

KELLEY DRYE & WARREN LLP

A LIMITED LIABILITY PARTNERSHIP

WASHINGTON HARBOUR, SUITE 400

3050 K STREET, NW

WASHINGTON, DC 20007

(202) 342-8400

FACSIMILE

(202) 342-8451

www.kelleydrye.com

EDWARD A. YORKGITIS, JR.

DIRECT LINE: (202) 342-8540

EMAIL: CYORKGITIS@KELLEYDRYE.COM

NEW YORK, NY
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April 4, 2019

By ECFS

Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Elefante Group Notice of *Ex Parte* Presentation; RM-11809, GN Docket No. 14-177

Dear Ms. Dortch:

Elefante Group, Inc. (“Elefante Group”), by its attorneys, hereby submits this written *ex parte* letter into the above-referenced proceedings to respond to questions received from Commission staff as to the basis for Elefante Group’s assertion that the Stratospheric-based Communications Services (“SBCS”) proposed by Elefante Group will operate within the Fixed Services, rather than some other service category.

SBCS, as proposed by Elefante Group, is a service between fixed, land-based stations, either between user terminals (“UTs”) operating in the Ka-Band or between gateway stations (“GWs”) and UTs.¹ The unmanned stratospheric platforms (“STRAPS”) of the SBCS, which operate at nominal fixed points, serve effectively as a switch or relay to enable the communications between those fixed points.² A STRAPS is not an end point of communications

¹ See Elefante Group, Inc., Petition for Rulemaking, RM-11809, 16-17 (May 31, 2018) (“Petition for Rulemaking”); Reply Comments of Elefante Group, Inc., RM-11809, GN Docket No. 14-177, 4-5 (Aug. 15, 2018) (“Reply Comments”).

² Elefante Group proposes that SBCS operators be required to maintain STRAPS operation at the specified nominal fixed point to which a STRAPS is registered and which forms the center point of its up to 70 km radius service coverage area within certain, regulatorily-established

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in the SBCS – a customer operating a UT will have no reason to communicate with the unmanned STRAPS. There will be communications between certain ground stations and the STRAPS for operational, command, and non-payload communications (“CNPC”) purposes, such as navigation, telemetry, and command and control. Elefante Group envisions that CNPC communications would operate in other bands established for those purposes, *e.g.*, the 5030-5091 MHz band or over commercial Ku-Band satellites.

Under Elefante Group’s proposal, SBCS, and more specifically STRAPS, will not enable communications between mobile stations or between fixed and mobile stations.³ Were this to occur, it would be a different service than the one Elefante Group proposed. What Elefante Group has proposed is most like a point-to-point microwave service, *i.e.*, fixed wireless services. More importantly, Elefante Group has examined the issue of mobile access and does not believe that it is feasible using current technologies for a STRAPS in the Ka-Bands or higher.⁴ Perhaps that might occur in lower bands facilitated by stratospheric stations, but that is not the SBCS that Elefante Group has proposed in its Petition. Accordingly, to define the services STRAPS can deliver in the bands discussed in the Elefante Group Petition as a mobile service would be to ignore the characteristics of the SBCS that Elefante Group is proposing and intends to operate. A conclusion that SBCS is something other than a fixed service would distort the definitions in the Commission’s rules.

tolerances. Petition for Rulemaking at 86. Elefante Group’s STRAPS, a lighter-than-air airship, will operate typically within 3 km of the nominal fixed point (and often much less than that), and will operate only within 10 km of that point. *Id.*; Reply Comments at 62. Elefante Group proposed that STRAPS only be able relay traffic to and from UTs and GWs only after it has transitioned to the nominal fixed point and while it maintains it. In other words, the STRAPS would not operate in the UT-link or GW-link spectrum to or after departing from the specified nominal fixed point. Petition for Rulemaking at 19, n.15. Outside of 10 km of the nominal fixed point, Elefante Group has proposed that the STRAPS cease operating in the SBCS spectrum. In normal operation, when there are winds, the STRAPS in Elefante Group’s design will essentially tack into the wind with its propulsion system and maintain a very stable position near the nominal fixed point. *Id.* at 10, n.6; Reply Comments at 11-12. Counterintuitively, it is when there is no wind that the tolerance will increase, as the airship will move around the nominal fixed point to establish and maintain thermal equilibrium.

³ Reply Comments at 4-6.

⁴ Petition for Rulemaking at 62 (citing *Use of Spectrum Bands above 24 GHz for Mobile Radio Servs., et al.*, GN Docket No. 14-177, *et al.*, Second Report and Order, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, and Memorandum Opinion and Order, 32 FCC Rcd 10988, ¶¶ 193-96 (2017)), 75, n. 98; Reply Comments at 30-31.

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Under the Commission's definitions of various services, SBCS, as envisioned by Elefante Group is, for the following reasons, a Fixed Service. The Commission's rules define "Fixed Service" as "[a] radiocommunication service between specified fixed points."⁵ As noted above, SBCS communications are between fixed UTs or between a fixed UT and a fixed GW. Despite the operational variance of the STRAPS as it operates to maintain the nominal fixed position (on average), the STRAPS will maintain a constant coverage area relative to the nominal fixed point so as to ensure continuous communications between the served fixed points. Each UT is deployed so as to communicate only with one STRAPS, even where there is overlapping coverage between two STRAPS operated by the same provider. There is no handoff of a UT pointing to another STRAPS, except when a STRAPS is replaced by another at the specified nominal fixed point, whether as part of regular maintenance or as required on an unscheduled, emergency basis.

In serving as a switch or relay, the STRAPS is much like a satellite in the Fixed Satellite Service ("FSS"). This underscores the fixed nature of the service. The FSS is defined generally as a "[a] radiocommunication service between earth stations at given positions, when one or more satellites are used."⁶ The FSS designation applies to both geostationary and non-geostationary orbit satellites. The "fixed" nature of the service is defined by the points of communication, *i.e.*, the stationary nature of the earth stations. SBCS is analogous: a radiocommunications service between UTs (or between UTs and GWs) at given positions when one or more STRAPS are used.⁷

SBCS does not meet other service definitions without "forcing a square peg in a round hole." For example, SBCS is not a type of aeronautical service, despite the use of STRAPS. Consider the Aeronautical Mobile Service, which the Commission's rules defines as "[a] mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radiobeacon stations may also participate in this service on designated distress and

⁵ 47 C.F.R. § 2.1(c).

⁶ *Id.*

⁷ More than one STRAPS might be involved in a link between two UTs in the coverage area of two different UTs, provided there is an inter-STRAPS capability. The Elefante Group Petition did not propose, at this time, spectrum or rules for such inter-STRAPS capabilities, or cross-links. Petition for Rulemaking at 19-20. However, even in the case of such links, the service itself will remain between fixed points, *i.e.*, between UTs, between UTs and GWs, or between GWs, and the multiple STRAPS will serve only as switches or relays.

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emergency frequencies.”⁸ SBCS is not a service from UTs to aircraft stations or between aircraft stations. Again, the STRAPS are not the points of communication, but rather nothing more than intermediate switching or relay points between the UTs or UTs and GWs. To suggest otherwise fundamentally overlooks that nature, and changes the purpose, of SBCS. The STRAPS are unmanned and the customer communications involved to or from UTs are not stored or used by the STRAPS.

SBCS does not meet the more general definition of “Mobile Service.” Under the Commission’s rules, a Mobile Service is “[a] radiocommunication service between mobile and land stations, or between mobile stations.”⁹ Mobile stations are “station[s] in the mobile service intended to be used while in motion or during halts at unspecified points.”¹⁰ As noted above, the communications service in SBCS is between fixed points on the ground, either UTs or UTs and GWs. Neither the UTs nor GWs are mobile stations. And, while it is not an endpoint of SBCS communications, nor is the STRAPS a mobile station. Unlike a mobile station in a mobile service, the STRAPS operates to maintain a fixed nominal point. But most importantly, the STRAPS is not a point of communication for the SBCS. Users or customers of an SBCS operator do not seek to pay for communications from or to UTs with the STRAPS.

The definition of Mobile Satellite Service (“MSS”) compared to that of the FSS underscores the propriety of treating SBCS as a fixed rather than a mobile service. MSS is defined under the Commission’s rules as “[a] radiocommunication service (1) [b]etween mobile earth stations and one or more space stations, or between space stations used by this service; or (2) [b]etween mobile earth stations by means of one or more space stations.”¹¹ The UTs and GWs in the SBCS are not mobile, like the earth stations in MSS, but rather are fixed, like the earth stations in the FSS. And, again, the STRAPS are not the points of communication.

For these reasons, SBCS, as proposed by Elefante Group, operates within the Fixed Service.

This conclusion is reinforced by yet another regulatory analogy. In the wireline services, the nature of a communication is determined by the end points and the net communication

⁸ 47 C.F.R. § 2.1(c).

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

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change in protocol.¹² Thus, a service is jurisdictionally either intrastate, interstate, or international based on the end points of the communications as well as the traffic carried over the service. In the SBCS, the communications are those between and among the fixed UT and GW endpoints; the service, as offered by the SBCS operator, facilitates point-to-point communications, such as a microwave service.

Further, wireline services are considered to be either information or telecommunications services based on the net communications and any net protocol change.¹³ Where there are protocol changes to and from IP protocol, for example, as part of the management of a wireline service, that does not change the nature of the communications between the end points when there is no net protocol change. By analogy, SBCS are between the UTs or GWs that are located at fixed points. The fact that the STRAPS is involved does not change the net nature of the communications as a Fixed Service. In effect, the use of the STRAPS is transparent to the customers who seek connectivity between fixed points.

While one might envision other services using communications payloads on lighter than air airships, such other services are NOT what Elefante Group has proposed for the 21, 26, and 70/80 GHz bands.

¹² See, e.g., *Qwest Commc'ns Corp. v. Farmers & Merchs. Mut. Tel. Co.*, File No. EB-07-MD-001, Memorandum Opinion and Order, 22 FCC Rcd 17973, ¶ 31 (2007); *AT&T Corp. Petition for Declaratory Ruling Regarding Enhanced Prepaid Calling Card Servs., et al.*, WC Docket No. 03-133, *et al.*, Order and Notice of Proposed Rulemaking, 20 FCC Rcd 4826, ¶ 5 (2005); *Teleconnect Co. v. Bell Tel. Co. of Pa.*, Memorandum Opinion and Order, 10 FCC Rcd 1626, ¶ 12 (1995).

¹³ See, e.g., *Restoring Internet Freedom*, WC Docket No. 17-108, Declaratory Ruling, Report and Order, and Order, 33 FCC Rcd 311, ¶¶ 6-8 (2018); *Petition for Declaratory Ruling that AT&T's Phone-to-Phone IP Telephony Servs. are Exempt from Access Charges*, WC Docket No. 02-361, Order, 19 FCC Rcd 7457, ¶ 12 (2004); *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, Final Decision, 77 FCC 2d 384, ¶ 5 (1980).

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Pursuant to Section 1.1206(b) of the Commission's rules, this letter is being filed electronically.¹⁴

Respectfully submitted,



Edward A. Yorkgitis, Jr.
Counsel to Elefante Group, Inc.

cc: Donald Stockdale, Wireless Bureau
Charles Mathias, Wireless Bureau
Blaise Scinto, Wireless Bureau
Julius Knapp, OET
Ron Repasi, OET
Jamison Prime, OET
Thomas Sullivan, International Bureau
Nese Guendelsberger, International Bureau
Dante Ibarra, International Bureau
Michael Mullinix, International Bureau

¹⁴ 47 C.F.R. § 1.1206(b).