

Memorandum

To: Curtrisha Banks

From: Karl Kensinger, ^{KK} Associate Chief, Satellite Division, Int'l. Bureau

Date: 2/12/2014

Re: IBFS File Nos. SAT-AMD-20051118-00236, SAT-MOD-20080701-00140

Please include this document and the attachment in the "other filings" section for the referenced files.

Staff analysis of collision risk for Iridium satellite disposal scenarios

Methodology: Using NASA's publicly available Debris Assessment Software, specify alternative initial end of life orbits for an Iridium first generation satellite. The satellite mass is specified as 560 kg. and the area to mass ratio (A/m) is specified as 0.013339 m²/kg. See File No. SAT-ASG-20010319-00025, Exhibit E, Attachment 1, Un-numbered Slides 20 and 23.

Scenario 1: Natural decay from mission orbit (778 km circular)

Collision risk—

One satellite: 0.00605 (1 in 165)

66 satellites: 0.3993 (1 in 2.5)

Scenario 2: Decay from disposal orbit (748 km apogee, 600 km perigee)

Collision risk—

One satellite: 0.00146 (1 in 684)

66 satellites: .09636 (1 in 10)

Scenario 3: Decay from disposal orbit (748 km apogee, 250 km perigee)

Collision risk—

One satellite: 0.00079 (1 in 1266)

66 satellites: 0.05214 (1 in 19)

Scenario 4: Decay from disposal orbit (250 km circular)

Collision risk—

One satellite: 0.00077 (1 in 1298)

66 satellites: 0.05082 (1 in 19.7)