



**National Radio Astronomy Observatory**

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**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
	)	
Amendment of Parts 2 and 25 of the	)	IB Docket No. 17-95
Commission's Rules to Facilitate the Use of Earth	)	
Stations in Motion Communicating with	)	
Geostationary Orbit Space Stations in Frequency	)	
Bands Allocated to the Fixed Satellite Service	)	
	)	

**REPLY TO COMMENTS OF SES S.A. AND O3B LIMITED**

The National Radio Astronomy Observatory (NRAO) is pleased to take this opportunity to respond to portions of the comments of SES and O3b as received by the Commission on 7/31/2017. Specifically, NRAO is concerned by the requests by SES and O3b to broaden the scope of the Proceeding i) to include communication of ESIM with non-GSO satellites, and ii) to use the spectrum band 10.7 – 10.95 GHz that is currently allocated to FSS (space-earth) but not used as discussed by SES and O3b.

The spectrum at 10.68 – 10.7 GHz is a passive service band protected by footnote RR. 5.340 internationally and by footnotes US 274, US 74 and US 131 domestically. Consistent with US 131, NRAO is currently coordinating radio astronomy use of this band with prospective FSS operators of non-GSO constellations wishing to use the immediately adjacent downlink spectrum at 10.7 – 12.75 GHz. Calculations by these prospective FSS operators show that compatibility between FSS and radio astronomy operations is not possible when radio astronomy sites are illuminated by the main beams of satellites using the lowest channel of the downlink spectrum, 10.7 – 10.95 GHz. This is unsurprising given that the power flux levels needed for FSS operation at an earth station are 60 dB higher than the interference threshold for radio astronomy use of the adjacent passive service band.

Care must also be taken to ensure that radio astronomy sites are not inadvertently illuminated at 10.7 – 10.95 GHz during the ESIM operations proposed by SES and O3b. NRAO asks that compatibility with radio astronomy operations be addressed when the Commission decides how to respond to SES's and O3b's requests: it is not assured.

Respectfully submitted

A handwritten signature in red ink, reading 'Harvey S. Liszt', is placed below the 'Respectfully submitted' text.

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