Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Amendment of Parts 21 and 74 To Enable	)	MM Docket No. 97-217
Multipoint Distribution Service and	)	
Instructional Fixed Television Fixed	)	File No. RM-9060
Service Licensees To Engage In Fixed	)	
Two-Way Transmissions	)	

PETITION FOR RECONSIDERATION

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List ABCDE

TABLE OF CONTENTS

I. INTRODUCTION. 2

II. DISCUSSION. 3

A. The Onerous Restrictions Imposed On All Response Station Installations Because Of Concerns That, In Extreme Circumstances, A Response Station Might Overload The Front End Of A Spectrally-Inefficient ITFS Downconverter Nearby Must Be Modified. 3

1. The Restrictions Designed To Address ITFS Downconverter Overload Should Not Apply With Respect To The Registered Receive Sites Of Any ITFS Licensee That Has So Agreed. 6

2. The Advance Notification And Professional Installation Requirements Should Not Apply With Respect To ITFS Receive Sites Registered Or Built After The Filing Of The Application For The Associated Response Station Hub. 8

3. The Advance Notice And Professional Installation Rules Should Not Apply When MDS Channels 1 Or 2/2A Are Being Used For Upstream Transmissions. 9

4. The Prophylactic Rules Designed To Address Overload Should Not Apply To Non-Cochannel And Non-Adjacent Channel ITFS Licensees With Registered Receive Sites Within 1960 Feet Of The Response Service Area Where The Response Station Will Operate In The 2500-2690 MHz Band At +18 dBW EIRP Or Less And The Response Station Licensee Installs Improved Downconverters. 11

5. Where Pre-Construction Notice Must Be Given, the Notice Period Should Be Reduced To One Business Day And The Content Of The Notice Modified. 14

B. The Commission Should Apply Its Expedited Licensing System To ITFS Major Modification Applications. 17

C. Other Rules Should Be Clarified To Provide Greater Certainty. 20

1. The Text Of Newly-Adopted Section 74.931(c) Must Be Amended To Permit An ITFS Licensee To Engage In Channel Shifting If It Leases To A Wireless Cable Operator That Utilizes Digital Transmissions. 20

2. The Commission Should Clarify The Definition Of An ITFS Station's PSA. 20

3. Sections 21.913(b) and 74.985(b) Should Be Amended To Eliminate The Requirement That Only A Licensee, Conditional Licensee Or Applicant

For A Response Station Hub Can Hold A High-Power Booster License And To Make Clear That Boosters Can Operate Utilizing Analog Modulation. 21

4. The Commission Should Amend Section 74.931 To Accommodate Those ITFS Licensees Who Do Not Actually Provide Service Throughout Their 35-mile Radius PSA. 21

EXECUTIVE SUMMARY

Although the Petitioners generally applaud the Commission for the decisions reflected in the *R&O,* there are two issues that the Commission must revisit before Multipoint Distribution Service ("MDS") and Instructional Television Fixed Service ("ITFS") licensees will be able to fully deploy advanced wireless broadband technologies in competition against cable, DBS, LMDS, and unlicensed ISM services. As the rules are currently written, wireless cable operators will not be able to respond to marketplace demand for high-speed data services with the rapidity of their competitors. To eliminate this competitive imbalance, the Commission must: (i) substantially revise the excessive restrictions that have been placed upon all response station installations due to fears that, in extreme circumstances, a high power response station transmission might overload the front end of a spectrally-inefficient ITFS block downconverter located nearby; and (ii) extend the streamlined application processing system adopted in the *R&O* to every application proposing a major modification to an ITFS station.

The Petitioners must stress that they are not asking the Commission to revisit the new rules requiring response station licensees to cure downconverter overload they cause. However, the Petitioners object to three requirements adopted in the *R&O* to address those concerns: (i) the requirement of Sections 21.909(n) and 74.939(p) that every ITFS licensee be given 20 days advance notice by certified mail before any response station can be activated within 1960 feet of one of its registered receive sites; (ii) the portions of those same rules which require that the notice contain far more information than the ITFS licensee reasonably needs, including information that cannot be obtained without first activating the response station; and (iii) the requirement of Sections 21.909(k) and 74.939(m) that all response stations be professionally installed under all circumstances. In each case, there are less onerous restrictions that can be employed to achieve the Commission's objectives, while still preserving the competitive viability of wireless operators. Specifically:

- The advance notification and professional installation restrictions should not apply with respect to the registered receive sites of any ITFS licensee that has so agreed. Because the risk of overload is minimal even under worst case assumptions and there are a variety of techniques for addressing that risk in less restrictive fashion than provided for under the new rules, the Petitioners suspect many ITFS licensees (particularly the 95% of ITFS licensees who rely upon leasing revenues from wireless operators) will readily agree to forego the requirements in order to assist wireless cable operators to be more competitive.

- The advance notification and professional installation requirements should not apply with respect to ITFS receive sites registered or built after the filing of the application for the associated response station hub. ITFS licensees are now on notice of the risk of overload, and should be deploying downconverters better able to reject undesired signals.

- The advance notice and professional installation rules should not apply when MDS channels 1 or 2/2a at 2150-2162 MHz are being used for upstream transmissions. These channels are far removed from the ITFS allocation at 2500-2690 MHz, and there are a variety of potential interferers operating closer to ITFS without any notification or professional installation requirements.

- The advance notification and professional installation rules should not be applicable to response stations that will be non-cochannel and non-adjacent channel to an ITFS receive site where

the response station will operate in the 2500-2690 MHz band at +18 dBw EIRP or less and the response station licensee installs improved downconverters at all registered ITFS receive sites within 1960 feet of the response service area . The Commission has a long history of allowing the replacement of spectrally-inefficient ITFS downconverters where necessary to promote new services, and there is no reason for a different policy here.

- Where advance notice of response station activation must be given, the notice period should be reduced to one business day and the content of the notice modified. The objective of the notification requirement was to assist ITFS licensees in determining the source of any interference they do receive, which the Petitioners' proposal accomplishes without the burdens of the current rule.

In addition, if advanced services are to be rapidly deployed over MDS/ITFS spectrum, the Commission must address the rules which have caused substantial backlog in the processing of ITFS major modification applications. Since the Commission is unlikely to enlarge the ITFS processing staff, the Petitioners believe that the best approach is for the Commission to apply its newly-adopted streamlined licensing system to all applications for ITFS major modifications, not just those proposing response station hubs and boosters.

Finally, there are several other rules adopted in the *R&O* that need to be amended in order to eliminate ambiguity and provide the industry with greater certainty.

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Amendment of Parts 21 and 74 To Enable Multipoint Distribution Service and Instructional Fixed Television Fixed Service Licensees To Engage In Fixed Two-Way Transmissions	)	MM Docket No. 97-217
	)	File No. RM-9060

PETITION FOR RECONSIDERATION

The parties to the Petition for Rulemaking that commenced this proceeding (collectively, the "Petitioners"), by their attorneys and pursuant to Section 1.429(a) of the Commission's Rules, hereby petition the Commission to reconsider and clarify certain aspects of the initial *Report and Order* (the "*R&O*").[1/]

In the interest of expediting completion of the reconsideration phase of this proceeding, this petition primarily will focus on two issues that absolutely must be revisited if the underlying objectives the Petitioners and the Commission share are to be achieved. The Petitioners believe that before Multipoint Distribution Service ("MDS") and Instructional Television Fixed Service ("ITFS") licensees will be able to fully deploy advanced wireless broadband technologies as envisioned by the *R&O*, the Commission must: (i) substantially revise the excessive restrictions that have been placed upon all response station installations due to fears that, in extreme circumstances, a high power response station transmission might overload the front end of a spectrally-inefficient ITFS block downconverter located nearby; and (ii) extend the streamlined application processing system adopted in the *R&O* to every application proposing a major modification to an ITFS station. In addition, the Petitioners believe that there are several minor clarifications that the Commission should issue at this time so as to provide the industry with greater certainty regarding the new

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[1/] *See Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service And Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, FCC 98-231, MM Docket No. 97-217 (rel. Sept. 25, 1998) [hereinafter cited as "*R&O*"].

regulatory environment crafted by the *R&O*.

I. INTRODUCTION.

While this Petition will necessarily focus on what the Petitioners believe to be wrong with the *R&O*, the Petitioners must begin by applauding the Commission for adopting innovative new rules and policies designed to promote the rapid deployment of broadband wireless services utilizing MDS and ITFS spectrum. As the Commission has reiterated on numerous occasions, this country faces a critical challenge in assuring that increased bandwidth is available to all Americans.[2] Since wireless technology can provide high-capacity links more quickly and at lower cost than wired competitors,[3] MDS and ITFS represent an effective, immediate solution to the "last mile" bandwidth limitations that have prevented widespread deployment of advanced telecommunications into homes and businesses to date. With the revisions proposed herein, the Commission's new MDS and ITFS rules will achieve the Commission's objectives -- to "provide increased service to consumers, upgrade the tools available to educational institutions and enhance the competitive position of MDS operators."[4]

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[2] *See Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Docket No. 98-146, FCC 98-187 at ¶¶ 1-2 (rel. Aug. 7, 1998)[hereinafter cited as "*Advanced Telecommunications NOI*"]; Werbach, *Digital Tornado: The Internet and Telecommunications Policy*, OPP Working Paper Series 29 at 73 (March 1997)[hereinafter cited as "*Digital Tornado*"].

[3] *See Digital Tornado*, at 74-75; *Advanced Telecommunications NOI* at ¶¶ 42-44; *See Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service And Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, FCC 97-360, MM Docket No. 97-217, at ¶¶ 1-7 (rel. Oct. 10, 1997) [hereinafter cited as "*NPRM*"]; Britton, "The Broadband Wireless Revolution," *Private Cable & Wireless Cable* at 37 (June, 1998).

[4] *R&O* at ¶ 2.

II. DISCUSSION.

A. The Onerous Restrictions Imposed On All Response Station Installations Because Of Concerns That, In Extreme Circumstances, A Response Station Might Overload The Front End Of A Spectrally-Inefficient ITFS Downconverter Nearby Must Be Modified.

If the benefits anticipated by the *R&O* are to be realized, the Commission must revisit the onerous restrictions that were adopted because of concerns expressed by one party that, in extreme circumstances, a response station operating on a non-cochannel and non-adjacent channel basis might nonetheless overload the front end of a spectrally-inefficient ITFS block downconverter located nearby. Specifically, the Petitioners object to three requirements adopted in the *R&O* to address those concerns: (i) the requirement of Sections 21.909(n) and 74.939(p) that every ITFS licensee be given 20 days advance notice by certified mail before any response station can be activated within 1960 feet of one of its registered receive sites; (ii) the portions of those same rules which require that the notice contain far more information than the ITFS licensee reasonably needs, including information that cannot be obtained without first activating the station; and (iii) the requirement of Sections 21.909(k) and 74.939(m) that all response stations be professionally installed under all circumstances. Unless those restrictions are substantially revised on reconsideration, the Commission will as surely prevent the widespread provision of broadband services over MDS and ITFS as if it had never adopted the *R&O* in the first place. And if that happens, not only will consumers suffer the loss of a competitive provider of broadband services, but the educational community these very rules are designed to protect will lose the benefit of commercial leasing arrangements that make most ITFS operations possible.

The bases for Petitioners concerns are not difficult to understand. As the Commission acknowledges in the *R&O*:

> MDS operators . . . face challenges posed by the convergence of different information delivery systems. For example, cable operators with which MDS operators compete previously operated as providers of one-way video programming, but now are increasingly providing a variety of two-way services, including Internet

> access. As has been discussed in the press and as we noted in the *1997 Competition Report*, other services, including direct broadcast satellite ("DBS"), satellite master antenna television services ("SMATV"), and the nascent local multipoint distribution services ("LMDS"), are also moving toward the provision of Internet services. The MDS industry will need to be able to offer comparable, competitively-priced services to compete against these players.[5]

To offer the comparable, competitively-priced services the *R&O* recognizes to be essential for wireless cable's survival, operators cannot be hamstrung with regulatory policies that delay service or add costs when compared to alternatives in the marketplace. Today, subscribers can secure immediate access to multichannel video programming and high-speed Internet access with the DirecDuo system from DirecTV, a system that can be purchased from a variety of retail consumer electronics outlets and installed by the subscriber in a matter of hours, and other DBS high-speed data services are under development.[6] Cable system operators are routinely offering installation to new subscribers within a day of the initial request for service,[7] and are beginning to sell cable modems through retail outlets, allowing subscribers to gain same-day access to high-speed Internet services. SMATV system operators can typically provide same-day activation of new services in the multiple dwelling unit buildings they serve. LMDS operators similarly have the flexibility to make installations immediately upon request or, if they choose, to distribute subscriber equipment through retail outlets and allow consumers to make their own installations. And, although not discussed in the *R&O*, wireless cable is already competing against another rapidly-emerging category of wireless Internet access service provider – companies that are already offering consumers immediate two-way high-speed wireless Internet access using the unlicensed spectrum in the

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[5] *R&O* at ¶ 8.

[6] *See Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming,* FCC 98-335, CS Docket No. 98-102 at ¶ 75 (rel. Dec. 24, 1998).

[7] Indeed, under Section 76.309 of the Commission's Rules, cable system operators are required to install service and respond to service calls in most cases within 7 days.

2.4 GHz Industrial, Scientific and Medical ("ISM") band.[8]

The rules in issue prevent wireless cable operators from being competitive in this marketplace environment. It is wireless cable operators, and wireless cable operators alone among all competitors, who are being denied the right to respond rapidly to consumer requests for service and who must ignore consumers' preference for a retail distribution channel. The question facing the Commission at this juncture is a rather simple one – given the Commission's acknowledgment both that most response stations will operate at lower power than projected by the sole advocate for these restrictions[9] and that block downconverter overload is only a risk in "limited circumstances,"[10] should the Commission cripple the competitive viability of commercial broadband services over MDS and ITFS (which in turn will fund substantial educational benefits for ITFS licensees) to avoid even the most remote possibility that for even the shortest period of time, a spectrally-inefficient ITFS downconverter will suffer overload? The answer should be a resounding "no!", particularly since other alternatives exist that will be fair to those ITFS licensees who have installed spectrally-inefficient downconverters, without compromising commercial operations.

So that there is no confusion, *the Petitioners are not asking the Commission to revisit those provisions of Sections 21.909(g)(8) and 74.939(l)(8) which require the licensee of any response station to cooperate and bear the expense of curing block downconverter interference.* To the contrary, those provisions were proposed by the Petitioners and, even standing alone, represent an extremely fair approach to addressing any overload of the spectrally-inefficient downconverters installed at some ITFS receive sites. Indeed, the fundamental fairness of the Petitioners' approach was recognized by virtually every ITFS licensee taking a position, as well as highly-respected technical consultants and technologically-sophisticated wireless communications equipment

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[8] *See, e.g.,* Annual Report of Interjet Net Corp. on SEC Form 10-KSB (dated July 14, 1998).

[9] *See R&O* at ¶ 53.

[10] *Id.* at ¶ 55.

manufacturers.[11] Comments filed by the many, long-time ITFS licensees represented by Dow, Lohnes and Albertson put it best:

> Competent engineers associated with the ITFS Parties have considered these issues and have concluded that the interference assumptions and calculations underlying the proposed rules are conservative and should provide sufficient interference protection. They believe that incidents of brute force overload, if they happen, will be isolated and can be cured with appropriate technical solutions. The FCC, as well as CTN, should focus more simply on crafting rules that require the proponent of a two-way, cellularized system to resolve interference problems caused by the system, and to shut down any interfering operations until a resolution can be achieved. The risk of inappropriate system design, engineering errors, defective or careless facility construction and even unforeseen or anomalous problems should be on the operator of the two-way system. This will provide adequate incentives for operators to avoid interference.[12]

Although the Petitioners believe that the rules in issue could be completely eliminated without compromising "real world" ITFS operations, that is not what the Petitioners are proposing here. Rather, the crux of the Petitioners' current proposal is that the Commission should allow system operators the flexibility to escape the reach of the onerous notification and professional installation requirements by securing ITFS licensee consents, utilizing MDS Channels 1 and 2/2A (which are removed by a minimum of 338 MHz from the closest ITFS channels) for upstream transmissions, or upgrading spectrally-inefficient ITFS downconverters. The Petitioners' proposals are discussed below, and specific proposed rules are set forth in Appendix A.

1. The Restrictions Designed To Address ITFS Downconverter Overload Should Not Apply With Respect To The Registered Receive Sites Of Any ITFS Licensee That Has So Agreed.

The first thing the Commission can do to ease the burden of the new rules is to make clear that the restrictions designed to address ITFS downconverter overload will not apply with respect to the registered receive sites of any ITFS licensee that has agreed to forego the notification and/or

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[11] *See* Letter from Paul J. Sinderbrand, Counsel to Petitioners, to Magalie Roman Salas, FCC Secretary, MM Docket No. 97-217 at 1-3 (filed July 17, 1998).

[12] Joint Comments of Alliance for Higher Education, et al., MM Docket No. 97-217 at 6-7 (filed Jan. 8, 1998).

professional installation requirements.

The Commission has consistently allowed MDS and ITFS licensees to waive interference protections afforded under the rules when doing so promotes the rapid inauguration of service, the most efficient use of spectrum, or other interests.[13] As the *R&O* recognizes:

> MDS and ITFS licensees have a long history of mutual cooperation in their operations. The realities of their operations compel such cooperation. An MDS operator trying to run a system across its BTA must cooperate with the various ITFS licensees in its BTA. Likewise, many ITFS licensees depend on the compensation paid by their local MDS operator to make their own systems a reality. Therefore, the viability of the services depend on the parties working together in good faith . . . ."[14]

Not surprisingly, the *R&O* specifically contemplates that consents will play a major role in the licensing of advanced MDS and ITFS facilities.[15]

In their Comments in response to the *Notice of Proposed Rulemaking* ("*NPRM*"), the Petitioners provided the Commission with a detailed analysis establishing three very fundamental points: (1) interference due to the overload of downconverters at ITFS receive sites by response stations is extremely unlikely (and is virtually impossible to occur when all of the outbound transmitters in a market are collocated at a common site that also serves as the response station hub, as will often be the case); (2) there is a vast array of techniques that can be employed prior to activation of response stations to mitigate any potential for interference before it occurs; and (3) in those rare cases where block downconverter overload does occur, additional techniques are available to cure rapidly the resulting interference.[16] Given the broad consensus among ITFS licensees that

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[13] *See, e.g.*, 47 C.F.R. §§21.902(b)(5); 21.938(f);74.903(b)(4); 74.985(b)(4).

[14] *R&O* at ¶ 63.

[15] *See id.* at ¶¶ 25, 66, 71. *See also* 47 C.F.R. §§ 21.902(b)(5)(i); 21.905(d)(3); 21.909(d)(3)(ii)-(v); 21.909(g)(6)(ii); 21.909(i)(l)(ii); 21.913(a); 21.913(b)(3) and (5)(ii); 21.913(e); 21.938(f); 74.911(e)(4); 74.936(b)(3); 74.939(d)(3)(ii)-(iv); 74.939(g)(6)(ii); 74.939(h)(1)(ii); 74.985(a); 74.985(b)(2) and (4); and 74.985(e).

[16] See Comments of the Petitioners, MM Docket No. 97-217 at 73-99 (filed Jan. 8, 1998)[hereinafter cited as "Petitioners Comments"].

the CTN proposals in this docket were excessive,[17] the Petitioners suspect that in most cases ITFS licensees will readily agree to waive the advance notification and professional installation rules so as to permit the commercial operator to deploy two-way service in a commercially viable manner.

2. *The Advance Notification And Professional Installation Requirements Should Not Apply With Respect To ITFS Receive Sites Registered Or Built After The Filing Of The Application For The Associated Response Station Hub.*

As the Commission considers the Petitioners' proposals for addressing block downconverter overload, it should keep in mind that the culprit here is not the new response station. Rather, it is the spectrally-inefficient downconverters lacking adequate rejection of non-adjacent channel signals that some ITFS licensees have installed in the past. Whatever justification an ITFS licensee may have had in the past for deploying such downconverters, that justification is long past. The ITFS community has been on notice of the vulnerability of obsolete ITFS downconverters to overload at least since CTN first raised the issue in this proceeding on November 25, 1997.[18] At some point, the Commission must begin holding ITFS licensees responsible for installing more appropriate downconverters. That time is now.[19]

Again, it bears repeating that the Petitioners are not suggesting that a response station hub licensee should be absolved from its responsibility under newly-adopted Sections 21.909(g)(8) or 74.939(l)(8) for curing overload interference; they are merely saying that the response station hub licensee should not be required to suffer the burdens of notification zones and professional installation to protect newly registered or built ITFS receive sites. Therefore, the Petitioners propose

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[17] *See supra* note 11.

[18] *See* Request of CTN for Supplemental Comment Period and Extension of Time, MM Docket No. 97-217 (filed Nov. 25, 1997) [hereinafter cited as "CTN Extension Request"].

[19] This is particularly so given the numerous other communications services operating in close proximity to ITFS channels that can cause in downconverter overload. For example, as is discussed *infra*, high-speed Internet services using the unlicensed ISM band are operating as close as 17 MHz away from ITFS channel A1 – the nearest ITFS channel. That is closer than any MDS channel is to ITFS channel A1.

that the rules be revised so that any response station can be activated without advance notice and without professional installation unless it is within 1960 feet of an ITFS receive site registered and constructed before the filing of the application for the associated response station hub.

3. *The Advance Notice And Professional Installation Rules Should Not Apply When MDS Channels 1 Or 2/2A Are Being Used For Upstream Transmissions.*

The Petitioners' disagreement with the *R&O*'s approach to addressing downconverter overload largely stems from the Commission adoption of a "one size fits all" approach to the problem. While the Petitioners have never denied that in extreme circumstances downconverter overload may occur, they have also presented the Commission with unrefuted evidence that, in practice, those extreme circumstances will occur only rarely.[20] On reconsideration, the Commission can mitigate the adverse consequences of the new rules somewhat by exempting from the advance notice and professional installation requirements response stations constructed under circumstances that clearly do not pose a significant threat of causing ITFS block downconverter overload.

The most obvious example of where the "one size fits all" approach is overly-protective involves the application of the rules to response stations that operate on MDS channels 1 and 2/2A at 2150-2162 MHz – *channels that are located a full 338 MHz away from the closest ITFS channel!* There are numerous communications services located closer to the ITFS band than MDS channels 1 and 2/2A, many of which can transmit at power levels as high, if not higher, than MDS response stations, but none of which suffers restrictions like the advanced notice and professional installation requirements. Next Generation Weather Radar ("NEXRAD") systems can operate in the 2.7-3.0 GHz band (*i.e.*, within 14 MHz of the closest ITFS channel) at megawatt power levels, but are not required to provide any advance notice to ITFS licensees. Point-to-point microwave facilities are routinely deployed in the 2160-2200 MHz band with power levels as high as +75 dBm EIRP, also

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[20] *See, e.g.*, Petitioners Comments at 73-99; Reply Comments of Petitioners, MM Docket No. 97-217 at 44-64 (filed Feb. 9, 1998)[hereinafter cited as "Petitioners Reply Comments"].

without advance notice to ITFS licensees. While Wireless Communications Service ("WCS") providers (who can operate at EIRPs of +63 dBm in the 2.3 GHz band) must give notice to ITFS licensees before activating cells, they are under no obligation to provide notice prior to the activation of subscriber units and are free to avail themselves of retail distribution.[21] And, transmission systems that use ISM frequencies for high-speed Internet access applications in the 2.4 GHz band (which can be as close as 17 MHz away from ITFS channel A1) at power levels similar to those that will be used in most cases by response stations using MDS channels 1 and 2/2A are being actively marketed and deployed.[22] Yet, these devices -- which compete directly against the high-speed Internet access services offered by wireless cable operators -- need not be professionally installed and users are not required to give any advance notice to nearby ITFS licensees before activating facilities. Indeed, these ISM band devices can be deployed without any licensing whatsoever!

Rather clearly, response station use of the 2150-2162 MHz band has been singled out for particularly harsh treatment when compared to the treatment of other bands closer to ITFS and more likely to cause ITFS downconverter overload. While the Petitioners are not asking the Commission to exempt MDS Channel 1 and 2/2A response station licensees from their obligations under Sections 21.909(g)(8) and 74.939(l)(8) to cure interference due to overload, fundamental fairness dictates that response station operating in the 2150-2162 MHz band should not be subject to the advance notification and professional installation requirements.

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[21] The Petitioners have previously indicated to the Commission a willingness to accept the obligation to provide notice to nearby ITFS licensees before activating any response station hub as an acceptable replacement for having to give notice prior to the activation of each associated response station. *See* Petitioners Comments at 103-104.

[22] Information from the World Wide Web sites of two vendors, Harris Communications and Iowave, Inc., regarding their unlicensed ISM high-speed Internet access equipment can be found at Exhibit 1.

4. *The Prophylactic Rules Designed To Address Overload Should Not Apply To Non-Cochannel And Non-Adjacent Channel ITFS Licensees With Registered Receive Sites Within 1960 Feet Of The Response Service Area Where The Response Station Will Operate In The 2500-2690 MHz Band At +18 dBW EIRP Or Less And The Response Station Licensee Installs Improved Downconverters.*

A second example of the *R&O*'s "one size fits all" approach being overly-inclusive is that it fails to account for the fact that any risk of overload can be virtually eliminated by replacing the spectrally-inefficient ITFS downconverters deployed by some ITFS licensees with models that employ appropriate selectivity. On reconsideration, the Commission should revise the advance notice and professional installation rules so that they will be inapplicable with respect to the activation of any non-cochannel and non-adjacent channel response station that will operate in the 2500-2690 MHz band at +18 dBw EIRP or less, so long as the response station licensee first installs improved downconverters at all registered ITFS receive sites within 1960 feet of its response service area.

The theoretical analyses submitted by CTN that led to the Commission's adoption of the rules in issue assumed, among other worst case elements, that the ITFS block downconverter has an overload point of -28 dBm at its input and that the transceiver is operating at +18 dBW EIRP.[23/] The Petitioners established in their filings in response to the *NPRM* that, in reality, the performance of downconverters can be superior to that assumed by CTN.[24/] With modern downconverters installed, the risk of overload from a response station operating at +18 dBW becomes virtually non-existent, even retaining the unrealistic worst case assumptions consistently employed by CTN.

The thrust of CTN's argument was that, assuming a downconverter with an input overload point of -28 dBm is used at an ITFS receive site with a 20 dBi antenna boresighted on a +18 dBw EIRP response station operating 50 feet away, interference due to overload will occur. While the

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[23/] *See, e.g.*, CTN Extension Request, Joint Engineering Exhibit at 1.

[24/] *See* Petitioners Comments at 98-99; Petitioners Reply Comments at 56-57.

Petitioners fundamentally disagree with this mode of analysis,[25] it can nonetheless be demonstrated that a simple replacement of the downconverter can eliminate the possibility of overload even under CTN's scenario.

Under the conditions postulated by CTN, the undesired signal level would be +4 dBm.[26] Although there are a variety of techniques that can be used to avoid overload, one of the most simple is to replace the spectrally-inefficient downconverter with one that contains appropriate input filters. To determine the threshold amount of filtering required to suppress the undesired signal sufficiently to avoid overload, one must take the difference between the undesired signal and the maximum input power of the downconverter loaded with the number of channels in the desired bandpass. Thus, the introduction of a filter with undesired signal suppression equal to or greater than that required to reduce the undesired signal sufficiently so that the sum of the power of the desired signal and that of the attenuated undesired signal does not exceed the power capability of the downconverter would eliminate the potential for downconverter overload.

Therefore, the Petitioners propose that where a response station hub licensee is installing response stations operating at +18 dBW or less, it should be exempt from the advance notification and professional installation requirement with respect to non-cochannel and non-adjacent channel registered receive sites, so long as prior to commencing operations it replaces the existing downconverters at the registered ITFS receive sites within 1960 feet of the response service area with models that suppress non-cochannel and non-adjacent channel signals in an amount equal to or greater than +4 dBm minus the downconverter maximum input power capability minus the sum of the power of the desired signals. Although the Petitioners do not believe that there will be many

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[25] Petitioners understand, for example, that the California Amplifier downconverter that CTN cited in its examples performs better than assumed by CTN. Moreover, registered ITFS receive sites are almost always located 100 feet or more from any other building, making the assumption that the response station will be within 50 feet highly overly-conservative.

[26] *See* CTN Extension Request, Joint Engineering Exhibit at 2.

situations in which an ITFS licensee could reasonably object to the replacement of an existing downconverter with an upgraded model,[27] the Petitioners nonetheless suggest that the Commission establish procedures to provide ITFS licensees a vehicle for raising any objections they might have.

Specifically, it is suggested that the proposal to upgrade downconverters should be made in writing and served upon the affected non-cochannel, non-adjacent channel ITFS licensee, conditional licensee or applicant at the same time the application for the response station hub license is served upon cochannel and adjacent channel ITFS interests. Any objection by the ITFS licensee would then have to be made within the 60 day period allowed for petitions to deny the response station hub application, documenting the particular reasons for the ITFS licensee's determination that the upgraded downconverter would interfere with its current service. If no objection is made within that 60 day period, the offer will be deemed to have been accepted. If an objection to the downconverter upgrade plan is received, the application should nonetheless be expeditiously granted, but the licensee should be required to comply with the notification and professional installation requirements until the Commission resolves the dispute.

A rule permitting a newcomer to replace spectrally-inefficient ITFS downconverters with modern equipment would hardly be novel. Since 1990, applicants for new or modified MDS and ITFS facilities have been permitted to upgrade downconverters installed by an ITFS licensee prior to May 26, 1983 and thereafter invoke the 0 dB adjacent channel desired-to-undesired ("D/U") interference standard, rather than the -10 dB D/U standard applicable to less selective

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[27] It would not surprise Petitioners if an attempt were made to derail this proposal by arguing that the filtering will increase the noise figure for the improved downconverter, thus preventing the reception of signal at ITFS stations where unfiltered downconverters are today employed. Such an argument, however, is specious, for at most ITFS receive sites there is such ample margin that an increase in the downconverter noise figure by several dB will have absolutely no impact on the quality of the signal received. In those rare cases where the increase in the noise figure is material, the situation can generally be resolved through an upgrade of the ITFS reception antenna at the expense of the response station licensee to increase the strength of the desired signal. Should a situation arise in which the ITFS licensee can document that the increased noise figure would be problematic and the receive antenna cannot be upgraded, then a viable objection to the exemption from the advance notice and professional installation requirements would exist.

downconverters installed prior to that date.[28] More recently, when the Commission established the WCS, it allowed WCS licensees to replace inadequately-filtered downconverters of ITFS licensees with new downconverters in order to prevent ITFS downconverter overload.[29] In each case the Commission recognized that it is spectrally-inefficient to hamper the deployment of innovative new service offerings in order to protect ITFS equipment that is inappropriate. The Commission should do the same here.

5. Where Pre-Construction Notice Must Be Given, the Notice Period Should Be Reduced To One Business Day And The Content Of The Notice Modified.

While grant of the proposals outlined above will provide a measure of relief, the viability of commercial operations will remain in jeopardy in those markets where an ITFS licensee refuses to cooperate, ITFS spectrum must be used for response channels, and technical considerations make the exemptions unavailable. Therefore, the Commission should further modify the notification requirements in a manner that is reasonably protective of the ITFS licensee, but eliminates the unreasonable burdens imposed on the commercial operator.

First, the Commission must reduce the length of the 20 day advance notice period. Twenty days is far more advance notice than is required to serve the objectives of the rule and, as noted above, places commercial operators at a significant competitive disadvantage. The advance notice requirement was deemed necessary because the signals from response stations causing the overload will be "noise like" and intermittent, making it more difficult for the ITFS licensee to identify the

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[28] *See* 47 C.F.R. §21.902(f)(ii); *Amendment of Parts 21, 43, 74, 78, and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, and Cable Television Relay Service*, 5 FCC Rcd 6410, 6414 (1990).

[29] *See* §27.53(a); *Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service*, 12 FCC Rcd 3977, 3984-85 (1997). It is worth noting that unlike the WCS rules that sunset in three years, the Petitioners are proposing that the licensee of the response hub authorization be required to cure interference from response stations no matter when it occurs. Thus, while ITFS licensees must expend funds to protect themselves against WCS interference occurring after February 20, 2002, the Petitioners have not proposed any sunset here.

source of the interference.[30] Assuming, for purposes of argument, that this consideration justifies a notice requirement,[31] it does not justify a 20 day delay in response station installation. Significantly, there is not one word in the *R&O* explaining why 20 days was chosen as the advance notice period. Since the stated purpose of the notice requirement is to assist the ITFS licensee in identifying the source of overload interference once it occurs, notice given at or about the time of installation will suffice. Therefore, in those circumstances where notice must be given, the Commission should only require at most one business day's advance notice; if block downconverter overload occurs thereafter, the ITFS licensee will know where to turn.[32]

To assure that this notice is not the first time an ITFS licensee learns of plans to deploy response stations in the vicinity of its registered receive sites, the Petitioners suggest that every application proposing a response station hub be served on any ITFS licensee with a registered receive site in or within 1960 feet of the proposed response service area, even if that licensee is not cochannel or adjacent channel. Such service would provide notice of the area in which response stations will be located, and identify the worst-case technical parameters of any response station that will be installed. In this way, the Commission can be certain that all ITFS licensees will have substantial advance notice before any response station is activated near a registered receive site.

Second, the Commission should substantially modify the contents of the notice. Rather than include the specific address and geographic coordinates of the station, the EIRP, antenna pattern, orientation and height AMSL, channels to be used and the name and telephone number of a contact person, the Petitioners propose that the notice identify only the registered ITFS receive site that is

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[30] *See R&O* at ¶ 55.

[31] As discussed above, the Petitioners believe that where the risk of overload is reduced by the upgrading of downconverters or frequency separation, any notice requirement is overly burdensome.

[32] Because the Petitioners are proposing a shortened notice period before a given response station is activated, each ITFS licensee should be permitted to elect to receive its advance notices by electronic mail or facsimile, rather than certified mail.

potentially affected by the new response station, the response station hub(s) with which the response station may communicate, and the name and telephone number of a contact person.

Prior to the issuance of the *R&O*, both BellSouth Corp. and People's Choice TV Corp. expressed strong objections to any mandatory disclosure of subscriber information, objections that are not even acknowledged in the *R&O*.[33] As those filings demonstrated, the elimination of the street address and coordinates is necessary to protect proprietary information. Several ITFS licensees have already entered into arrangements to lease excess capacity to Internet service providers other than the wireless cable operator in the market,[34] while others apparently are planning to provide commercial Internet service themselves. If a wireless cable operator must disclose to such an ITFS licensee precisely where it intends to locate a response station, that ITFS licensee could pass the information along to its own lessee or utilize that information itself to market a competing Internet access service to the customer. Under such circumstances, the ITFS licensee receiving the notice has a substantial advantage, for that ITFS licensee or its own commercial partner could then promise the consumer identified in the notice immediate access to an alternative service without a 20 day delay!

Even more troubling, requiring response station hub licensees to supply advance notice of the exact EIRP, the exact antenna pattern, orientation, polarization and height AMSL, and the exact channels of the response station prior to activating a response station is impossible. Those characteristics often cannot be determined until the installer activates the response station. For example, until operations are actually attempted, it is impossible to determine precisely how high

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[33] *See* Letter from Matt Oristano, Chairman, People's Choice TV Corp., to Magalie Roman Salas, FCC Secretary, MM Docket No. 97-217 at 2-3 (filed July 31, 1998); Further Comments of BellSouth Corp. and BellSouth Wireless Cable, at 5 (Filed July 2, 1998).

[34] For example, on November 27, 1998, World Wide Wireless Communications, Inc. issued a press release announcing that it had entered into "an exclusive and irrevocable option to lease, and potentially purchase excess capacity on some 40 ITFS channels owned by Shekinah [Network]" for purposes of providing a high-speed Internet access service.

the antenna will need to be mounted to overcome obstructions. Similarly, until transmissions are actually attempted, it is impossible to determine which response station hub (and thus which set of response station channels and other characteristics) will yield the best service in those cases where the customer is within the response service area of two or more hubs. The Commission has placed the system operator in a CATCH-22 situation -- a response station cannot transmit until the operator provides notice of its technical characteristics, but the technical characteristics cannot be identified until the response station begins to transmit.

Again, so that there is no confusion, the Petitioners must stress that they do not oppose rules that require the response station hub licensee to cooperate with any ITFS licensee that suffers interference as a result of downconverter overload, which cooperation will often involve disclosing detailed technical information regarding nearby response stations. In those rare cases when interference actually occurs, no relevant information should be held back. However, given that the risk of overload is minuscule even under worst-case assumptions, the burdens associated with providing this detailed information prior to installation of the response station far outweigh the benefit of providing ITFS licensees with such detailed information.

B. The Commission Should Apply Its Expedited Licensing System To ITFS Major Modification Applications.

When it issued the *NPRM* in this proceeding, the Commission "solicit[ed] comment on whether we should retain our current periodic filing window system used for ITFS applications."[35] The Petitioners responded by demonstrating that the Commission could substantially expedite the initiation of competitive wireless cable services over leased ITFS excess capacity by moving to a rolling, one-day filing window system for the processing of all ITFS modification applications and by adopting provisions for the expedited review and grant of those applications.[36] However, while

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[35] *See NPRM* at ¶ 46.

[36] *See* Petitioners' Comments at 47-55.

the *R&O* adopts the Petitioner's proposal for expediting applications proposing response station hubs and boosters, it does not even address the Petitioner's suggestion that the streamlined processing system be expanded to all ITFS modification applications. On reconsideration, the Petitioners urge the Commission to amend its rules so that ITFS major modification applications will also be processed under the same streamlined application system adopted for applications proposing ITFS response station hubs and boosters.[37]

If the Commission's objective of expediting the delivery of advanced broadband telecommunications services is to be achieved, it is essential that dramatic steps be taken to assure that all ITFS modification applications, whether for response station hubs, boosters or more traditional downstream facility modifications, be processed under the newly-adopted streamlined system. In order to deploy two-way broadband wireless services, not only will some channels need to be converted to use for upstream use and, in some cases boosters added, but other ITFS facilities that comprise the system will also need to be modified. To cite one example previously offered by the Petitioners, if existing ITFS facilities are to be used for downstream transmissions, but the tower on which those facilities are located cannot physically accommodate the addition of upstream reception equipment, it will be necessary for the system operator to relocate those ITFS downstream transmission facilities to another site where the tower can accommodate all of the upstream and downstream equipment that needs to be collocated.[38] In most cases, that will require the filing of an application proposing a major modification to the ITFS license. Another example is an existing main downstream ITFS transmission site that must be relocated or change polarization or antenna pattern in order to avoid interference with cochannel cells that the ITFS licensee will be proposing

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[37] The *R&O* also did not specifically address the Petitioners' proposals for addressing the processing of application amendments. *See* Petitioners Comments at 44-47. The proposed rules annexed hereto incorporate the proposals made by the Petitioners.

[38] *See* Letter to Magalie Roman Salas from Paul J. Sinderbrand, MM Docket No. 97-217 at 1 (filed Sept. 4, 1998).

during the first filing window as part of the two-way system design. Again, these changes to the existing station will require a major modification application.

Because service to the public cannot commence until the Commission authorizes all of the necessary facility changes, it does little good for the Commission to expeditiously authorize the establishment of a response station hub or booster, while inextricably intertwined applications proposing to relocate or otherwise make major modifications to downstream ITFS transmission facilities languish under the existing window filing system. And languish they inevitably will. As the Petitioners discussed in detail in their Comments in response to the *NPRM*, the current filing window system for ITFS major modification applications is extremely inefficient, primarily because the Commission cannot devote the personnel necessary to expeditiously process the quantity of applications being submitted.[39] Applying the streamlined application processing system to all ITFS modification applications will allow the limited number of staff personnel to focus on the more difficult contested cases, while expediting the deployment of critical ITFS modifications.[40]

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[39] *See* Petitioners' Comments at 48-52.

[40] Because applications for ITFS major modifications must demonstrate that the proposed facility will maintain its power flux density at no more than -73 dBw/m^2 at the PSA border, the new licensing system will, in many respects resemble the geographic licensing system that has been successfully employed by the Commission in other services, including MDS. However, it will still be necessary for the Commission to process applications for new ITFS applications under a window system. In order to simplify the Commission's task of determining which applications for new ITFS stations are mutually-exclusive, and to avoid forcing the Commission to determine whether applications for new stations are mutually-exclusive with modification applications, the Commission should suspend the rolling, one-day filing window from time to time so as to permit the opening of brief windows during which only applications for new ITFS stations can be filed.

C. Other Rules Should Be Clarified To Provide Greater Certainty.

1. The Text Of Newly-Adopted Section 74.931(c) Must Be Amended To Permit An ITFS Licensee To Engage In Channel Shifting If It Leases To A Wireless Cable Operator That Utilizes Digital Transmissions.

The Commission should amend Section 74.931(c) to conform it with the determination in Paragraph 101 of the *R&O* that "an ITFS licensee which itself utilizes, *or leases excess capacity to a wireless cable operator which utilizes, digital transmissions*" may engage in channel shifting. (emphasis added). Despite the language of Paragraph 101, there is no provision in Section 74.931(c) permitting an analog-only ITFS licensee to engaging in channel shifting if it leases to an operator that uses digital technology. To cure that ambiguity, Section 74.931(c)(3) should be amended as set forth in Appendix A.

2. The Commission Should Clarify The Definition Of An ITFS Station's PSA.

The *R&O* grants all ITFS stations a circular protected service area ("PSA") with a radius of 35 miles, even those ITFS stations that do not engage in leasing. However, there is some ambiguity in the *R&O* as to the specific definition of that PSA. Newly-adopted Section 74.903(d) cross-references Section 21.902(d)(1) as defining the area of the PSA. Section 21.902(d)(1) affords protection "within a protected service area of which the boundary will be 56.3255 kilometers (35 miles) *from the transmitter site*.[41] However, footnote 296 of the *R&O* suggests that the PSA is defined as "an area within a 35 mile radius of the *licensee's registered receive sites*." (emphasis added). This latter definition would appear to be an error, and on reconsideration the Commission should confirm that the center of the ITFS PSA is the main transmission site.

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[41] 47 C.F.R. § 21.902(d)(1)(emphasis added).

3. *Sections 21.913(b) and 74.985(b) Should Be Amended To Eliminate The Requirement That Only A Licensee, Conditional Licensee Or Applicant For A Response Station Hub Can Hold A High-Power Booster License And To Make Clear That Boosters Can Operate Utilizing Analog Modulation.*

The versions of Sections 21.913(b) and 74.985(b) adopted by the *R&O* differ markedly from those originally proposed in the *NPRM* in that (i) they limit eligibility for a high power booster license to entities that are also a response station hub licensee, conditional licensee or applicant, and (ii) they suggest that high power boosters must operate using digital modulation. There is no indication in the *R&O* that these restrictions were intended and, indeed, they appear to be contrary to the general theme of licensee flexibility which the *R&O* embodies.[42] It will often be the case that the applicant for a high power booster license will not also be a response station hub licensee; as part of a coordinated, multi-licensee system, often some licensees' channels will be utilized for upstream transmission, while an entirely different set of licensees' channels will be used for downstream transmissions. And, while two-way systems will operate digitally, there is still a demand for high power analog booster stations to expand the coverage area of analog downstream video transmission facilities. To clarify that analog boosters are still permitted and that booster authorizations are available to all licensees and conditional licensees, without regard to whether they hold a response station authorizations, the Petitioners suggest that Sections 21.913(b) and Section 74.985(b) be amended as set forth in Appendix A.

4. *The Commission Should Amend Section 74.931 To Accommodate Those ITFS Licensees Who Do Not Actually Provide Service Throughout Their 35-mile Radius PSA.*

Finally, the Commission should amend Sections 74.931(c)(1) and (d)(1) to accommodate

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[42] The Petitioners speculate that the language which has the effect of limiting boosters to digital operation was intended merely to make clear that if a booster operates using digital modulation, it must comply with the uniform spectral density requirement that applies to all MDS and ITFS digital transmissions. The rules properly require that response stations operate digitally, since the entire interference prediction scheme is predicated on digital transmissions. However, that is not the case with respect to boosters, so there is no reason to limit boosters to digital operation.

those ITFS licensees whose facilities do not provide coverage throughout an entire 35-mile radius circular PSA. These two new rule sections require that the Commission's minimum usage, recapture and reservation rules "apply spectrally over the licensee's whole protected service area." While the Petitioners do not object to the underlying purpose behind these provisions, the specific language will prove problematic for those ITFS licensees who do not actually serve their entire PSA.

The 35-mile radius PSA was defined for administrative convenience, and often does not reflect the actual area served by a licensee. For example, an ITFS licensee with a 35-mile radius PSA may use a cardioid antenna that leaves portions of its PSA unserved. The intention behind the rules was to assure that as sectorization and cellularization are deployed, ITFS licensees make appropriate educational usage of their facilities.[43] The intention was not to require ITFS licensees engaged in leasing to expand their facilities to serve their entire PSA, yet that is what a literal reading of the Rules requires of any ITFS licensee that desires to engage in leasing. Amending paragraphs (c)(1) and (d)(1) of Section 74.931 to provide that the minimum usage, recapture, and reservation rules "apply spectrally over the licensee's whole actual service area" solves the problem.

In a similar vein, the Commission should exempt from the new minimum usage rules, but not from the new recapture and reservation rules, those ITFS booster stations serving geographic areas which are within the ITFS licensee's PSA, but outside the area in which the ITFS license has an educational mission. For example, a system operator may desire to deploy boosters within the 35-mile radius PSA of a local school district that holds an ITFS licensee, but outside of the school district itself. A strict application of Sections 74.931(c)(1) and (d)(1), even as amended pursuant to the prior paragraph, may preclude such deployment because the ITFS licensee has no educational receive sites within the geographic area to be served by the booster. In such a case, strict application of Sections 74.931(c)(1) and (d)(1) would inadvertently frustrate development of a broadband

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[43] *See R&O* at ¶114.

wireless system by restricting the deployment of boosters.

To address this problem, the Commission should allow the leasing of excess capacity on boosters that serve geographic areas in which the ITFS licensee has no educational mission. However, in order to accommodate future expansion of that ITFS licensee's mission, the ITFS licensee should be required: (a) if it is transmitting digitally, maintain a minimum of 5% of that booster's capacity for immediate use by the ITFS licensee, as well as the the ability to ready recapture 20 hours per channel per week if the spectrum needed to do so exceeds the 5% reservation; or (b) if it is transmitting using analog modulation, maintain the ability to immediately use 20 hours per channel per week, and to ready recapture an additional 20 hours per channel per week. In this fashion, the Commission can assure the maximum deployment of facilities without undue burdens on ITFS licensees, while assuring that ITFS licensees retain the capability of utilizing all boosters within their PSA for educational purposes should the need arise.

WHEREFORE, for the foregoing reasons the Commission should adopt the rule revisions set forth in Appendix A.

Respectfully submitted,

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