

Exhibit A

Narrative Statement, Market Study Request and Additional Information

Narrative Statement and Market Study Request

This application is being filed pursuant to Part 5, Subpart E of the Commission's Rules seeking an experimental authorization to conduct operational and market testing of telecommunications services that, if successful, the Applicant hopes to provide to the Federal Aviation Administration ("FAA") on a permanent basis, either directly to the FAA or through the National Oceanic Atmospheric Administration ("NOAA"). Under Section 5.202(b) of the Commission's Rules, pursuant to an agreement with the National Data Buoy Center, NOAA, US Department of Commerce, Stennis Space Center (Telecommunications Service Authorization P.O. #NA-98-QAF-9819), Applicant will locate and operate transmit and receive facilities on as many as 100 ocean buoys in and around U.S. coastal waters. This experimental program will test and evaluate whether these ocean buoy based facilities can reliably extend the current scope of the FAA's ability to communicate with aircraft approaching the United States. The positive impact on aircraft safety if this experiment is successful cannot be overstated.

Accordingly, the objective of the experiment is to test: (1) whether the ocean buoy based services can be provided in adverse environments; (2) varying data protocols to assure continuous error-free transmissions; and (3) low power consumption techniques for the transmission facilities. The experimental program will also be used to evaluate the long-term viability of ocean buoy radio services between aircraft and the FAA. In addition, in order for the Applicant to understand whether the service is economically viable and to assist the Applicant in evaluating whether to seek permanent authority for services that will be tested in this

experimental program, the Applicant requests that it be permitted to offer the proposed experimental services to the FAA (possibly through NOAA) on a market study basis pursuant to Section 5.206 of the Commission's Rules and the conditions thereof.

The applicant intends to utilize a Canadian satellite, MSAT1, as an element of this experimental program. Applicant will acquire satellite transmission capacity on MSAT1. The MSAT1 satellite will be used as the uplink/downlink for the services, carrying communications originated from the FAA to the ocean buoys and in turn to aircraft. The ocean buoys will transmit continuously, providing an "open channel" for aircraft. Once an aircraft is in range of the buoy, transmissions from the aircraft may be sent to or received from the FAA via the ocean buoys and the MSAT1 satellite. Communications travelling to and from the FAA will be uplinked or downlinked at TMI's facilities in Ottawa and will be carried, in part, over the existing terrestrial telephone networks.

Location of Ocean Buoys

Applicant does not yet know where the buoys will be located and requests authorization to operate the transmitters anywhere in U.S. coastal waters, including the Gulf of Mexico. Over the two-year testing period, Applicant expects that the buoys will be tested at numerous locations.

Radio Spectrum

As specified in Exhibit B, the experiment will utilize L-Band spectrum that is authorized to the MSAT1 satellite. As such, Applicant does not require a special or unique allocation of spectrum for the experimental program. In addition, Applicant does not anticipate any radiofrequency interference issues.

Radiofrequency Radiation

Because the ocean facilities are not accessible to persons that are unaware of the radio operations, Applicant believes that such facilities pose no threat of harmful radiation to humans and will have no significant environmental impact. If the Commission would like additional information regarding environmental impact, Applicant will provide such information upon request.

Other Information

Applicant will provide additional information regarding its proposed experimental program upon request.

Part 1 – Circuit Switched Services

The ocean buoy transmitter terminals may be equipped with any of the aforementioned antennas and will operate at internationally coordinated frequency ranges of 1631.5-1660.5 MHz (transmit) and 1530-1559 MHz (receive). The coordinated frequencies should be operable with the MSAT satellite located at the geostationary orbit arc of 106.5 degrees West Longitude. Similarly, operation over these frequencies should not cause any technical difficulty when operated from 101 degrees orbital position, which the Applicant plans to do temporarily as a result of AMSC's recent MSS license modification. See FCC File Nos. 29-SAT-ML-98 and 627-SSA-MP/L-98(2).

Depending on the location of the terminal operating on the MSAT network, the elevation and azimuth angle will vary considerably. As an approximate range, it should be expected that these terminals be able to operate at locations with elevation angles from 5 to 65 degrees and azimuth angles in range of 100 to 250 degrees.

Transmitter EIRP/4 kHz towards the horizon

Antenna ID	Antenna	Max. EIRP/4 kHz
A1	WEC Mast	12.5 dBW/4 kHz
A2	WEC Contour Dome	16.5 dBW/4 kHz
A3	WEC Fixed Site (0.76 m)	16.5 dBW/4 kHz
A4	WEC Fixed Site (0.92 m)	16.5 dBW/4 kHz
A5	WEC Maritime Contour Dome	16.5 dBW/4 kHz
A6	WEC Multichannel Fixed Site	16.5 dBW/4 kHz
A7	KVH Single Channel Maritime	16.5 dBW/4 kHz
A8	MELCO Dome	16.5 dBW/4 kHz
A9	MELCO Fixed Site	16.5 dBW/4 kHz
A10	MELCO Briefcase	16.5 dBW/4 kHz
A11	MELCO Omniquest	16.5 dBW/4 kHz
A12	Calquest	16.5 dBW/4 kHz
A13	MELCO Transportation Dome	16.5 dBW/4 kHz

Part 2 – Packet Switched Services

The ocean buoy transmitter terminals equipped with any of the aforementioned antennas may operate at internationally coordinated frequency ranges of 1631.5-1660.5 MHz (transmit) and 1530-1559 MHz (receive). The coordinated frequencies should be operable with the MSAT satellite located at the geostationary orbit arc of 106.5 degrees West Longitude. Similarly, operation over these frequencies should not cause any technical difficulty when operated from

101 degrees orbital position, which the Applicant plans to do temporarily as a result of AMSC's recent MSS license modification. See FCC File Nos. 29-SAT-ML-98 and 627-SSA-MP/L-98(2).

Depending on the location of the terminal operating on the MSAT network, the elevation and azimuth angle will vary considerably. As an approximate range, it should be expected that these terminals be able to operate at locations with elevation angles from 5 to 65 degrees and azimuth angles in range of 100 to 250 degrees.

Transmitter EIRP/4 kHz towards the horizon

Antenna ID	Antenna	Max. EIRP/4 kHz
D1	WEC Contour Dome	16.5 dBW/4 kHz
D2	Narrowband Fixed Site	13.8 dBW/4 kHz
D3	Narrowband Mobile	16.0 dBW/4 kHz
D4	Eaton Mobile	16.1 dBW/4 kHz

Response to Item 4(f)-(g) – Emissions and Other Operating Parameters

The applicant will be testing two services, circuit switched and packet switched. Because these services utilize different transmission techniques, this response is divided into two parts.

Part 1 – Circuit Switched Services

Terminal Transmitter Parameters

Signal	T/R Mode	Access Scheme	Transmission Rate (symbols/s)	Modulation Scheme	Emission Designation
MT-ST	T	TDMA	3375	DQPSK	5K00G9W
MT-SR	T	Slotted Aloha	3375	DQPSK	5K00G9W
Voice/Data	T	FDMA	3375	DQPSK	5K00G9W

Operating Frequencies

Transmit Range	1626.5 - 1660.5 MHz (The band 1626.5-1631.5 MHz is not available on the MSAT system)
Channel Spacing	6 kHz
Tuning Increments	500 Hz
Frequency Stability	±320 Hz
Polarization	Right Hand Circular

Transmitter Power and EIRP

Antenna ID	Antenna	Antenna Gain	Max. Power into Antenna	Max. EIRP	Max. EIRP/4 kHz
A1	WEC Mast	7.7	4.6 W	12.5	12.5 dBW/4 kHz
A2	WEC Contour Dome	11.7	3.0 W	16.5	16.5 dBW/4 kHz
A3	WEC Fixed Site (0.76 m)	19.9	0.5 W	16.5	16.5 dBW/4 kHz
A4	WEC Fixed Site (0.92 m)	21.8	0.3 W	16.5	16.5 dBW/4 kHz
A5	WEC Maritime Contour Dome	11.7	3.0 W	16.5	16.5 dBW/4 kHz
A6	WEC Multichannel Fixed Site	24.2	0.2 W	16.5	16.5 dBW/4 kHz
A7	KVH Single Channel Maritime	14.8	1.5 W	16.5	16.5 dBW/4 kHz
A8	MELCO Dome	9.0	4.0 W	16.5	16.5 dBW/4 kHz
A9	MELCO Fixed Site	17.0	0.9 W	16.5	16.5 dBW/4 kHz
A10	MELCO Briefcase	14.1	1.7 W	16.5	16.5 dBW/4 kHz
A11	MELCO Omniquest	11.0	3.5 W	16.5	16.5 dBW/4 kHz
A12	Calquest	12.3	2.6 W	16.5	16.5 dBW/4 kHz
A13	MELCO Transportation Dome	12.0	2.8 W	16.5	16.5 dBW/4 kHz

Maximum Carrier EIRP while off: -45 dBW

Terminal Receiving Parameters:

Signal	T/R Mode	Access Scheme	Transmission Rate (symbols/s)	Modulation Scheme	Emission Designation
GC-S	R	TDM	3375	DQPSK	5K00G9W
Voice/Data	R	FDMA	3375	DQPSK	5K00G9W

Receiving System Noise Temperature: 300 K in band 1525-1559 MHz at all elevation angles.

Operating Frequencies:

Receive Range	1525-1559 MHz (The band 1525-1530 MHz is not available on the MSAT system)
Channel Spacing	6 kHz
Tuning Increments	500 Hz
Receiver Frequency Stability	Capable of acquiring signals with ± 320 Hz frequency error
Polarization	Right Hand Circular

The expected ranges of single carrier unfaded power flux densities of the antennas received by a terminal at the earth's surface are:

Carrier	Antenna Type	G/T (dB/K)	Minimum dBW/m ²	Maximum dBW/m ²
GC-S	All	all	-129.3	-121.3
Voice/Data	Medium	-16	-132.4	-124.4
Voice/Data	High	-12	-136.4	-128.4
Voice/Data	Fixed	-10	-138.4	-130.4

Part 1 – Circuit Switched Services

Terminal Transmitter Parameters

Signal	T/R Mode	Access Scheme	Transmission Rate (symbols/s)	Modulation Scheme	Emission Designation
MT-ST	T	TDMA	3375	DQPSK	5K00G9W
MT-SR	T	Slotted Aloha	3375	DQPSK	5K00G9W
Voice/Data	T	FDMA	3375	DQPSK	5K00G9W

Operating Frequencies

Transmit Range	1626.5 - 1660.5 MHz (The band 1626.5-1631.5 MHz is not available on the MSAT system)
Channel Spacing	6 kHz
Tuning Increments	500 Hz
Frequency Stability	±320 Hz
Polarization	Right Hand Circular

Transmitter Power and EIRP

Antenna ID	Antenna	Antenna Gain	Max. Power into Antenna	Max. EIRP	Max. EIRP/4 kHz
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A2	WEC Contour Dome	11.7	3.0 W	16.5	16.5 dBW/4 kHz
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A13	MELCO Transportation Dome	12.0	2.8 W	16.5	16.5 dBW/4 kHz

Maximum Carrier EIRP while off: -45 dBW

Terminal Receiving Parameters:

Signal	T/R Mode	Access Scheme	Transmission Rate (symbols/s)	Modulation Scheme	Emission Designation
GC-S	R	TDM	3375	DQPSK	5K00G9W
Voice/Data	R	FDMA	3375	DQPSK	5K00G9W

Receiving System Noise Temperature: 300 K in band 1525-1559 MHz at all elevation angles.

Operating Frequencies:

Receive Range 1525-1559 MHz (The band 1525-1530 MHz is not available on the MSAT system)
Channel Spacing 6 kHz
Tuning Increments 500 Hz
Receiver Frequency Stability Capable of acquiring signals with ± 320 Hz frequency error
Polarization Right Hand Circular

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Carrier	Antenna Type	G/T (dB/K)	Minimum dBW/m ²	Maximum dBW/m ²
GC-S	All	all	-129.3	-121.3
Voice/Data	Medium	-16	-132.4	-124.4
Voice/Data	High	-12	-136.4	-128.4
Voice/Data	Fixed	-10	-138.4	-130.4

Part 2 – Packet Switched Services

Terminal Transmitter Parameters

Signal	T/R Mode	Access Scheme	Transmission Rate (symbols/s)	Modulation Scheme	Emission Designation
MT-DT	T	TDMA	3375	DQPSK	5K00G9W
MT-DRr	T	Slotted Aloha	3375	DQPSK	5K00G9W
MT-DRd	T	Slotted Aloha	3375	DQPSK	5K00G9W

Operating Frequencies

Transmit Range	1626.5 - 1660.5 MHz (The band 1626.5-1631.5 MHz is not available on the MSAT system)
Channel Spacing	6 kHz
Tuning Increments	500 Hz
Frequency Stability	±320 Hz
Polarization	Right Hand Circular

Transmitter Power and EIRP

Antenna ID	Antenna	Antenna Gain	Max. Power into Antenna	Max. EIRP	Max. EIRP/4 kHz
D1	WEC Contour Dome	11.7	3.0 W	16.5	16.5 dBW/4 kHz
D2	Narrowband Fixed Site	15.5	0.7 W	13.8	13.8 dBW/4 kHz
D3	Narrowband Mobile	12.0	2.5 W	16.0	16.0 dBW/4 kHz
D4	Eaton Mobile	12.1	2.5 W	16.1	16.1 dBW/4 kHz

Maximum Carrier EIRP while off: -45 dBW

Terminal Receiving Parameters:

Signal	T/R Mode	Access Scheme	Transmission Rate (symbols/s)	Modulation Scheme	Emission Designation
DH-D	R	TDM	3375	DQPSK	5K00G9W

Receiving System Noise Temperature: 300 K in band 1525-1559 MHz at all elevation angles.

Operating Frequencies:

Receive Range 1525-1559 MHz (The band 1525-1530 MHz is not available on the MSAT system)
Channel Spacing 6 kHz
Tuning Increments 500 Hz
Receiver Frequency Stability Capable of acquiring signals with ± 320 Hz frequency error
Polarization Right Hand Circular

The expected ranges of single carrier unfaded power flux densities of the antennas received by a terminal at the earth's surface are:

Carrier	Antenna Type	G/T (dB/K)	Minimum dBW/m ²	Maximum dBW/m ²
DH-D	all	all	-129.3	-121.3