

FHH Telecom Law

Current Issues in Telecommunications Law and Regulation

November 2003

Millimeter-Wave Spectrum Opens for Business

The FCC broke new ground this month by authorizing commercial use of the 71-76, 81-86, and 92-95 GHz bands -- the highest frequencies ever made available to non-Government users. Designing equipment for these upper reaches -- called "millimeter wave" bands, because their wavelengths are only a few millimeters -- presents a daunting technical challenge, and became practical only within the last few years.

The rulemaking is remarkable for the vast amounts of spectrum it provides. The 12.9 GHz authorized here -- by far the most ever handled in a single proceeding -- equals the total of all spectrum allocated to all FCC-regulated and Government services from the beginning of radio to just over a decade ago.

3G Licensing Rules

Long awaited mobile broadband services -- also known as "3G" -- took another step toward deployment with the FCC's adoption of licensing rules for the 1710-1755 and 2110-2155 MHz bands. That 90 MHz of spectrum will be licensed in blocks of 10, 10, 20, 20, and 30 MHz, although licensees will be free to aggregate or partition their holdings. The FCC will auction the five blocks using three different maps of geographic areas: Economic Areas, Cellular Market Areas, and Regional Economic Area Groups. Licenses will issue under the Part 27 rules, "Miscellaneous Wireless Communications Services" -- a regulatory scheme that gives licensees a great deal of flexibility in how their spectrum is used. The initial license period is 15 years, with 10 year renewal options. Licensees must be providing "substantial service" by the end of the license term, but have no construction requirement until the end. Information on technical rules was not available at press time. (See page 3 for a related story on clearing spectrum for 3G.)

The 71-76 and 81-86 GHz bands are well suited for point-to-point communications over a few kilometers, and can deliver extremely high data rates -- well into the gigabit/second range. The FCC divided each of these bands into four segments 1.25 GHz wide. But a licensee is not restricted to one segment, and can aggregate segments to make use of all 10 GHz. The segments appear to have been adopted mainly as an aid to coordinating paired links. Pairing between the 71-76 and 81-86 GHz bands is permitted but not required. If paired, however, the bands must be paired in corresponding segments, e.g., 71-72.25 GHz with 81-82.25 GHz.

The 92-95 GHz band is divided into two unequal segments, 92-94 and 94.1-95 GHz, which also may be aggregated. The gap at 94-94.1 GHz protects satellite-based cloud radars. There is no specific provision for pairing in this band.

The FCC has adopted an innovative licensing scheme. Every licensee will hold a non-exclusive nationwide license for the entire 12.9 GHz, and there is no limit on the number of such licenses. But frequency coordination is required for each link. According to preliminary reports, coordination will proceed in two steps. First, the user will coordinate with the federal agencies sharing the bands by entering proposed link data into a database maintained by the National Telecommunications Information Administration. A "green" response clears the user to proceed to the next stage, while a "yellow" response, expected to be rare, means the coordination must go through IRAC review -- a process that can take several weeks. Second, the user coordinates with other private users by entering the link data into a third-party database. If there are no conflicts, the coordination is cleared instantly, and the link is retained in the database for future coordinations. Priority is solely by date of entry in the database.

(Continued on page 9)

No more acrimony . . .



A Pocket Guide to Acronyms

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Does anybody else get confused by the ever-increasing numbers of acronyms for network configurations? I was at a meeting recently where the acronyms were flying faster than next-quarter subscriber projections at a WISP convention. One presentation was so acronym-thick that I found myself gasping for air as a torrent of WANs, P-WLANs, and WMANs sucked up the available oxygen. Even this publication, it must be conceded, sometimes falls prey to the unapologetic use of undefined acronyms. To be sure, speaking in codes known only to a secret fraternity has a certain Skull-and-Bones panache, but always with a lingering suspicion that your listeners merely nod knowingly to avoid looking unhip, but have no idea what you're talking about.

There's also the deeper problem of how to pronounce acronyms normally seen only in print. When I was a kid, for example, I always thought the word "awry" rhymed with "Gene Autry," the cowboy actor; it was a revelation when someone pronounced it correctly as "a-rye." Most people in our industry seem to pronounce "WAN" and its variants with a broad "a" as they would pronounce the regular word "wan." Conversely, people pronounce "LAN" with a flat "a" as in "land." But both pronunciations feel right. Were they reversed, WAN would sound disturbingly like a baby crying and LAN would sound like someone affecting a phony British accent. But with no authoritative source in charge of establishing correct pronunciation, we're all on our own.

Then there's the vexing issue of how to pronounce letters prefixed onto existing acronyms. The biggest problem here is "CLEC." I've heard it pronounced "cee-leck," like "sea change," but also as "cleck," as in "dreck." Perhaps the choice of pronunciation subliminally reflects one's views on competition in the local exchange market. The problem compounds in the field of networks. Someone trying to pronounce both w's in WWAN, for example, sounds like Porky Pig. On the other hand, "double U WAN" sounds clumsy and could easily be confused with UUWAN, which could then be further confounded with UUNet. It's enough to make you want to ululate.

While continuing to ponder the pronunciation problem, we offer the following guide for the acronym-challenged:

WAN	wide area network
WWAN	wireless wide area network
LAN	local area network
WLAN	either a wireless local area network or a wide area (non-local) local area network
LAWN	the weedy area around my house
P-WAN	public wide area network
P-WAN	private wide area network, never to be confused with its opposite, P-WAN
OBI-WAN	wide area network in a galaxy far, far away
NO-WAN	zen theatrical form where the stage is completely empty; the audience sits and silently imagines wireless communications
SWAN	a large, graceful bird
DAN	a guy I know at the gym

Keep this guide handy at all times. People will think you know what they're talking about.

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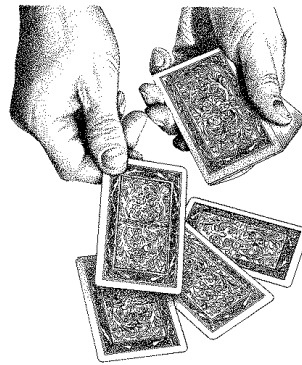
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3G MONTE -- THE FCC SPECTRUM SHELL GAME

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Shuffling federal and non-federal frequencies with the agility of a street-corner three-card monte player, the FCC has proposed allocation changes to make room at 1710-1755 MHz for the newest generation of wireless communications service, referred to as third generation or 3G. Presently the federal government is the exclusive occupant of this band (and up to 1850 MHz), used for microwave links and military tactical radio relay. The plan is to move these services to 2025-2110 and 2360-2400 MHz.

One of the destination bands, 2025-2110 MHz, is currently occupied by broadcast and cable auxiliary services, including transmitter links, local television transmission service, and cable television relay, and by satellite services for uplink and space-to-space transmissions. The FCC wants some military operations now at 1710-1850 MHz to move here and share the spectrum with current licensees. Incoming users would include government operations from 1755-1850 MHz -- above the 3G allocation. But the FCC reasons that some migration from spectrum above 1755 MHz will permit operations at 1710-1755 MHz operations to migrate above 1755 MHz. In other words, the FCC hopes that opening 2025-2110 MHz to the government will foster a double migration.



The other destination band, 2360-2400 MHz, would take in the remainder of federal operations departing 1710-1755 MHz. Currently this band is set aside for mobile, aerospace, and radar use (2360-2385 MHz), not-yet-auctioned Wireless

Communications Services (2385-2390 MHz), aeronautical telemetry (2385-2390 MHz), and unlicensed PCS devices (2390-2400 MHz). For the future, the FCC proposes that 2360-2395 MHz support federal aeronautical applications, with non-federal aeronautical telemetry at 2385-2395 MHz. This last item has raised concerns among manufacturers of the many unlicensed devices at 2400-2483.5 MHz. Presently these devices are subject to stringent out-of-band emissions limits in the "restricted band" at 2310-2390 MHz that protects aeronautical telemetry, among other services. The manufacturers fear expansion of aeronautical telemetry service to include 2390-2395 MHz may bring with it an expansion of the restricted band and tighter limits on their products. So far, however, the FCC has not proposed any such change.

Comments on these proposals are due November 3, 2003, and reply comments on December 1, 2003.

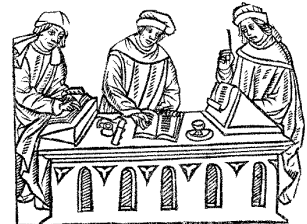


FCC to Auction 900 MHz SMR licenses

The FCC has announced it will auction sixty 900 MHz licenses beginning on February 11, 2004. Generally used for Specialized Mobile Radio Service, the licenses range from 896 to 901 MHz, paired with 935 to 940 MHz, and cover a patchwork of geographic areas from Seattle to Miami and Philadelphia to Honolulu. Minimum opening bids range from \$1,000 to \$54,000.

We Have Issues...

... just not enough of them, recently. But we try to be complete, if not always timely. So although some articles in this issue report on not-so-current events, all are updated for accuracy as we go to press.



Our editors, hard at work on the last issue

*The Part 15 Report***Rules for Unlicensed Devices Cleaned Up**

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Moving on a broad front, the FCC has eliminated several Part 15 rules affecting unlicensed devices. The changes generally respond to manufacturers' complaints about unnecessary or conflicting requirements:

- ☞ Limits on second and third harmonic emissions for certain 24 GHz devices are relaxed. (Previously, two applicable rules set out differing requirements, and the FCC had enforced the more stringent.)
- ☞ Data transmissions are now permitted over remote control devices at 40 MHz and above 70 MHz.
- ☞ Power levels for RFID (radio frequency identification) systems used for tracking containers and merchandise are increased from current levels to be consistent with European and Australian standards.
- ☞ "Declaration of Conformity" labels are simplified to eliminate the "For Home or Office Use" language along with the statement that the complete device has been tested for compliance. The FCC also clari-



fied issues about the placement of product information in battery compartments and elsewhere, but declined to permit electronic labeling of products (except for software-defined radios).

- ☞ The certification requirement is dropped for intentional radiators operating below 490 kHz and having extremely low emissions -- at least 40 dB below the Part 15 limit. Such devices now need only be verified as compliant.
- ☞ Information required to be in the user manual may now be placed on a CD or on the Internet, if the device is intended for use with those media.
- ☞ Accredited testing laboratories need not file descriptions of their facilities with each application, so long as the accrediting entity has filed the necessary descriptive information with the FCC.

The FCC also cleaned up some errors and inconsistencies in various rule parts that had crept in over the years. But yet more changes are in store. See our story on the next page.



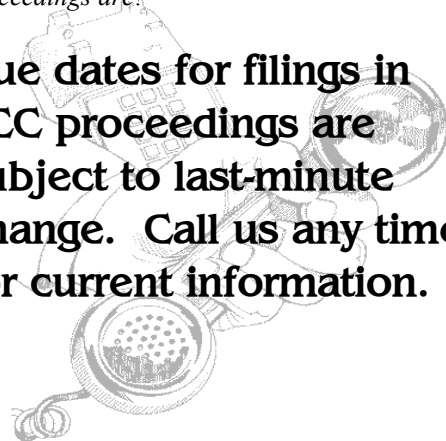
Part 15 Legality Upheld



The FCC has ruled that unlicensed Part 15 devices -- cordless phones, Wi-Fi networks, and the rest -- are lawful after all. In an obscure proceeding on unlicensed transmitters in the 24 GHz band, an amateur radio association had argued that the wording of the 1934 Communications Act requires all transmitters to be licensed (except for categories not relevant here). On that reasoning, most of the ordinary unlicensed devices would be unlawful. When pressed by its opponents, though, the amateurs conceded the FCC has the authority to approve *non-interfering* unlicensed devices -- and further, has the authority to decide which devices are non-interfering. That was all the FCC needed. Reiterating that the 24 GHz transmitters in question do not interfere, it ruled against the amateurs.

It's November—Do you know where your proceedings are?

Due dates for filings in FCC proceedings are subject to last-minute change. Call us any time for current information.



The Part 15 Report

FCC Proposes Further Changes In Regulation of Unlicensed Devices

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Just weeks after releasing an order that cleans up loose ends in the "Part 15" rules on unlicensed devices (see story on preceding page), the FCC issued a Notice of Proposed Rulemaking taking up yet more Part 15 issues:

- ⊕ More sophisticated antennas for unlicensed devices, including sectorized, phased array, and steerable antennas.
- ⊕ Transmitter testing with only the highest gain antenna of each type to be used. (Today every combination of transmitter and antenna must be tested separately, which can drive up costs and delay.)
- ⊕ Substitution of "technically equivalent" transmitters, antennas, or RF power amplifiers in a previously certified system, if professionally installed by a party that offers commercial radio services (including wireless Internet service providers)
- ⊕ Harmonization of measurement rules for U-NII devices and Section 15.247 "digital modulation" devices so they both use average measurements. (The present rules regulate Section 15.247 devices according to peak measurements.)
- ⊕ Harmonization of power spectral density limits and out-of-band emissions limits between U-NII devices and Section 15.247 devices, so that both categories are subject to the same rules -- but the FCC does not say which set of rules it prefers.
- ⊕ Spread spectrum frequency hopping devices capable of supporting second generation Bluetooth products.
- ⊕ Provision for modular transmitters that are subdivided into separate units.

The FCC asks whether it should require a "spectrum etiquette" for unlicensed devices generally -- which could alter the economics of the industry.

Proposed administrative changes include:

- ⊕ Deleting the procedure for requesting a special temporary authority (STA) for a Part 15 device. The FCC has now gone ten years now without a formal STA request.
- ⊕ Disallowing waivers for paper filings, so that all certification filings must be done electronically, including requests for grantee codes and name/address changes. (No one has requested a filing waiver for five years.)
- ⊕ Increasing the number of not-yet-certified units that can be imported for demonstration, valuation, and testing.
- ⊕ Requiring that accredited labs be re-accredited every two years

Spectrum etiquette. In a potentially controversial move, the FCC asks whether it should require a "spectrum etiquette" for unlicensed devices generally. Presently only unlicensed PCS equipment is subject to an etiquette, which spells out in detail the procedures each device must use for choosing transmit frequencies and checking that they are vacant before use. Some of the more sophisticated non-PCS systems in use, including those based on IEEE 802.11 protocols, have listen-before-talk mechanisms or alternatives to avoid causing each other interference. But many less expensive products have no such capability. Requiring a spectrum etiquette would doubtless cut down on interference in the band, but could also alter the economics of the industry.

Comments are due 30 days after publication in the Federal Register, which should occur soon. Because the deadline is relatively short, companies interested in participating may wish to begin laying out their plans soon.

communications service? Information service?

Court Reverses FCC

A recent decision by the U.S. Court of Appeals for the Ninth Circuit may ultimately require cable systems providing open access to their systems to open their systems to competing Internet service providers (ISPs).

Both the FCC and the courts have grappled with regulatory classifications for broadband services provided by cable operators (cable modem services). The Communications Act offers a few basic possibilities. These services could be considered "cable services" (and thus regulated as cable TV services under Title VI of the Communications Act as "telecommunication services" (treated like Title II common carrier services), or "information services," which the FCC has decided not to regulate -- at least as a combination of these. The classification has impact not only on the competitive market for the services, but also whether municipalities or states may regulate their terms and prices, whether providers must allow competitors access to their networks (and at what terms), and the prices that providers must pay to have their wires attached to utility poles. The most obvious impact for consumers is the pricing and quality of the service and the range of choices of Internet service providers (ISPs).

The first federal courts to take up these questions arrived at conflicting answers. In 2000, the Ninth Circuit considered in *City of Portland v. Time Warner* whether a local municipality may impose open access conditions on cable modem service as a condition for approving sale of a cable TV franchise. The court concluded that cable modem service does not qualify as a cable service, but does contain elements of both an information service and a telecommunication service. So the decision created the provision of information service as an information service, and a telecommunication service. Cable modem service, in the court's view, is cable service (as defined in the Communica-

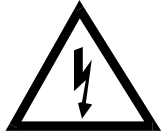
tions Act). And because it is not limited to regulation of cable services, the municipality could not impose conditions on cable modem service. Nevertheless, at approximately the same time, a federal court in Virginia likewise invalidated a local ordinance that imposed open access requirements on cable modem service, but held cable modem service to be a combination of a telecommunication service and a cable service. Also at approximately the same time, the Eleventh Circuit (later reversed by the Supreme Court) held the FCC could not regulate pole attachments for cables that combine cable TV and cable modem service.

In response to the conflicting decisions, and with the intent of promoting broadband services to the public, the FCC issued a Notice of Inquiry in late 2000 asking how cable modem services should be classified and regulated. In March of 2002, the FCC released its Declaratory Ruling -- the subject of the recent Ninth Circuit decision. The Declaratory Ruling concluded that today's cable modem service is properly classified as an interstate information service, not a

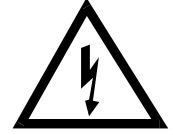
telecommunication service, and does not include a separate of telecommunication service. That would be treated as either a cable service (by local municipalities), or as a telecommunication service (with a requirement to provide access to other providers). No one has argued that cable modems are interstate. The court told the Ninth Circuit that the cable service is not interstate.

A telephone company contended the FCC should also have ruled that DSL service is similarly subject only to

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FCC Re-Thinking RF Exposure



The FCC seeks comment on proposals to amend its rules limiting human exposure to radiofrequency (RF) energy. The Notice of Proposed Rule-making (NPRM) addresses issues related to compliance with the existing exposure limits, but does not propose to amend the numerical limits themselves.

The National Environmental Policy Act (NEPA) requires federal agencies to examine the effects of their actions on the quality of the human environment. As part of its NEPA responsibilities, the FCC has previously adopted requirements for evaluating the impact of human exposure to RF energy from radio transmitters.

Now the FCC proposes to rethink its rules on "routine evaluation" of compliance with exposure guidelines and "categorical exclusion" from evaluation of certain transmitters. Each of these phrases sums up a set of presumptions that strongly affect manufacturers' obligations under the rules.



Among its proposals, the FCC is considering a requirement for routine testing of specific absorption rate (SAR) from spread spectrum and "digital modulation"

transmitters of more than 100 milliwatts, if designed for use within 20 cm of the body. (This actually may be good news for manufacturers, if it means the FCC will no longer require SAR testing of these devices under 100 milliwatts, which make up the large majority made.) The NPRM also proposes to codify procedures for evaluating compliance of modular transmitters, such as those often used in laptop computers, and for evaluating RF exposure

from multiple transmitters in a single device. Still other proposed amendments would clarify what is meant by "occupational" exposure, and more clearly define the responsibilities of FCC licensees in complying with occupational limits in workplace environments.

Comments are due on December 8, 2003, and reply comments on January 6, 2004.



(Continued from page 6)
information service regulation -- *i.e.*, no regulation at all.

In the end, the Ninth Circuit cut through the policy arguments and the regulatory classifications to overturn the FCC's 2002 Declaratory Ruling on the narrow legal basis of *stare decisis*, the principle that courts must follow their own prior decisions. In this case, the Ninth Circuit followed its prior ruling in *City of Portland* that cable modem service combines an information service and a telecommunication service. The FCC's subsequent ruling that cable modem service is only an information service, with no telecommunication service component, is inconsistent with that holding, and so the Ninth Circuit reversed it. Of course, a different circuit might well have reached a different result, but now the Ninth Circuit decision controls nationwide.

While consumer groups cheered the decision as likely to promote consumer access to multiple ISPs via cable

modem, the FCC's Chairman vowed to appeal the decision, stating the court was undermining the FCC's attempts to promote competition in the broadband market. (The Chairman presumably referred to competition between delivery technologies, such as cable and DSL, rather than to competition between ISPs over a particular technology.)

The FCC is likely to appeal the decision either *en banc* to the Ninth Circuit, or to the Supreme Court. Alternatively, Congress could resolve the matter through legislation, but that seems unlikely. Or the FCC could simply forbear from imposing either common carrier or cable regulation on cable modem service. For that matter, the FCC could also forbear from regulating DSL. And any such measures are likely to be challenged anew in court. The only certainty emerging from the Ninth Circuit's decision is that the final outcome is still far from certain.



Spectrum Boost for Rural America?

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The FCC has adopted a Notice of Proposed Rule-making (NPRM) discussing ways to promote deployment of spectrum-based services in rural areas.

The NPRM seeks comment on which areas of the country should be considered rural. It then asks what types of rules for wireless network construction would best promote service in those areas, and explores the construction requirements for leased spectrum. Significantly, the FCC seeks comment on whether modifying the rules for unused spectrum would result in better service to rural America. Should the FCC expand the use of auctions for the re-licensing of spectrum? Or, alternatively, should it advance a process modeled after the cellular unserved-area rules, which provide that willing providers may apply for licenses in areas not being served? The NPRM further seeks comment on the effects of small versus large geographic licensing areas, and the costs of partitioning license areas after an auction, as compared to aggregating areas during or after the auction.

Other issues raised include the removal or modification of regulations that may impede rural service, a proposal for satisfying build-out requirements in rural areas, and methods to promote better access to the equipment necessary to provide service in rural markets through clarification of the FCC's policy on infrastructure sharing. Proposals also include adjustments to the cellular cross-interest rule as it applies in rural service areas.

Comment and reply dates have not been established at press time.

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Don't Call Us -- We'll Call You

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While the telemarketers continue pressing in court for their constitutional right to disturb people at dinner, fifty million households have let their fingers do the talking by signing up for the national do-not-call registry. Unlike earlier efforts to curb unwanted calls, the registry is nationwide in scope, covers both interstate and intrastate telemarketing calls, and bars most commercial solicitations. Still permitted to call are tax-exempt non-profit organizations, non-commercial calls that do not include advertisements (such as surveys), and calls from organizations having a previously established business relationship with the called party. That last exception allows a company to call for 18 months after a transaction, including a payment, so that most people's credit card companies, telephone providers, and the like can continue to call at will. The database is administered by the Federal Trade Commission (FTC), with enforcement coordinated between the FCC and the FTC.

Legally the federal rules constitute a floor, and thus supercede all less restrictive state do-not-call rules. States may adopt more restrictive do-not-call laws governing *intrastate* telemarketing, and federal regulation does not preempt those. State efforts to regulate *interstate* telemarketing would almost certainly be preempted, although the FCC promises to consider them on a case-by-case basis. Still, chances are that a telemarketer can bypass restrictive state rules simply by dialing State *A* customers from State *B*, and vice versa.

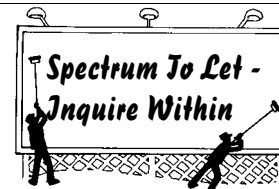
The FCC also addressed the annoyance of "predictive dialers" -- the machines that dial numbers automatically, whether or not a telemarketer is ready to get on the phone, and often leave the consumer yelling "Hello?" into a vacuum. The new rules now require that 97% of these calls be transferred to a live sales agent within two seconds. In addition, many types of prerecorded messages are prohibited. And telemarketers cannot block caller ID.

Both the FCC and the FTC are enforcing compliance pending resolution of the legal challenges.



Secondary Markets in Spectrum Approved

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Almost five months after announcing the adoption of rules to allow secondary markets in spectrum, the FCC released the actual text of the rules. Its goal is to allow parties that have licensed spectrum but don't need it to lease their bandwidth to parties that need it but don't have it. Until now most such transactions have been blocked by the FCC's interpretations of its infamous 1963 *Intermountain Microwave* case forty years ago. Decided in the context of technology and regulation as they were 40 years ago, that case required the licensees themselves to operate facilities in licensed spectrum, and set out six tests for determining whether a licensee had improperly abdicated that responsibility. Under *Intermountain* and the scores of cases that followed its reasoning, leasing of spectrum amounted to unauthorized transfer of control, a serious violation.

The FCC has now overruled *Intermountain Microwave*. In place of the six tests, the rules introduce a distinction between *de facto* and *de jure* control of a licensed facility. By definition, *de jure* control always remains with the licensee. But the licensee is now permitted to hand over *de facto* control to a lessee.

There are two models for leases. Both allow licensees to enter into leasing agreements for any amount of spectrum, in any geographic area, and for any period of time (within the scope of the license).

One model, which the FCC calls "spectrum manager" leasing, does not require prior FCC approval. But the licensee must keep up an active, ongoing oversight role. That includes maintaining a reasonable degree of actual working knowledge about the lessee's activities that could affect its compliance with FCC policies and rules. The licensee must also handle all transactions with the FCC, and take responsibility for FCC compliance. Subleases are permitted.

Under the other model, called "de facto transfer" leasing, the lessee assumes both control of the facilities and responsibility to the FCC. Prior FCC approval is required. Where the lease term exceeds 360 days, the lessee becomes subject to substantially all of the rules that apply to the licensee. Again, subleases are permitted. But leases for 360 days or less are exempt from certain non-interference-related rules, including some use restrictions, rules on designated entities, competition policies, and regulatory classification. Moreover, these short-term leases will ordinarily be approved within 10 days. But the FCC cautions that parties may not "stack" a sequence of short-term leases over a period longer than 360 days, and short-term lessees may not sublease.

The new procedures apply to most of the two-way radio services, whether or not limited to private or non-commercial use. Excluded are public safety, broadcast auxiliary, maritime, aviation, personal radio services (citizens band, family radio, etc.), amateur radio, and satellite. But the details are complicated. Licensees interested in leasing should preliminarily make sure their license qualifies.

Attached to the new rules is a Further Notice of Proposed Rulemaking that requests comment on various potential mechanisms for helping spectrum markets to operate more efficiently. These include (1) mechanisms for sharing spectrum information, possibly through "market-maker" intermediaries; (2) mechanisms to facilitate access to spectrum by new technologies, such as an automated clearinghouse mechanism to provide real-time spectrum information; and (3) more flexible regulatory treatment. Comment due dates are not yet available.



(Continued from page 1)

Neither of these automatic coordination mechanisms may be in place until four months after the new rules are published in the Federal Register -- that is, probably not before the second or third quarter of 2004.

Because these frequencies yield highly directional beams from a small antenna, and their propagation is relatively

poor, even nearby systems are unlikely to interfere with each other. This permits a high level of frequency reuse within a small area. Coordination conflicts should be rare, except perhaps among links terminating on the same rooftop.

The FCC will permit indoor-only unlicensed operation at 92-94 and 94.1-95 GHz. There is no provision for unlicensed operation at 71-76 and 81-86 GHz.

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