Before the
Federal Communications Commission
Washington DC 20554

In the Matter of	)	
	)	
Petition to Modify Parts 2 and 101 of the	)	
Commission's Rules to Enable Timely	)	RM-11809
Deployment of Fixed Stratospheric-Based	)	
Communications Services in the 21.5-23.6,	)	
25.25-27.5, 71-76, and 81-86 GHz Bands	)	

COMMENTS OF THE
FIXED WIRELESS COMMUNICATIONS COALITION

The Fixed Wireless Communications Coalition, Inc. ("FWCC")[1] files these comments on the Petition for Rulemaking in the above-captioned docket.[2]

Elefante Group asks the Commission to amend the rules to facilitate Stratospheric-Based Communications Services ("SBCS") through stratospheric platforms stations ("STRAPS") at 65,000 feet altitude.

We admire the vision behind the Elefante Group proposal. Nevertheless, Elefante Group has underestimated the adverse impact of its proposal on the Fixed Service (FS). It may be possible to modify the proposal in ways that preserve the vision, but also maintain the regulatory parity with the FS that Elefante Group claims, but has not yet achieved.

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[1] The FWCC is a coalition of companies, associations, and individuals actively involved in the fixed services—*i.e.*, terrestrial fixed microwave communications. Our membership includes manufacturers of microwave equipment, fixed microwave engineering firms, licensees of terrestrial fixed microwave systems and their associations, and communications service providers and their associations. The membership also includes railroads, public utilities, petroleum and pipeline entities, public safety agencies, cable TV providers, backhaul providers, and/or their respective associations, communications carriers, and telecommunications attorneys and engineers. Our members build, install, and use both licensed and unlicensed point–to–point, point–to–multipoint, and other fixed wireless systems, in frequency bands from 900 MHz to 95 GHz. For more information, see www.fwcc.us.

[2] Petition for Rulemaking of Elefante Group, Inc., RM-11809 (filed May 31, 2018).

Elefante Group seeks to use these bands for SBCS:

user terminal uplinks:	21.5-23.6 GHz
user terminal downlinks:	25.25-27.5 GHz
feeder downlinks:	71-76 GHz
feeder uplinks:	81-86 GHz

The FS uses three: the 21.5-23.6 GHz ("23 GHz band") and 71-76 GHz and 81-86 GHz.

We have no objection to sharing the bands with SBCS under the same frequency coordination procedures and technical rules that FS operators use. But Elefante Group is asking for far-reaching exceptions to the frequency coordination procedures. It insists these changes would not disadvantage FS frequency coordination of new links.[3] As we show below, however, the specifics of the proposal suggest otherwise.

A. THE 23 GHZ BAND

As of July 6, 2018, the 23 GHz band has 39,507 links overall, and 37,965 links in the 21.5-23.6 GHz segment Elefante Group wants to use. Figure 1 shows the overall increase in use of the band since 1992.[4]

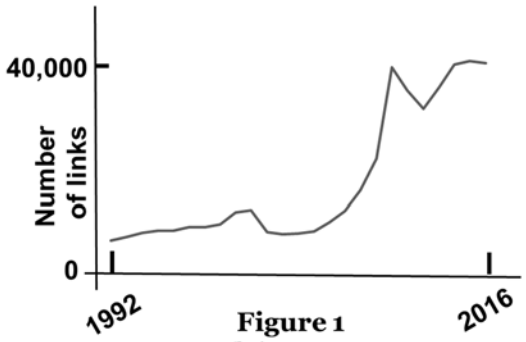

Figure 1
Growth in 23 GHz FS usage over time

An FS operator in the 23 GHz band (as in most FS bands) must coordinate each link individually. The operator launches the process by circulating a Prior Coordination Notice ("PCN") to all other potentially affected licensees and previously coordinated applicants. The PCN lists transmit and receive locations, specific frequency use, and other technical properties.[5]

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3 Petition Appendix B at 14 ("Future FS links are no more inhibited by SBCS than through current coordination with conventional FS links.") (underline omitted).

4 Data courtesy of Comsearch.

5 47 C.F.R. § 101.103(d).

If not objected to (or if objections are resolved), the PCN acts as a reservation for six months, barring other applicants from coordinating links that would cause interference to the link in the PCN. Ordinarily the coordinating party files its FCC application within the six-month period. The rules allow renewal of a PCN, with no stated limit on how many times, but an application filed by another party takes precedence over a multiply-renewed PCN.[6]

These procedures give full protection to each existing and proposed link, while leaving the maximum practical room for the coordination of future links.

The Petition requests something different for SBCS links:

- Once a STRAPS location is established, SBCS operators "engage in pre-coordination to define frequency-dependent protection contours around existing conventional links."[7]
- SBCS is free to use all frequencies outside those contours—plus frequencies inside the contours, other than those specified in the FS receiver license.[8]
- As SBCS links are added, they are included in the Commission's database for future FS coordination.[9]
- As new FS links are added, SBCS operators adjust spectrum usage to accommodate them, if possible,[10] but would have the right to reject coordination requests anywhere in the pre-coordinated region.[11]

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6 *Geodesic Networks, LLC*, Memorandum Opinion and Order and Order on Reconsideration, 29 FCC Rcd 10429 at ¶ 16 (Wireless Telecom. Bur. 2014). The Commission has requested comment on whether it should conduct a rulemaking to limit how long a party may hold a coordination without filing an application. *Wireless Telecommunications Bureau's Broadband Division and Public Safety and Homeland Security Bureau's Policy and Licensing Division Issue Declaratory Ruling on Microwave Frequency Coordination and Seek Comment on Portion of Petition for Declaratory Ruling Filed by the Fixed Wireless Communications Coalition, Inc*., Public Notice, 30 FCC Rcd 355 at 7 (Wireless Telecom. Bur. & Public Safety and Homeland Sec. Bur. 2015).

7 Petition at 69-70.

8 Petition Appendix B at 2.

9 Petition at 70.

10 Petition Appendix B at 13-14.

11 Petition Appendix B at 14.

1. The FWCC objects to SBCS's claimed right to arbitrarily block new FS links over the entire band and across very large areas.

Rather than coordinate link by link, Elefante Group proposes to simultaneously pre-coordinate all frequencies not then licensed to FS at all locations over an entire STRAPS coverage area. This area is big enough to include an entire metropolitan region, and then some.[12] The economics are likely to dictate placing STRAPS over major population centers, which is also where most 23 GHz medium distance FS links are deployed.[13]

As we read the Petition, Elefante Group claims the right to reject an FS coordination request anywhere in a 15,400 square km pre-coordinated region, on any frequency in the band, even if the request does not threaten interference to a registered SBCS link.[14] The Petition mentions two such instances,[15] but the wording makes clear that these are examples, not an exhaustive list. Moreover, the examples suggest that rejection of an FS coordination request may rely on information internal to the SBCS operator's frequency management system, and may not be accessible to FS frequency coordinators.

If this reading is correct, it is deeply troubling. Notwithstanding Elefante Group's proposing to coordinate "much as FS links coordinate among themselves."[16] and claims that it "is not seeking special treatment,"[17] it appears to be asking for the privilege to reject others'

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12 "[A] single STRAPS positioned over Washington, DC would cover the District, surrounding suburb and cities along the Beltway, and extend into many rural communities, potentially providing services to the District, all or part of 22 counties in three states, parts of Baltimore, and other independent cities." Petition at 13-14 (footnote omitted).

13 Although the Petition frequently mentions serving rural areas, it expressly disclaims any commitment to rural service. Petition at 88-89.

14 The pre-coordinated area is bigger than three states.

15 Petition Appendix B at 14.

16 Petition at 69.

17 Petition Appendix B at 14.

coordination requests in ways that are inconsistent with ongoing FS frequency coordination. Elefante Group claims to seek co-primary status for SBCS,[18] but describes a status that would give it rights in the spectrum far superior to those of the FS.

If our reading is wrong, we ask Elefante Group to clarify its view of the proposed coordination rights of SBCS vis-à-vis the FS.

2. Other issues

Other aspects of the Elefante Group proposal would further disadvantage the FS in coordinating with SBCS, and in some instances would expose the FS to harmful interference from SBCS.

> **POWER**. Elefante Group offers to comply with the Commission's emissions limits only below 10 degrees elevation.[19] But the FS, which is limited to "the minimum amount of power necessary to carry out the communications desired,"[20] rarely approaches the limits in the rules. An SBCS link putting out maximum EIRP in a horizontal direction would take up far more frequency coordination space than a typical FS link.
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> **BANDWIDTH**. Elefante Group proposes very high enterprise bandwidths of 450 MHz[21]—almost a fifth of the allocated band—while FS links are limited to 50 MHz at most.[22] SBCS service to just a few enterprises in the same area would risk squeezing out new FS links.
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> **CHANNELIZATION**. Elefante Group opposes the adoption of a channel plan.[23] A possible result will be idiosyncratically staggered SBCS channel usage, impeding FS operators' attempts to coordinate.

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18 Petition at 4.

19 Petition at 94. Elefante Group promises compliance with "the absolute emission limitations described in 101.111" below 10 degrees elevation. Perhaps it meant to cite Section 101.113.

20 47 C.F.R. § 101.113(a).

21 Petition Appendix A at 2 (table).

22 47 C.F.R. § 101.147(s).

23 Petition at 100.

RECEIVER DATABASE. Elefante Group proposes to base its coordination system on the FS receivers listed in the "FCC database,"[24] which we assume refers to ULS. Reliable coordination will need a complete, accurate, and frequently updated FS receiver database, which ULS does not provide; but such databases do exist, and access may be available.

ADJACENT CHANNEL ISSUES. Elefante Group promises negligible adjacent channel interference by limiting out-of-band band emissions.[25] This misapprehends the problem. Adjacent channel interference originates mostly in the receiver, not the transmitter. An FS receiver (like all other radio receivers) is sensitive to interference in the channels adjacent to the channel it is tuned to, and will pick up strong interference in the second-adjacent channels as well. Even if the transmitter out-of-band emissions are zero, frequency coordination still must take adjacent channel interference into account.

CONDITIONAL AUTHORIZATION. The FS relies on the availability of conditional authorization on a subset of 23 GHz frequencies. The Commission should require Elefante Group to manage its database updates and consultations so as to preserve this option.

To us, at least, none of these issues appears critical to the proposal, although of course Elefante Group must make that determination. We request only full protection of existing FS links (which Elefante Group appears to offer), and an even-handed approach to coordinating new links, which is more problematic.

B. 71-76 GHz AND 81-86 GHz BANDS

Elefante Group proposes to use the 71-76 and 81-86 GHz bands for feeder link downlinks and uplinks, respectively.

The Petition provides only sparse information on SBCS operations in these bands. We see no data on any of the properties that would figure into an interference evaluation: power levels, bandwidths, antenna characteristics, and so on. The Petition has is no quantitative compatibility analysis.

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[24] Petition Appendix B at 2.

[25] Petition Appendix B at 10.

There is not enough information on these bands for the FWCC to offer an informed response. If Elefante Group proposes to comply in all respects with the existing technical rules and licensing and coordination procedures, then we will have no objection. Otherwise the Commission should insist on full detail, and following its receipt, should allow time for further comment (perhaps by *ex parte* filing) before moving to an NPRM.

CONCLUSION

Elements of the Elefante Group proposal will disproportionately hinder FS frequency coordination in the 23 GHz band. We think it possible that Elefante Group can modify the details in ways that will make frequency coordination between SBCS and the FS more even-handed.

We reserve judgment on the 71-76 and 81-86 GHz bands until Elefante Group makes more information available.

Respectfully submitted,

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July 11, 2018.

CERTIFICATE OF SERVICE

I, Mitchell Lazarus, an attorney with the firm Fletcher, Heald & Hildreth, PLC, hereby state that I caused true copies of the foregoing COMMENTS OF THE FIXED WIRELESS COMMUNICATIONS COALITION to be sent by first class mail, postage prepaid, on July 11, 2018, to the following:

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