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FEDERAL COMMUNICATIONS COMMISSION
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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of

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

**RESPONSE OF THE CATHOLIC TELEVISION NETWORK TO
PETITIONS FOR RECONSIDERATION**

CATHOLIC TELEVISION NETWORK

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SUMMARY

In response to the petitions for reconsideration filed regarding the *Two-Way Order*, the Catholic Television Network (“CTN”) urges the Commission to retain its reasonable response station notification and professional installation requirements. The arguments against these requirements are based on inapt comparisons to dissimilar services, unacceptable alternatives that would not provide any semblance of the information needed to remedy interference, baseless privacy arguments, and frequency separation arguments that do not address the need for notification.

On the other hand, CTN believes that two requests for relief from the notification and professional installation requirements have merit: (1) Petitioners’ request for an exemption when replacing an ITFS licensees’ existing downconverters with overload-resistant downconverters; and (2) Qualcomm’s request for an exemption for certain low-power response stations. With the addition of certain limitations to define what constitutes acceptable equipment, CTN has no objection to these two proposals.

Rather than adopting time-consuming complaint resolution procedures proposed in some petitions, the Commission should expand the “documented complaint” procedures announced in the *Two-Way Order* as developed in CTN’s Petition for Reconsideration. CTN’s proposed procedure will guarantee expedited resolution of complaints of interference. Even more importantly, the Commission should make clear that ITFS licensees need not suffer continued interference and disruption of their educational missions while a complaint awaits resolution.

CTN believes that the Commission should not license non-ITFS entities for service on ITFS frequencies. Such action would represent *de facto* reallocation of ITFS spectrum for purely commercial use. Continuing the policy of limiting ITFS licenses to ITFS eligible entities will safeguard the autonomy of ITFS entities and expand the reach of ITFS instructional or cultural programming. Similarly, the Commission should not allow enforcement of excess capacity lease provisions which would require the assignee of an ITFS license to assume the obligations of the lease upon transfer of license. Such provisions are restraints on licenses that prevent them from being freely alienable.

Finally, the Commission should heed the Instructional Telecommunications Foundation's argument that it is unwise and unfair to leave the resolution of mutually exclusive applications entirely up to the parties, and should reconsider its departures from the carefully negotiated *Joint Statement* in light of the questions raised by the National ITFS Association.

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**RESPONSE OF THE CATHOLIC TELEVISION NETWORK TO
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Pursuant to Section 1.429 of the Commission's Rules, the Catholic Television Network ("CTN"), by its undersigned attorneys, hereby submits this response to certain petitions for reconsideration filed in the above-referenced docket on December 28, 1998.¹

**I. THE COMMISSION SHOULD RETAIN THE RESPONSE
STATION NOTIFICATION AND INSTALLATION
REQUIREMENTS ADOPTED IN THE TWO-WAY ORDER.**

In adopting rules for two-way services on Instructional Television Fixed Service ("ITFS") and Multipoint Distribution Service ("MDS") facilities, the Commission recognized that high-powered response station transmitters installed without individual authorizations can pose a danger to nearby fixed ITFS receive sites. Specifically, the Commission recognized that in certain limited

¹ The petitions for reconsideration were filed in response to the Commission's *Report and Order* adopting rules to permit two-way operations on ITFS and MDS frequencies. *Report and Order*, 13 FCC Rcd 19112 (1998) ("*Two-Way Order*").

circumstances, ITFS receive sites could be affected by brute-force overload (“BFO”) interference from response station transmitters. The Commission also found that in many instances it will be difficult for ITFS licensees to identify the location of interfering transmitters.²

To address these concerns, the Commission adopted two rules. First, the Commission adopted a rule requiring a response station hub licensee to give advance notice to an ITFS licensee before deploying a response transmitter in close proximity to any one of the ITFS licensee’s fixed receive sites.³ This rule was designed to assist an ITFS licensee in resolving any cases of BFO interference that may occur as a result of response station operation.⁴ Second, to help guard against the inadvertent occurrence of BFO interference in the first instance, the Commission imposed a requirement that all MDS and ITFS response stations be professionally installed.⁵

² *Two-Way Order*, ¶ 55.

³ *See* 47 C.F.R. §§ 21.909(n), 74.939(p).

⁴ *See Two-Way Order*, ¶ 55.

⁵ *See* 47 C.F.R. §§ 21.909(k), 74.939(m). The professional installation requirement also helps prevent inadvertent co-channel and adjacent-channel interference that could result from improper installation and unauthorized operation of response stations. *See Two-Way Order*, ¶ 52 (“Given the interference environment in which response stations operate, we do not believe it would be prudent to permit them to be installed by nonprofessionals with no knowledge of the protection requirements for nearby ITFS receive sites.”).

Several petitions request various modifications to these rules. The original set of petitioners in RM-9060 (“Petitioners”) request four exemptions. Specifically, Petitioners request that the notification and installation rules not apply:

- To the receive sites of an ITFS licensee that agrees to waive the enforcement of those rules;
- Under certain circumstances, to receive sites at which improved ITFS downconverters are installed;
- To ITFS receive sites constructed after the filing of a response station hub application;
- When Channels MDS-1 and MDS-2/2A are being used for upstream transmissions.⁶

CTN does not object to the first two proposals with certain modifications proposed herein. It is reasonable to allow individual ITFS licensees to waive receipt of the notification requirement. However, one licensee in a market cannot waive the rights of others to receive notification and to require professional installation. Therefore, the Commission must make clear that *all* ITFS licensees in the area to be served must consent to non-professionally installed transmitters before any response stations can be so installed.

Similarly, CTN does not object to permitting a hub station licensee to replace all of an ITFS licensee’s downconverters with interference-tolerant models, and in exchange, be relieved from its notification and professional installation requirements. However, for this exception, *all* of the area ITFS licensees must have agreed to have their downconverters replaced or consented to non-professional

⁶ See Petitioners’ *Pet. for Recon.*, at 6-11.

installation, before the hub licensee would be relieved of its obligations. Moreover, before downconverter replacement can become a viable option, the Commission must adopt a standard for what constitutes an interference-tolerant downconverter.

On the other hand, as discussed below, the remaining two requested exemptions should be denied. In addition, the Commission should deny the Petitioners' request to reduce the content of the notice to be provided to ITFS licensees, and should deny the request of the San Francisco/San Jose Educator/Operator Consortium (the "Consortium") to eliminate the notification rule altogether.

A. Petitioners Offer No Valid Rationale for Modification of the Notification Rule.

Petitioners portray the notification rule as a regulatory overreaction to a "remote possibility of BFO interference that will arise only in limited circumstances."⁷ However, the Commission has already recognized that BFO occurs only in "limited circumstances" — and that the notification rule is appropriately limited to just those circumstances in which such interference is likely to occur.⁸ Thus, the rule only requires notification of deployment of response stations within a limited area, i.e., *within 1960 feet of an ITFS receive site.*

⁷ Petitioners' *Pet. for Recon.*, at 5.

⁸ See *Two-Way Order*, ¶ 55.

Petitioners downplay the need for the notification rule by comparing two-way ITFS and MDS to other services occupying nearby spectrum that are not required to notify ITFS receive sites of nearby transmitter deployment.⁹ However, Petitioners ignore fundamental differences between two-way ITFS and MDS and these other services. For example, to equate response station transmitters to Next Generation Weather Radar (NEXRAD) and point-to-point microwave transmitters, as Petitioners attempt to do, is absurd. Only about 200 NEXRAD stations are expected to be deployed in the entire country; they are frequency-coordinated and generally aimed well above the horizon.¹⁰ The point-to-point microwave service, unlike two-way ITFS and MDS, requires an individual station license for each transmitter.¹¹ The application for the station license (and the subsequent license itself) specifies the location of the transmitter and all of its relevant parameters. No equivalent to this application and station license exists for ITFS and MDS response stations. Furthermore, the transmission facilities for NEXRAD and point-to-point microwave transmitters are visually apparent, whereas an interfering ITFS and MDS response transmitter may not always be obvious.¹² An ITFS licensee who receives interference following the construction of a 30-foot radome (NEXRAD) or a

⁹ See Petitioners' *Pet. for Recon.*, at 8-10.

¹⁰ See *Amendment of Parts 2 and 80 of the Commission's Rules to Accommodate Next Generation Weather Radars in the 2900-3000 MHz Band*, 5 FCC Rcd 826, 826 (1990).

¹¹ 47 C.F.R. § 101.5(a).

¹² See Joint Engineering Statement at ¶¶ 4A-B.

tower equipped with 8-foot diameter shrouded dishes (point-to-point microwave) within a few hundred feet of an ITFS receive site is not likely to need notification in order to form a theory as to the source of the interference.

Petitioners' comparison of ITFS and MDS two-way service to unlicensed services in the 2.4 GHz band is equally inapposite.¹³ Unlicensed transmitters in the 2.4 GHz band are limited to no more than 1 watt transmitter output and 4 watts EIRP at the maximum output power — considerably less than the 2,000 watts EIRP at which ITFS and MDS response stations are permitted to operate.¹⁴

Equally flawed is Petitioners' comparison of two-way ITFS and MDS service to DirecTV, SMATV, and cable.¹⁵ These services do not use radiofrequency transmissions for return paths at all, so they would not interfere with ITFS or any other receivers.¹⁶ Therefore, Petitioners' complaint that regulation "prevents wireless cable operators from being competitive" with these other services is a red herring.¹⁷ Wireless cable operators are free to use wireline return paths just like these other services in exchange for regulation just like these other services.

¹³ See Petitioners' *Pet. for Recon.*, at 8 n.19, 10.

¹⁴ EIRP increases beyond 4 watts are permissible in the 2.4 GHz band, but must be accompanied by proportionate decreases in transmitter power. See *Amendment of Parts 2 and 15 of the Commission's Rules Regarding Spread Spectrum Transmitters*, 12 FCC Rcd 7488, 7498 (1997) (finding such EIRP restrictions to be necessary because of the highly encumbered nature of the spectrum in the lower 2 GHz band).

¹⁵ See Petitioners' *Pet. For Recon.*, at 4-5.

¹⁶ See Joint Engineering Statement, at ¶ 3.

¹⁷ Petitioners' *Pet. For Recon.*, at 5.

In the end, the only valid service comparison is to WCS, which, as Petitioners well know, includes a notification requirement similar to the requirement at issue here. WCS transmitters operate in the 2.3 GHz band and are capable of causing BFO interference to ITFS downconverters, and accordingly WCS operators must give notice to ITFS operators before activating cells. Indeed, it was the then-Wireless Cable Association International (WCA), one of the Petitioners, that was instrumental in placing that notification requirement in the WCS rules. In the words of the WCA:

Although the downconverters installed by wireless cable operators and educational users of ITFS spectrum have been designed to avoid interference by filtering out signals from currently authorized users of the 2305-2320 MHz and 2345-2360 MHz bands, *those downconverters will suffer destructive blanketing interference* if, as permitted under the new WCS rules, WCS signals are transmitted at power levels exceeding 20 Watts EIRP in close proximity to MDS and ITFS receive sites.¹⁸

Those same downconverters, which Petitioners now term “spectrally inefficient,” obviously will suffer a similar fate if response station signals are transmitted at power levels exceeding 2000 watts EIRP in close proximity to MDS and ITFS receive sites. This amply justifies the need for the limited notification rule the Commission has incorporated into the rules.¹⁹

¹⁸ *Petition for Expedited Recon. of the Wireless Cable Association, International*, Gen. Dkt. 96-228, at ii (filed Mar. 10, 1997) (emphasis added).

¹⁹ Petitioners’ argument that deployment of WCS cell sites, not response stations, triggers the notification requirement is disingenuous. *See* Petitioners’ *Pet. for Recon.*, at 10. Because WCS stations are mobile, there is no “nearby” ITFS licensee to notify.

B. The Notification Rule Should Be Retained.

Given the limited nature and effect of the notification rule and the strong justification for it, the request of the San Francisco-San Jose Consortium to eliminate the rule altogether is indefensible.²⁰ Their alternative proposal — for response station *hub* applicants to simply serve copies of their applications on all ITFS licensees having registered receive sites in the notification zone — does not address the problem at all. Notification of an application for a response station hub is of little use to an ITFS licensee given that (i) a hub is incapable of causing interference by itself; (ii) the hub application may be filed months or years before a response station capable of causing interference is activated; (iii) the hub may be only one of several stations operating in the area; and (iv) a hub application does not identify a specific, problematic response station. By contrast, the current notification rule allows licensees to immediately identify the particular response station transmitter causing interference. The Consortium's request should be rejected.

C. The Information in the Notice Should Be Maintained.

Although they accept the responsibility to make ITFS licensees aware of the activation of new response transmitting stations within the ITFS notification zone, Petitioners ask not to be required to provide the physical location and technical

²⁰ See Consortium *Pet. for Recon.*, at 7.

operating parameters of new response stations. Instead, Petitioners propose a stripped-down notice requirement consisting only of the following three items:

- The identity of the affected ITFS receive site;
- The identity of the response station hub(s) with which the new response station may communicate; and
- The name and phone number of a contact person.²¹

The San Francisco/San Jose Consortium also opposes the current notice requirements and claims that competitive and privacy concerns dictate limits on providing information to ITFS licensees.²²

Neither Petitioners nor the Consortium offers any valid reason why the ITFS notice should not continue to provide notice of such basic information as physical location and transmitter specifications. As the Commission recognized, this information is needed for ITFS licensees to find and evaluate the source of harmful BFO interference.

Petitioners and the Consortium do not claim that it would be burdensome to provide the basic information that is now required, nor could they because this information will obviously be available to them. The Consortium's conclusory statement that mailing this information will create "huge administrative burdens" offers no rational justification for elimination of this requirement.²³ The Commission has previously required service on ITFS licensees of applications

²¹ See Petitioners' *Pet. for Recon.*, at 15-16.

²² See Consortium *Pet. for Recon.*, at 6-8.

²³ *Id.*, at 7.

containing similar information.²⁴ And, the required information is no more extensive that applicants would have provided in an application filed on FCC Form 330.²⁵

As for the Consortium's concerns regarding disclosure of sensitive information, it seems unlikely that the location of the transmitters could always be hidden, and the Consortium has made no attempt to show that a response station's physical location or operating specifications are in any way confidential. The fact that the notice may be sent to the lessee of a competitor does not change this result. The information in the notice is essentially what an applicant would have provided in an application for the same site. Given the long history of public access to such information in the ITFS and MDS services, there is no justification to adopt a blanket restriction for this information on confidentiality grounds.

In any event, ITFS licensees are not interested in the identities of a wireless cable operator's customers; rather, they need to be able to identify a potentially interfering site. Therefore, for example, the notification is designed to provide the street addresses, and in a multi-tenant building, it would only be necessary for the operator to provide the street address and a coded name for the site.²⁶

²⁴ See *Digital Declaratory Ruling*, 11 FCC Rcd 18839, ¶ 53 (1996).

²⁵ See FCC Form 330, §§ VI and VII.

²⁶ See *Two-Way Order*, ¶ 55.

D. The Notice Should Apply to ITFS Receive Sites Installed After Filing of the Response Station Hub Application.

Petitioners request exemption from the notification and professional installation requirements as to ITFS receive sites that are registered or built after the filing of a response station hub application.²⁷ In effect, they request that the filing of a hub application would act to “cut off” from the notification and professional installation rules any new receive sites that ITFS licensees in the area may wish to construct. The Commission should deny this request.

The filing of a hub station application is irrelevant to the threat of BFO interference because *response stations*, not hubs, cause interference to receive sites.²⁸ An ITFS receiver requires adequate protection *regardless* of when it is installed.²⁹ Petitioners claim that the notification and installation requirements are not necessary if ITFS licensees install “more appropriate” downconverters in newly constructed receive sites as opposed to “spectrally-inefficient downconverters lacking adequate rejection of non-adjacent channel signals.”³⁰ However, there is no requirement on ITFS licensees to install only downconverters that Petitioners deem appropriate; to the contrary, an ITFS licensee is free to install any downconverter it chooses, and may base its decision on economic efficiency rather than on spectrum

²⁷ See Petitioners’ *Pet. for Recon.*, at 8-9.

²⁸ See Joint Engineering Statement, at ¶ 1.

²⁹ See CTN *Pet. For Recon.*, at 9-12.

³⁰ See Petitioners’ *Pet. for Recon.*, at 8.

efficiency, unless a wireless cable operator agrees to reimburse an ITFS licensee for the cost of installing overload-immune downconverters.³¹

E. The Use of MDS-1 and MDS-2 Does Not Affect the Need for Notification and Professional Installation.

Petitioners request exemption from the notification and professional installation requirements for response stations transmitting on MDS-1 and MDS-2.³² The Commission should also deny this request.

Petitioners argue that an exemption is justified because MDS-1 and MDS-2 are 338 MHz away from the ITFS band.³³ However, frequency separation does not eliminate the need for notification; it only permits the use of a particular remediation technique if brute-force overload occurs.³⁴ Transmissions on MDS-1 and MDS-2 are not so far away as to escape detection and amplification in the initial stage of an unfiltered ITFS downconverter, and thus are capable of causing brute-force overload. When this happens, the 338-MHz separation of the MDS-1 and MDS-2 channels from the ITFS band may permit the BFO to be cured through the use of a filter installed between the antenna and the downconverter.³⁵ However, before *any* mitigation technique can be applied, the ITFS licensee must

³¹ See *infra*, Section I(F)(1).

³² See Petitioners' *Pet. for Recon.*, at 9-10.

³³ Petitioners ignore the fact that an ITFS licensee could be using MDS-1 or MDS-2 pursuant to channel-shifting or a channel swap.

³⁴ See Joint Engineering Statement, at ¶ 5.

³⁵ Even this technique may not be available in the case of an integral antenna-downconverter combination.

know where to turn to request relief. The notification rule was designed to supply this information.

F. Narrow Exemptions from the Notification and Installation Rules May Be Appropriate in Limited Circumstances.

Petitioners request that the Commission relieve wireless cable operators of notification and professional installation requirements when they install (1) interference-resistant downconverters or (2) low-power downconverters. With appropriate limitations, both these proposals have merit.

1. BFO Interference Resistant Downconverters. Petitioners seek the option of replacing an ITFS licensee's existing downconverters with better equipment as an alternative to complying with the notification and professional installation requirements as to that licensee.³⁶ This option would be available with respect to the activation of any non-co-channel and non-adjacent channel response station that will operate at +18 dBW EIRP or less.³⁷ CTN would not oppose such an exemption from the notification and professional installation rules, *provided that* the replacement downconverters meet an agreed-upon standard for resistance to brute-force overload.

Petitioners propose to allow a wireless cable operator to replace "spectrally-inefficient ITFS downconverters . . .with models that employ appropriate

³⁶ See Petitioners' *Pet. for Recon.*, at 11-14.

³⁷ See *id.*, at 11.

selectivity.”³⁸ However, the terms “spectrally inefficient” and “more appropriate selectivity” are meaningless by themselves. Moreover, while overload-resistant downconverters are theoretically possible, CTN is not aware of any that are presently commercially available.³⁹ If the Commission favors Petitioners’ suggestion, it must adopt a standard to ensure that replacement downconverters are reasonably resistant to brute-force overload. CTN recommends that the following *minimum* standards be applied to all replacement downconverters if downconverter replacement is to be an alternative to notification and professional installation:

- A third-order intercept point of 30 dBm;
- A conversion gain of 32 dB, or the same conversion gain as the existing downconverter, whichever is less; and
- A noise figure of no greater than 2.5 dB, or no more than 1 dB greater than the noise figure of the existing downconverter, whichever is greater.⁴⁰

Downconverters meeting these minimum standards should be sufficiently resistant to brute-force overload from non co-channel and non-adjacent channel response stations operating at +18 dBW EIRP or less so as to make notification and professional installation unnecessary.

³⁸ *Id.*

³⁹ *See* Joint Engineering Statement, at ¶ 6A.

⁴⁰ According to the current California Amplifier catalog, its downconverters have third-order intercept points of approximately 24 dBm, conversion gain of approximately 32 dBm, and noise figures between 1.7 and 4 dB. Note that better performance is represented by a *higher* third-order intercept and by a *lower* noise figure. *See id.* at ¶ 6B.

2. Low Power Response Transmitters. Qualcomm requests an exemption from the notification and professional installation requirements for low power response stations operating at power levels of -6 dBW EIRP or less.⁴¹ CTN agrees that devices operating in this power range pose an insignificant threat of brute-force overload, and supports such an exemption.⁴²

Qualcomm also requests the elimination of the requirement that MDS reception antennas and ITFS transmission antennas be directional.⁴³ CTN supports the use of non-directional transmitting antennas with low-power devices operating at -6 dBW EIRP or less. As to omnidirectional receive antennas, CTN does not read the Qualcomm petition to propose, and would oppose any proposal, to alter the basis for protection of MDS and ITFS protected service areas. In conducting interference analyses, all hypothetical receive sites should be assumed to be using the Commission's 2-foot reference antenna. This requirement is fundamental to achieving spectral efficiency in the ITFS and MDS bands through the reuse of the ITFS and MDS channels in neighboring systems.

II. The Commission Should Adopt Expedited Interference Complaint Resolution Procedures.

While the Commission has acknowledged that interference complaints must be promptly resolved without disruption to education, it has left open the

⁴¹ See *Qualcomm Pet. for Recon.*, at 7-10.

⁴² Joint Engineering Statement, at ¶ 2.

⁴³ See *Qualcomm Pet. for Recon.*, at 13-20.

procedures to be followed if interference does occur. BellSouth has proposed an interference resolution process that could take nearly three months to conclude.⁴⁴ The Consortium has proposed a more expeditious process that would still take a month or more to resolve.⁴⁵ However, even without the substantial delay in time, neither of these procedures is satisfactory, because each would require the interfered-with party to continue to suffer interference pending resolution of the matter. In this way, each of these proposals ignores the Commission's requirement that the interfering facility "promptly remedy the interference or immediately cease operations of the interfering facility."⁴⁶ This requirement is of the utmost importance to ITFS licensees, to whom lost airtime can mean disruption of their educational mission.

By contrast, CTN has proposed a "documented complaint" process that requires a high evidentiary burden yet results in immediate action.⁴⁷ In addition, recognizing the need for a more relaxed but still "expedited" interference resolution process that does not require such a high evidentiary burden as the documented complaint process, CTN advanced an alternative process called a "notice of complaint of interference."⁴⁸ The key difference between these proposals and those

⁴⁴ See *BellSouth Pet. for Recon.*, at 7-10.

⁴⁵ See *Consortium Pet. for Recon.*, at 4-5.

⁴⁶ See, e.g., 47 C.F.R. § 21.909(g)(7).

⁴⁷ *CTN Pet. for Recon.*, at 4-7.

⁴⁸ See *id.*, at 7-8.

of BellSouth and the Consortium is that CTN's proposals do not require ITFS licensees to suffer interference while a complaint is being resolved. While the proposals of BellSouth and the Consortium are directed toward bringing any complaint resolution process to a speedy conclusion, the Commission should not place the burden on ITFS licensees and students receiving instruction to suffer interference during that process.

III. The Commission Should Not License Non-ITFS Entities on ITFS Frequencies.

Petitioners have asked that ITFS licensees not be *required* to provide instruction throughout the entire 35-mile protected service area (PSA), and that parts of an ITFS PSA can be served by booster stations used entirely for commercial purposes devoid of any educational mission.⁴⁹ Similarly, BellSouth requests that the FCC allow wireless cable operators to be licensed to operate booster stations for purely commercial purposes within any part of an ITFS station's 35-mile protected service area in which the ITFS licensee is not currently operating.⁵⁰ CTN opposes these complementary proposals because, if either were adopted, it would undermine

⁴⁹ See Petitioners' *Pet. for Recon.*, at 21-23.

⁵⁰ See BellSouth *Pet. for Recon.*, at 10-11. BellSouth also urges that the small minority of ITFS stations that provide only point-to-point service not receive protected services areas. See *id.*, at 13-14. This change should not be adopted unless there are two limitations placed on it: (1) where an ITFS licensee holds only four channels, the protection should be for all four channels even if one or two are used only for point-to-point; and (2) if the point-to-point station legitimately needs to add a receive site for additional point-to-point use, and cannot do so because of interference within what would have been the protected service area, then the point-to-point licensee can require the interfering station(s) to pay for a replacement link on equivalent spectrum.

the educational nature of the ITFS service and result in a *de facto* reallocation of spectrum for purely commercial use.

First, the Part 74 rules have never *required* an ITFS station to serve all of the area within which it may have received protection from harmful interference; and there is no suggestion in the *Two Way Order* that the Commission intended to change that principle. Rather, the new rules merely provided protection from harmful interference for ITFS stations equivalent to what all MDS stations receive. And, while an MDS station does receive a 35-mile protected service area, there is no requirement that it *actually* serve all points within the service area. Therefore, specifying that Section 74.931 should apply only to an ITFS station's *actual* service area is unnecessary.

Second, new Section 74.931 appears to require that wherever ITFS licensees are providing service, the existing recapture and minimum usage rules apply to transmissions on ITFS frequencies. Petitioners acknowledge the purpose of the rule — to assure that “ITFS licensees make appropriate educational usage of their facilities”⁵¹ — but ignore the fact that reserving ITFS frequencies for ITFS eligibles is “the ultimate safeguard of the autonomy of ITFS licensees and their ability to maintain the provision of educational services.”⁵² That is, the Commission’s policy is that the ITFS programming obligations should be effectuated wherever ITFS frequencies are in use. Providing an exception for transmissions into areas “without

⁵¹ Petitioners’ *Pet. for Recon.*, at 22.

⁵² *Two-Way Order*, ¶ 114.

ITFS service” would eviscerate that policy and authorize purely commercial use of ITFS frequencies.

Third, the *Two-Way Order* is the first application of an automatic 35-mile PSA for ITFS. It makes no sense to expand the protected service area for ITFS stations, but not to impose the ITFS programming obligations on the entire area, because the instructional requirements attach to the frequencies, not the licensee. The impact of this rule is simply that, if a commercial operator wants to install a booster that will use ITFS frequencies in a previously unserved area of the PSA, some instructional or cultural material should also be carried in the newly served area. The new rule thus promotes instructional use of frequencies rather than harming ITFS licensees, as the Petitioners wrongly imply. That is a consistent goal of the Commission, and should be the goal of the ITFS rules.⁵³

IV. ITFS Leases Should Not Be Automatically Assigned with the Frequencies.

BellSouth asks the Commission to abandon its policy of not allowing ITFS licensees to sign excess capacity lease agreements that would require assumption of the licensee’s obligations under such leases in the event the licensee transfers the licensed facilities.⁵⁴ CTN opposes this proposal because it represents a restraint on licenses that would be inconsistent with the Commission’s policy that licenses be

⁵³ See, e.g., *Two-Way Order*, at ¶ 6.

⁵⁴ See *BellSouth Pet. for Recon.*, at 15-16.

freely alienable.⁵⁵ If an ITFS licensee wants to assign its license, it should be able to do so without being forced to find a successor willing to be bound by the lease. The students and public served by an ITFS assignee should not be bound by limits on service imposed by the prior licensee. Furthermore, legitimate, technically proficient lessees would not be restricted in negotiating leases even under the current approach.⁵⁶

V. The Commission Should Reconsider its Absolute Reliance on Parties to Resolve Mutually Exclusive Applications Filed in the Same Window.

The Instructional Telecommunications Foundation, Inc. (“ITF”) requests that the Commission reconsider its decision to issue automatic license grants to ITFS and MDS systems that are mutually exclusive simply because they are applied for in the same filing window.⁵⁷ CTN supports this proposal for the reasons expressed by ITF.

CTN appreciates the Commission’s effort to provide applicants with the freedom to negotiate and attempt to resolve conflicts. However, using such negotiations as a rationale to ignore conflicts rather than to resolve them does not serve the ITFS community and the distribution of ITFS programming. If there is no negotiable resolution, even though a reasonable solution may be available, the ability to build a viable station is placed in jeopardy. Accordingly, the Commission

⁵⁵ See *MDS Auction Reconsideration Order*, 10 FCC Rcd 13821, ¶ 16 (1995).

⁵⁶ See *id.*

⁵⁷ See *ITF Pet. for Recon.*, at 4-7; *Two-Way Order*, ¶ 65.

must implement specific procedures by which it will referee such conflicts at the request of an interested party after good faith efforts have failed. The alternative, as ITF correctly points out, is a game of “chicken” that would have no correlation to the public interest, but would unfairly favor commercial entities over educational institutions.

VI. The Commission Should Address the Concerns of the National ITFS Association.

CTN also supports the requests of the National ITFS Association (“NIA”), particularly with respect to modifying the Commission’s actions that ignored the carefully negotiated balance of the *Joint Statement* by making one-sided changes to the detriment of ITFS licensees.⁵⁸ The fact that the ITFS industry association that negotiated the *Joint Statement* believes that the *Two-Way Order’s* concessions to the wireless industry have obliterated any semblance of equilibrium shows that the Commission must give serious attention to the concerns raised by the NIA on reconsideration. Moreover, CTN agrees with the NIA that the Commission should adopt two specific proposals: (1) the Commission should allow ITFS major-modification applications to proceed under the new streamlined procedures; and (2) the Commission should implement expedited procedures for resolving interference disputes.

⁵⁸ See NIA *Pet. for Recon.*, at 6-7.

As CTN previously noted,⁵⁹ allowing ITFS major-modification applications to participate in the streamlined procedures will ensure a level playing field, will finally resolve the unnecessary delays under which such applications have languished for years, and will improve ITFS licensees' abilities to meet changing educational needs. Expedited dispute resolution procedures, such as those proposed by CTN,⁶⁰ will further the educational missions of ITFS licensees, encourage the independent resolution of disputes, and discourage the filing of frivolous interference claims. Thus, each of these proposals should be adopted.

Respectfully submitted,

CATHOLIC TELEVISION NETWORK

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Dated: February 4, 1999

⁵⁹ See *CTN Pet. for Recon.*, at 13-15.

⁶⁰ See *id.* at 3-9.

**JOINT
ENGINEERING
EXHIBIT**

Catholic Television Network
Joint Engineering Exhibit
in Support of Opposition to
Certain Petitions for Reconsideration
MM Docket 97-217

February 1, 1999

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Catholic Television Network

Joint Engineering Statement of

John F.X. Browne, P.E., Robert W. Denny, Jr., P.E., and Dane E. Ericksen, P.E.

The firms of John F.X. Browne and Associates, P.C., Denny & Associates, P.C., and Hammett & Edison, Inc., have been retained jointly on behalf of the Catholic Television Network ("CTN"), representing numerous Instructional Television Fixed Service ("ITFS") stations licensed to, and operated by, the Roman Catholic Archdioceses and Dioceses throughout the United States, to prepare an engineering exhibit in support of an Opposition to certain Petitions for Reconsideration of the September 25, 1998, Report and Order ("R&O") to MM Docket 97-217 concerning two-way, "cellularized" ITFS and Multipoint Distribution Service ("MDS") stations.

Fixed Receive Sites Added After a Response Hub is Authorized Should Still Be Entitled to BFO Protection

1. In their Petition for Reconsideration, Petitioners ask that ITFS receive sites registered or built after the filing of a Response Station Hub receive site should not be entitled to protection, on the grounds that such a filing should put ITFS licensees "on notice" of the need to install downconverters more immune to brute force overload ("BFO"). This argument is flawed for three reasons: first, it is Response Station transmitters that cause BFO interference, not a Response Station Hub, which is a receive site. So a newcomer Response Station transmitter could create a first-time problem to an ITFS receive site, even though the ITFS receive site was installed after the Response Station Hub was activated; in other words, the triggering event would be the installation of a nearby Response Station transmitter, and not a Response Station Hub that predates a particular ITFS receive site. Second, this proposal presumes to place the economic burden for special, BFO-tolerant downconverters on ITFS licensees, as Petitioners did not include in their Reconsideration Petition any proposal to reimburse ITFS licensees for the extra cost of BFO-tolerant downconverters; and third, because of Petitioners' ultimate decision not to support a blanket requirement that all ITFS receive site downconverters be upgraded whenever two-way operations are proposed, there is no longer an incentive for downconverter manufacturers to develop and mass produce a BFO-tolerant downconverter, because there is now no guaranteed mass market. And if such BFO-tolerant downconverters cannot have the benefit of economies of scale, then they are likely to be significantly more expensive than conventional downconverters.

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Customer-Installed Response Station Transmitters Should Be Allowed, but Only for Response Stations with EIRPs of No Greater than -6 dBW

2. Petitioners ask that the requirement for Response Station transmitters to be professionally installed be reversed, claiming that this requirement would restrict the introduction of two-way, cellularized, wireless cable service. Since the reason for this requirement is to ensure the proper orientation of the Response Station's transmitting antenna, so as to minimize the likelihood of antenna geometries that would cause BFO to a nearby ITFS receive site, there is some justification for exempting very low equivalent isotropic radiated power ("EIRP") response stations. However, the EIRP exemption level proposed by Petitioners, +18 dBW, or 63 watts, is far too high; instead, the EIRP exempt level proposed in the QUALCOMM Reconsideration Petition, -6 dBW, or 0.25 watts EIRP, could reasonably be adopted.

Petitioners' Comparisons of Non-"Hamstrung" Other Services Are Technically Flawed

3. Petitioners argue that other pay services are not "hamstrung" by regulatory policies that delay service or add cost. Petitioners then give several examples of competing services that have no notification or professional installation obligations: DirectDuo from Direct TV; cable television; Satellite Master Antenna System ("SMATV"); and Local Message Delivery Service ("LMDS"). The flaw in these comparisons is that none of the other services involve the intermingling of up to 2,000-watt (+33 dBW) EIRP transmitters with receivers operating in the same band; if they did so, those other services would most likely have had similar restrictions imposed upon them. Indeed, all of the examples cited by Petitioners do not include a service based on the use of an RF transmitter at a subscriber's location, and therefore the comparisons are wildly flawed.

Petitioners' Comparisons of Other High Powered Services Not Burdened with a Notification Requirement is Technically Flawed

4A. At Page 9 of Petitioners' Reconsideration Petition, the point that there are other services that are BFO interference threats, but have no obligation to notify ITFS receive site licensees in advance, is offered. Petitioners' examples are again flawed: for example, although it is true that Next Generation Weather Radars ("NEXRAD") operate in the 2.7-3.0 GHz band at megawatt power levels, NEXRAD antennas are contained in large geodesic domes that are obvious, and the rotation of the radar antenna means that any BFO interference it causes to other services is easily recognized. Further, there is typically only one NEXRAD station in a given area. In contrast, Response Station transmitting antennas may be difficult to spot, may number in the hundreds or

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thousands in a given geographic area, may well be located in, or near, residential areas, and will probably not transmit continuously, making the tracking down of any BFO interference they might cause much more difficult.

4B. Equally flawed is the Point-to-Point microwave station example. Stations operating in the 2,160–2,162 MHz Private Operational Fixed Service (“POFS”) microwave band cited by Petitioners must employ at least Category B transmitting antennas and, in “frequency congested areas,” must employ at least Category A transmitting antennas. At 2 GHz this means a 6-foot diameter parabolic dish for Category B, and an 8-foot diameter parabolic dish for Category A. This means that the transmitting antenna will be both professionally installed and obvious. Also, the number of such links is likely to be far smaller than the number of Response Station transmitters, less likely to be installed in residential neighborhoods, individually licensed and documented, and almost assuredly will not have intermittent periods of operation. Again, this is a painfully flawed example.

MDS Channel 1/Channel 2 Response Station Transmitters Should Not Be Exempted from a Notification Requirement

5. Petitioners argue that Response Station transmitters operating between 2,150 and 2,162 MHz (MDS Channels 1 and 2) should not be subject to the adopted BFO-mitigating rules. This argument is flawed. A 2,000-watt EIRP Response Station transmitter operating on MDS 1 or MDS 2 is still a BFO interference threat; the difference is that, with a 338 MHz guard band, filtering becomes a practical mitigation tool.

A Criteria for BFO-Tolerant Downconverters Must Be Developed

6A. Any scheme that relies on improved-performance downconverters needs to define what constitutes such improved performance. The current catalog for California Amplifier, a major provider of ITFS and wireless cable downconverters, shows approximately 16 models of downconverters, most of which have a Third Order Intercept of +24 dBm. That manufacturer indicates that it could probably produce a broadband downconverter with a 6 dB more BFO-tolerant performance; that is, with a Third Order Intercept of +30 dBm. The manufacturer indicates that the cost of such a BFO-tolerant downconverter would be approximately five times the cost of its standard downconverters, although it also indicated that this cost would come down if BFO-tolerant downconverters could be manufactured in quantity; that is, if there were sufficient demand to allow economies of scale to apply.



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6B. Therefore, a criteria for a BFO-tolerant downconverter could be reasonably specified as a downconverter with a Third Order Intercept of 30 dBm or better, and with no reduction in the gain or bandwidth of the converter it is replacing, and with a noise figure that is no more than 1 dB worse (and hopefully the same as, or even better than) the noise figure of the downconverter that it is replacing. Alternatively, a BFO-tolerant downconverter could be defined as one with at least a 31-channel bandwidth, a gain of at least 32 dB, a noise figure of 2.5 dB or better, and a Third Order Intercept of 30 dBm or better. Since a BFO-tolerant downconverter would only need to be installed at those ITFS receive sites where BFO interference proves to be a problem, and since Petitioners insist that such occasions will rarely occur, the increased cost of such an upgraded downconverter should not be of concern to a wireless cable operator wishing to introduce two-way service in an area served by one or more downstream ITFS signals.*

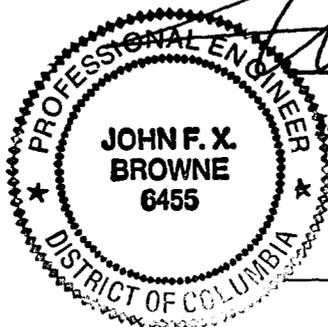
6C. Further, neither the Commission nor any ITFS licensee should be expected to accept Petitioners' undocumented claim, at Page 12, Footnote 25, that a downconverter will have better performance than given in the manufacturer's published specifications.

* It should be noted that in cases where an ITFS receive site uses an intergrated receiving antenna and downconverter that replacement of the receiving antenna may also be necessary.

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Summary

7. All of the arguments offered in Petitioners' Reconsider Petition and addressed in this joint engineering statement are technically flawed. Several of Petitioners' cited comparisons are wildly inappropriate. However, the proposal by QUALCOMM, namely to exempt very low EIRP Response Station transmitters (i.e., Response Station transmitters with EIRPs of -6 dBW or less) from the BFO notification requirement has merit and should be adopted.



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February 1, 1999

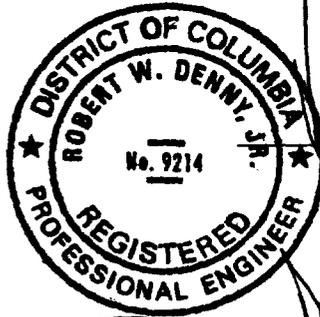


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Summary

7. All of the arguments offered in Petitioners' Reconsider Petition and addressed in this joint engineering statement are technically flawed. Several of Petitioners' cited comparisons are wildly inappropriate. However, the proposal by QUALCOMM, namely to exempt very low EIRP Response Station transmitters (*i.e.*, Response Station transmitters with EIRPs of -6 dBW or less) from the BFO notification requirement has merit and should be adopted.

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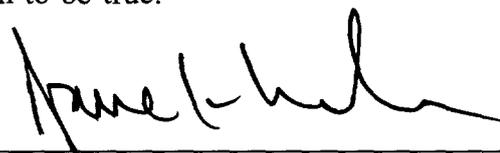
Affidavit

State of California
County of Sonoma

ss:

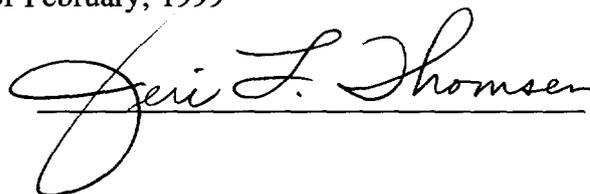
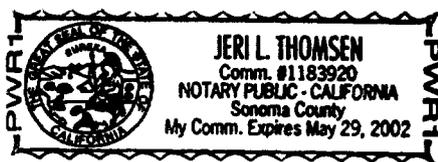
Dane E. Ericksen, being first duly sworn upon oath, deposes and says:

1. That he is a qualified Registered Professional Engineer, holds California Registration No. E-11654, which expires on September 30, 2000, and is employed by the firm of Hammett & Edison, Inc., Consulting Engineers, with offices located near the city of San Francisco, California,
2. That he graduated from California State University, Chico, in 1970, with a Bachelor of Science Degree in Electrical Engineering, was an employee of the Field Operations Bureau of the Federal Communications Commission from 1970 to 1982, with specialization in the areas of FM and television broadcast stations and cable television systems, and has been associated with the firm of Hammett & Edison, Inc., since October 1982,
3. The firms of John F.X. Browne and Associates, P.C., Denny & Associates, P.C., and Hammett & Edison, Inc., have been retained jointly on behalf of the Catholic Television Network to prepare an engineering exhibit in support of an Opposition to certain Petitions for Reconsideration of the September 25, 1998, Report and Order to MM Docket 97-217 concerning two-way, "cellularized" ITFS and Multipoint Distribution Service stations,
4. That such engineering work has been carried out by him or under his direction and that the results thereof are attached hereto and form a part of this affidavit, and
5. That the foregoing statement and the report regarding the aforementioned engineering work are true and correct of his own knowledge except such statements made therein on information and belief and, as to such statements, he believes them to be true.



Dane E. Ericksen, P.E.

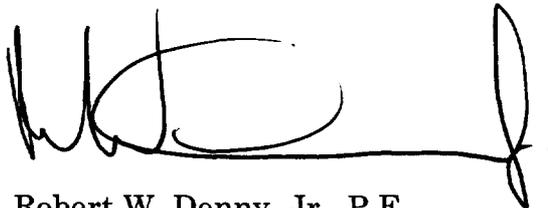
Subscribed and sworn to before me this 1st day of February, 1999



**JOINT ENGINEERING EXHIBIT
IN SUPPORT OF OPPOSITION TO
CERTAIN PETITIONS FOR RECONSIDERATION
CATHOLIC TELEVISION NETWORK
MM DOCKET 97-217**

CERTIFICATION

I declare under penalty of perjury that I am president and treasurer of the firm of Denny & Associates, P.C., consulting engineers with offices in Washington, DC; that I am a professional engineer registered in the District of Columbia, the State of Maryland, and other jurisdictions; that my qualifications as an expert in radio engineering are a matter of record with the Federal Communications Commission; that the foregoing exhibit was prepared under my direction; and that the statements contained therein are true of my personal knowledge except those stated to be on information and belief and, as to those statements, I believe them to be true and correct. Executed on February 3, 1999.

A handwritten signature in black ink, appearing to read 'RWD', with a long horizontal line extending to the right and ending in a vertical stroke.

Robert W. Denny, Jr., P.E.

CERTIFICATE OF SERVICE

I, William D. Wallace, hereby certify that I have on this 4th day of February, 1999, caused to be served true and correct copies of the foregoing "Response of The Catholic Television Network to Petitions for Reconsideration" upon the following parties via hand delivery (indicated by an *) or first-class United States mail, postage prepaid:

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