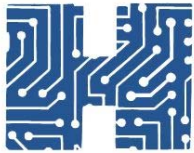


NKOTHB in sync with PCS?



Coming Soon: New Kids on the (H) Block?

By Cheng-Yi Liu
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Nearly a year ago Congress passed, and President Obama signed into law, the Middle Class Tax Relief and Job Creation Act of 2012. The 47% famously referred to by former Candidate Romney may be surprised to learn that more than 53% of the text of the law dealt with matters largely unrelated to tax relief or job creation. By contrast, Title VI of the law – what we in the biz refer to as the “Spectrum Act” – comprises a whopping 55 out of the law’s 102 pages. That amounts to nearly 54% by our math. Not surprisingly, we have reported on numerous aspects of the Spectrum Act here over the last year.

Don’t fret if you’ve missed out – there’s plenty more Spectrum Act fun still to come.

For example, we have the FCC’s Notice of Proposed Rulemaking (NPRM) seeking comment on proposed service rules for the Advanced Wireless Services (AWS) H Block spectrum. Licenses in the block are anticipated to be offered for competitive bidding in 2013.

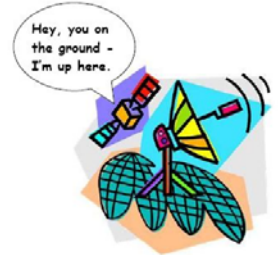
Pat yourself on the back – but not too hard – if you deduced that the NPRM and anticipated AWS H Block spectrum auction are products of the Spectrum Act. Hence, the law directs the FCC to “unleash” (or grant, if you prefer) new initial licenses in the AWS H Block (among others) within three years of the Spectrum Act’s passage. The goal is to “unleash more spectrum for broadband” because doing so is supposedly “essential” to the achievement of “economic growth, job creation and global competitiveness” and nirvana generally. (To

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Satellite transmuted into terrestrial

Administrative Alchemy Yields Gold for DISH

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We reported in last May’s edition of *FHH Telecom Law* that the FCC had proposed to alter the satellite licenses held by affiliates of DISH Network to allow terrestrial operations. DISH had bought the licenses out of bankruptcy proceedings, the satellite-oriented mobile communications business having proven not to be a viable business model, at least in this band for the original holder of the licenses. In connection with that acquisition, DISH urged the FCC to modify its licenses to permit (in addition to the Ancillary Terrestrial Component (ATC) of those licenses) terrestrial service without any concomitant obligation to provide satellite service.

The FCC had already made such terrestrial-*sans*-satellite service possible in 2011 by reallocating the pertinent 2 GHz band to permit, on a co-primary basis, both satellite communications and terrestrial fixed/mobile communications. All that remained was for the Commission to create technical and service rules for the new terrestrial service in this band (to be dubbed AWS-4) and modify the licenses accordingly. The Commission did that by a Report and Order issued just in time to be placed under DISH’s Christmas tree.

The proposal drew surprisingly little opposition, given the fact that DISH’s licenses would approximately triple or quadruple in value (from something over \$2 billion to around \$8 billion) as a result of the fundamental change effected by the license modification. The limited wrangling that did occur at the FCC concerned the degree to which mobile operations in the new service would have to protect operations in the immediately adjacent, soon-to-be created, AWS “H” block. The FCC wanted to be sure that the H block downlink operations in the 1995-2000 MHz band would not suffer interference from the AWS-4 uplink operations in the 2000-2020 MHz band. This necessitated placing some constraints on out of band emissions

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Telecom Providers and Manufacturers: Accessibility-Related Recordkeeping and Certification Requirements Are Now in Effect

By Cheng-Yi Liu
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If you happen to be subject to Section 255, 716 and/or 718 of the Communications Act, the FCC wants to make sure that you know you've got some recordkeeping to do – and some reporting, too. (Fuzzy on whether you're in that club? If you are **not** a communications service provider or equipment manufacturer, you need read no further. If you do happen to fall into one or both of those categories, you should read on, although it may turn out that you, too, are off the hook.)

The new recordkeeping requirements – which took effect on January 30, 2013 – arise from Congress's repeated efforts to ensure that telecommunications services and equipment are accessible to folks with disabilities. Thanks to those efforts, certain service providers and manufacturers must take affirmative steps to provide accessibility to the extent achievable.

And now, in addition to actually taking those steps, the affected companies must also maintain records of the steps they've taken . . . and they've also got to confirm to the FCC, once a year, that they are indeed maintaining such records.

What kind of recordkeeping are we talking about?

According to the Commission, affected entities must maintain, in the ordinary course of business:

records of information about efforts to consult with individuals with disabilities; descriptions of the accessibility features of their products and services; and information about the compatibility of such products and services with peripheral devices or specialized customer premise equipment commonly used by individuals with disabilities to achieve access.

Section 14.31, which imposes this obligation, is light on specifics – no particular format for the records is mandated. However, the records must be kept “for a two year period from the date a product ceases to be manufactured or a service ceases to be offered”. (The Commission's public notice about the recordkeeping rule says – unhelpfully, and perhaps a bit misleadingly – that the records must be maintained “for a reasonable period”.)

Once the records have been prepared, there is **no** obligation that they be submitted to the FCC (unless a complaint is filed and the FCC then asks for them). But that doesn't mean that you don't have to file anything at all.

Au contraire. The Commission wants to be sure that everybody that's supposed to be keeping records is in fact keeping records, even if the FCC isn't particularly interested in seeing the records themselves. So, as of this year, every telecom service provider and manufacturer subject to the recordkeeping requirement must submit a certificate to the FCC, annually, confirming that the certifying entity “has established operating procedures that are adequate to ensure compliance with the recordkeeping rules and that it is keeping records accordingly”. That certificate must be supported by a statement – *signed under oath or penalty of perjury* – from an authorized company official verifying the truth and accuracy of the report.

In addition, the certificate must include the name and contact information of company personnel authorized to receive service, and/or resolve, complaints about possi-

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New rules for the current environment



FCC Overhauls Experimental Radio Rules

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The FCC is friendly to anyone who works on new radio technologies, whether a Ph.D. corporate researcher or a teenager making solder burns in his parents' furniture. (A lot of the FCC engineers, we suspect, were once those teenagers.) The FCC carefully regulates radio equipment available for sale, but it also lets people build their own gear, either homebrew or from kits, with almost no regulation, and it encourages tinkering with new ideas.

Innovators who develop new radio-based products, even those ultimately meant to conform to the FCC's technical rules, usually have to power up early models and prototypes that may not yet comply. In order to keep an eye on such activities, while still maximizing freedom in the lab, the FCC long ago set up the Experimental Radio Service. An inventor – or anyone – simply fills out a form with the location, the frequencies to be used, the power, and a few other details, and explains the purpose in a short paragraph. A few weeks later, the FCC sends a license.

The FCC has now rewritten these rules. The old form of experimental license remains available, but some new options appear as well. (Caution: the new rules depart substantially from those the FCC proposed back in 2010.) Among other changes, the new rules gather together the experimental provisions from other rule parts, including the Experimental Broadcast Stations formerly authorized under Part 74.

One problem with the old experimental regime was the need to apply for (and then wait for) a new or modified license if the research takes an unexpected direction – as it often does. Suppose an engineer is working on a new kind of unlicensed radar in the Wi-Fi band at 2400 MHz. She needs an experimental license to operate the new device, until it passes the compliance tests for FCC certification. As the research proceeds, though, the engineer might want to try designing for the somewhat different rules at 5800 GHz. But to operate in that band is unlawful, until the FCC updates the license – a process that can take several weeks.

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Online and in the air

FCC Boots Up Internet Service in Airplanes

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A recent FCC action will make it easier to read FHH Telecom Law on board an aircraft.

Wiring up an airplane for Wi-Fi is relatively easy. The hard part is getting a wholesale Internet connection to and from the aircraft that is adequate to serve dozens of on-board users simultaneously. One obvious answer is a broadband radio connection from the ground, but that has a downside: due to its high vantage point, the aircraft ties up frequencies over a very wide geographical area. So the airlines and their Internet-provider partners have been looking up rather than down – satellite service could do the job.

The FCC has now adopted technical and licensing rules that will allow earth stations installed on aircraft to communicate with Fixed-Satellite Service (FSS) spacecraft in geostationary orbits, using 14.0-14.5 GHz for uplinks, and 10.95-11.2, 11.45-11.7, and 11.7-12.2 GHz for downlinks. The new service will be called “Earth Stations Aboard Aircraft” (ESAA). Antennas on board the planes will have to maintain a sufficiently accurate bead on the satellite so to avoid causing interference to adjacent satellites in orbit. The FCC has been authorizing a similar service on an *ad hoc* basis since 2001, and evidently feels the technology is now sufficiently mature to permit routine licensing.

ESAA follows earlier rule changes that allowed the installation of FSS antennas first on ships, and then on vehicles. In the FCC's view, the adoption of ESAA is the logical next step in that progression. Oddly, though, the “F” in FSS continues to stand for “Fixed,” even as the FCC authorizes the service for increasingly mobile applications. Although there is also a separate Mobile Satellite Service, its technical characteristics are not well suited to multi-user broadband delivery.

As a regulatory matter, the ESAA rules follow the precedent set with earth stations on ships and vehicles in denying interference protection to the 10.95-11.2 and 11.45-11.7 GHz downlink bands. This helps the new aircraft-based service conform to the existing U.S. allocations. Moreover, considering that aircraft doubtless

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Trust us, we're the government . . .



GAO Report: In Wake of Successful Hack of FCC Computer Systems, \$10 Million Fix Ineffective

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Did you know that, in September, 2011, the FCC was the victim of “a security breach on its agency network”?

Neither did we.

The precise nature and extent of the breach hasn't been made public (as far as we can tell), but it must have been impressive. Did you also know that, in reaction to that breach, the FCC wangled out of the Office of Management and Budget a cool \$10 million to undertake an immediate “Enhanced Secured Network” (ESN) Project to improve its computer security against such cyber attacks?

Neither did we.

And did you also know that the General Accountability Office (GAO), called in to assess the manner in which the FCC implemented its ESN Project, concluded that the FCC messed up? In particular, according to the GAO, the Commission “did not effectively implement or securely configure key security tools and devices to protect these users and its information against cyber attacks.”

And did you know that, as a result, again according to the GAO, the Commission continues to face “an unnecessary risk that individuals could gain unauthorized access to its sensitive systems and information”?

Neither did we.

This is all spelled out – circumspectly, to be sure, presumably so as not to reveal too much about the FCC's vulnerabilities – in a GAO report sent to Congress on January 25, 2013. The report was not publicly announced until this month.

The fact that the FCC's computer systems have been compromised is bad enough. The fact that the FCC, apparently acting in haste, cut a few too many corners in its effort to lock up the barn door after the horse had taken a hike is even more troublesome.

But what is especially galling – to this observer, at least – is the fact that, while all that has been going on, the Commission has proposed to force a large universe of individuals to trust the FCC with their social security numbers. And in so doing, the Commission hasn't bothered to mention that the computer systems on which those numbers would presumably be maintained have already been shown to be vulnerable to hackers.

As we reported last month in our companion blog, Commlawblog.com, the Commission is considering the elimination of the Special Use FRN in connection with broadcast Ownership Reports (FCC Forms 323 and 323-E). If adopted, that elimination would mean that all attrib-

utable interest holders of all full-service broadcast stations (as well as LPTV and Class A TV stations) would have to cough up their social security numbers to the Commission in order to obtain an FCC Registration Number (FRN), which would have to be included in all Ownership Re-

ports. Comments on that proposal had to be filed no later than February 14.

The FCC's seeming reticence relative to the fact that it suffered an apparently successful cyber attack 18 months ago, and that its efforts to fix the problem in the meantime have apparently been less than successful, is understandable, if regrettable (and also curiously contrary to this Commission's professions of “transparency”).

But it seems extraordinarily inappropriate for the Commission, knowing of those vulnerabilities, to then propose that a huge number of folks must provide to the FCC the crown jewels of their identity, their social security numbers. In so doing, shouldn't the Commission, at a bare minimum, have alerted us all to the fact that not only are their computers possibly vulnerable (we all know that that's an unfortunate fact of modern-day life), but that their computers had *already been successfully attacked*? Oh yeah, and mightn't it have been a good idea to spread the word that GAO had been called in to see whether the

(Continued on page 18)

The FCC, apparently acting in haste, cut a few too many corners.

Telecom Tickler 2013

CPNI Certifications Due By March 1

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If you're a telecommunications carrier or interconnected VoIP provider, now's the time to get out your calendar, turn it to late February or so, and mark in big red letters: "**CPNI CERTIFICATIONS DUE MARCH 1, 2013**". And don't forget to follow up by that important deadline.

CPNI here refers, of course, to Customer Proprietary Network Information (but you probably already knew that), and the certifications that are due at the Commission by **March 1, 2013** are required by the FCC's rules (as you hopefully already knew as well.) The FCC has issued a convenient "Enforcement Advisory" to remind one and all of the deadline. Like similar advisories in past years, this year's includes a helpful list of FAQs and a suggested template showing what a certificate should look like. Heads up, though – this year's advisory specifies that CPNI includes the numbers of calls made *and received*; advisories in past years referred only to "phone numbers called". Additionally, in this year's advisory voicemail is specifically included among the services covered by CPNI.

The Commission takes this reporting requirement very seriously.

As we have explained annually for the past several years, the CPNI rules are designed to safeguard customers' CPNI against unauthorized access and disclosure. The rules themselves are set out in Subpart U of Part 64 of the Commission's rules, if you want to check them out yourself.

Since 2008, the rules have required that telecommunications carriers and interconnected VoIP providers have an officer sign and file with the Commission a compliance certificate, annually, stating that he or she has personal knowledge that the company has established operating procedures that are adequate to ensure compliance with the rules. The carrier must also provide: (a) a statement accompanying the certification explaining how its operating procedures ensure that it is or is not in compliance with the rules; and (b) an explanation of any actions taken against data brokers and a summary of all customer complaints received in the past year concerning the unauthorized release of CPNI.

The Commission takes this reporting requirement *very seriously* – historically the FCC has doled out five-digit

finest to non-compliant carriers. (In fact, the FCC's zeal is such that, in many instances, it has initiated forfeiture proceedings even against carriers who, as it turned out, had fully complied with the rules.)

In light of this, it's a good idea not only to get the report filed on time, but also to be sure to get, and keep, records demonstrating what you filed and when you filed it. That way, if the FCC wrongly accuses you (as it has wrongly accused others in the past), you will ideally be able to avoid a considerable amount of hassle, not to mention liability for any fine.

Who, exactly, needs to file this report? In its recently-released FAQ, the Commission offers examples of "telecommunications carriers" subject to the reporting requirement: "local exchange carriers (LECs) (including incumbent LECs, rural LECs and competitive LECs), interexchange carriers, paging providers, commercial mobile radio services providers, resellers, prepaid telecommunications providers, and calling card providers." But the FCC cautions (in italics, as it has in past years) that "*this list is not exhaustive*".

(The Commission emphasizes that aggregators are *not* required to file. An aggregator is "any person that, in the ordinary course of its operations, makes telephones available to the public or transient users of its premises, for interstate telephone calls using a provider of operator services.")

This is *not* something that can or should be left to guesswork: as in most other areas of the law, ignorance is no excuse. If you are a telecommunications carrier or an interconnected VoIP provider, it would behoove you to tie down, sooner rather than later, whether you are required to file a certification. (Your communications counsel would be a good place to start, if you have any questions.)

Remember: If you are in the broad universe of entities required to file the certification but you fail to do so for whatever reason, you're almost certainly looking at a \$20,000 forfeiture (not to mention the aggravation and legal fees normally associated with responding to an NAL).



Law of physics, FCC-style

FCC Demonstrates Principle of Conservation of (Regulatory) Energy

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Providers of international telecommunications services may be happy to learn that the FCC has reduced or eliminated requirements to report data on international traffic, revenue and circuits. Sort of. By consolidating Sections 43.61 and 43.82 of its rules into a single rule (Section 43.62), the FCC claims in the public notice touting its Second Report and Order (*2nd R&O*) that it will “eliminate” international traffic and revenue reporting requirements for over 1,000 reseller carriers. (Facilities-based service providers should get a few breaks, too, but we won’t cover them in detail here.)

But there’s a catch to the Commission’s broad claim of deregulation. As it turns out, the elimination/reduction of reporting requirements is balanced out by a raft of *new* requirements which effectively restore the equilibrium of regulatory burden because, presumably, to do otherwise might violate the laws of physics and destroy the universe.

What new requirements are involved?

First, all entities that either (a) have an International Section 214 Authorization or (b) provided any international services in the prior year will have to file a “Registration Form” and a “Services Checklist” annually by July 31. Previously, only common carriers that actually provided international services had to file anything. (This means that all holders of International Section 214 Authorizations must now file something each year. Before, by simply not providing telecommunications services, companies could obtain and retain such authorizations without necessarily triggering additional filing requirements.)

The new Registration Form shouldn’t create a huge burden. In addition to soliciting basic name/address information and a certification, it also requires a list of a filer’s International Section 214 Authorizations and cable landing licenses. Doesn’t the Commission – which granted such authorizations in the first place – already have all this information in its databases, you ask? Yes, but according to the FCC, requiring companies to report these data “will serve as a valuable check on our own records, ensuring that the filers’ records and our records agree.”

The new Services Checklist, which consists of a list of seven check boxes (two of which include two separate sub-boxes each) also seems fairly tame, for an FCC required form. Reporting entities simply designate the categories which apply to their services; entities which provided “International Communications Services Resale” (ICS Resale) and “International Miscellaneous Services” during the reporting period must indicate whether or not such services generated over \$5,000,000 in revenue in the prior year.

Simple so far.

But once you decide which boxes to check, the Services

Checklist provides friendly and convenient instructions on which of the “Schedules” on the new “Traffic and Revenue Report” you will need to file.

Um, “Schedules”? “Traffic and Revenue Report”?

Companies will now have to submit additional data on a new “Traffic and Revenue Report” containing multiple “Schedules”.

That’s right, companies will now have to submit additional data on a new “Traffic and Revenue Report” containing multiple “Schedules”. At least the new Schedules have defined fields to complete, which is better than the reporting process under the old international traffic and revenue filing manual (last revised in 1995).

To accompany the new Traffic and Revenue Report, the International Bureau (IB) will also be preparing a new filing manual which would, in a perfect world, be more concise and easier to understand than the old filing manual. The outlook isn’t good so far: the initial draft is a hefty 97 pages of joyous reading (to be fair, only 37 pages comprise actual written instructions – appendices with definitions and copies of the new forms make up the rest). Luckily, the public will have another chance to comment on the IB’s proposed updates, so the draft might get improved. The bottom line, though, is that filing entities will need to learn a new set of parameters for reporting.

Perhaps the most significant new burden: international traffic and revenue reporting requirements will be im-

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(International Telecom Reporting - Continued from page 6)
posed on interconnected VoIP services (e.g., Vonage) and one-way VoIP services (e.g.,

Skype) which provide for international calling to the PSTN. Collectively, the *2nd R&O* calls these types of services “international VoIP services connected to the PSTN.”

So while more than 1,000 reseller carriers may experience a reduction in international traffic/revenue filing requirements, more than 1,000 interconnected VoIP providers in addition to an unknown number of one-way VoIP providers will experience the opposite effect.

In the *2nd R&O* the Commission trots out the usual justifications for extending additional carrier requirements to interconnected VoIP services, as well as the ever-familiar disclaimer that the Commission does not determine whether such services are “telecommunications services” or “information services.” Interconnected VoIP providers probably won’t be surprised by this (we’re certainly not), as the Commission has been slowly extending all kinds of telecommunications carrier requirements their way for quite some time.

Most providers of “international VoIP services connected to the PSTN” should have an easy enough time handling the new reporting requirements. However, there are a few nuances which may prove to be tricky, and we may need to see the final version of the new filing manual before some questions are fully settled.

For example, the reporting of “non-route-specific” revenue. Generally, this could include items such as monthly subscription fees for international calling plans or bundled plans which cover both domestic and international calling. The new requirements specifically dictate that revenue from such fees must be broken out and allocated to specific international routes. Allocating revenue to specific international routes (e.g., services provided from the U.S. to Mexico) is easy when service is billed on a per-call basis, but VoIP providers (as well as more traditional carriers) with non-route-specific revenue will need to devise their own allocation methodologies to account for this requirement.

Another issue which may complicate reporting for providers of international VoIP services connected to the PSTN involves the definitions of Facilities ICS (that’s international communications services, if you’ve forgotten) and ICS Resale.

Facilities ICS providers have greater reporting burdens than ICS Resale providers. According to the *2nd R&O*, it should take providers of international VoIP services connected to the PSTN 150 hours when applying Facilities ICS type requirements; by contrast, the burden should be a measly two hours when applying ICS Resale requirements. That’s a big difference. The initial draft of the new filing manual dedicates many pages (and diagrams) to explaining what would be considered “Facilities IMTS” as opposed to “IMTS Resale” (the ICS nomenclature wasn’t introduced until the *2nd R&O*). The explanations also cover types of VoIP services which would fit into the “Facilities IMTS” camp, thereby triggering the greater reporting burdens.

Unfortunately, we won’t have true certainty on how to make the Facilities ICS vs. Resale ICS distinction until the new manual is complete. (Those who have particular views on this should keep an eye out for the next opportunity to comment on the IB’s proposed updates to the filing manual.)

There are a few nuances which may prove to be tricky.

So, getting back to the FCC’s claim that the *2nd R&O* will eliminate reporting requirements for over 1,000 reseller carriers: that claim is technically true . . . in a zero-sum game kind of way. The *2nd R&O* estab-

lishes a reporting threshold of \$5,000,000 in revenue generated from ICS Resale (as opposed to Facilities ICS). Thus, resellers with ICS Resale revenue below this threshold won’t need to report additional data or file the Traffic and Revenue Report. Once the rule changes go into effect, qualifying resellers will need only file the Registration Form and the Services Checklist to tell the Commission that they are exempt from filing. So one filing requirement was eliminated, only to be replaced by another.

On the bright side, this “conservation of regulatory energy” probably prevented the universe from imploding.

Because the new rules include “information collections”, they can’t take effect until they have been run past the Office of Management and Budget (thanks to our old friend, the Paperwork Reduction Act). Additionally, the IB still has to update the new filing manual, and the reporting forms have to be implemented in the International Bureau Filing System. Bottom line: this could take a while. The Commission promises that it will issue a public notice concerning the effective date, once that date is tied down. Check www.Commlawblog.com for updates.



(New Kids on the (H) Block - Continued from page 1)

all the “leashed” spectrum out there yearning for freedom – don’t worry, your time will come.) The *NPRM* is the FCC’s first step in implementing this particular Spectrum Act directive.

The AWS H Block comprises the spectrum blocks at 1915-1920 MHz (Lower H Block) and 1995-2000 MHz (Upper H Block). For those new to the block, the AWS H Block is actually adjacent to the PCS-block; the “H” is a continuation of the PCS-block letter designations.

This isn’t the first time the Commission has proposed service rules for the H Block. Comments were solicited back in 2004, and again in a follow-up in 2008. However, due to the passage of time and advances in technology, the Commission figures it’s a good idea to revisit H Block issues again, including the question of whether “harmful interference” to the neighboring PCS-block may occur.

The Spectrum Act expects residents in the AWS H Block to play nice with their PCS neighbors. In fact, the Act prohibits the Commission from granting initial licenses if it should determine that licensing in the H Block would cause harmful interference to commercial mobile service licensees in the PCS Downlink band (1930-1995 MHz). The Commission has tentatively concluded that licensing in the *Upper* H Block will not cause harmful interference to the PCS Downlink band. The Commission bases this tentative conclusion on the fact that, in previous proceedings, no contrary technical data/analyses were submitted. (Note: AT&T appears to disagree with the FCC’s conclusion.)

The potential for harmful interference from the *Lower* H Block, on the other hand, has been hotly debated, and the various PCS licensees have proposed different technical rules on how this result might be avoided. Which of those proposals would work best to avoid harmful interference from the Lower H Block (a matter the PCS licensees haven’t been able to agree on so far) is an issue on which the *NPRM* seeks comment. The outcome of this debate may ultimately determine the fate of the H Block spectrum.

Residents in the AWS H Block are expected to play nice with their PCS neighbors.

It should be noted that this *NPRM* was a companion to the Commission’s simultaneous decision to re-purpose the adjacent 2000-2020 MHz band for terrestrial operations. This band was purchased as a primarily mobile satellite band by DISH Network about a year ago. The FCC has now converted it to satellite and terrestrial use and re-dubbed it the “AWS-4” band. Before doing so, however, the Commission bent over backwards to ensure that terrestrial operations from AWS-4 would not interfere with the yet-to-be created H Block.

If the Commission decides, after evaluating the comments filed in response to the *NPRM*, that the new kids on the H Block won’t play nice with the kids in the PCS neighborhood, the Spectrum Act’s desired unleashing of spectrum may be stymied. However, rather than adopt an “all-or-nothing” approach, the Commission has offered up an alternative. The *NPRM* tentatively concludes that the Spectrum Act would still

require the Commission to auction and license half of the H Block spectrum even if the other half were found to cause harmful interference to the PCS Downlink band. The remaining question would then be: if one portion of the H Block gets “unleashed,” what should the Commission do with other? (The *NPRM* doesn’t presume which of the two portions – upper or lower – would necessarily be “unleashed” first in this half-block auction scenario.) Comments are solicited on the appropriate use for such spectrum and/or whether it should be designated for Unlicensed PCS.

Some other proposals open for comment in the *NPRM* include:

- ? licensing of the H Block for exclusive geographic areas by Economic Areas;
- ? an interim (within 4 years) buildout requirement to offer service and signal coverage to at least 40% of the population;
- ? a final buildout requirement of 70% coverage;
- ? cost-sharing formulas; and
- ? licensing and operating rules.

Take a look at the *NPRM* for the full list of issues/proposals on which comments are being sought.

Initial comments were due by **February 6, 2013** and reply comments are due by **March 6, 2013**.

T-Band take-back takes off

With Raft of Threshold Questions, FCC Starts Take-Back Process for 470-512 MHz

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In most parts of the country, the frequency band 470-512 MHz, also called the “T-band,” is better known as TV channels 14-20. But 11 major metropolitan areas use parts of the band for public safety communications, like the two-way radios in police cars, ambulances, and fire vehicles. These users include some of the nation’s biggest first responders, such as the Los Angeles County Sheriff’s Department and the New York City Police Department. Other licensees also use the band for two-way communications.

Last year, as part of the Middle Class Tax Relief Act (most of which has little to do with middle class tax relief), Congress gave public safety entities access to additional spectrum in the 700 MHz band for a nationwide first responder broadband network. But it also required that public safety licensees give back spectrum they use in the T-band, which would then be auctioned for commercial services. Public safety users would have to vacate the T-band by 2021 for a spectrum auction by 2023. The auction revenue is supposed to be made available to

current public safety licensees to help offset the cost of relocating their systems to other frequencies. Oddly, the statute is silent as to the non-public safety users of T-band.

There has been talk among public safety licensees of asking Congress to repeal the T-band “give back” provisions. Unless and until such a repeal occurs, though, the FCC has its marching orders. In keeping with those orders, the FCC has released a public notice to investigate the implications of the law for public safety and other land mobile radio licensees. The public notice seeks detailed information on the extent and nature of public safety radio systems in the T-band, whether some of the current users can migrate to the new first responder broadband network or other public safety frequency bands, and the potential costs of such a relocation.

Comments in response to the public notice are due on **May 13, 2013**, with reply comments due on **June 11**.

Wilkommen, Bienvenu, 欢迎

New Faces at FHH



Fletcher, Heald & Hildreth is pleased to announce the addition of three new lawyers to its slate of telecom practitioners: James Troup, Tony Lee and Cheng-Yi Liu.

Jamie and Tony come to us most recently from the Venable law firm in Washington, where they practiced together as partners in the communications section for six years. This represents something of a homecoming for Jamie, since he actually began his career at FHH in the mid-’80s. Their primary focus has been on the matrix of issues affecting independent local exchange carriers, including federal regulatory issues, wireless offerings, tariffs, access charges, ancillary service offerings, transactions, and related litigation. They currently work with a large network of ILECs in Iowa and other states. They are also experienced in handling large enterprise telecommunications contracts and complex merg-

ers. Jamie will be a member, and Tony will be “of counsel”.

Joining the firm as an associate, Cheng is a 2006 graduate from the Maurer School of Law at Indiana University, where he received a Merit Scholarship and Dean’s Honors and, most strikingly, co-founded the University’s Chinese Yo-Yo Club. He got his undergraduate degree (a B.A., with a minor in electrical engineering) from the University of Texas. He’s spent the last five years advising clients on a wide range of telecom and regulatory matters, including VoIP, wireless licensing, carrier service/resale arrangements and the like. We’re pleased to report that, in addition to his obvious familiarity with telecom law (and his interest in Chinese Yo-Yo), Cheng also lists recreational lock-picking among his hobbies.



(Accessibility-Related Recordkeeping - Continued from page 2)
 ble violations of the accessibility rules.

When do these certificates have to be filed? By April 1 of each year (but note that the certificate must be updated to keep the contact information current).

What period of time is covered by each annual certificate? According to Section 14.31(b)(3), each certificate relates to “records pertaining to the previous calendar year”. That, of course, poses something of a problem with respect to the certificate due to be filed April 1, 2013, since the recordkeeping requirement did not take effect until January 30, 2013 and, thus, nobody was required to keep records during the previous calendar year. The FCC’s public notice addresses that conundrum by asserting that the certificate due by this coming April Fool’s Day “must certify that, as of January 30, 2013 (the effective date of the recordkeeping rules), records are being kept in accordance with the Commission’s rules.” That’s not really what the actual rule (that would be Section 14.31(b)(3)) seems to provide, but if you opt to comply with the public notice’s direction, the FCC probably won’t hold it against you.

You might not want to get too heavily invested in the “small entity” exemption.

How do you file these certificates and updates? Electronically, through the FCC’s web-based Recordkeeping Compliance Certification and Contact Information Registry. (You’ll need your FRN and password to access the upload site.)

And who, exactly, is required to file these annual certificates? This gets a little complicated. As we said up front, the accessibility requirements – *i.e.*, the focus of the recordkeeping/certification obligations – are imposed by Sections 255, 716 and 718 of the Act. Each of those sections applies to particular categories of communications-related service providers and the manufacturers of equipment used for such services:

Section 255 applies to providers of telecommunications services, interconnected VoIP services, voicemail, or interactive menu services, as well as to manufacturers of equipment for telecommunications or interconnected VoIP services.

Section 716 applies to providers of “advanced communications services” (ACS) and manufacturers of equipment (including end-user, network and software) for such services. For purposes of these new requirements, covered ACS include: non-interconnected VoIP services (*e.g.*, “one-way VoIP”), electronic messaging services (*e.g.*, text-messaging, instant messaging, e-mail) and interoperable video conferencing services (*e.g.*, real-time video chat). Section 718 applies to manufacturers of, and service pro-

viders offering, mobile phones that include an Internet browser.

The recordkeeping and certification requirements are identical for all categories, even though the specific substantive accessibility requirements are not.

Let’s take a quick look at those categories. Sections 255 and 718 are reasonably straightforward – if you belong to one of these, you should know it. But Section 716 is trickier.

First, the definition of ACS technically includes “interconnected VoIP” services. But “interconnected VoIP” services – as currently defined by the FCC – are **not** subject to Section 716. That section specifically excludes any services that were already subject to Section 255 prior to the enactment of the Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA) on October 8, 2010, and Section 255 was extended to interconnected VoIP services (as currently defined) in 2007. So there appears to be an inconsistency here.

While the FCC could conceivably change the definition, or regulatory classification, of “interconnected VoIP” in the future, for the time being interconnected VoIP providers and equipment manufacturers should be pleased to know that they appear to be subject to the slightly less burdensome accessibility requirements of Section 255 as opposed to the heftier burdens of Section 716.

Second, entities subject to Section 716 can also include providers/developers of software (*e.g.*, applications, cloud-based services, etc.) used to engage in ACS. As the FCC explained, “if software gives the consumer the ability to send and receive e-mail, send and receive text messages, make non-interconnected VoIP calls, or otherwise engage in advanced communications, then provision of that software is provision of ACS.”

But hold on there. The FCC, somewhat confusingly, distinguishes between software which allows one to “engage” in ACS and software which merely “manages” ACS. Providing the latter type of software (for which the FCC offers Microsoft Outlook as an example) as a standalone product is apparently *not* the provision of ACS subject to Section 716. If you want to see the FCC’s full discussion of this, feel free to peruse the 302-page order. Otherwise, be aware that special accessibility considerations may need to be given for communications-related software.

On the positive side, Section 716 is subject to a number of
(Continued on page 11)



(Administrative Alchemy - Continued from page 1)

by the AWS-4 operator (DISH) that would marginally impede the utility of the 2000-2005 MHz portion of DISH's spectrum.

Apparently never having been warned about the discourtesy of looking a gift horse in the mouth, DISH argued strenuously that the modified licenses it did not yet have should not be impaired by these protective measures for the H block. The FCC nevertheless stiffened its backbone and adopted strong measures to protect the H block – perhaps in part because there are only 10 MHz to be auctioned in this new band, and if five of them were impaired, the value of the licenses would be materially reduced.

With that issue resolved, the FCC went on to adopt relatively standard service rules for the new service: EA-based license areas and build-out requirements of 40% of total population within four years and 70% within seven years. The interesting quirk here is that the penalty for failure to meet the final benchmark is not loss of license (as the Commission recently imposed on WCS licensees) but loss of only those EAs where the build-out has not been met. This nice little stocking-stuffer permits DISH to simply abandon those EAs with marginal economic value to it since it would have little incentive to serve them anyway. Of course, this policy completely undercuts the utility of having satellite-based mobile operators in the first place – the very carriers who would have the technical ability to serve the most rural areas economically are now no longer required or incentivized to do so.

Under the service rules, DISH is now the only party authorized to provide such service, if it wants. But because the Commission has granted complete flexibility of use to the AWS-4 licensee, DISH itself has no obligation to provide

satellite service at all. What's more, a lessee or assignee of this spectrum can be relieved by DISH of any obligation to protect satellite operations in the territory involved. Without such protection, satellite service could not as a practical matter be offered in those areas. And once the obligation to protect satellite operations is removed by sale or lease, it is gone forever.

In short, although the entire license modification arrangement adopted by the Commission was expressly set up to protect DISH's right to provide satellite service at the same time that it offers terrestrial service, neither DISH nor its successors have any obligation to actually offer any satellite service whatsoever.

Several commenters (including the author of this article) had suggested that the FCC should not simply hand DISH a windfall by radically changing its licenses; rather, those commenters argued, the spectrum should be made available for others to bid on in a fair auction. This had been the recommendation of the Commission's own National Broadband Plan. As noted above, however, the FCC felt it had to protect DISH's right to provide satellite service while relieving DISH of any obligation to provide that service. So the FCC, ignoring its own recommendation to itself, regretfully gave DISH the windfall.

Finally, some commenters had sought the imposition of restrictions on DISH's ability to lease, wholesale, or sell its license rights to the big carriers. The FCC declined to impose any such conditions.

There remained only for the FCC to complete the statutory process of modifying the DISH licenses. The FCC did that on February 15, completing perhaps the single largest act of public largesse in American commercial history.



(Accessibility-Related Recordkeeping - Continued from page 10)

exemptions or exclusions. As mentioned above, Section 716 excludes any service which was already covered by Section 255 prior to the CVAA. Additionally, Section 716 exempts customized equipment or services used on private networks, and the FCC has adopted a limited exemption for qualifying "small entities." The qualification criteria for the "small entity" exemption are industry specific, and are based on standards established by the Small Business Administration. (Example: Most telecommunications service providers with 1,500 or fewer employees qualify as small entities, but an "Electronic Computer Manufacturing" company would qualify only if it has 1,000 or fewer employees.)

Despite the obvious temptation, you might not want to get too heavily invested in the "small entity" exemption: it's cur-

rently set to expire on October 8, 2013.

Finally, thanks to Section 716(h), the Commission may waive the Section 716 obligations where the equipment/service in question: "(A) is capable of accessing an advanced communications service; and (B) is designed for multiple purposes, but is designed primarily for purposes other than using advanced communications services." Many devices are designed for multiple purposes these days, so just because a mobile phone also takes pictures does not mean the FCC will think it qualifies for a waiver under Section 716. Anybody thinking that they qualify for a waiver will have to submit a waiver request – and get that request granted – before they will be free of their statutory chores.

To read more about the new recordkeeping and certification filing requirements, check out the FCC's recent Public Notice. We've included a link at www.CommlawBlog.com.



(*Experimental Radio Rules - Continued from page 3*)

Program Experimental Licenses

The FCC addresses the problem of changing technical needs with a new category of “Program Experimental License.” Eligible entities include: colleges or universities with an accredited graduate research program in engineering; research laboratories; hospitals or health care institutions (but not for clinical trials; see below); manufacturers of radio-frequency (RF) equipment; and manufacturers that integrate RF equipment into their end products. (As we read the rule, a college or university is eligible to use this kind of license for projects outside the engineering graduate program, so long as it has such a program.) An eligible entity must also have a defined geographic area, such as a building or campus, and must certify that it either has “demonstrated experience with RF technology” or has partnered with an entity having that expertise. Applicants wishing to operate at multiple locations will need a separate license for each.

The licensing rules have complex requirements meant to minimize the likelihood of interference to spectrum incumbents. But licensees can apply for any frequencies they want except for the particularly sensitive “restricted bands” listed in Section 15.205 (a). An applicant needing to operate in these bands can instead apply for a conventional experimental license. Most frequencies above 38.6 GHz are also available, despite their all being denominated as “restricted,” except for those allocated to radio astronomy and a few others. Special requirements apply to frequencies used for commercial mobile (cell, PCS, 3G, 4G, and more), emergency notifications, and public safety.

At least ten calendar days before each experiment, the licensee must post the following information on the FCC website:

- ☞ a narrative statement describing the experiment, including measures to avoid causing harmful interference to any existing service licensee in the proposed band;
- ☞ contact information for the researcher in charge of the experiment;
- ☞ contact information for a “stop buzzer” point of contact – a person who can turn off the equipment if interference occurs;
- ☞ technical details including frequency, power, bandwidth, modulation, location, number of units, etc.; and
- ☞ for commercial mobile, emergency notification, and public safety frequencies, a list of potentially

affected licensees.

Licensees in other services that fear interference from an experimental operation are expected to contact the experimental licensee with their concerns. Only the FCC can stop the experiment from proceeding, once the ten-day notice period has elapsed. Experiments that use federal (or shared federal-private spectrum) may need longer than ten days for coordination.

An applicant that seeks non-disclosure of proprietary information as to the justification for its application cannot use a Program Experimental License, but should apply for a conventional experimental license. A Program Experimental applicant can, however, request non-disclosure of the notification information listed above, if the information otherwise qualifies for non-disclosure.

Within 30 days after the completion of each experiment, the licensee must file a narrative statement describing the results, including any interference incidents and steps taken to resolve them.

A new rule allows the FCC to designate a defined geographic area and frequency range as an “innovation zone.” Program Experimental Licensees who want to operate in that zone and within the an-

nounced technical parameters do not need further authorization.

Medical Testing License

Tests of medical equipment, other than in clinical trials, can use a Program Experimental License. Clinical trials, however, need a different approach. A Medical Testing License is available for that purpose. Eligibility is limited to “health care facilities” as defined in Section 95.1103(b), although testing is also allowed at other locations, such as patients’ homes. The license can be used only for testing a device “that uses RF wireless technology or communications functions for diagnosis, treatment, or patient monitoring.” The prior notification requirements for a Program Experimental License apply here as well. Medical Testing Licensees must file a yearly report that includes a list of tests and a description of each, with the equipment tested and the results of the test, noting any interference incidents and their resolution.

Market Trials

The existing experimental rules allow for market trials, un-

(Continued on page 13)

Licensees fearing interference from an experimental operation are expected to contact the experimental licensee with their concerns.

The bigger they come . . .

Size Still Matters to M&A Regulators

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With the 2012 book now closed on several acquisitions and mergers in the communications field, the federal government has performed its annual ritual of announcing the thresholds it will use for automatic federal review of mergers and acquisitions. The FCC worked on several 2012 “Big Ticket” transactions including the Verizon spectrum shuffle with assets from Verizon Wireless, T-Mobile, Leap, several cable companies and others.

The FCC can review any transaction in detail before issuing an approval. On the other hand, Congress long ago deemed that the Department of Justice and the Federal Trade Commission *must* review transactions that cross certain dollar amount thresholds. The dollar amounts of those thresholds were announced in January. They took effect as of **February 11, 2013**. Readers considering a merger or acquisition should bear in mind that the administration automatically will be sending at least two agencies to take a closer look at transactions where either:

the total value of the transaction exceeds \$283,600,000; or
 the total value of the transaction exceeds \$70.9 million and

one party to the deal has total assets of at least \$14.2 million (or, if a manufacturer, has \$14.2 million in annual net sales) and the other party has net sales or total assets of at least \$141.8 million

The new thresholds also affect the filing fees that parties to a deal have to pay the government for the pleasure of going through the review process. (Fees are split between the FTC and the Department of Justice.) For most of 2013, any deal subject to review and valued at less than \$141.8 million will pay a \$45,000 fee. (Used to be that deals coming in at a mere \$100 million got to pay that.) For deals valued at more than \$141.8 million but less than \$709.1 million, the review fee will be \$125,000. And if you’re proposing a deal valued at more than \$709.1 million, get set to fork over a tidy \$280,000.

When negotiating deals, all parties would be well-advised to bear these thresholds in mind. Once those lines are crossed, the prospect of additional (and considerable) time, expense and hassle to navigate the federal review process is a virtual certainty.



(Experimental Radio Rules - Continued from page 12)

der very limited circumstances, of equipment not yet shown to comply with the FCC’s technical rules.

The new rules expand the opportunity for these trials, but not by much. Experimental licensees can now sell such equipment to one another – for example, a cell phone manufacturer can sell not-yet-certified models to a wireless service provider – but any transactions with consumers must take the form of a lease, not a sale, and the equipment must be collected or disabled at the close of the trial.

Medical devices for use in a clinical trial can also be the subject of a market study.

The FCC has clarified and slightly expanded the long-standing rules on when and where a not-yet-authorized device may operate. Operation of such devices in residential areas is now permitted, for the first time, if under a carrier’s license and with the carrier’s consent. The sale of uncertified “evaluation kits,” formerly prohibited, is now allowed with appropriate notices to the buyer.

Compliance Testing License

The former rules allowed a commercial test lab to operate a device for the purpose of assessing compliance with FCC technical rules, but left unanswered the question whether it needed a license to operate a candidate device that uses a licensed band, such as a cell phone. The new rules resolve that issue with a special form of experimental license available only to test labs.

Importation limits

Not-yet-authorized devices could formerly be imported in quantities of 2,000 for devices to be used in a licensed service, and 200 for others. The maximum will now be set at 4,000 for all types of devices.

Some of the new rules will take effect as usual 30 days after publication in the Federal Register. Others will require approval by the Office of Management and Budget, and will take longer. Check www.Commlawblog.com for updates.



Ready to get boosted?

FCC Gives Cell Phones a Boost

By Cheng-Yi Liu
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Despite the promise of ubiquitous cell phone coverage, we are all too familiar with the dreaded phenomenon of dead spots. Historically, cell users frustrated by that phenomenon often fought back by using signal boosters that receive and re-transmit cell phone signals to improve coverage. Recognizing the obvious desirability of boosters, but concerned about their potential for interference, the FCC has now adopted a new comprehensive regulatory approach to boosters. As a result, we can look for a new breed of consumer signal boosters hitting the market soon, probably by year's end.

This should come as good news for consumers . . . unless you rely upon poor signal coverage as an excuse to avoid calls from your mother (shame!), have an aversion to compulsive cell-phone talkers (like some of us here), or have already purchased an existing device that's not compliant with the FCC's rules (in which case you *may* need to upgrade).

Previously, the FCC did not specifically prohibit boosters, but its rules were a bit fuzzy. For years various groups expressed concern that "unauthorized" boosters were causing harmful interference to wireless networks. To address those concerns, the FCC initiated a formal rulemaking to look into the issue in 2011. The result: two new categories of boosters, subject to different requirements.

"Consumer Signal Boosters" are "out-of-the-box" devices for personal use by individuals to improve cell coverage in a limited area, like a house, a car, an RV, a boat, etc. "Industrial Signal Boosters" are all others. Deployed by wireless providers, they serve larger areas, like campuses, hospitals, tunnels, airports, office buildings, etc. Since such industrial boosters aren't significantly affected by FCC's latest action, we'll focus here on the new category of Consumer Signal Boosters. (Also unaffected by the new rules are "femtocells," which connect to the network through broadband Internet access rather than licensed cell frequencies.)

Ready to get boosted?

Sorry, but you'll need to wait a little longer for booster manufacturers to bring their products into compliance with a new "Network Protection Standard" designed to ensure that all new devices have appropriate safeguards. Under that Standard, all Consumer Signal Boosters must:

- ✎ comply with existing technical parameters for the applicable spectrum band of operation;
- ✎ automatically self-monitor certain operations and shut down if not in compliance;
- ✎ automatically detect and mitigate oscillations (caused when the device picks up its own signal too strongly, like the feedback in a public address system);
- ✎ power down or shut down automatically when a device is not needed, as when the device approaches the base station with which it is communicating;
- ✎ be designed so that these features cannot be easily defeated; and
- ✎ incorporate interference avoidance in systems that use unlicensed frequencies internally.

The FCC does not want buttons, knobs or switches which allow for certain features to be deactivated.

The FCC does not want buttons, knobs or switches which allow for these features to be deactivated. (Understandable, as we ourselves can't resist pressing buttons on electronic devices just to see what they will do.)

The new rules prescribe two alternative sets of technical specifications that comply with the Network Protection Standard. But equipment manufacturers are not obliged to adhere to either, if they can demonstrate compliance some other way.

The FCC does not anticipate compliant Consumer Signal

(Continued on page 15)



(Cell phone boosters - Continued from page 14)

Boosters becoming available until late 2013. By March 1, 2014, all boosters marketed in the U.S. must comply with the new standards.

As for consumers, the “out-of-the-box” ease of use will be complicated by some additional paperwork requirements.

Once you get your hands on a compliant Consumer Signal Booster, you will have to give your cell phone provider certain registration information and get the provider’s permission before putting the booster to use. In practice, getting the provider’s permission should be a non-issue for most: all of the major providers (Verizon Wireless, AT&T, Sprint, and T-Mobile), plus many smaller providers, have agreed to grant blanket approval for Consumer Signal Boosters that meet the Network Protection Standard. You would need to request express permission only from smaller providers that have not yet signed on.

The registration information you’ll have to provide will include, as a minimum, the booster’s: (a) owner (and, if different, its operator); (b) make; (c) model; (d) serial number; (e) location; and (f) date of initial operation. The aim is to help authorities track down devices that cause interference problems. Providers will have to set up a free registration process. Also, providers will have to announce (at least annually for the first two years) whether or not they have consented to the use of each FCC-certified model.

But let’s suppose you’re one of those early adopters who hopped onto the booster bandwagon before now. How do the new rules affect your pre-Network Protection Standard booster?

Good news: the FCC does **not** prohibit consumers from continuing to use such legacy devices, even if those don’t comply with the Network Protection Standard. **BUT** a consumer will need *express* permission from the wireless provider to use these “legacy” devices. The provider is not obligated to give consent (especially if the old school booster is likely to

cause harmful interference) and the consent can be withdrawn at any time.

Consumer note: Non-compliant boosters cannot be marketed in the U.S. after March 1, 2014.

Continued operation of *any* Consumer Signal Booster, whether legacy or new, is contingent on the device not causing harmful interference. If a service provider or the FCC tells you to turn off your device because of interference issues, you must do so, or face potential penalties.

With respect to penalties, in a separate statement Commission Pai acknowledged that consumers using legacy boosters might violate the new requirements simply out of ignorance:

[W]e cannot expect that every American who currently uses a booster will know that he must register that booster and obtain his carrier’s consent. Indeed, I very much doubt that most individuals will learn about these requirements in the foreseeable future. For some reason unbeknownst to me, most Americans just don’t watch FCC open meetings or read FCC orders.

[Editor’s note to Commissioner Pai: Many Americans may not watch your meetings or read your orders because we here at FHH Telecom Law – and CommLaw-Blog.com – take care of some of that heavy lifting for them.]

At Pai’s suggestion, the Commission has directed the Enforcement Bureau to give consumers who are violating the rule (whether by using unregistered devices or by failing to obtain consent from their providers) the chance to avoid a fine by shutting the device off. That’s a one-shot-only chance, though: a consumer who has previously been warned by the Bureau and who continues in violation can expect a fine.

Looking for more information? The FCC has set up a handy signal booster website – <http://wireless.fcc.gov/signal-boosters/index.html> – that provides some background and links to related materials.

How do the new rules affect your pre-Network Protection Standard booster?



More wi-fi spectrum in the works?

FCC Proposes to Simplify and Expand Unlicensed 5 GHz Use

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Blame it all on Congress. *The Middle Class Tax Relief and Job Creation Act of 2012*, best known for extending the since-expired payroll tax cuts, took just a few lines for that task, but continued on for another hundred pages of unrelated legislation. The statute has been good for us here at *FHH Telecom Law* (and our companion blog, *CommLaw-Blog*); we have reported on incentive auctions, microwave issues, 911 implementation, and lots more. Now the FCC has responded to yet another mandate in the act: to expand unlicensed operations in the 5 GHz band.

But the FCC is doing more: it has issued a Notice of Proposed Rulemaking (*NPRM*) that would not only add new 5 GHz frequencies but also overhaul and (we hope) simplify a particularly confusing stretch of the rules. We will touch on that first, and then take up the proposed expansion.

It is hard to overstate the importance of having enough unlicensed spectrum. The vast majority of radio transmitters in use today are unlicensed. We would be hard pressed to get along without Wi-Fi, Bluetooth, cordless phones, nursery monitors, automatic toll payment, automatic braking in cars, and myriad other such consumer conveniences. Industry as well relies on unlicensed communications and, increasingly, on unlicensed radar. Equally important, though less often mentioned, is the importance of unlicensed spectrum as a technology test bed. Licensed frequencies, if auctioned, are usually too expensive to risk on untried technology, while non-auctioned, site-licensed spectrum is governed by technical rules so restrictive as to preclude experimentation. Much innovation benefits from the technical flexibility inherent in the FCC's unlicensed rules.

Updating Rules on the Present Bands

Unlicensed operations in the frequency range 5.15-5.825 GHz today are governed by four sets of technical rules. Three are collected under the heading of "Unlicensed National Information Infrastructure Devices," or U-NII, detailed in Section 15.407 in the FCC rulebook. The fourth comes under the "digital modulation" rule, in Section 15.247. See the graphic on the next page for the breakdown. Below 5.725 GHz, the U-NII rules are the only choice. The power limits are relatively low, and the need to avoid certain airport weather radars adds complication. The region above 5.725 GHz is popular because it offers the

highest power for Wi-Fi standards *a* and *n* (and also the proposed standard *ac*). The band is a favorite of wireless Internet service providers, or WISPs, which offer Internet service via a roof antenna, mostly in regions not served by either broadband cable or telephone.

Before 2003, most manufacturers working above 5.725 GHz opted for the U-NII standards, which have no express limit on data speed, because Section 15.247 then limited speeds to about 11 megabits/second. But a rule change that year eliminated the limit in Section 15.247, and thus put the two sections on an equal footing for speed. Today Section 15.247 is the favorite because in fixed point-to-point applications it allows more focused antennas with no penalty in transmitter power, offers 125 MHz of bandwidth *versus* 100 MHz for U-NII, allows more power per megahertz, and has more relaxed limits for out-of-band emissions.

The FCC now proposes to harmonize the two rule sections. In some respects it suggests changing the U-NII provisions to match those in Section 15.247: namely, extending the upper bound on U-NII-3 by 25 MHz, to 5.85 GHz, and allowing the same power-per-megahertz as Section 15.247. In other respects, however, the harmonized rules would follow the U-NII provisions: a power penalty in fixed point-to-point applications for antenna gains above 23 dBi, and the more stringent U-NII limits on unwanted emissions.

A separate proposed harmonization would amend the rules for U-NII-1 at 5.15-5.25 GHz to more closely match those for U-NII-2 at 5.25-5.35 GHz in three respects: raise the power limit from 50 mW to 250 mW; raise the power-per-megahertz to match U-NII-2; and drop the limitation to indoor-only operation. As an alternative, also up for discussion, is raising the U-NII-1 power limits to U-NII-3 levels (1 watt), and again allowing outdoor operation. Neither proposal would require DFS or TPC in the U-NII-1 band.

The *NPRM* revisits the stubborn problem of U-NII-2 devices causing interference to airport weather radars operating at 5.6-5.65 GHz. Dynamic frequency selection (DFS) capability is required in the U-NII-2A and U-NII-2C bands

(Continued on page 17)



(5 GHz NPRM - Continued from page 16)

specifically to protect those radars: the U-NII device must “listen” for the presence of a radar signal and, if found, move to a different frequency. Interference has persisted nonetheless, some from illegally operated U-NII devices that may lack DFS, but also from fully compliant systems.

Some interference to radars comes from users unlawfully changing the frequency of a certified device. This can result in a transmitter possibly overpowered for its band, with no DFS, operating on the same frequency as the radars. The FCC has found that some U-NII transmitters are easily modified in this respect. It proposes to require security safeguards to prevent such reprogramming, and/or the transmission of ID information to help locate offending units. It also asks for comment on these additional measures:

- built-in geolocation capability in combination with database registration and access, so that units within a certain distance of a radar will automatically avoid its frequencies;
- tighter limits on unwanted emissions to reduce interference from U-NII transmitters operating close by a radar frequency;
- improved sensing capability; and
- changes to certification test procedures to better assess sensing capability.

(Note to manufacturers and test labs: The above is only a rough summary. Please consult the proposed rules and measurement procedures in *NPRM* at pp. 39-45.)

Expanding into New Bands

As shown in the table above, the FCC is considering an expansion into 195 MHz of new U-NII spectrum. It hopes to find 120 MHz in the tentatively-named U-NII-2B band at 5.37-5.47 GHz, and another 95 MHz in the U-NII-4 band at 5.85-5.925 GHz. This would yield an unbroken sweep of 775 MHz, albeit subject to differing technical rules in the various sub-bands.

The problem, of course, is that both of the proposed new bands are occupied. The 5.37-5.47 GHz U-NII-2B band houses military and other government radars, weather radars (some used by broadcasters), NASA systems, unmanned aircraft, satellite observations of the planet, and border surveillance. At 5.85-5.925 GHz, U-NII-4, are more military and other government radars, automatic communications with and between vehicles, and a secondary amateur band.

U-NII, being an unlicensed service, will be required to protect licensed services, *i.e.*, all of the above. We expect it will be a challenge to accomplish adequate protection to the satisfaction of the federal government (not to mention the amateur radio folks) while leaving enough technical elbow room for U-NII to be useful.

As a starting point for discussion, the FCC proposes:

- U-NII-2B to operate under the same rules as the adjoining bands, U-NII-2A and U-NII-2C, providing 475 MHz of contiguous and consistently regulated spectrum; and
- U-NII-4 to operate under the same rules as U-NII-3, with the same rules also applying to the 25 MHz in between. This would provide another 200 MHz that is contiguous and consistently regulated, at somewhat higher power.

Freq. (GHz)	Width (MHz)	U-NII Rules (Sec. 15.407)	Digital Modulation Rules (Sec. 15.247)
5.15-5.25	100	U-NII-1 50 mW max indoor only	
5.25-5.35	100	U-NII-2A 250 mW max DFS required * TPC required *	
5.35-5.47	120	U-NII-2B (new -- proposed)	
5.47-5.725	255	U-NII-2C 250 mW max DFS required * TPC required *	
5.725-5.825	100	U-NII-3 1W max must cut back power at high point-to-point antenna gains	1W max no power penalty at high point-to-point antenna gains
5.825-5.85	25	not U-NII (proposed expansion)	
5.85-5.925	75	U-NII-4 (new -- proposed)	

* DFS: dynamic frequency selection required to detect and avoid certain federal radar systems.

* TPC: transmit power control required (for EIRP ≥ 500 mW) to minimize interference to certain other users.

The FCC seeks comment on whether DFS and TPC requirements should apply to U-NII-2B and U-NII-4, and if so, what the technical characteristics should be.

Manufacturers of future devices and present users of the proposed expansion bands should pay close attention. Reading between the lines, we have the sense that the FCC is tired of tinkering with these rules. The outcome of the proceeding may set the technical provisions for many years to come.

Comments and reply comments will be due 45 days and 75 days, respectively, after publication in the Federal Register. Check back on our blog and we will let you know when that happens.



(Internet on Airplanes - Continued from page 3)

will tap into the service while in the airspace of foreign countries and over international waters, the non-protection provision simplifies compliance with international allocations as well. Uplink operations at 14.0-14.5 GHz are authorized on a secondary basis: ESAA must avoid causing interference to, and must accept all interference from, the primary users, which include the small VSAT terminals often seen on the roofs of gas stations and chain hotels. In an accompanying Notice of Proposed Rule-making, the FCC seeks comment on whether to elevate the ESAA uplinks to co-primary status.

Regardless of primary/secondary status, ESAA uplinks will be required to coordinate with the sensitive receivers used by the Space Research Services and the Radio Astronomy Service. The service must also comply with the CALEA rules that enable properly authorized law

enforcement agencies to tap into customer communications.

See the FCC order for details on the technical and licensing rules, which are very detailed indeed. The order does not, however, address the touchy question of whether passengers will be allowed to use their onboard connections for voice service via VoIP: cell phones in the sky. That question is probably outside the FCC's jurisdiction, so kindly direct your complaints about the loudmouth in the next seat to the FAA or the individual airline.

Comments and reply comments on upgrading 14.0-14.5 GHz operations to co-primary status will be due 75 days and 105 days, respectively, after publication in the Federal Register. Check www.Commlawblog.com to see when that happens.



(GAO Report - Continued from page 4)

problem had been fixed? And once GAO concluded that, um, the problem hadn't been fixed, don't you think the FCC might have at least had some second thoughts about persisting in its proposed insistence on the submission of social security number-based FRNs?

Before you answer those questions, consider this. In 2009, when the FCC first proposed to require the submission of SSN-based FRNs for all attributable interest holders, a number of parties objected, pointing out (among other things) that such submission would increase the risk of identity theft. The Commission's response? We quote it verbatim:

While identity theft is a serious matter, none of the comments identify a single instance of a security breach with respect to the Commission's CORES system. Indeed, their claims are purely speculative. The FCC has a robust security architecture in place for CORES that exceeds Federal guidelines and recommendations and has deployed strict operational controls in compliance with NIST guidance. The servers are located in secured locations with strict access control. Logically, the databases are located behind several firewalls that protect the data from the Internet and the general FCC user population.

All servers and communications are monitored both by automated tools and systems as well as operational procedures. The CORES application uses separate roles for various user classes, and administrative access is only permitted from limited set of known internal workstations. All transmission of non-public data is encrypted.

(You can find the entire FCC response on the OMB website. It's the "Supplementary Document", uploaded on 10/16/09 and titled "Response Letter to OMB on Comments Received".)

So, according to the FCC, the notion that its oh-so-secure computer systems might be compromised was, at most, far-fetched speculation.

Oops.

We now know that that speculation was not at all far-fetched. That being the case, the Commission may want to re-think its proposed abandonment of the Special Use FRN. And anyone who, in response to the proposal to deep-six the SUFRN, expresses concern about data security should be sure to cite to the GAO report. That way, the Commission can't claim that such concerns are merely speculative.