

FCC Consolidates Rules and Extends Frequency Bands for Mobile Earth Stations on Aircraft, Ships and Vehicles

Chip Yorkgitis

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At its open meeting on September 26, 2018, the Federal Communications Commission ("FCC") unanimously voted to adopt a [Report and Order and Further Notice of Proposed Rulemaking](#) to consolidate the agency's rules governing three different types of mobile earth stations that operate in the Fixed Satellite Service ("FSS") and communicate with geostationary satellites ("GSOs"). The consolidated rules will apply to all categories of Earth Stations in Motion ("ESIMs"). More importantly, the Commission extended the frequency bands on which ESIMs can operate on a primary basis into the conventional Ka-band. It also seeks comment in the FNPRM on expanding ESIMs operations into additional spectrum in the Ku-band and Ka-bands, potentially on a secondary or unprotected basis. However, the Commission left addressing ESIM operations with non-geostationary satellite orbit ("NGSO") FSS systems for a separate NPRM.

Rule Consolidation

In this Report and Order, the FCC consolidates its heretofore separate Part 25 rules governing Earth Stations Aboard Aircraft ("ESAAs"), Earth Stations on Vessels ("ESVs"), and Vehicle-Mounted Earth Stations ("VMESs") into a single rule section covering technical and operational requirements for all ESIMs. The new rules will be broken down into (1) core rules applicable to all ESIMs, (2) vehicle-type specific rules across multiple frequency bands, (3) frequency-band specific status and coordination rules, and (4) vehicle-type specific rules that apply to a single frequency band. The proposal by the FCC to consolidate these already similar ESAA, ESV and VMES rules was uncontroversial and should streamline the ESIMs license application and review process somewhat.

Additional Spectrum for ESIMs

Providing ESIMs with increased opportunities to access spectrum is a key element of the Report and Order. ESIMs were already authorized on a primary basis to operate in 3700-4200 MHz and 5925-6425 MHz ("the conventional C-band"); 11-7-12.2 GHz and 14.0-14.5 GHz ("the conventional Ku-band"); and 10.95-11.2 GHz, 11.45-11.7 GHz and 13.75-14.0 GHz ("the extended Ku-band"). The Commission extended the frequency bands on which ESIMs can operate on a primary basis to the 18.3-18.8 GHz, 19.7-20.2 GHz, 28.35-28.6 GHz and 29.25-30.0 GHz bands ("the conventional Ka-band").

The most controversial aspect of the extension of ESIMs into the conventional Ka-band was access to the 29.25-29.3 GHz band because ESIMs will need to share the band with GSO FSS operations and feeder links for the NGSO Mobile Satellite Service in the 29.25-29.5 GHz band. Specifically, Iridium

operates feeder links in that band. It had asked the FCC not to permit ESIMs operations in the 29.25-29.3 GHz band, or alternatively allow land and marine ESIMs in the band now, but defer consideration of aeronautical ESIMs until more work on coordination can be done. As another alternative, Iridium had argued that the FCC could allow all ESIMs to operate in the band, but mandate strict protection mechanisms by ESIMs to protect Iridium feeder links that would operate such as protection zones. While the FCC recognized that coordination between ESIMs and NGSO space stations is more complex than with GSO space stations, it determined that coordination is possible. Therefore, the FCC declined to provide Iridium with any special affirmative technical protections beyond the procedural coordination obligation requirements in the current rules. The Commission did, however, remove some language regarding Iridium potentially refusing to engage in required coordination.

FNPRM

In the FNPRM, at the request of SES and O3b, the FCC seeks comment on extending the ESIMs operations into additional spectrum bands:

- 10.7-10.95 GHz and 11.2-11.45 GHz bands on an unprotected basis;
- 17.8-18.3 GHz band on a secondary basis;
- 19.3-19.4 GHz and 19.6-19.7 GHz on a primary basis; and
- 18.9-19.3 GHz and 28.6-29.1 GHz on an unprotected, non-interference basis with respect to NGSO FSS satellite systems.

In the ESIMs Report and Order and FNPRM, the Commission has made substantial procedural and substantive changes to the licensing of ESIMs and is considering further expansion of the spectrum in which ESIMs can operate. While the satellite industry fought hard for the additional access, it remains to be seen whether the numbers of ESIMs in operation rise and how swiftly. While the FCC moved quickly to this Report and Order—only 16 months after the NPRM was released—how quickly the industry responds to exploit this new access may impact how rapidly the FNPRM leads to even further spectrum access.

Comments will be due 45 days after the FNPRM is published in the Federal Register and reply comments will be due 75 days after publication.