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EX PARTE OR LATE FILED

October 7, 1997

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Hughes Communications, Inc., File No. 90-SAT-P/LA-97(A) & 119 through 127-SAT-P/LA-97;
Hughes Communications, Inc., File No. 148 through 151-SAT-P/LA-97;
Hughes Communications, Inc., File No. 157/158-SAT-P/LA-97 &159-SAT-P/LA-97(20).
EX PARTE PRESENTATION

Dear Mr. Caton:

Enclosed on behalf of Hughes Communications, Inc. (HCI) is an ex parte presentation that was delivered today to the Commission representatives identified therein in connection with the above-referenced applications. The three enclosures to that presentation consist of the HCI applications referenced above, which already are of record in these proceedings and therefore have not been submitted again.

Two copies of this letter are included for each of the three application proceedings referenced above.

It is not clear whether service of the enclosed presentation is required to be made to the other pending applicants for V band satellite systems. Out of an abundance of caution,

copies are being provided to counsel indicated below. Copies of the three HCI applications referenced above already have been provided to those counsel.

Respectfully submitted,

John P. Janka
Arthur S. Landerholm

Enclosures

cc:

Mark Grannis (counsel for Teledesic)
James Troup (counsel for CAI Data)
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Brent Weingardt (counsel for Motorola)
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Acting Secretary
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IB Docket No 97-95, RM-8811;
ET Docket No. 94-124, RM-8308, RM-8784;
ET Docket No. 95-183, RM-8553;
Hughes Communications, Inc., File No. 90-SAT-P/LA-97(A) & 119 through 127-SAT-P/LA-97;
Hughes Communications, Inc., File No. 148 through 151-SAT-P/LA-97;
Hughes Communications, Inc., File No. 157/158-SAT-P/LA-97 &159-SAT-P/LA-97(20).
EX PARTE PRESENTATION

Dear Mr. Caton:

In connection with the current satellite processing rounds, Hughes Communications, Inc. (HCI) has filed the applications referenced above for three new satellite systems that will operate in the 36.0-51.4 GHz band (the "V band"). These applications represent the focus by HCI to serve the telecommunications needs of the future in a part of the radio frequency band that has been unutilized for commercial satellite services to date.

In its pleadings in the docket proceedings referenced above, HCI urged the Commission, in developing a band plan for the V band, to take into account the satellite system proposals that are submitted in the current V band processing round. HCI also noted that the V band presents a unique opportunity to accommodate the future spectrum needs of the next generation of Fixed Satellite Service (FSS), Broadcasting Satellite Service (BSS) and Mobile

Satellite Service (MSS) systems, and urged the Commission to provide more than 2 GHz of bandwidth for satellite systems in these bands. The three applications submitted by HCI represent ways in which all of these important services can be provided at V band. Moreover, these HCI systems, which use a total of 4.1 GHz of V band spectrum in each direction (uplink and downlink), demonstrate why the amount of bandwidth that the Commission has proposed to make available for satellite services is inadequate. The Commission's current proposal simply will not support the provision of all of the satellite services proposed by HCI and others at a level that would allow the development of economically viable businesses in the future.

The HCI V band systems represent a gigantic leap forward in technology, as they offer capacity on the order of ten times that of current satellite systems, in order to meet the growing demand for digital capacity in the areas of low cost multi-media distribution, interactive mobile services, and high-data-rate trunking. While each of these three systems uses many of the same technological advances that will open the V band to commercial satellite use, the systems are complementary and each serves a decidedly different segment of the broad information and communications markets. These three systems are:

SpaceCast: An international multimedia satellite system;
StarLynx: A global mobile satellite system; and
Expressway: A global telecommunications fixed satellite system;

As each of these three systems proposes to use frequency bands that are the subject of the proceedings referenced above, HCI is submitting into the record of the docket proceedings referenced above a copy of each of these applications, as well as the following brief description of these systems and their spectrum requirements.

SPACECAST

SpaceCast is a geostationary orbit (GSO) satellite system offering innovative and affordable video and multimedia broadcast, and point-to-multipoint, services in the United States and internationally. Specifically, SpaceCast meets the growing need to offer bandwidth-intensive video and multimedia applications to businesses and homes that can be tailored to the specific needs of the end users. SpaceCast is intended to provide primarily one-way, receive-only service.

The SpaceCast system will be comprised of six satellites at four orbital positions that are interlinked by optical (laser) intersatellite links and that provide communications at both V band and Ku band. V band communications will utilize the 47.2 to 50.2 GHz (Earth-to-space) and 39.5 to 42.5 GHz (space-to-Earth) bands. The Ku band service links will utilize 500 MHz of uplink and downlink spectrum, with the precise bands depending on spectrum availability at each SpaceCast orbital position. Through spot beam technology and dual polarization, each satellite

will maximize use of this spectrum by reusing it up to forty times at V band and up to eight times at Ku band.

SpaceCast serves the growing number of businesses and institutions who require the capability to distribute video and multimedia content to a diverse clientele. These businesses range from the emerging digital-age broadcasters to today's more established video content distributors. SpaceCast will offer these entities service at a wide range of transmission rates, from multiplexed 384 Kbps (used for compressed video) to 155 Mbps (for high speed, high capacity applications, such as high-resolution video cache services), and a wide variety of data rates in between. Each satellite in the system will provide the capacity equivalent of up to 166,000 channels of 384 Kbps compressed video (approximately 60 Gbps per satellite); the total global capacity of the SpaceCast system is nearly one million video channels.

The innovative SpaceCast system design, which enables the use of small beam sizes and very small receive antennas, allows a content distributor to uplink from a small, 2.5 meter antenna at any location, even the most remote, and to downlink to a variable sized coverage area that best suits its needs, whether to an individual city, a larger geographic area, the entire contiguous U.S., or beyond. This variable coverage area capability allows a broadcaster to tailor the reach of its signal to the nature of its content and its intended audience. The small uplink dish will make satellite broadcasting less expensive and more accessible, thereby allowing many new broadcasters, small and large alike, to utilize satellite technology for video and multimedia content distribution. The ability to use a range of small receive-only antennas, from 45 cm (18 inches) to 1 meter (39 inches), ensures that SpaceCast user equipment will be both affordable and easily installable in a wide range of locations.

STARLYNX

StarLynx is global system consisting of both GSO and medium Earth orbit (MEO) spacecraft that will offer a unique mix of wideband mobile and portable satellite communications services in a manner never before proposed. Specifically, StarLynx offers two-way, broadband service to small user terminals for use in conjunction with personal computers and other portable electronic devices, as well as to mobile terminals mounted on vehicles.

The StarLynx system will be comprised of four satellites at two GSO orbital positions and twenty satellites in MEO orbit, connected by laser (optical) intersatellite links. Communications services will be provided in the V band at 37.5-38.6 GHz for space-to-Earth transmissions and in 1.1 GHz of contiguous spectrum between 45.5-46.7 GHz for Earth-to-space transmissions. Through the use of spot beam technology, dual polarization, and CDMA, the system will reuse this spectrum ten times per satellite. The hybrid GSO/NGSO nature of the system facilitates co-frequency sharing with both GSO systems and other NGSO systems.

The StarLynx system will serve the rapidly increasing number of people who require voice and high-rate, interactive data services at any time and at any location. Using either the portable or mobile devices, users will be able to stay connected to a wide variety of networks, including the Internet, wide and local area networks, remote computers, asynchronous transfer mode networks, and the public switched telephone network. Service to portable user terminals (that are stationary when they transmit and receive) will use a small, flat antenna (approximately 30 x 30 cm or 11.8 x 11.8 inches) that will support data rates up to 2 Mbps. These antennas will be integrated with electronics and will work in conjunction with notebook and desktop computers, personal digital assistants, electronic planners, and other devices that would otherwise require a wired modem connection for data and voice communications. Service to mobile user terminals (that transmit and receive while in motion) will utilize somewhat larger (approximately 60 x 60 cm or 23.6 x 23.6 inches) antennas that will support data rates up to 8 Mbps. These conformal antennas will be mounted onto vehicles, including automobiles, trucks, trains, ships, and airplanes.

In short, StarLynx, which offers mobile satellite services seamlessly integrated with fixed satellite services, is an innovative system that efficiently utilizes the available spectrum for a combination of mobile and portable uses and that greatly expands the range of satellite services to be offered at V band.

EXPRESSWAY

Expressway is a GSO fixed satellite system offering a wide range of very high data rate, symmetrical, two-way switched circuits throughout the world. Fundamentally, this system is configured to provide affordable, high-capacity service to business users at rates of T1 (1.544 Mbps) to OC-3 (155 Mbps) and beyond. The system offers connections to the terrestrial infrastructure as well as high-capacity communications capabilities at fixed locations that are isolated from present or planned terrestrial systems. The use of ultra-wide bandwidth and on-board processors (which avoid the need for dedicated channels) greatly reduces the cost of service.

Expressway will be comprised of fourteen satellites at ten orbital positions around the world, that are interlinked by optical (laser) intersatellite links, and that provide communications at both V band and Ku band. V band communications will take place in the 47.2 to 50.2 GHz (Earth-to-space) and 39.5 to 42.5 GHz (space-to-Earth) bands. The Ku band service links will utilize 500 MHz of uplink and downlink spectrum, with the precise bands depending on spectrum availability at each Expressway orbital location.

Expressway supports the burgeoning demand for wideband telecommunications by offering a full range of fixed-satellite services, individually tailored to the needs of customers. Two-way service will be provided through 2.5 meter antennas. Each of the satellites in the

system will provide the capacity equivalent of 42,000 simultaneous T1 circuits; the total global capacity of the Expressway system is 588,000 T1 circuits

By providing highly reliable, quickly set-up, high capacity links and by offering affordable "first and last mile" high capacity service, Expressway provides an attractive alternative to customers who seek to avoid the installation delay and costs associated with terrestrial based systems. The Expressway system also offers users affordable, high-rate data service and the ability to obtain high capacity communications services in locations that are remote from present or planned terrestrial cable, fiber, and wireless systems. The distance insensitivity of satellite-based service will permit this broadband capability to be provided at much lower cost than currently is possible. In short, the system is a high-speed network that allows virtually universal access.

Finally, please note that the restated Expressway application supersedes in its entirety the Expressway application originally submitted on July 14, 1997. While the architecture of the Expressway system remains essentially the same, HCI has made a number of minor refinements that are reflected in this amendment. For the convenience of the reader, all changes are incorporated in this restated version.

* * *

HCI would be pleased to provide the Commission with any additional information it may require with respect to these systems in connection with the above-referenced rulemaking proceedings. Copies of this letter and the three HCI applications are simultaneously being provided to the Commission representatives identified below. Please contact one of us if you have any questions.

Respectfully submitted,

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