

**Exhibit A**  
**Intelsat License LLC**  
**Castle Rock, Colorado**  
**Vertex 11.0 Meter Earth Station**  
**Call Sign: E0300096**

**Compliance with FCC Report & Order (FCC 96-377) for the 13.75 - 14.0 GHz Band**  
**Analysis and Calculations**

**1. Background**

This Exhibit is presented to demonstrate the extent to which the Intelsat License LLC (“Intelsat”) satellite earth station in Castle Rock, Colorado is in compliance with Federal Communications Commission (“FCC”) Report and Order 96-377. The potential interference from the earth station to U.S. Navy shipboard radiolocation operations (“RADAR”) and the National Aeronautics and Space Administration (“NASA”) space research activities in the 13.75 - 14.0 GHz band is addressed in this exhibit. The parameters for the earth station are:

**Table 1. Earth Station Characteristics**

- Coordinates (NAD83): 104° 48’ 24.0” W, 39° 16’ 37.0” N
- Satellite Location for Earth Station: IS-16 at 177° W to 33° W
- Frequency Band: 13.75-14.0 GHz for uplink
- Polarizations: Linear & Circular
- Emissions: 850KFXD
- Modulation: FM/PCM/PSK
- Maximum Aggregate Uplink EIRP: 85 dBW for all Carriers
- Transmit Antenna Characteristics
  - Antenna Size: 11.0 meter in Diameter
  - Antenna Type/Model: Vertex/ 11KPK
  - Gain: 62.5 dBi
- RF power into Antenna Flange: 22.5 dBW (Maximum)

- Minimum Elevation Angle: 36.84° @ 141.65° Az  
24.83° @ 120.81° Az
- Side Lobe Antenna Gain:  $29 - 25 \cdot \log(\theta)$

Because the above uplink spectrum is shared with the Federal Government, coordination in this band requires resolution data pertaining to potential interference between the earth stations and both U.S. Navy Department and NASA systems. Potential interference from the earth station could impact the U.S. Navy and/or NASA systems in two areas. These areas are noted in FCC Report and Order 96-377 dated September 1996, and consist of (1) Radiolocation and radio navigation, (2) Data Relay Satellites.

#### Summary of Coordination Issues:

- 1) Potential Impact to Government Radiolocation (Shipboard Radar)
- 2) Potential Impact to NASA Tracking and 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 aboard ocean going U.S. Navy ships. FCC 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 and provides for an interference protection level of  $-167 \text{ dBW/m}^2/4 \text{ kHz}$ .

The closest distance to the shoreline from the Castle Rock earth station is approximately 1150 km southwest toward the Pacific Ocean.

Therefore, there should be no interference to the U.S. Navy RADAR from the Castle Rock, Colorado due to distance and terrain blockage between the site and the shore.

### **3. Potential Impact to NASA's Tracking and Data Relay Satellite System**

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

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 11.0 meter earth station antenna will not transmit in this band. Therefore, there will be no potential interference to the TDRSS space-to-space link.

#### **4. Coordination Result Summary and Conclusions**

The results of the analysis and calculations performed in this exhibit indicate that compatible operation between the earth station at the Castle Rock, Colorado facility and the U.S. Navy and NASA TDRSS space-to-earth and space-to-space links are possible. No interference to U.S. Navy RADAR or NASA TDRSS operations from the Castle Rock, Colorado site earth station will occur.