Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
Amendment of Part 101 of the Commission's Rules to Modify Antenna Requirements for the 10.7 – 11.7 GHz Band	)	WT Docket No. 07-54 RM-11043

REPLY COMMENTS OF ERICSSON INC

I. Introduction

Ericsson Inc ("Ericsson") hereby submits reply comments in response to the Federal Communications Commission's *Notice of Proposed Rulemaking* in the above referenced proceeding in which the Commission considers modifying Part 101 of its Rules to permit the installation of smaller antennas by Fixed Service ("FS") Operators in the 10.7 – 11.7 GHZ ("11 GHz") band.[1] A review of the filed comments reveals that many commenters support modification of Part 101.115 of the Commission's rules as Ericsson does. However, several commenters suggest modifications to the rules to address unsupported interference concerns, which Ericsson does not support.

In Ericsson's view, revisions of the Commission's frequency coordination procedures, particularly those set forth in Part 101.103, are not only unnecessary but also unjustified because smaller antennas (0.61 m) do not materially change the risk of interference to other Operators in or adjacent to the 11 GHz band. Moreover, such

[1] *See Notice of Proposed Rulemaking In the Matter of Amendment of Part 101 of the Commission's Rules to Modify Antenna Requirements for the 10.7 – 11.7 GHz Band, WT Docket No. 07-54, RM 11043, FCC 07-38(rel. March 27, 2007).*

modifications do not promote more efficient use of the band. Therefore, customized coordination procedures that apply only to FS and Fixed Satellite Services ("FSS") are not in the public interest and may complicate administration of the band. For these reasons, Ericsson urges the Commission to only modify Part 101.115 of its rules to permit the deployment of smaller antennas in the 11 GHz band.

II. Argument

A. Modifications to the FCC's General Frequency Coordination and Interference Procedures are Unnecessary and Unjustified.

Several Commenters advise the Commission to modify Part 101.103 of its rules to address generalized interference concerns. As Ericsson explained at length in its filed comments, smaller antennas do not materially alter or increase the risk of interference. In fact, there is no greater risk of interference from smaller antennas than currently exists with larger antennas.

Interference levels depend on the effective isotropic radiated power "EIRP", which is a combination of the gain of an antenna and the transmitter power, independent of main lobe or side lobe gain. At the same transmitter power, larger antennas have higher gain than smaller antennas. Moreover, there are practical limitations on the EIRP of smaller antennas due to heat dissipation and spurious emissions considerations. As a result, smaller antennas do not pose any higher risk of interference than larger antennas.[2]

In addition, when one looks at the side lobe and main lobe properties of smaller antennas, it is evident that there is no increased risk interference associated with them. First, there is less than a one degree angle differential at each side between the main lobes of 0.61 m and 1.2 m antennas. Second, the side lobe suppression characteristics of 0.61 m antennas mean that the smaller antennas will proactively level out the difference in

[2] *See* Ericsson Comments at 4-9 (filed May 25, 2007).

absolute EIRP between the current antenna standards and the proposed standards. Consequently, the risk of interference from smaller antennas is comparable to that of large antennas.

The analyses submitted by both Ericsson and Alcatel-Lucent in their initial comments, make this point clear.[3] These analyses show the interference levels caused by smaller antennas will be comparable to or better than those of 1.2 m antennas. Since smaller antennas do not change the interference risk at all, there is simply no justification for changing the currently applicable coordination rules.

Furthermore, concerns about aggregate interference raised by Intelsat are unfounded and demonstrate why no specific changes to Part 101.103 are needed.[4] Intelsat argues that "sanctioning smaller antennas could greatly increase the number of antennas operating in the vicinity of 11 GHz band earth stations" and that "transmissions from multiple 11 GHz FS antennas in the aggregate may interfere with 11 GHz earth station operations, even if each FS antenna standing alone would not create a problem."[5] This is not true.

Any deployment of dense microwave networks requires careful coordination, which is one of the primary reasons Part 101.103 exists. Operators regularly and readily use different frequency channels to facilitate intra-FS coexistence without harmful interference. In practice, the closer a group of FS antennas are to a FSS antenna the greater the likelihood that they use different frequencies. If allowed to deploy smaller antennas, FS Operators would follow these established coordination procedures. Consequently, there is less likelihood, not more, of aggregate interference problems

[3] *See* Ericsson Comments; Alcatel-Lucent Comments (filed May 25, 2007).
[4] *See* Intelsat Comments at 4-5 (filed May 25, 2007).
[5] Intelsat Comments at 4-5.

resulting from smaller antennas. Therefore, revisions of the frequency coordination procedures directed at addressing this unfounded concern are not necessary or justified.

B. The Proposed Modification to Part 101.115 Promotes the More Efficient Use of the 11 GHz band.

Improving access to 3G mobile services and increasing broadband service penetration is the compelling reason to modify Part 101.115. The 11 GHz band offers prime propagation characteristics for high capacity transmission networks. This band is not currently put to full use for this purpose, especially in densely populated areas, because only large antennas are authorized by the applicable service rules.

Through the simple and targeted change to Part 101.115 proposed by FiberTower, the Commission could remedy this underutilization and enable Operators to deploy high capacity backhaul transmission networks, which are desperately needed in urban and metropolitan areas, using the 11 GHz band. Such action serves the public interest by maximizing the value and utility of the 11GHz band.

Two parties, Intelsat and Comsearch, advise the FCC to take action that would directly undermine more efficient use of the 11 GHz band. Specifically, Intelsat asks the Commission to segment the 11 GHz band. For its part, Comsearch requests that the Commission apply the Class B standard to smaller antennas. Neither action is in the public interest because neither promotes the more efficient use of spectrum. For this reason, Ericsson recommends that the FCC reject both proposals.

1. Segmentation of the 11 GHz Band Thwarts Efforts to More Efficiently Utilize the Spectrum.

In its comments, Intelsat suggests that the Commission should segment the 11 GHz band to purportedly resolve interference issues.[6] As explained in detail in

[6] Intelsat Comments at 5-7.

Ericsson's initial comments and above, smaller antennas do not materially alter the risk of interference. Therefore, segmentation of the band, or any other similarly drastic measure, to address unchanged interference conditions is unnecessary. Such action would simply lead to more complicated administration of valuable spectrum resources.

Moreover, segmentation of the band would greatly disadvantage FS Operators and would impede the more efficient utilization of the 11 GHz band. Improving access to the 11 GHz band underlies the instant request for modification of Part 101.115. Rather than augmenting the availability of 11 GHz, segmentation would cause FS Operators to lose critical 11 GHz spectrum in urban and metropolitan areas and would otherwise impede coordinated and efficient use of the band.

Further, under Intelsat's segmentation plan, intra-FS coordination would be a more limiting factor for the efficient use of spectrum than FS/FSS coordination and neither service would, in practice, be able to utilize 100% of the FS or FSS available bandwidth. Consequently, segmentation would only serve to hinder the effective use of spectrum and limit its availability to support enhanced 3G mobile and broadband services, especially in densely populated areas, where it is needed most. Therefore, Intelsat's proposal is not in the public interest and the Commission should reject it.

2. Requiring Smaller Antennas to Meet Class B Specifications Defeats the Purpose of Allowing Smaller Antennas.

In its comments, Comsearch suggests an equally imprudent modification to address its unwarranted interference concerns. Although Comsearch supports acceptance of smaller antennas in the 11 GHz band, it proposes to put them into a new Class B standard. This proposal ignores the fact that modern 0.61 m antennas perform much better than the proposed Class B standard specifications, particularly with respect to radiation suppression outside the main beam.

This proposal also effectively excludes the use of smaller antennas in urban and metropolitan areas where higher radiation suppression, available with smaller antennas, is needed for coordination, both for intra-FS and FS/FSS uses. Thus, Comsearch's proposal frustrates the primary purpose for the rule change. For this reason, Comsearch's proposal is not in the public interest and the Commission should reject it.

C. Rural Operators will not be Disadvantaged if Smaller Antennas are Authorized in the 11GHz Band.

Union Telephone Company opposes the rule change based on its desire to protect the integrity of its long haul rural transmission operations.[7] As previously stated, the interference levels will not change for the worse if smaller antennas are authorized in the 11 GHz band. Since Union Telephone Company's operational and interference considerations related to its long haul transmissions will not change, its opposition to the rule change is unfounded.

Moreover, the central purpose of the rule change is to permit deployment of smaller antennas in urban and metropolitan areas to satisfy the increasing need for transmission capacity in these densely populated areas. Smaller antennas are less suitable for, and likely will not be extensively deployed in, the rural areas where Union Telephone Company operates. Therefore, Union Telephone Company will not be disadvantaged if smaller antennas are permitted in the 11 GHz band and it is not in the public interest to deny modification of Part 101.115 on the basis of Union Telephone Company's objections.

[7] *See* Union Telephone Company Comments (filed May 25, 2007).

III. Conclusion

The 11 GHz band has the propagation characteristics necessary to support the high quality, high capacity transmission network critical to improving the coverage and penetration of enhanced 3G mobile and broadband services, especially in densely populated areas. At present, this band is largely underutilized because Operators may not deploy smaller, more cost effective antennas in this band. The change to Rule 101.115 proposed by FiberTower would allow Operators to deploy 0.61 m antennas in the 11 GHz band and thereby open this band for use in metropolitan and urban areas, with minimal increased risk of interference to FSS Operators and adjacent licensees. Thus, the rule change promotes the more efficient use of spectrum and is in the public interest.

For the reasons set forth above and in Ericsson's initial comments, Ericsson asks the Commission to modify Part 101.115. Ericsson urges the Commission to reject those proposals offered by Intelsat and Comsearch, and to otherwise refrain from modifying Part 101.103 to establish new interference or coordination rules that are customized for FS and FSS stations.

Respectfully submitted this 11th day of June, 2007.

A Ellis
Allison Ellis, Director, Regulatory Policy
Ericsson Inc
1634 I Street, N.W., Suite 600
Washington, D.C. 20006-4083
Telephone: (202) 824-0103
Facsimile: (202) 783-2206