Exhibit A

Compliance of Operations in the 13.75 - 14.0 GHz Band with FCC Report & Order (FCC96-377)

1. Background

This exhibit is presented to demonstrate the extent to which the Intelsat North America LLC earth station in Nuevo, CA is in compliance with FCC Report & Order 96-377. The potential interference from the earth station to US Navy shipboard radiolocation operations (RADAR) and the NASA space research operations in the 13.75 - 14.0 GHz band is addressed in this exhibit. The parameters for the earth station are as follows:

Table 1. Earth Station Characteristics

- Coordinates (NAD83): 33° 47' 47.3" North, 117° 05' 15.0" West
- Satellite Location for Earth Station: Intelsat IS-16 from 48.0°W to 58.0°W
- Frequency Band: 13.9975 GHz
- Polarizations: Linear and Circular
- Emissions: 850KG7D
- Modulation: Digital
- Maximum Aggregate Uplink EIRP: 85.0 dBW
- Transmit Antenna Characteristics
  - Antenna Size: 9.0 meters in Diameter
  - Antenna Type/Model: Vertex/RSI KPK
  - Gain: 60.1 dBi
- RF power into Antenna Flange: 24.9 dBW or 25.6 dBW/ MHz or 1.6 dBW/4 kHz (Maximum)
- Minimum Elevation Angle: Nuevo, California 8.7° @ 102.0° Az. at 48.0° W. 17.0° @ 108.4° Az. at 58.0° W.
- Side Lobe Antenna Gain: $32 - 25*\log(\theta)$

Because the above uplink spectrum is shared with the federal government, analysis of potential interference between the earth station and both Navy Department and NASA systems is required. Potential interference from the earth station could impact the Navy and/or NASA systems in two areas.

These areas are noted in FCC Order 96-377 and consist of (1) Radiolocation and radio navigation and (2) Data Relay Satellites.

Summary of Coordination Issues:

2) Potential Impact to Government Radiolocation (Shipboard Radar)
3) Potential Impact to NASA Data Relay Satellite Systems (TDRSS)

2. Potential Impact to Government Radiolocation (Shipboard Radar)

Radiolocation operations (RADAR) may occur anywhere in the 13.4 - 14 GHz frequency band on board United States Navy ships. The FCC's Order 96-377 allocates the top 250 MHz of this 600 MHz band to the Fixed Satellite Service (FSS) on a co-primary basis with the radiolocation operations, with an interference protection level of -167 $dBW/m^2/4$ kHz.

The closest distance to the shoreline from the Nuevo, CA earth station is approximately 64.8 km west towards the Pacific Ocean. The power spectral density at this distance is provided below:

1. Clear Sky EIRP: 85.0 dBW
2. Carrier Bandwidth: 850 KHz
3. PD at antenna input: 1.6 dBW/4 kHz
4. Transmit Antenna Gain: 60.1 dBi
5. Antenna Gain Horizon: FCC Reference Pattern

Since the earth station will be operating to a satellite at azimuths 102° and eventually at 108.4°, it will radiate interference toward the ocean on its back-lobe. A conservative analysis, using FCC standard reference pattern, results in a worst case gains of -10.0 dBi towards the Intelsat satellite, at azimuths of 102° and 108.4°.

The calculated signal density at the shoreline, assuming free space loss only is provided below:

$PFD_{(free\ space\ loss\ only)}$ = Antenna Feed Power density (dBW/4 kHz) + Antenna Off-Axis Gain (dBi) – Spread Loss (dBW/m^2).

= 1.6 dBw/4 kHz + (-10.0) dBi – $10*\log[4\Pi(64800m)^2]$
= -115.6 $dBW/m^2/4$ kHz

However there is an additional path loss of approximately 94.9 dB, which includes absorption loss and earth diffraction loss for the actual path profiles from the proposed earth station to the nearest shoreline.

PFD_{actual} = $PFD_{free\ space\ loss\ only}$ +Additional Path Losses (~ 94.9 dB)
= -210.5 $dBW/m^2/4$ kHz

The resulting PFD, including additional path losses to the closest shoreline location, is -210.5 $dBW/m^2/4$ kHz. This is 43.5 dB below the –167 $dBW/m^2/4$ kHz interference criteria of R&O 96-377. Therefore, the

interference to the U.S. Navy RADAR from the earth station will be well within the permissible levels per the FCC's rules, given the distance and the terrain blockage between the site and the shore.

3. Potential Impact to NASA's Data Relay Satellite System (TDRSS)

The geographic location of the earth station in Nuevo, CA is outside the 390 km radius coordination contour surrounding NASA's White Sands, NM ground station complex. Therefore, the TDRSS space-to-earth link will not be impacted by the Intelsat earth station in Nuevo, CA.

The TDRSS space-to-space link in the 13.772 to 13.778 GHz band is assumed to be protected if an earth station produces an EIRP less than 71 dBW/6 MHz in this band. The 9.0 meter earth station that is the subject of this application will not radiate in this band, as the proposed transmissions will be limited to the 13997.5 GHz frequency.

Therefore, there will be interference to the TDRSS space-to-space link.

4. Summary and Conclusions

The result of the analysis performed in this exhibit indicates compatible operation between the Nuevo, CA earth station and the U.S. Navy radiolocation operations.

Similarly, there will be no interference above permissible FCC levels into NASA's TDRSS systems, as the intended operations are outside of the 13772.0 to 13778.0 MHz frequency range.