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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Amendment of the Commission's Rules Regarding the 37.0 - 38.6 GHz and 38.6 - 40.0 GHz Bands	)	ET Docket No. 95-183 RM-8553
	)	
Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, 37.0 - 38.6 GHz and 38.6 - 40.0 GHz	)	PP Docket No. 93-253

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SUPPLEMENTAL COMMENTS OF

THE NATIONAL SPECTRUM MANAGERS ASSOCIATION

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September 4, 1996

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SUMMARY

The National Spectrum Managers Association respectfully submits these Supplemental Comments to apprise the Commission and other interested parties of recent progress in NSMA's ongoing efforts to develop appropriate post-licensing policies and procedures for precluding harmful interference resulting from the blanket-authorized service area operations of Fixed Service licensees in the 37.0 - 38.6 GHz and 38.6 - 40.0 GHz bands. NSMA has developed a series of recommendations that together form a solid basis for the adoption of appropriate rule provisions in this rulemaking to effectively deal with this important facilities deployment issue.

NSMA is open to all parties interested in spectrum management and frequency coordination issues. As a result, a broad cross-section of representatives of licensees, equipment manufacturers, and others from the U.S. - Canadian spectrum management community have participated in NSMA deliberations relating to the development of post-licensing frequency coordination procedures for the Fixed Service licensees in the frequency bands that are the subject of this rulemaking. NSMA's study objectives have centered on developing post-licensing frequency coordination procedures that are intended to:

- Prevent harmful interference to the greatest extent possible;
- Expedite and simplify applicable coordination procedures by minimizing the complexity and/or ambiguity of necessary engineering calculations;
- Maximize spectral efficiency; and

- Maximize the ability of licensees to rapidly and flexibly deploy systems to meet service demand throughout their authorized areas of operation.

NSMA's proposed post-licensing frequency coordination procedure is grounded on the traditional "first come - first served" concept of primary allocation status. It also incorporates an innovative approach that should facilitate rapid deployment and is intended to provide effective interference protection. NSMA envisions its recommended procedural framework as a default "safe harbor". Accordingly, it is assumed that Commission will anticipate and permit licensees to enter into alternative jointly agreed upon arrangements for precluding interference.

Even though NSMA has reached consensus on an effective generalized procedural approach, substantial further study is necessary to develop specific criteria and finalize computational methods on which to base formal NSMA recommendations. Nonetheless, NSMA believes that the procedural framework set forth in this submission forms a sufficient basis for the adoption of an effective rule provision governing the conduct of Fixed Service post-licensing frequency coordination in the frequency bands that are the subject of this proceeding. Accordingly, the Commission should foster flexibility and responsiveness to industry developments by adopting the general procedural framework for post-licensing Fixed Service frequency coordination set forth in these Supplemental Comments, and by delegating to NSMA the role of formulating and revising specific industry recommendations for implementing those general guidelines.

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SUPPLEMENTAL COMMENTS OF
THE NATIONAL SPECTRUM MANAGERS ASSOCIATION

The National Spectrum Managers Association ("NSMA") respectfully submits the following Supplemental Comments in the above-captioned proceeding.[1] This submission augments NSMA's initial comments in this proceeding, apprising the Commission and other interested parties of recent progress in NSMA's ongoing

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[1] See Notice of Proposed Rulemaking; ET Docket No. 95-183, RM-8553 & PP Docket No. 93-253, FCC 95-500 (the "NPRM"). To the extent necessary, NSMA hereby moves for acceptance of these Supplemental Comments, the submission of which has been requested by Commission staff. A broad cross-section of interested parties have participated in the open-forum NSMA deliberations that have resulted in this filing. Accordingly, it appears that no party will be prejudiced by Commission consideration of these Supplemental Comments. Furthermore, the information contained in this submission constitutes an important contribution to the record in the above-captioned proceeding. Thus, the public interest will be well-served by acceptance of these Supplemental Comments.

efforts to develop appropriate post-licensing policies and procedures for precluding harmful interference resulting from the blanket-authorized service area operations of Fixed Service licensees in the 37.0 - 38.6 GHz ("37 GHz") and 38.6 - 40.0 GHz ("39 GHz") bands.[2] As set forth in more detail below, NSMA has developed a series of recommendations that together constitute a preliminary framework to address this important issue.[3] This framework of recommendations forms a solid basis for the adoption of appropriate rule provisions in the above-captioned rulemaking.

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[2] See NPRM, at ¶ 118. See, also, Comments of the National Spectrum Managers Association (filed February 12, 1996) (the "NSMA Comments").

[3] The *intraservice* compatibility and frequency coordination issues addressed in this submission are fundamentally distinct from the issues relating to the prospect of *interservice* sharing between Fixed Service and Fixed-Satellite Service operations in the 37 GHz and 39 GHz bands raised in a petition for rulemaking filed by Motorola Satellite Communications, Inc. See Petition of Motorola Satellite Communications, Inc., RM-8811, FCC Public Notice Report No. 2132 (released May 21, 1996). Further study is clearly necessary to determine whether, and under what conditions, such interservice sharing may be practical. Due, however, to a lack of adequate information on the technical characteristics of the satellite operations contemplated by the Motorola petition, NSMA is unable to evaluate the feasibility of developing effective procedures for precluding incidences of interference arising from the co-primary satellite and terrestrial operations proposed by Motorola. NSMA, whose membership includes both terrestrial and satellite interests, stands ready to support Commission efforts in this rulemaking to address the critical threshold issues raised by the Motorola petition.

I. BACKGROUND

NSMA is spearheading an ongoing organized industry effort, which it commenced late in the summer of 1995, to develop recommendations regarding post-licensing frequency coordination procedures specific to the 37 GHz and 39 GHz bands that are intended to preclude harmful interference resulting from the ongoing blanket-authorized operations of Fixed Service licensees.[4] NSMA's efforts in this regard have focused on the dual objective of providing adequate protection from harmful interference, while also maximizing the deployment flexibility made possible by the wide-area 37 GHz and 39 GHz Fixed Service blanket-licensing scheme. As indicated in the NSMA Comments and confirmed by other commentors, the implementation of efficient post-licensing procedures to preclude harmful interference resulting from the operations of 37 GHz and 39 GHz Fixed Service licensees is essential to viable commercial operations, and is a critical factor in determining the attendant economic value of the spectrum.[5]

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[4] Formed in 1984, NSMA is a not-for-profit U.S. - Canadian professional society dedicated to developing consensus industry recommendations for the conduct of frequency coordination among commercial and private FCC and Industry Canada applicants, permittees and licensees engaged in the provision of a broad range of wireless services. NSMA is an open organization, providing a forum to all parties interested in developing workable and efficient methods to facilitate effective electromagnetic interference avoidance procedures, while minimizing the resulting burden on affected spectrum users.

[5] See, e.g., Comments of BizTel, Inc., ET Docket No. 95-183, RM-8553 (filed

(continued...)

In the period since the NSMA Comments were filed in the above-captioned proceeding, NSMA, through its working group structure, has continued and expanded its study of possible approaches to precluding harmful interference resulting from the operations of Fixed Service licensees in the 37 GHz and 39 GHz bands. This process is ongoing, and is anticipated to be subject to refinement based on the outcome of this rulemaking, and as 37 GHz and 39 GHz Fixed Service operations expand and provide more empirical operational data.

NSMA is open to all parties interested in spectrum management and frequency coordination issues. As a result, a broad cross-section of representatives of licensees, equipment manufacturers, and others from the U.S. - Canadian spectrum management community have participated in NSMA deliberations relating to the development of procedures to address post-licensing Fixed Service frequency coordination issues in the 37 GHz and 39 GHz bands.

II. NSMA STUDY OBJECTIVES

To date, NSMA's relevant study efforts have focused on developing appropriate procedures and criteria for precluding harmful interference resulting from

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[5/](...continued)
4, 1996), at 44; Comments of Advanced Radio Telecom Corp., ET Docket No. 95-183, RM-8553 (filed March 4, 1996), at 42; Reply Comments of WinStar Communications, ET Docket No. 95-183, RM-8553 (filed April 1, 1996), at 12.

the operations of geographically proximate co-frequency Fixed Service licensees in the 37 GHz and 39 GHz bands.[6] As indicated in the NSMA Comments, NSMA agrees with the Commission's conclusion that, absent an appropriate mitigating post-licensing mechanism, incidences of harmful interference resulting from the geographically proximate blanket-authorized co-frequency operations of different 37 GHz or 39 GHz licensees could occur.[7] NSMA's related study objectives have centered on developing post-licensing frequency coordination procedures that are intended to:

- Prevent harmful interference to the greatest extent possible;
- Expedite and simplify applicable coordination procedures by minimizing the complexity and/or ambiguity of necessary engineering calculations;
- Maximize spectral efficiency; and
- Maximize the ability of licensees to rapidly and flexibly deploy systems to meet service demand throughout their authorized areas of operation.

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[6] NSMA is also studying the potential for harmful interference that could arise from adjacent channel operations by different Fixed Service licensees in the 37 GHz and 39 GHz bands. While no consensus has been reached at this time with respect to this issue, it is anticipated that formal NSMA recommendations relating to post-licensing Fixed Service frequency coordination in the 37 GHz and 39 GHz bands will address the preclusion of harmful adjacent channel interference.

[7] See NPRM at para. 118. The same concerns over post-licensing interference problems between geographically proximate licensees would apply in the event that final rules adopted by the Commission were to entail individual path authorizations in addition to service area authorizations. See, e.g., NPRM, at ¶ 108.

Using these objectives, NSMA has studied several possible procedural approaches to precluding post-licensing incidences of harmful interference that could arise from Fixed Service operations in the same authorized channel block in geographically proximate 37 GHz and 39 GHz service areas. The approaches studied generally encompass several types of innovative *streamlined* frequency coordination mechanisms. These have included options entailing the use of a service area border power flux density threshold, as discussed at paragraph 118 of the NPRM, fixed coordination distance triggers, and variations of these two alternatives. In studying these options, NSMA has assumed that any post-licensing frequency coordination procedures or criteria adopted in the above-captioned proceeding will be of a minimum default nature, and that the Commission will encourage affected licensees to cooperate to resolve interference cases and will permit the use of alternative jointly agreed upon arrangements for precluding interference on a case-by-case or ongoing basis.

III. NSMA'S RECOMMENDED POST-LICENSING 37 GHz & 39 GHz FIXED SERVICE COORDINATION PROCEDURE

NSMA's study efforts have resulted in consensus on a recommended procedural framework designed to minimize incidences of post-licensing interference resulting from geographically proximate co-frequency Fixed Service operations in the 37 GHz and 39 GHz bands. The proposed procedure set forth below is grounded

on the traditional "first come - first served" concept of primary allocation status.[8] It also incorporates an innovative approach that should facilitate rapid deployment and is intended to provide effective interference protection. In sum, NSMA's proposed post-licensing coordination procedure fully comports with the stated objectives of the above-captioned proceeding, the expressed service and operational goals of system operators participating in the NSMA process, and NSMA's overall standards for effective frequency coordination procedures.

Based on the results of extensive study conducted in NSMA's well-attended open-forum working group process, NSMA believes that the relatively simple procedure described below can be effective in precluding harmful interference resulting from the operations of geographically proximate co-frequency Fixed Service licensees, while maximizing operational flexibility in 37 GHz and 39 GHz Fixed Service systems. However, it is important to note that, even though NSMA has reached consensus on an effective generalized procedural approach, substantial further study is necessary to develop specific criteria and finalize computational methods on which to base formal NSMA recommendations.[9] Nonetheless, NSMA believes that the procedural framework set forth in this

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[8] In this regard, NSMA has developed a specific recommended framework under which interference protection can be established in the context of post-licensing blanket authorized Fixed Service operations in the 37 GHz and 39 GHz bands. See Section III(D), infra.

[9] See Section VI, infra.

submission forms a sufficient basis for the adoption of an effective rule provision governing the conduct of 37 GHz and 39 GHz Fixed Service post-licensing frequency coordination. Accordingly, as set forth more fully in Section V, infra, NSMA urges the Commission to adopt NSMA's recommended post-licensing 37 GHz and 39 GHz Fixed Service frequency coordination framework. Such action by the Commission will maximize flexibility and preclude the need for further rulemaking in the future by codifying general principles and procedures that allow industry to determine the best methods and criteria for ongoing implementation of that general framework. Finally, it should be stressed that NSMA envisions its recommended procedural framework as a default "safe harbor". Accordingly, the new Commission rules adopted in this proceeding should anticipate and permit 37 GHz and 39 GHz Fixed Service licensees to enter into alternative jointly agreed upon arrangements for precluding interference.

A. Post-Licensing Co-Frequency Coordination Trigger Criteria

NSMA's recommended post-licensing co-frequency coordination procedure is initiated when a 37 GHz or 39 GHz Fixed Service licensee seeking to install facilities determines by the designated computational method that the effective interference distance of the subject facilities can potentially produce harmful interference to, or receive harmful interference from, facilities that are or could be located anywhere

within the service area of another geographically proximate co-frequency licensee. The results of studies conducted to date indicate that two interference distance computations may be relevant. The first distance is computed by determining whether the transmitting station mainbeam EIRP[10/] violates the industry-designated protection criteria for an assumed victim receiver potentially located anywhere within a co-frequency service area of another licensee.[11/] To take account of potential interference that may result from the sidelobe emissions of a transmitting station, it is also likely that it will be necessary to initiate the proposed co-frequency coordination procedure when a planned facility is within a second fixed distance of a geographically proximate co-frequency service area boundary.[12/] Further study is required to finalize the specific methodology and technical criteria for determining effective interference distance(s).

[10/] NSMA is considering at least two classes of possible approaches to determining the effective mainbeam interference distance of the transmitting station. One approach under consideration entails selecting a fixed distance from a matrix of uniformly applied pre-designated mainbeam EIRP or mainbeam EIRP density levels by identifying the mainbeam power level or mainbeam power density that most closely resembles the transmitting station characteristics. A second more dynamic approach being considered entails the use of a designated formula that employs the *actual* EIRP density of the intended transmitting station to compute the effective mainbeam interference distance. This second approach is analogous to the power flux density threshold discussed at paragraph 118 of the NPRM.

[11/] NSMA is working to develop appropriate protection criteria for victim receivers. These efforts are being supported by equipment manufacturers, licensees, and other interested parties.

[12/] This distance could vary, if the power characteristics and sidelobe performance of a subject station, as well as propagation effects, are considered.

B. Proposed Notification & Response Process

If a proposed station exceeds the above-described coordination trigger criteria, prior to installation and commencement of operation, NSMA proposes a streamlined notification and response process whereby the installing licensee will be obligated to give notice to the relevant co-frequency Fixed Service licensee(s) of its intent to install the subject facilities. Said notice shall include all pertinent data required for a recipient to perform an interference analysis[13/] to determine the potential impact to or from the proposed system with respect to the recipient's installed facilities, or with respect to recipient's facilities for which notification and response is in process or has been completed within a yet to be agreed upon prior period.[14/] The recipient's response shall specify in appropriate detail technical considerations regarding any case of radio system interference addressed therein.

A notice issued under NSMA's proposed procedure shall specify a deadline on or before which the recipient may respond with an interference objection and request resolution. An allowable standard response timeframe of as short as two days is under consideration. Longer response timeframes are also being considered. Given the short periods under consideration, such periods must be

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[13/] See 47 C.F.R. § 101.103(d)(2)(i). It is assumed that the yet-to-be-determined standardized protection criteria discussed supra will generally be applied in the conduct of interference analysis.

[14/] See Section III(D), infra.

calculated from the date of receipt. Additionally, the notice issuer should be encouraged to employ electronic or other expedited means to ensure timely delivery and properly confirm receipt.

It is assumed that, in addition to objecting to potential incidences of harmful interference to its installed or protected facilities, the recipient of a notice will also include in its response potential cases of harmful interference to the facilities proposed in the notice. Additionally, it is assumed that when resolution of an interference case is necessary in accordance with an objection forwarded pursuant to NSMA's proposed procedure, affected parties will be compelled by Commission policy to cooperate to conclude the process as rapidly as possible.[15/] All involved parties should use reasonable efforts to resolve technical problems and conflicts that may inhibit the most effective and efficient use of the radio spectrum at issue. However, the notice recipient should not be obligated to suggest changes or re-engineer already installed facilities.

If reasonable notice delivery procedures are followed in accordance with the above-stated guidelines, and no response is received to a notice within the designated response timeframe, then the issuer of the notice is free to install the

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[15/] The Commission requirement for cooperation in the interference resolution process in a post-licensing facilities deployment situation should be at least as strong as the requirement to do so in a pre-licensing prior coordination situation.

proposed facilities.[16] Nonetheless, in the event that interference cases arise after the completion of a successful notice and response procedure as a result of unforeseen circumstances, such as signal reflection or other propagation anomalies, all parties should be encouraged to work in good faith to resolve such cases. However, unless otherwise agreed to by the affected parties, under no circumstances shall the operator of first-in-time facilities installation be required to re-engineer its system to resolve and interference case. The pursuit of resolution of unresolvable interference cases before the Commission should be considered a last resort alternative, available only after the exhaustion of the above-described measures.

C. Expedited Deployment

Rapid deployment is a key operating advantage that is characteristic to a blanket-licensing scheme and has been deemed critical by system operators participating in the NSMA process. Accordingly, it is well understood that, on some occasions due to service or competitive exigencies, it may become necessary for licensees to deploy systems even more rapidly than provided for by NSMA's

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[16] To facilitate protection of an installed facility, NSMA recommends that upon completion of a facilities installation involved in a post-licensing notice, the installing licensee send notice of the installation completion to the parties to which it sent its post-licensing frequency coordination notice.

proposed post-licensing 37 GHz and 39 GHz Fixed Service notice and response procedure. NSMA is working to develop appropriate procedures to meet pressing deployment requirements and anticipates the inclusion of provisions for expedited post-licensing frequency coordination in final NSMA recommendations.

D. Interference Protection Principles

NSMA has determined that the deployment and operational considerations present in a blanket-authorized Fixed Service environment merit a specific approach to interference protection. The interference protection principles described below are based on the "first come - first served" concept inherent to primary allocation status, and take account of deployment flexibility deemed necessary for effective and efficient facilities operation.

Under the post-licensing frequency coordination procedures set forth herein, NSMA interprets "first come - first served" to refer to the protection of the necessary bandwidth,[17] and the industry-agreed upon performance and availability objectives, for a given facilities installation that is first-in-time with respect to other facilities that may be involved in a frequency coordination procedure. It is anticipated that, once the defined trigger criteria are exceeded, notification procedures will be initiated for any proposed utilization within an authorized 50 MHz channel block, regardless of

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[17] See 47 C.F.R. § 101.3.

the bandwidth of the proposed utilization or its center frequency. However, the above-described *"first come - first served" interference protection will only apply to the protection of the necessary bandwidth, and industry agreed-upon performance and availability objectives, needed to support the subject operations of the first-in-time facilities installation.* Under such an approach, licensees will be free, subject to the applicable coordination procedures, to initiate operations on any unused portion of a 50 MHz authorized channel block. Such use should be permissible to promote efficient and timely spectrum utilization, taking account of the fact that many facilities may utilize only a portion of an authorized 50 MHz channel block. Spectral efficiency and the timely delivery of service to new users would be impeded if the first-in-time licensee were permitted to protect the entire 50 MHz channel block regardless of the actual necessary bandwidth required for the first-in-time licensee's particular facilities operation. Accordingly, no interference protection is afforded for future service expansion bandwidth for a facilities installation. Each new utilization must be implemented pursuant to the procedures delineated above.

However, upon successful completion of the above-described notice and response process, licensees should be permitted a reasonable period to complete facilities installation. NSMA is working to develop a industry consensus as to the appropriate time period during which a licensee can claim first-in-time protection for facilities that have been successfully coordinated, but not yet installed. On expiration of this period, a licensee should be required to re-initiate and successfully

complete the notice and response process to extend protection on a proposed facilities installation.

IV. THE COMMISSION SHOULD CLEARLY DISTINGUISH POST-LICENSING COORDINATION PROCEDURES FROM PRIOR COORDINATION PROCEDURES

The distinctive post-licensing cross-service area interference environment presented by currently licensed 39 GHz Fixed Service blanket-authorized operations and proposed for the 37 GHz band presents unique new challenges to spectrum managers. The need to protect deployments from harmful interference under a blanket-authorized licensing model is as critical, if not more critical, than the need to preclude potential incidences of harmful interference in a pre-licensing prior coordination situation. Because of unique operational and technical characteristics made possible by the Fixed Service blanket-authorization model, NSMA maintains that any post-licensing Fixed Service interference avoidance procedures adopted by the Commission should be clearly distinguished and physically set apart in the Commission's Rules from the pre-licensing stage *prior* coordination procedures set forth in Section 101.103 of the Commission's Rules. Accordingly, NSMA recommends that the Commission adopt a free-standing rule provision that is fully independent of the prior coordination provisions set forth in Section 101.103, and specifically addresses post-licensing interference avoidance procedures for Fixed

Service licensee operations in the 37 GHz and 39 GHz bands. In this regard, NSMA currently plans to adopt at least one formal NSMA recommendation that is specific to such post-licensing procedures.[18]

V. NSMA IS AN APPROPRIATE FORUM FOR THE ONGOING REVIEW & RE-FORMULATION OF POST-LICENSING FREQUENCY COORDINATION PROCEDURES

The Commission should recognize NSMA as the principal industry forum responsible for the ongoing review, development, and re-formulation of industry recommendations relating to post-licensing frequency coordination procedures for Fixed Service operations in the 37 GHz and 39 GHz bands. Specifically, the Commission should delegate to NSMA, and possibly to other additional complimentary industry organizations, the principal responsibility for promulgating recommendations relating to specific technical procedures and criteria for 37 GHz and 39 GHz post-licensing Fixed Service frequency coordination.

To ensure proper responsiveness to changing operational conditions *without the burden of further rulemaking*, this process of ongoing industry input should be facilitated through explicit provision in the rules adopted in this proceeding for the

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[18] The procedures developed by the Commission and NSMA for this purpose *could* ultimately have applicability to other blanket-authorized Fixed Service frequency bands that are under consideration for future licensing. NSMA anticipates the conduct of additional study in this regard, and will keep the Commission informed of any relevant findings.

promulgation and revision of published industry recommendations and reports relating to all aspects of post-licensing Fixed Service frequency coordination. Such an approach is fully consistent with the Commission's practice of relying on industry and market forces to guide the pace of technical developments and shape appropriate regulatory responses, and, thus, should be adopted in this circumstance.[19] This positive trend should be continued in the above-captioned rulemaking by Commission designation of NSMA as the industry body responsible for developing and refining over time specific procedures and related technical criteria necessary to reduce interference conflicts with blanket-authorized operations by Fixed Service licensees in the 37 GHz and 39 GHz bands. As a preliminary matter, NSMA is uniquely qualified to shoulder this responsibility in an effective fashion.

Delegating ongoing oversight responsibility of these procedures to NSMA will reduce the regulatory burden on licensees and other interested parties by avoiding the necessity for detailed development of implementation procedures by the Commission. Recognizing NSMA as the responsible industry organization will also ensure the efficient adaptability of the post-licensing frequency coordination process as 37 GHz and 39 GHz services mature.

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[19] The recent incorporation by explicit reference in the new Part 101 of TIA Bulletin TSB-10, "Interference Criteria For Microwave Systems", is a specifically analogous example of the Commission facilitating effective industry involvement in the ongoing oversight of appropriate procedures and technical criteria relating to frequency coordination. See 47 C.F.R. § 101.105.

This approach will serve the public interest by enabling NSMA to continue to study and rapidly implement technical and procedural refinements that will improve interference protection and/or simplify the timely deployment of facilities and the delivery of innovative new wireless services to the public. NSMA's study efforts conducted to date have confirmed that it is not possible at this time to fully predict or completely analyze all of the possible deployment scenarios and resulting operating conditions that could occur under the Fixed Service blanket-licensing scheme in the 37 GHz and 39 GHz bands. This uncertainty is compounded by the fact that many technical and service rule issues remain unresolved in the above-captioned rulemaking. Furthermore, NSMA's efforts over the last year have been complicated somewhat by the fact that there are no other established wide-area Fixed Service licensing models from which to draw empirical comparisons. Additionally, it appears that various market forces are driving the need for an early resolution of the above-captioned rulemaking. Taking all of these factors into account, NSMA is firmly convinced that the flexible and responsive policy of delegating to industry the ongoing oversight of post-licensing Fixed Service frequency coordination in the 37 GHz and 39 GHz bands recommended herein is a proper decision.

VI. SUMMARY OF AREAS REQUIRING FURTHER STUDY

As set forth in detail in these Supplemental Comments, NSMA has developed a comprehensive preliminary framework to address the preclusion of harmful interference resulting from the operations of different Fixed Service licensees in the 37 GHz and 39 GHz bands. NSMA believes that this framework forms a solid basis for the adoption of appropriate rule provisions in the above-captioned rulemaking.

However, as discussed throughout this submission, substantial further study and deliberation is necessary to arrive at specific computations and criteria on which to base a formal NSMA recommendation for application of the procedural framework that the NSMA proposes for Commission adoption in this rulemaking. Principal areas of further study that must be concluded to complete a formal NSMA recommendation relating to post-licensing Fixed Service frequency coordination in the 37 GHz and 39 GHz bands are summarized below:

- The approach (or the optional approaches) for determining the effective mainbeam and sidelobe interference distances of a proposed station must be finalized;
- Protection criteria for victim receivers must be finalized;
- An appropriate notification response period must be agreed upon;
- An appropriate period during which a proposed facilities installation can be protected after completion of a notice and response procedure and prior to actual installation and installation notification must be agreed upon;

- Appropriate facilities performance and availability objectives on which to base interference protection standards must be agreed upon;
- An appropriate method of precluding harmful adjacent channel interference should be agreed upon

VII. CONCLUSION

The NSMA recommendations and proposals set forth herein form a solid foundation for joint industry-government implementation of effective streamlined procedures for precluding potential incidences of harmful interference arising from the operations of blanket-authorized Fixed Service licensees in the 37 GHz and 39 GHz bands. The Commission should foster flexibility and responsiveness to industry developments by adopting the general procedural framework for post-licensing Fixed Service frequency coordination in the 37 GHz and 39 GHz bands set forth herein, and by delegating to NSMA the role of formulating and revising specific industry recommendations for implementing those general guidelines. For these

reasons, NSMA urges the Commission to adopt final rules in the above-captioned proceeding that are fully consistent with these Supplemental Comments.

Respectfully submitted,

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