

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Amendment of Parts 2 and 25 of the Commission's	)	IB Docket No. 17-95
Rules to Facilitate Use of Earth Stations in Motion	)	

**REPLY COMMENTS OF CTIA**

CTIA respectfully submits these reply comments in response to the Notice of Proposed Rulemaking (“*NPRM*”) released by the Federal Communications Commission (“Commission”) in the above-captioned proceeding, seeking comment on broadening the availability for Earth Stations in Motion (“ESIMs”) and reducing the regulatory burden on existing ESIMs.<sup>1</sup>

**I. INTRODUCTION.**

The record in this proceeding demonstrates that additional information should be provided to the record to enable parties to develop and analyze the potential interference effects from these operations into adjacent-band terrestrial mobile broadband operations. CTIA commends the Commission for seeking comment on methods to reduce regulatory burdens and relax operating restrictions for ESIM operators. However, it is critically important that such changes not unintentionally exacerbate coexistence challenges between Fixed-Satellite Service (“FSS”) providers and adjacent-band Upper Microwave Flexible Use Service (“UMFUS”) and Local Multipoint Distribution Service (“LMDS”) licensees.<sup>2</sup> To this end, CTIA recommends

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<sup>1</sup> *Amendment of Parts 2 and 25 of the 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*, Notice of Proposed Rulemaking, 32 FCC Rcd 4239 (2017) (“*NPRM*”).

<sup>2</sup> When referencing UMFUS licensees, CTIA is referring both to grandfathered operations in the 27.5-28.35 GHz band that were permitted to provide mobile service under Part 30 of the

that the Commission define specific deployment and protection scenarios expected for ESIM operations so that adjacent-band licensees will have sufficient information to model the interference effects that are presented by the *NPRM* proposals. In particular, as proposed by commenters, the Commission should:

- Define specific deployment scenarios for ESIMs, including operational information provided by prospective ESIM operators, to facilitate analysis of interference to adjacent terrestrial operations based on actual operating scenarios;
- Consider the effect of removing antenna pointing and relaxing off-axis effective isotropic radiated power (“EIRP”) requirements for ESIMs on future coexistence between FSS and UMFUS/LMDS operators;
- Confirm that the out-of-band emission (“OOBE”) limits of Section 25.202(f) of the Commission’s rules apply to ESIM operations; and
- Require prospective ESIM operators to provide actual OOBE and channelization information into the record.

By giving consideration to these issues raised in the record, the Commission will allow a relaxed regulatory structure for ESIMs without sacrificing the protections needed for adjacent UMFUS/LMDS operations.

## **II. THE COMMISSION SHOULD ENSURE THAT ADJACENT TERRESTRIAL SYSTEMS ARE PROTECTED FROM INTERFERENCE.**

The *NPRM* seeks comment on two broad proposals to facilitate the deployment of ESIMs and reduce the regulatory burden facing these systems: (1) relaxing existing Part 25 rules to streamline the technical obligations facing ESIMs; and (2) allowing ESIMs in four additional spectrum bands (18.3-18.8 GHz, 19.7-20.2 GHz, 28.35-28.6 GHz, and 29.25-30 GHz).<sup>3</sup> CTIA limits its observations to the 28.35-28.6 GHz and 29.25-30 GHz bands that are directly adjacent

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Commission’s rules and to new licensees in this spectrum band that will be licensed in the future under Part 30. See *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014, ¶ 41 (2016).

<sup>3</sup> *NPRM* ¶ 2.

to UMFUS and LMDS terrestrial licensees. While CTIA is wholly supportive of Commission efforts to relax regulatory burdens and permit flexibility for existing operators, there should be ample technical information provided to demonstrate such initiatives would not inadvertently affect other primary licensed users. The record in this proceeding shows that neither the Notice nor ESIM proponents provide sufficient technical information to allow affected parties to ascertain the effects of the proposals.

**A. Specific Deployment Scenarios Should Be Provided For Interference Analyses.**

CTIA supports the comments made by the Global Mobile Suppliers Association (“GSA”) that potential use cases should be presented by the ESIM proponents or the Commission in order to gauge the effect of ESIMs on adjacent-band UMFUS and LMDS operations.<sup>4</sup> In particular, ESIMs include three different types of FSS earth stations: (1) Earth Stations on Vessels; (2) Vehicle-Mounted Earth Stations; and (3) Earth Stations Aboard Aircraft. Examples of potential deployments for each of these types of ESIMs should be provided, either by ESIM proponents or the Commission, so that affected UMFUS and LMDS licensees can attempt to accurately model the interference effects (if any) associated with these new systems. Alternatively, ESIM proponents or the Commission should review the potential ESIM deployment scenarios presented by GSA that could impact adjacent-band terrestrial services.<sup>5</sup> CTIA recommends that the record be updated to confirm (or correct) these scenarios to enable all affected stakeholders the opportunity to analyze the effects of new ESIM operations.

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<sup>4</sup> See Comments of Global Mobile Suppliers Association, IB Docket No. 17-95 (filed July 31, 2017) (“GSA Comments”).

<sup>5</sup> GSA Comments at 2-4.

**B. Relaxation of Antenna Pointing And Off-Axis EIRP Requirements May Unintentionally Limit The Ability For FSS/UMFUS Coexistence.**

The existing Commission rules contain antenna pointing accuracy requirements that the *NPRM* suggests could be removed since other technical limitations in the Commission's rules limit the interference effects from ESIMs to adjacent satellite systems.<sup>6</sup> Additionally, the Commission suggests that the off-axis EIRP limits may not be necessary to protect other satellite systems and proposes to allow ESIM applicants the option of certifying compliance with the antenna pattern requirements of Section 25.209 of the Commission's rules and the antenna input power density limits of Section 25.212.<sup>7</sup> However, the Commission has not considered if these existing regulations could be beneficial for coexistence between FSS and UMFUS/LMDS licensees. For example, precise antenna pointing by FSS earth station antennas could limit the interference effects from these stations to adjacent-band UMFUS/LMDS operations. Moreover, knowledge of the precise off-axis EIRP from an FSS earth station is a key component in determining the interference margin between ESIMs in the presence of terrestrial operations in the adjacent spectrum bands. As some of these requirements are useful in conducting coexistence analyses between adjacent band terrestrial operations and ESIMs, CTIA suggests that the Commission (and ESIM proponents) consider retaining them to help manage the use of the spectrum by ESIMs in the 28.35-28.6 GHz and 29.25-30 GHz bands.

**C. The Commission Should Confirm That ESIM OOB Limits Are Governed By Section 25.202(f) Of The Commission's Rules.**

The *NPRM* is silent on the specific OOB limits required for ESIM operators. Some ESIM parties suggest that the OOB limits contained in Section 25.202(f) of the Commission's

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<sup>6</sup> *NPRM* ¶ 22.

<sup>7</sup> *NPRM* ¶¶ 23-24.

rules<sup>8</sup> are applicable to ESIM operations.<sup>9</sup> To remove any uncertainty, the Commission should clarify that the OOB limits found in Section 25.202(f) apply to ESIM operations, consistent with the rules' application to all earth stations generally. This will enable affected parties to clearly understand what adjacent emissions should arise from ESIM operations when modeling interference effects.

**D. Actual OOB And Channelization Information Should Be Provided For ESIM Operations.**

CTIA also supports suggestions made by GSA that ESIM proponents provide actual OOB and channelization information into the record.<sup>10</sup> CTIA agrees with the concerns raised by GSA that, based on preliminary analysis, terrestrial parties in the adjacent UMFUS/LMDS spectrum bands may receive harmful interference from ESIMs under certain operating scenarios.<sup>11</sup> CTIA, therefore, believes that ESIM proponents should be obligated to provide additional technical data and assumptions to demonstrate that allowing ESIMs will not adversely affect existing primary terrestrial operations in adjacent bands. Any interference analysis will need to make assumptions about ESIM adjacent-band emissions, and OOB information and channel sizes will enable this modeling to be accurate and complete. Absent this data, UMFUS/LMDS operators will be unable to assess the effects to their existing or planned operations as a result of new ESIM systems.

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<sup>8</sup> See 47 C.F.R. § 25.202(f).

<sup>9</sup> See, e.g., Comments of ViaSat, Inc., IB Docket No. 17-95, at 12 (filed July 31, 2017).

<sup>10</sup> GSA Comments at 2.

<sup>11</sup> *Id.*

### **III. CONCLUSION.**

CTIA does not oppose measures to broaden the availability for ESIMs and reduce the regulatory burden on existing ESIMs, but such measures should not come at the expense of primary terrestrial operations, which may face harmful interference from ESIMs in certain operational scenarios. CTIA therefore urges the Commission to require additional data and use case scenarios to allow all affected stakeholders to accurately model the effects of ESIMs on adjacent-band terrestrial operations.

Respectfully Submitted

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