding Number 14-177.
A lot of new products use the buzzwords “wireless connectivity.” In old-fashioned English, they have radio transmitters. This means they must go through an FCC approval process before they can be sold to the public.

The FCC understandably writes its technical rules around existing technologies. A device made to comply with those rules can get quick authorization, even if intended for a new application. Sometimes, though, the underlying technology is so novel that the existing rules do not reasonably apply, making compliance with those rules impossible. Such a device requires individualized attention from the FCC before it can reach the market.

For a new and different radio technology, the approval process usually takes years — delays that can seriously impede innovation. More than once, a client has approached me with a concept for a new kind of radio device; but when I explained how long FCC approval would take and what it would cost, the client abandoned the idea. Other clients started the process but ran out of time and money along the way. Even when it ultimately succeeds, FCC approval adds hard-to-predict costs and delays to ventures that already carry inherently high risk.

Surely there must be ways by which the proponent of a new technology can secure FCC approval more quickly. These are set out below. Some work better than others in particular situations. The greatest improvements, though, will need a handful of changes in how the FCC goes about implementing its procedures.

Update the rules to embrace the new technology

If technology has evolved beyond the FCC’s rules, why not just update the rules to accommodate the technology? Although the obvious answer, this is rarely a preferred option. It takes too long.

The Administrative Procedure Act (APA), a 1946 federal statute, lays out what an agency like the FCC must do when creating or modifying substantive rules. Briefly, it says the FCC must: let people request a rule change; publish a Notice of Proposed Rulemaking (NPRM) giving advance notice of the proposed rule or amendment; receive comments from interested persons; and publish the rule as adopted. That doesn't sound too onerous. For about 40 years after passage of the APA, the FCC typically pushed out technical rule changes in six months or less -- pretty fast, by government standards. The FCC would simply print the proposed rule in the Federal Register, receive a handful of informed and helpful comments, and issue a Report and Order (R&O) setting out the new rule.

Today, though, a comparable rule change takes at least two years, usually three, and often four or more. The delays have several causes:

- Courts interpreting the APA over the years have added legal requirements that make the NPRM and R&O longer, more complex, and much more time-consuming to prepare.
- With the spread of the Internet, the FCC began accepting comments on line. Some proceedings attract tens of thousands of submissions; a few have exceeded a million. Many of these are brief and repetitive, often copied verbatim by the thousands from advocacy websites. But the FCC staff still has to sort through them all, which takes time.
- As the spectrum becomes more crowded, proposals for new radio technologies routinely
meet opposition. Some of this comes from competitors. Some comes from spectrum users concerned about interference to their operations, or who just don’t want other people on or near their frequencies. These last oppositions tend not to be well founded, but again, they require time and attention from the FCC.

- Even after the FCC issues an R&O, most rule-making proceedings still stagger on, zombie-like. Losing opponents have the right to seek reconsideration at the FCC, and often do, adding another two or three years. Often parties will seek reconsideration of a reconsideration decision; each cycle usually runs more slowly than the ones before. After reconsideration, or instead of it, opponents can petition for review by the courts – an additional one to two years. Requests for reconsiderations and court appeals normally do not stop the challenged rules from taking effect and in the end they rarely change the outcome, but their pendency can still discourage investors and cause anxiety among potential buyers.

Perhaps the longest-running example of a technical rulemaking in recent years was the FCC’s proposal to authorize ultra-wideband (an extremely low-power signal that spans a very wide swath of spectrum). Vehement opposition came from every nearly organized group of spectrum users, each of which said: Not on my frequencies! From the FCC’s initial Notice of Inquiry, through the NPRM to the R&O, took four years. There followed three separate reconsideration cycles – here, here, and here – that took another eight years. The technology never became as widespread as its proponents had hoped. A never-resolved standards dispute was doubtless a factor. But the 12 years it took to finalize the rules also probably deterred manufacturers and investors alike.

Some of the procedural steps that prolong rulemakings stem from the APA (and opponents taking advantage of the APA), which the FCC is powerless to change. While the suggestions below might shave a few months off a typical rulemaking, there is not much more that the FCC or proponents can do to accelerate this approach.

Waive the rules to permit the new technology

When its new technology is barred by one or another FCC rule, the proponent can ask that the rule(s) be waived. An FCC waiver acknowledges that a device does not comply with the rules, but declares the device to be eligible for authorization anyway. Typically a waiver involves a one-off situation that meets three conditions: the device will benefit the public, will cause no more interference than a compliant device, and cannot be constructed in accordance with the rules. In some circumstances this path can lead to FCC approval more quickly than the rule-making approach.

One example is the so-called “millimeter wave” body scanner familiar to U.S. air travelers. The device directs radio waves toward the person in the chamber, picks up the reflections, and processes them into an image. (The power is so low that the passenger being scanned receives less radio energy than someone sitting in front of a laptop.)

The FCC has long allowed low-power unlicensed operation in the body scanners’ frequency band. Rules for that band specify maximum emissions calculated to prevent harmful interference to licensed users in the band. The rules also specify methods for measuring the emissions (here and here). But using those methods to measure the body-scanner’s signal does not make much sense, because the signal is very different from that of a conventional low-power radio. If the body scanner were tested according to the rules, it would fail to meet FCC specifications, but the scanner’s signal properties (together with its normal mode and location of operation) nevertheless make it inherently non-interfering. That, together with the high public interest in the device, prompted the FCC to issue a waiver.

Neither Congress nor the FCC has mandated procedures for considering waivers. Rules for that band specify maximum emissions calculated to prevent harmful interference to licensed users in the band. The rules also specify methods for measuring the emissions (here and here). But using those methods to measure the body-scanner’s signal does not make much sense, because the signal is very different from that of a conventional low-power radio. If the body scanner were tested according to the rules, it would fail to meet FCC specifications, but the scanner’s signal properties (together with its normal mode and location of operation) nevertheless make it inherently non-interfering. That, together with the high public interest in the device, prompted the FCC to issue a waiver.

Neither Congress nor the FCC has mandated procedures for considering waivers. In most cases the FCC publishes the request and invites comments from the public. As in rulemakings, and for similar reasons, waiver requests tend to be opposed. The process from request to grant typically takes about two years – faster than most rulemakings, but still long enough to impede innovation. Two recent waivers – to iRobot, maker of the Roomba floor

(Continued on page 8)
(Speeding Innovation - Continued from page 9)

cleaner, and to the Breitling watch company – took only seven and eight months, respectively. We hope the shorter times reflect a change in policies and procedures, although the fact-specific nature of waiver requests make it hard to generalize. Ideally, the FCC should be able to get these grants down to a matter of weeks.

Ordinarily a waiver applies only to the company that requested it. But once a waiver is granted, other companies wishing to market a similar device can request “me-too” waivers. The FCC issues these in a few months without public comment, as in this example. The economics can seem unfair: Company A spends many thousands of dollars and waits years for a waiver, after which Company B steps in and obtains an identical waiver much more quickly for a small fraction of the cost. Sometimes patent considerations keep the technology exclusive to Company A. If not, though, a quick me-too waiver is the only way the FCC can avoid playing favorites among competitors.

In a somewhat speedier variation of the usual waiver process, the FCC may forgo public comment but grant a waiver nonetheless, if it judges the request to be non-controversial. Such a grant is informally called an “office waiver.” Here is an example which took just over a year.

Rarely, the FCC will issue a “blanket waiver” available to anyone, as it did in Paragraph 81 of this R&O allowing unlicensed wireless microphones. Another blanket waiver authorized pre-existing devices that the new rules adopted in an R&O otherwise would have disallowed. Sometimes a blanket waiver coincides with the release of an NPRM, giving the public the benefit of the proposed rules before they take effect. In 2001, the FCC proposed to authorize the high-speed forms of Wi-Fi that are commonplace today (Wi-Fi “g” and above), and also allowed companies to market the proposed devices at reduced power while the rulemaking ran its course. Wi-Fi “g” products appeared in stores just a few weeks after release of the waiver order; the revised rule did not take effect for another 14 months.

Interpret the rules to accommodate the new technology

Occasionally a party can persuade the FCC to interpret a rule so as to allow a device that a more literal reading might prohibit. The proponent (usually with counsel) asks for the interpretation by conferring or corresponding directly with the appropriate FCC staff. The staff acts by sending a letter to the requesting party. These decisions are not subject to public comment and the letter is not published – a much-favored outcome because it leaves competitors in the dark. The FCC takes this action only when it is confident other spectrum users will not be affected.

Because any real example would violate client confidentiality, this one is fictitious. The FCC limits a particular category of unlicensed devices to indoor operation, relying on the building walls to help limit interference outside the building. Suppose someone wanted to operate these devices in stadiums to keep attendees updated on game statistics. In an unroofed venue, this could be said to be prohibited outdoor operation. But the FCC might be persuaded that the stadium structure would provide the same or better interference protection as the walls of a building, and on appropriate request, interpret the rule to allow stadium use.

An office waiver, mentioned above, is similar in process and outcome to a rule interpretation, except that the FCC releases its decision to the public. Sometimes a party will request a rule interpretation and be offered an office waiver instead.

Speeding up the outcome

What can a proponent do to get its innovative technology through these processes more quickly?

The fastest approval always comes with a compliant device. It’s well worth taking the trouble to make one, if at all possible. Paying engineers is a lot faster and cheaper than retaining lawyers. If compliance is not feasible, the design engineers can still help to shorten the approval time with these measures:

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Avoid frequency bands used for critical applications.

- Avoid frequency bands likely to incur well-organized opposition.
- Use a modulation that is inconspicuous to other band occupants.
- Keep the power and duty cycle low.
- Minimize out-of-band emissions, especially into critical bands.
- Associate the technology with applications having high public interest.
- Comply with as many relevant FCC rules as possible.

What can the FCC do to get its processes moving more quickly?

The most obvious way to quickly accommodate new technologies – accelerating the rulemaking process – is a lost cause. Although the suggestions below will help, the real problem is the layering-on of legal requirements by the courts, calling for lengthy, complicated NPRMs and R&Os. In principle Congress could fix the problem by amending the APA, but in practice that will not happen any time soon.

Here are a few alternatives.

First, the FCC can better accommodate innovation through more and faster use of waivers. If a new-technology waiver request looks plausible on its face, it should presumptively qualify for a grant, with the burden on opponents to show why it would cause harm. (A statute arguably requires this approach.) Blanket waivers can be a faster alternative to new rules, in situations where they don’t create an unlawful end-run around the APA requirements. When a rulemaking on equipment requirements is unavoidable, the FCC should routinely ease the delays with a blanket waiver pending the outcome.

Second, the FCC can make more and better use of rule interpretations. In addition to the private letter rulings it occasionally issues now, the FCC can interpret rules by order or public notice, thus making the benefits available to everyone. The APA allows this approach by specifically exempting “interpretative rules” from prior notice and public comment. These are appropriate in cases where technology has over-taken the rules, and an interpretation that allows the new technology poses no realistic risk of harmful interference. A party that disagrees still has recourse to a reconsideration proceeding or a court appeal.

Third: A technical rulemaking usually specifies testing procedures to assess whether a device complies with the new rules. In some, as here, test procedures become the central focus. Many waivers (and interpretations) likewise need new test procedures, but ordinarily the development of these procedures for a particular waiver does not start until after the waiver is granted. Compliance testing and ultimate approval must then await the procedures, which can add another three to six months. Instead, the FCC should routinely develop the test procedures, and then allow testing to go forward, in parallel with the drafting and review of the waiver grant. The happy result would be approval of the device for marketing just a day or two after release of the waiver.

Finally, the FCC can speed up its review of comments, especially in heavily subscribed proceedings, with a public notice that announces, once and for all:

The Commission will disregard submissions which are moot, irrelevant, repetitive, frivolous, utterly lacking in support, or which plainly do not warrant consideration.

(We cribbed some of the language from a different rule.) This will not prevent the filing of pointless submissions, but it will tell their authors they are wasting their time. By letting the FCC toss the sometimes thousands of filings that do not make a substantive contribution, the policy should help it to reach decisions more quickly.

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to reduce microphone access to UHF channels even more. On the upside, though, the Commission has currently opened some other bands for wireless mic use.

As a result, wireless microphone users now must prepare to dance a spectrum hokey-pokey, with some new rules to follow (and new spectrum to access as soon as those new rules are adopted); other rules that will apply during transition periods; and still more rules that will take effect with the transition of new 600 MHz spectrum licensees to UHF. And when it comes to spectrum options, they won’t know exactly how much spectrum will be available to them, or where it will be located, until the incentive auction is over.

**Let’s start with the good news.**

Licensed mics will be able to operate closer to co-channel TV stations by relying on a “sensing threshold” of -84 dBm (when indoors and under other conditions). Previous rules permitting co-channel operation when the TV station is at least 4 kilometers away (or after coordinating with TV licensees) will remain in effect as well.

Two UHF channels will be available for shared use by wireless mics and white space devices. The channels will consist of: (1) a “preserved white space” channel where mics will share with white space devices; and (2) the Duplex Gap between wireless uplink and downlink channels. The Gap will be divided into one 4 MHz block reserved exclusively for licensed mics and a 6 MHz block where unlicensed mics will share with white space devices. Recognizing that in some TV markets the Duplex Gap may have to be made available to a TV station, the Commission is proposing to provide a second “preserved white space” channel in those markets. This proposal will be addressed in a pending rulemaking.

Depending on various auction outcome scenarios, unlicensed mics will share with white space devices most of the guard band between television and wireless downlink spectrum and will get to use 2 MHz of the 3 MHz of spectrum in the guard bands closest to TV Channel 37.

Licensed mic users may also “reserve” spectrum otherwise shared with white space devices. This can be done on short notice and/or for specific needs, e.g., breaking news coverage or particular events (e.g., concerts, gatherings, etc.) that involve extensive mic use. But there will be a slight lag time: the licensed mic user must notify a white space database administrator and request channels for immediate use; the administrator will then have 10 minutes to notify other administrators, and all administrators will then have 20 minutes to “push” notice out to any white space devices operating in the area, advising them to clear the channels.

New spectrum will be available for licensed wireless microphone operators in 941.5-944 MHz, 952.85-956.25 MHz, and 956.45-959.85 MHz. Use of any of those bands will be subject to coordination with the local SBE coordinator. And 944-952 MHZ, previously available only to certain licensed users, will now be open to ALL licensed mics, also subject to coordination.

Also, in certain limited circumstances, wireless mics will now be able to use 1435-1525 MHz – a band currently used for communications relating to flight tests – subject to coordination with the Aerospace and Flight Test Radio Coordinating Council (that’s the test flight spectrum coordinator). Pre-operation authentication and verification confirmation will also be required to use 1435-1525 MHz, through specific procedures and requirements must be worked out. Use of this particular option will be limited to specific fixed locations, such as large venues (outdoor or indoor), where large numbers of mics (typically 100+) are needed for specified time periods, i.e., situations in which other available spectrum resources are insufficient.

And other, better bandwidth channels will be available on 169-172 MHz for Part 90 licensees, while two 25 MHz channels at the top and bottom of 6875-7125 MHz will be opened for Part 74 (and Part 78 CARS) licensees. Use of both bands will be subject to coordination.

**Now the bad news.**

The FCC rejected requests to “grandfather” existing equipment. As a result, a large amount of UHF microphone equipment currently owned must be tossed by

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(Speeding Innovation - Continued from page 11)

The FCC also needs a way to weed out the many oppositions centered on baseless claims that a new technology will cause interference. These include a large fraction of waiver oppositions. Typically such oppositions read like this: “The waiver, if granted, would cause widespread and unacceptable interference to our operations.” They rarely include any technical support and are often hopelessly implausible. (Some have alleged interference from fractional-watt devices hundreds of miles away.)

The best way for the FCC to discourage such filings is to insist on the inclusion of a “link budget.” This is a calculation used by radio engineers to predict the signal strength at a receiver from a given transmitter. It takes into account the transmitter power, properties of the transmit and receive antennas, the distance between them, effects of the chosen frequency, losses in antenna cables, attenuation due to intervening atmospheric conditions, terrain, or ground clutter, and any other relevant considerations. The FCC should announce:

In rulemaking and waiver proceedings, the Commission will disregard any allegation or prediction of harmful interference from another party’s operations unless accompanied by either (a) evidence of actual harmful interference or (b) a realistic link budget estimating power at the victim receiver, together with a plausible showing as to why this level of power will cause harmful interference to the receiver.

None of the above suggestions will entail much additional work for the FCC. To the contrary, they will reduce the workload by forestalling some comments and allowing the FCC to ignore many others. Nor will these create additional burdens for parties to FCC proceedings, except for rulemaking and waiver opponents who would have to prepare link budgets – which they should be doing anyway. In practice, we expect the requirement will keep many unsupportable oppositions from reaching the FCC at all. The net effect will be to help prevent regulatory delay from blocking the launch of new products.

(FHH represented clients in all of the proceedings mentioned or linked in this post.)

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39 months after the Commission issues its “Channel Reassignment PN” placing TV stations in their new channels, an event we estimate is not likely to happen until June 2016 at the earliest. (Note two very marginal exceptions: some equipment may be modifiable, though this will be costly, and some mics may still fit within the new technical requirements.)

The FCC also rejected requests to assist a subset of professional wireless mic users protect their operations. Some such users are “unlicensed” because they use fewer than 50 microphones – think regional theaters like the Signature and Steppenwolf and orchestras even as large as the Houston and Baltimore Symphonies. Proponents had suggested a mechanism for such groups to register for protection from white space devices. The Commission declined to provide such a mechanism.

Unlicensed mics choosing to operate in the 600 MHz may operate in the Duplex Gap and guard bands, but do so only with 20 mW EIRP, and they must register with (and pay any required fees to) white space database administrators. They also may no longer register for protection from white space devices.

Licensed mics may only operate in 600 MHz at 20 mW EIRP in the Duplex Gap. That’s bad news because, generally, licensed mics are allowed more than 10 times that (i.e., 250 mW power).

Where does this leave the industry?

Users must plan well-ahead to determine whether and when new equipment must be purchased, what spectrum may be available to them, and when specific operating rules go into effect. Once the incentive auction is done and the FCC makes new TV channel assignments, a 39-month transition period will begin where mics can operate in the 600 MHz Service Band, but after the transition they must vacate all of the 600 MHz Service Band except for the Duplex Gap & guard bands (licensed mics must vacate all of the 600 MHz Service Band except for 4 MHz in the Duplex Gap). Professional users that do not qualify for FCC licenses will not have access to any of the new spectrum and will need to determine how to continue to provide professional events while sharing spectrum with white space devices (from which they will no longer be able to register for protection).
word “drone,” in FAA-speak they are referred to as “unmanned aircraft systems” or UAS. You’d need a “small UAS,” which is an unmanned aircraft weighing less than 55 pounds. (For those keen on drone facts, there is also a “micro UAS” class, which the FAA proposes to mean aircraft of up to 4.4 lbs., made of fragile materials that can break easily and not cause harm upon collision, and which cannot exceed an airspeed of 30 knots.)

As long as you won’t be taking to the skies within certain distances from certain airports, in otherwise restricted airspace or in certain densely populated areas, you’ll need three things to operate your drone commercially:

- An exemption, issued under a process pursuant to Section 333 of the FAA Modernization and Reform Act of 2012, which can obviate the need for a separate FAA-issued Airworthiness Certificate and will come with a limited Certificate of Waiver or Authorization (COA);
- An authorized pilot (i.e., someone with an FAA-issued Airman Certificate); and
- A properly registered UAS.

Section 333 Exemption, Airworthiness Certificate and COA. Historically, commercial drone operators had to apply for, and obtain, two different certificates from the FAA: an Airworthiness Certificate and a COA. The FAA’s new and improved 333 Exemption process, a temporary process put in place until the agency issues permanent rules, expedites things by allowing would-be drone operators to obtain both certificates through a single process. The process essentially requires filing paperwork to show that a UAS is “airworthy” and that its proposed operation will otherwise satisfy the FAA’s temporary rules.

With respect to airworthiness, note that while 333 Exemptions are issued to operators and not manufacturers, showing that the particular drone model already has been determined to be “airworthy” will help get that authority faster. (Alternatively, a drone operator may still separately seek a formal “airworthiness certification” in one of three categories, but that could take a year to process.)

On the operational side, an applicant for a 333 Exemption must describe in some detail the nature of its proposed operations, including the nature of the equipment to be used, the manner in which and the area in which it will be used, and the RF spectrum on which the drone controls and any related on-board gear (e.g., cameras) will operate consistently with FCC requirements. It must also include the qualifications of the Pilot in Command (PIC) who will be responsible for the drone’s operation. You can find a more detailed listing of the requirements for an exemption, as well as the process for getting your exemption petition filed, here.

A successful 333 Exemption petition will result in the issuance of a “blanket” COA that will permit operation of the drone essentially nationwide (with some exceptions). Blanket COAs generally limit drone operation to no higher than 200 feet above ground level during daylight only, with drone weight of less than 55 pounds. Operation pursuant to a blanket COA is prohibited within certain distances of airports/heliports, otherwise restricted airspace and certain densely populated areas.

333 Exemptions also require that the PIC controlling the drone maintain visual line of site (VLOS) of the drone at all times, unaided by any device other than corrective lenses. No, you can’t operate a drone from a moving vehicle, so you won’t be able to maintain VLOS by following your drone around in a car. And no drone-flying over (or within 500 feet of) “nonparticipating” persons unless those persons (a) are protected by adequate barriers or structures or (b) have given their consent and the operation doesn’t constitute an undue hazard to them.

(Pretty much any of those conditions would put the kibosh on the drone filing service we here at FHH Telecom Law were contemplating. At 18 stories, our building is just around the 200 foot limit, so the roof-top is probably not a good launch point. While the FCC is less than three miles away from our bunker as the drone flies (according to Google, at least), and while we can make out the Portals from our roof-top patio on a clear day, it’s doubtful that we could maintain the necessary VLOS. Also, our anticipated flight path

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would pass over sidewalks, streets, a river full of boaters and a Mall full of tourists, all of whom would be “nonparticipating” as far as the FAA is concerned. And let’s not forget that we’d have to fly through a Reagan National Airport approach path and right past the White House, i.e., areas where the Feds strongly discourage any drone use.)

If you want to fly in any of the no-fly areas not covered by the blanket COA, or if you want to operate beyond any of the other parameters specified in the blanket COA, you’ll have to file separately for a standalone COA – but you’ll still have to get a 333 Exemption first.

How long does it take to get a 333 Exemption? The FAA has sped up its 333 Exemption process significantly since first issuing them in 2014, and now has issued more than a thousand 333 Exemptions. It appears that, in recent months, the process has taken four to six months from initial petition to issuance of the COA. (You can find copies of all of those at this FAA website page.)

Authorized Pilot. While Congress has afforded the FAA some flexibility in the issuance of 333 Exemptions and COAs, it has not done so with regard to airman certification standards. As a result, individuals operating commercial drones in the National Airspace System must have an FAA airman certificate (though the FAA relaxed initial requirements and now allows those with sport or recreation pilot certificates to fly UAS). We understand that some available services provide qualified pilots for short-term hires.

A Registered Drone. In addition to the formal 333 Exemption, operators must also separately register their drone(s) with the FAA. Registration is accomplished by submission to the FAA of an original (no computer generated copies, please) AC Form 8050-1 and a plethora of other information. More paperwork, to be sure, but kudos to the FAA for charging only $5 for this process, a bargain compared to FCC filing fees which can run in the hundreds of dollars.

Bear in mind that the 333 Exemption process is, in theory, in place only temporarily, until the FAA finalizes its anticipated UAS regs. So will those regs make drone authorization and operation any easier?

At this point, many are doubtful. While the proposed rules would eliminate the airworthiness certification requirements and make obtaining an airman’s certificate for UAS operations easier, they also include a number of the limitations on commercial drone use currently in place. These include prohibitions on: flying at night; flying over people not associated with your project; and flying where the pilot lacks VLOS of the drone. This limits much of what the burgeoning industry wants to do, and what is being done in other countries, i.e., delivering not just Amazon packages, but prescription medicines and medical equipment to rural areas; conducting search and rescue missions and sending drones out to obtain a better understand the state of a wildfire; inspecting pipelines and critical infrastructure like railroad lines and cellular towers; and precision agriculture.

Key industry players are pushing the FAA to allow for highly automated, non-visual line of sight operations (after all, our Defense Department is not shy of using these technologies overseas), but at this point the FAA does not appear open to the idea. So plans for a “drone superhighway” (Amazon has proposed low altitude – i.e. 200-400 feet – “transit pathways,” with a “no fly zone” in 400-500 feet AGL to provide a protective space between drones and aircraft) and a drone air traffic control system (NASA is busy at work on this) are a bit premature. The FAA will have to be confident that drones operating in the superhighway could detect, communicate with, and avoid other drones, and generally be able to “see and avoid” and otherwise retain control while being operated from a distance. This will take time.

For now, then, if you want to use your drone for your business – such as newsgathering – it would probably be a good idea to get a 333 Exemption petition on file. Despite Congress’s direction that the FAA’s new rules be in place this month, a number of observers are estimating that those rules won’t be ready until late 2016 or even 2017. If you apply for a 333 Exemption now, you’d be likely to be in operation by early 2016. Let us know if we can help in the process.
The FCC cited Verizon’s experience with the replacement of its copper network serving Fire Island that was damaged by Superstorm Sandy with a wireless network as an example of where carriers need to carefully consider whether a proposed copper replacement will result in a discontinuance, reduction, or impairment of service requiring a discontinuance application. In that case, Verizon provided notice to Fire Island wireline customers that their copper phone line service would be replaced by wireless service. Outraged customers complained that the switch to wireless service would mean that the network would not provide its own power, and was not compatible with alarm systems, medical monitoring services, fax machines, credit card machines, collect calling services, and some international calling cards. Furthermore, customers would not be able to receive broadband Internet through the wireless-based service. As a result of the public outcry, Verizon was forced to backpedal on its wireless plan, and install a fiber-based solution instead.

Among the new requirements adopted by the FCC is the requirement for ILECs to provide at least six months’ advance notice of proposed copper retirements to interconnecting carriers in order to provide those carriers with adequate time to prepare their networks for the changes. The FCC emphasized that ILECs must consider the impact of their actions on end user customers, including the end users of carrier customers. The FCC adopted rules that permit entities that directly interconnect with the ILEC’s network to request additional information where necessary to allow the interconnecting entity to accommodate the ILEC’s changes with no disruption of service to the interconnecting entity’s end user customers. ILECs are required to work with requesting interconnecting entities in good faith to provide such additional information.

Retail customers are not left out of the FCC’s new notice requirements. ILECs will be required to provide direct notice of planned copper retirements to all of their retail customers within the affected service areas, but only where the copper to the customer’s premises is to be retired, e.g., where an ILEC replaces copper-to-the-premises with fiber-to-the-premises regardless of the customer’s preference. Notice to customers will not be required in those instances where operational copper remains in place. Residential customers must receive at least 90 days’ notice, and nonresidential customers must receive at least 180 days’ notice, of any planned copper retirement. It is important to note that the FCC declined to adopt any exemptions from the copper retirement requirements for rural LECs.

The FCC also considered whether the transition to fiber-based technologies would impact the ability of competitive carriers to continue to provide service to subscribers. To address that concern, the FCC adopted an interim rule that ILECs which seek approval to discontinue wholesale services to competitive carriers must provide access to reasonably comparable wholesale services for (1) special access services at DS1 speed and above, and (2) commercial wholesale platform services such as AT&T’s Local Service Complete and Verizon’s Wholesale Advantage. The replacement services must be offered to competitive providers at rates, terms and conditions that are reasonably comparable to those of the legacy services.

The FCC’s Report and Order is not exactly a sea-change regarding the requirements for network facilities discontinuances, and in this case, copper wire. However, it does provide additional guidance, and to some extent, imposes additional requirements, regarding network changes to copper facilities that require FCC approval. Furthermore, it also provides some assurance that the FCC is looking to protect and promote competition through its interim wholesale access rules. It remains to be seen whether access by competitive carriers to the covered wholesale services will change, for the better or for the worse, in the future.
order to preserve the Commission’s ideal competitive cast of four nationwide players, the FCC should have reserved 40 MHz. This would presumably have permitted Sprint and T-Mobile to each graciously acquire the needed 20 MHz without having to bid too fiercely against each other, while AT&T and Verizon would gambol in the unreserved band where they too could each comfortably acquire their own 20 MHz. The four carrier model would be preserved and all other carriers would pick up any remaining crumbs. Ultimately, the FCC decided to retain the 30 MHz reserve, but while T-MO lost the battle, it may have won the war. Sprint has since announced that it is sitting out this auction, thus eliminating the carrier which would have been most likely to bid against T-MO for the 20 MHz block.

With this issue resolved, there are a few key things to remember about the reserved block:

☑️ The reserved spectrum does not become reserved until the FCC has received enough bids to meet the minimum it needs to declare the auction a success (i.e., enough to: pay off the broadcasters who are selling their stations; cover the expenses of the auction; and cover relocation costs of re-packed broadcast stations). Until that point in the auction is reached, reserve-eligible bidders must compete directly against the big guys, and if they are not actively bidding when the success point is reached, they are not eligible to bid in that market. So smaller carriers can’t sit around and wait for the big guys to be frozen out of the bidding lest they themselves get frozen out.

☑️ We just said “smaller carriers” can’t sit around, because our natural assumption is that the eligible bidders for the reserved spectrum will be scrappy little companies trying to get their piece of the American dream. But in fact, AT&T and Verizon are themselves actually eligible bidders for reserved spectrum in a significant percentage of the markets. And since there is no size or revenue cap on who qualifies as an eligible bidder for reserved spectrum, there could easily be giant new entrants, either domestic or foreign, who are looking to break into the spectrum market. Nothing would preclude Google or large European carriers, for example, from being eligible for the reserved spectrum.

☑️ And while there was much wrangling over the 30 vs. 40 MHz reserve, it may well be that in some markets where not that much spectrum is available to begin with, the reserved spectrum could be as little as 10 MHz.

☑️ One nice thing about the reserved spectrum is that it will not be “impaired,” i.e., subject to a large degree of interference constraints and therefore deemed less desirable. “Unimpaired” spectrum cannot have more than 15% impairment, while “impaired” spectrum can go as high as 50% impairment.

☑️ Buyers of reserved spectrum must also be aware that once they have bought the spectrum, they can’t sell or lease it to an entity that is not eligible for the reserve for a period of 6 years.

Potential bidders in the forward auction have much to think about. The availability of reserved spectrum – and how to maximize that opportunity – is a key element to consider.

Section 7 as authority for its actions, we are not aware of a case where it has explicitly followed the section’s mandates. It has already missed the one-year deadline for the Battelle request (assuming Section 7 applies). We agree with IEEE that applications over 95 GHz can legitimately be deemed new technologies, which makes the ZenFi and McKay Brothers requests a good place to start applying Section 7.

Reply comments are due by November 30. Submit your filing at this link; use proceeding number 15-245. (FHH represents an industry group that filed in support of the Battelle request.)
Following congressional approval last year for the unlocking of cell phones, the Librarian of Congress has now adopted a broad exemption that permits the unlocking of all wireless handsets, including smart phones and “phablets.” A cell handset obtained through a carrier (such as Verizon or AT&T) usually comes software-configured to operate only on that carrier’s network. Unlocking the handset allows it to connect to competing carriers.

The Librarian has also authorized (among other things) circumventing software controls to unlock or gain access to:

- tablets;
- wireless modems;
- wearable wireless devices such as smartwatches and fitness devices;
- smart meters and smart appliances;
- smart TVs;
- video game software (for limited purposes);
- voting machines;
- vehicle software (other than telematics and entertainment systems); and
- implanted medical devices, to access the patient’s own data.

The same order authorizes the “jailbreaking” of a handset or tablet: modifying it so as to (a) install apps and other software not approved by the carrier, and (b) remove apps the carrier tried to make non-removable. Also authorized is the examination of computer programs for security research.

Without these special exemptions from the Librarian, each activity above would arguably violate the 1998 Digital Millennium Copyright Act (DMCA) and expose the perpetrator to a fine of up to $500,000 and up to five years in the federal penitentiary. Click here for background on why this is so.

The Librarian declined to authorize the unlocking of or access to:

- digital rights management (DRM) controls on digital media for the purpose of playing on alternative devices or to make back-up copies, even for personal use;
- ditto for e-books;
- dedicated e-book readers such as the Kindle; and
- video game consoles (as opposed to game software).

You may ask why the Librarian of Congress, traditionally a keeper of books, gets to regulate high-tech devices. The Librarian has always been in charge of administering the Copyright Act, which seemed reasonable enough in the days of paper. When Congress made the relevant sections of the DMCA part of the Copyright Act, that brought a wide range of digital issues – such as unlocking – within the Librarian’s purview. Many tech bloggers, along with the FCC Chairman, have questioned whether issues relating to sophisticated software are in the right hands.

The Librarian’s order is here. Get comfortable; it’s a long read.

Then have fun hacking.