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

Received

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Satellite and Radio Communication Division  
Satellite Policy Branch

In the Matter of the Applications of:	)	
	)	
CTA Commercial Systems, Inc.	)	File No. 23-SAT-P/LA-95
	)	
E-SAT, Inc.	)	File No. 24-SAT-P/LA-95
	)	
Final Analysis Communication Services, Inc.	)	File No. 25-SAT-P/LA-95
	)	
GE American Communications, Inc.	)	File No. 26-SAT-P/LA-95
	)	
Leo One USA Corporation	)	File Nos. 27-SAT-AMEND-95 57-DSS-P/LA-94(48)
	)	
Orbital Communications Corporation	)	File No. 28-SAT-MP/ML-95
	)	
Volunteers In Technical Assistance	)	File No. 29-SAT-AMEND-95
	)	
For Authority to Construct, Launch and Operate a Low Earth Orbit Non-Voice Non-Geostationary Mobile Satellite System	)	

COMMENTS OF MOTOROLA SATELLITE COMMUNICATIONS, INC.

Motorola Satellite Communications, Inc. ("Motorola") hereby files its comments on the above-captioned applications to construct, launch and operate Non-Voice Non-Geostationary

("NVNG") low earth orbit satellite systems ("Little LEOs"). These comments are limited to issues relating to the regulation and monitoring of orbital assignments for LEO satellite systems.

Motorola holds a license to construct, launch and operate the IRIDIUM® system, a "Big LEO" MSS satellite system that will comprise 66 operational satellites and up to 12 in-orbit spares.<sup>1/</sup> The IRIDIUM® satellites will circle the Earth in near-polar orbits in six orbital planes at an altitude of approximately 780 km, while the spares will be launched in near-polar orbit approximately 645 kilometers above the Earth. Because some of the instant applications propose satellite systems that would utilize orbits of similar altitude to the orbits of the IRIDIUM® satellites, Motorola has a profound interest in ensuring that the IRIDIUM® satellites are adequately protected from any risk of collision (however remote) with any of these proposed satellites. The need for protection is all the more heightened because, absent adequate monitoring by this Commission, no U.S. or international regulatory body has assumed jurisdiction to regulate and/or coordinate the orbital locations of low-earth-orbit satellite systems. It is therefore imperative that, in licensing any of the proposed Little LEO systems, the Commission establish orbital parameters that avoid any risk of

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<sup>1/</sup> See In re Application of Motorola Satellite Communications, Inc. for Authority to Construct, Launch and Operate a Low Earth Orbit Satellite System in the 1616-1626.5 MHz Band, File Nos. 9-DSS-P-91(87), CSS-91-010, 43-DSS-AMEND-92, 15-SAT-LA-95, 16-SAT-AMEND-95, Order and Authorization, (DA 95-131, rel. Jan. 31, 1995).

collision between the proposed LEO satellite systems and the already licensed satellites of other Big LEO and Little LEO systems, and that it require close compliance with these orbital parameters.<sup>2/</sup>

Motorola notes its particular concern with the proposed systems of GE American Communications, Inc. ("GE Americom") and Volunteers in Technical Assistance ("VITA"), which contemplate 800 km orbital altitudes, or only 20 km in altitude above the IRIDIUM® satellites.<sup>3/</sup> A measurable risk of satellite collision would arise if these two applicants failed to comply very strictly with their orbital parameters and failed to keep their space vehicles within "station keeping" boxes circumscribed by reasonable tolerance parameters. Further, two other applicants - CTA Commercial Systems, Inc. ("CTA") and Final Analysis Communication Services, Inc. ("Final Analysis") -- propose to use the same 1000 km orbital altitude.<sup>4/</sup> If both of these systems

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<sup>2/</sup> The Commission must also take measures to avoid interference by launch vehicles with the orbits of licensed satellites, and must require the instant applicants to implement orbital correction mechanisms that correct a satellite's orbit when it transcends reasonable tolerance levels.

<sup>3/</sup> See GE Americom Application at 2 (24 satellites inserted in nominal polar orbit at an orbital altitude of 800 km); VITA Application, Exhibit B at 3 (one satellite in a near polar orbit, with a nominal circular altitude of 667 km and apogee and perigee altitudes of 800 km.)

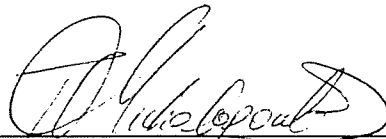
<sup>4/</sup> See CTA Application at 6 and I.A-7 (32 satellites in 4 planes in 50° inclined orbit and 6 satellites in polar orbit at 1000 km altitudes); Final Analysis Application at II-1 - II-3 and Fig. II-1 (24 satellites in four orbital planes and two satellites in quadrature orbits, all at an altitude of 1000 km).

were launched, there would be a substantial risk of collision between satellites of the two systems, exposing IRIDIUM® satellites and other licensed LEO satellites to an even greater risk of collision from the resulting space debris.

The Commission must focus its attention on the orbital parameters proposed by these Little LEO applicants, and, if necessary, require certain revisions to the system designs in order to avoid the possibility of in-orbit collisions. In any case, the Commission should require close compliance with the orbital parameters set forth in any authorization that may be issued in the above-captioned proceedings.

Respectfully submitted,

**MOTOROLA SATELLITE  
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Date: February 24, 1995

CERTIFICATE OF SERVICE

I, Pantelis Michalopoulos, hereby certify that a copy of the foregoing Comments of Motorola Satellite Communications, Inc. was served by first-class mail, postage prepaid, this 24th day of February, 1995, on the following persons:

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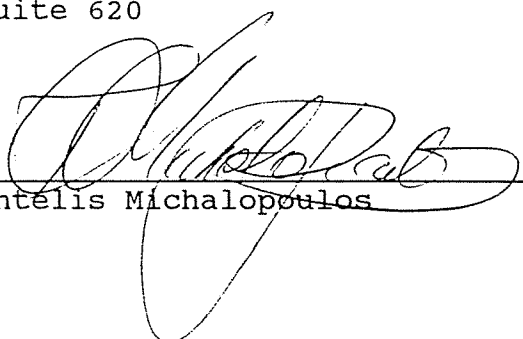
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