

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

In the Matter of)
)
Panasonic Avionics Corporation) File No. SES-MOD-_____
) Call Sign: E100089
Modification to Ku-Band Earth Stations)
Aboard Aircraft (ESAA) Blanket License)
)

MODIFICATION APPLICATION

Panasonic Avionics Corporation (“Panasonic”) hereby seeks to modify its existing Ku-band earth stations aboard aircraft (“ESAA”) blanket license¹ by adding new authorized satellite points of communication. Panasonic’s ESAA terminals operate onboard U.S. and foreign-registered aircraft using the eXConnect System, a worldwide Ku-band satellite network supporting Panasonic’s Global Communications Suite (“GCS”) in-flight connectivity offering.

Panasonic requests that the Federal Communication Commission (“Commission” or “FCC”) modify the Panasonic ESAA blanket license to add six (6) satellites as authorized points of communication for the previously licensed Panasonic Phased Array (“PPA,” formerly the “Aura LE”) terminal and one (1) satellite as an authorized point of communication for the previously licensed Mitsubishi Electronics Company (“MELCO”) antenna.

Pursuant to Section 25.117(c) of the FCC Rules,² Panasonic herein provides information that is changing as a result of the requested modification, including a description of the new satellite points of communication is provided herein, FCC Form 312 identifying the operational

¹ See Panasonic Avionics Corporation, Radio Station Authorization to, File Nos. SES-MFS-20130930-00845, Call Sign: E100089 (Sep. 24, 2014) (“*ESAA Authorization*”).

² 47 C.F.R. § 25.117(c).

characteristics associated with each new satellite, and supplemental technical information which is attached hereto in the Technical Appendix. Panasonic certifies that the remaining information in support of the Panasonic Ku-band ESAA blanket license has not changed. Panasonic has attached hereto a table referring to information provided pursuant to requirements in Section 25.227 of the FCC Rules.³

I. INTRODUCTION

Panasonic seeks to modify its ESAA blanket license to add a total of six new satellites (Eutelsat 70B, Galaxy 16, JSAT 5A, Yamal 401, Yamal 300K and NSS-6) as authorized points of communication for the PPA terminal, and one of these satellites (Galaxy 16) as an authorized satellite point of communication for the MELCO terminal. Panasonic requests authority to communicate with these satellites to extend the coverage and increase the capacity of the global eXConnect network. The proposed operations are consistent with the coordinated parameters of the proposed satellites and the Commission's rules and policies governing Ku-band ESAAs.⁴ For the reasons described herein, grant of the proposed modification would serve the public interest.

II. ADDITIONAL SATELLITE POINTS OF COMMUNICATION

Panasonic requests that the Commission modify its Ku-band ESAA blanket license by adding six (6) satellites as authorized points of communication for the previously licensed PPA

³ See Regulatory Compliance Index.

⁴ See 47 C.F.R. § 25.227; see also *Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands; Service Rules and Procedures to Govern the Use of Aeronautical Mobile Satellite Service Earth Stations in Frequency Bands Allocated to the Fixed Satellite Service*, IB Docket Nos. 12-376 & 05-20, Notice of Proposed Rulemaking and Report and Order, FCC 12- 161 (rel. Dec. 28, 2012) ("ESAA Order").

terminal, and adding one the six satellites as an authorized point of communication for the MELCO terminal.⁵ This authority will allow Panasonic to utilize additional commercial Ku-band satellite capacity for the global eXConnect network.

A. Additional Satellites

The following table provides an overview of the basic parameters of the proposed operations with each new satellite point of communication.

Table 1 - Proposed Satellite Points of Communication

Satellite	Licensing Admin.	Orbital Location	Downlink Freq. (GHz)	ITU Region Coverage Area	Serves U.S.
Eutelsat 70B	France	70.5° E	10.95 to 11.7; 12.5 to 12.75	R1, R3	No
Galaxy 16	U.S.	99° W	11.7 to 12.2	R2	Yes
JCSAT-5A	Japan	132° E	12.25 to 12.75	R3	No
Yamal 401	Russia	90° E	10.95 to 11.2 11.45 to 12.75	R1	No
Yamal 300K	Russia	177° W	10.95 to 11.7	R1, R2	Yes
NSS-6	Netherlands	95° E	11.45 to 11.7 12.5 to 12.75	R3	No

1. Eutelsat 70B

Eutelsat 70B is a non-U.S. licensed satellite positioned at the 70.5° E orbital location that is licensed by France, a member of the World Trade Organization (“WTO”) for services covered under the WTO Basic Telecommunications Agreement. Panasonic seeks authority to use Eutelsat 70B capacity for ESAA uplink operations in the 14.0-14.5 GHz band (Earth-to-space)

⁵ The MELCO terminal is installed on Lufthansa Airlines aircraft only. Because the MELCO terminal operates pursuant to German authority in international and foreign airspace, the Commission only authorizes the terminal for operation in U.S. airspace. Galaxy 16 is the only new satellite point of communication that will support MELCO operations in U.S. airspace. Importantly, the addition of the Galaxy 16 satellite changes the West limit for the MELCO antenna to 99° W.

and for downlink operations in the 10.95-11.7 GHz and 12.5-12.75 GHz bands (space-to-Earth). The Eutelsat 70B satellite will serve Europe, Middle East/North Africa and South Asia regions.

The operator of Eutelsat 70B, Eutelsat, has reviewed the technical characteristics of Panasonic's PPA ESAA terminal operations and confirmed that such operations are consistent with its coordination agreements and will not result in unacceptable interference to other satellites within +/- 6 degrees of Eutelsat 70B. Attached hereto in the Technical Appendix is a letter confirming that the power levels associated with Panasonic's PPA ESAA terminal operations with Eutelsat 70B have been coordinated with operators of adjacent satellites.⁶

The Eutelsat 70B satellite is built on the Eurostar E-3000 platform and will retain a small amount of gas under pressure at end-of-life ("EOL"). As a result, in Section III, *infra*, Panasonic respectfully requests a partial waiver of Sections 25.114(d)(14)(ii) and 25.283(c) of the Commission's Rules, 47 C.F.R. §§ 25.114(d)(14)(ii) & 25.283(c), to the extent necessary to grant this modification application. The Commission has previously granted a waiver of these requirements in similar circumstances.⁷

2. Galaxy 16

Galaxy 16 (S2687) is a U.S. licensed satellite positioned at the 99° W orbital location. Panasonic seeks authority to use Galaxy 16 capacity for ESAA operations on a primary basis in the 14.0-14.5 GHz band (Earth-to-space) and the 11.7-12.2 GHz band (space-to-Earth), consistent with Section 25.227 of the FCC Rules. The Galaxy 16 satellite will serve the North America region.

⁶ See Technical Appendix at Annex A-1.

⁷ See Section III.A, *infra*.

The operator of Galaxy 16, Intelsat, has reviewed the technical characteristics of Panasonic's PPA and MELCO ESAA terminal operations and confirmed that such operations are consistent with its coordination agreements and will not result in unacceptable interference to other satellites within +/- 6 degrees of Galaxy 16. Attached hereto in the Technical Appendix is a letter confirming that the power levels associated with Panasonic's PPA ESAA terminal operations with Galaxy 16 have been coordinated with operators of adjacent satellites.⁸

3. JCSAT-5A

JCSAT-5A is a non-U.S. licensed satellite positioned at the 132° E orbital location that is licensed by Japan, a member of the WTO for services covered under the WTO Basic Telecommunications Agreement. Panasonic seeks authority to use JCSAT-5A capacity for ESAA uplink operations in the 14.0-14.5 GHz band (Earth-to-space) and for downlink operations in the 12.25-12.75 GHz band (space-to-Earth). The JCSAT-5A satellite will serve the Japan region.

The operator of JCSAT-5A, Sky Perfect JSAT, has reviewed the technical characteristics of Panasonic's ESAA terminal operations and confirmed that such operations are consistent with its coordination agreements and will not result in unacceptable interference to other satellites within +/- 6 degrees of JCSAT-5A. Attached hereto in the Technical Appendix is a letter confirming that the power levels associated with Panasonic's PPA ESAA terminal operations with JCSAT-5A have been coordinated with operators of adjacent satellites.⁹

⁸ See Technical Appendix at Annex A-2 and B-1.

⁹ See Technical Appendix at Annex A-3.

JCSAT-5A has previously been granted U.S. market access for C-band frequencies.¹⁰ The FCC previously reviewed the orbital debris mitigation and satellite end-of-life plans for this satellite and therefore no new showing regarding these issues should be required to authorize communications using Ku-band frequencies. Out of an abundance of caution, however, Panasonic provides updated orbital debris mitigation and satellite end-of-life information for the JCSAT-5A satellite.

The JCSAT-5A satellite is built on the Lockheed Martin A2100 platform and will retain a small amount of gas under pressure at EOL. As a result, in Section III, *infra*, Panasonic respectfully requests a partial waiver of Sections 25.114(d)(14)(ii) and 25.283(c) of the Commission's Rules, 47 C.F.R. §§ 25.114(d)(14)(ii) & 25.283(c), to the extent necessary to grant this modification application. The Commission has previously granted a waiver of these requirements for A2100 model satellites in similar circumstances.¹¹

4. Yamal 401

Yamal 401 is a non-U.S. licensed satellite positioned at the 90° E orbital location that is licensed by Russia, a member of the WTO for services covered under the WTO Basic Telecommunications Agreement. Panasonic seeks authority to use Yamal 401 capacity for ESAA uplink operations in the 14.0-14.5 GHz band (Earth-to-space) and downlink operations in the 10.95-11.2 GHz and 11.45-12.75 GHz bands (space-to-Earth). The Yamal 401 satellite will serve the Europe and North Asia regions.

¹⁰ See File Nos. SES-MFS-20061109-01976 and SES-MFS-20100510-00571; *see also* Space Stations Approved for U.S. Market Access at http://www2.fcc.gov/ib/sd/se/market_access.html (although use of the list is limited to Section 214 purposes, it provides a useful reference for satellite market access decisions).

¹¹ See Section III.A, *infra*.

The operator of Yamal 401, Gazprom Space Systems, has reviewed the technical characteristics of Panasonic's PPA ESAA terminal operations and confirmed that such operations are consistent with its coordination agreements and will not result in unacceptable interference to other satellites within +/- 6 degrees of Yamal 401. Attached hereto in the Technical Appendix is a letter confirming that the power levels associated with Panasonic's ESAA operations with Yamal 401 have been coordinated with operators of adjacent satellites.¹²

The Yamal 401 satellite is built on the ISS Reshetnev Ekspress-2000 platform and will retain a small amount of gas under pressure at EOL. As a result, in Section III, *infra*, Panasonic respectfully requests a partial waiver of Sections 25.114(d)(14)(ii) and 25.283(c) of the Commission's Rules, 47 C.F.R. §§ 25.114(d)(14)(ii) & 25.283(c), to the extent necessary to grant this modification application. The Commission has previously granted a waiver of these requirements for an Ekspress model satellite in similar circumstances.¹³

5. Yamal 300K

Yamal 300K is a non-U.S. licensed satellite that is licensed by Russia, a member of the WTO for services covered under the WTO Basic Telecommunications Agreement, and now operates at the 177° W orbital location.¹⁴ Panasonic seeks authority to use Yamal 300K capacity for ESAA uplink operations in the 14.0-14.5 GHz (Earth-to-space) band and downlink operations in the 10.95-11.7 GHz (space-to-Earth) band. The Commission authorized Panasonic to communicate with Yamal 300K at its previous orbit location of 90° E. With the launch of

¹² See Technical Appendix at Annex A-4.

¹³ See Section III.A, *infra*.

¹⁴ Panasonic understands that the Yamal 300K satellite will operate at this location pursuant to and consistent with an ITU filing of the Netherlands, which is also a WTO member and party to the WTO Basic Telecommunications Agreement.

Yamal 401 into that location, the Yamal 300K now operates from the 177° W orbital slot. The Yamal 300K satellite will serve the East Asia, North Pacific and North America regions.

The operator of Yamal 300K, Gazprom Space Systems, has reviewed the technical characteristics of Panasonic's PPA ESAA terminal operations and confirmed that such operations are consistent with its coordination agreements and will not result in unacceptable interference to other satellites within +/- 6 degrees of Yamal 300K. Attached hereto in the Technical Appendix is a letter confirming that the power levels associated with Panasonic's ESAA operations with Yamal 300K at its new location have been coordinated with operators of adjacent satellites.¹⁵

6. NSS-6

NSS-6 is a non-U.S. licensed satellite positioned at the 95° E orbital location that is licensed by the Netherlands, a member of the WTO for services covered under the WTO Basic Telecommunications Agreement. Panasonic seeks authority to use NSS-6 capacity for ESAA uplink operations in the 14.0-14.5 GHz band (Earth-to-space) and downlink operations in the 11.45-11.7 GHz and 12.5-12.75 GHz bands (space-to-Earth). The NSS-6 satellite will serve the East Asia region.

The operator of NSS-6, SES, has reviewed the technical characteristics of Panasonic's commercial PPA ESAA terminal operations and confirmed that such operations are consistent with its coordination agreements and will not result in unacceptable interference to other satellites within +/- 6 degrees of NSS-6. Attached hereto in the Technical Appendix is a letter

¹⁵ See Technical Appendix at Annex A-5. The Commission previously reviewed the orbital debris mitigation and satellite end-of-life plan for the Yamal 300K satellite and granted a waiver to permit Panasonic ESAA terminals to communicate with the satellite. Also note that the coordination affidavit indicates Yamal 300K is located at the 183° E orbit location, which is the equivalent of 177° W under the Commission's East/West longitude naming convention.

confirming that the power levels associated with Panasonic’s ESAA terminal operations with NSS-6 have been coordinated with operators of adjacent satellites.¹⁶

The NSS-6 satellite is built on the Lockheed Martin A2100 platform and will retain a small amount of gas under pressure at EOL. As a result, in Section III, *infra*, Panasonic respectfully requests a partial waiver of Sections 25.114(d)(14)(ii) and 25.283(c) of the Commission’s Rules, 47 C.F.R. §§ 25.114(d)(14)(ii) & 25.283(c), to the extent necessary to grant this modification application. The Commission has previously granted a waiver of these requirements for A2100 model satellites in similar circumstances.¹⁷

B. Ground Segment

The following table identifies each proposed satellite points of communication and new associated gateway earth station. Network control for Panasonic’s proposed operations will be provided by Panasonic’s Network Operations Center (“NOC”) located in Lake Forest, California through the gateway earth stations below.

Table 2 - Gateway Earth Stations

Satellite	Satellite Operator	Gateway Earth Station Location	Country	Gateway Operator	FCC Call Sign
Eutelsat 70B	Eutelsat	Cologne	Germany	Stellar	N/A
Galaxy 16	Intelsat	Brewster	USA	USEI	E120043
JSAT 5A	SPJSAT	Tokyo	Japan	SPJSAT	N/A
Yamal 401	Gazprom	Moscow	Russia	RuSat	N/A
Yamal 300K	Gazprom	Brewster	USA	USEI	E120043
NSS-6	SES	Cyprus	Cyprus	Stellar	N/A

¹⁶ See Technical Appendix at Annex A-6.

¹⁷ See Section III.A, *infra*.

C. Geographic Areas of Operations

Attached hereto in the Technical Appendix, Panasonic includes depictions of the geographic areas in which its ESAA terminals will operate with each proposed satellite point of communication.¹⁸

D. Additional Technical Information

By extending the coverage and capacity of its ESAA network, Panasonic proposes to implement an ESAA system under Section 25.227(a)(2) of the FCC Rules,¹⁹ and includes the technical demonstration required by Section 25.227(b)(2) of the FCC Rules²⁰ in the attached Technical Appendix.²¹ Specifically, Panasonic has submitted certifications from its serving satellite operators that its proposed operations are consistent with the coordinated values of the satellites.

Control of off-axis EIRP spectral density is essential to protect adjacent satellites operating in the Ku-band. As it does with the existing eXConnect system, Panasonic will control the off-axis EIRP spectral density generated by its ESAA system so that it is no greater than is accepted for other Ku-band terminals operating with FSS satellites.²² In this connection, Panasonic notes that while it does not employ real-time adaptive uplink power control, its terminals may operate at higher uplink EIRP spectral density levels at lower skew angles (*i.e.*, where beamwidths are narrower) than they do at higher skew angles (*i.e.*, where beamwidths are

¹⁸ See Technical Appendix; *see also* 47 C.F.R. § 25.227(b)(4).

¹⁹ 47 C.F.R. § 25.227(a)(2).

²⁰ 47 C.F.R. § 25.227(b)(2).

²¹ See Technical Appendix.

²² See 47 C.F.R. § 25.227(a)(2).

wider). In all cases, however, Panasonic will comply with the off-axis EIRP spectral density levels coordinated for the satellite.

E. Administrative Issues

Panasonic would note two administrative issues that the Commission may wish to address in the context of the requested license modification. First, Sections B, C and E of the current license document for Call Sign E100089 refer to the prior name for the PPA antenna, the “AURA LE.” Panasonic respectfully requests that the license document uniformly refer to this ESAA antenna as the “PPA.”

Second, Section C (Frequency Coordination) of the license document refers to the orbital arc range for the PPA (AURA LE) antenna as 180W to 180W. Given the wide range of satellites listed as authorized points of communication, Panasonic understands that it is the Commission’s intent to enable PPA operations with those satellites specifically included as authorized points of communication that may be located anywhere along the geostationary arc. However, including the same value in the East and West limit typically denotes authority to communicate with a single orbit location. Accordingly, Panasonic respectfully suggests changing the East limit to “180E” to avoid potential confusion.

III. WAIVER REQUESTS

A. Limited Waiver of Sections 25.114(d)(14)(ii) and 25.283(c)

Panasonic respectfully requests a limited waiver of Sections 25.114(d)(14)(ii) and 25.283(c) of the Commission’s Rules, 47 C.F.R. §§ 25.114(d)(14)(ii) & 25.283(c), to the extent necessary to grant this application. Section 25.283(c) of the Commission’s Rules requires space stations to ensure that at the EOL, “all stored energy sources on board the satellite are discharged, by venting excess propellant, discharging batteries, relieving pressure vessels, and

other appropriate measures.”²³ Similarly, Section 25.114(d)(14)(ii) requires space station applications to address “whether stored energy will be removed at the spacecraft’s end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored energy, or through other equivalent procedures specifically disclosed in the application.”²⁴

The Commission may waive its rules for “good cause shown,” specifically in cases where compliance would impose an undue hardship or where the policy underlying the rule will still be served.²⁵ Several of the proposed satellite points of communication included in the instant modification application were not designed to vent all pressure vessels at EOL. Now that the satellites are in-orbit, it is not possible to modify their designs, and requiring a modification attempt would represent an undue hardship for Panasonic and its satellite operators.

Of the six new satellite points of communication proposed herein, one is a U.S.-licensed satellite (Galaxy 16) and one (Yamal 300K) has been previously authorized by the Commission to communicate with Panasonic PPA terminals at its original orbit location. In the grant of authority to access Yamal 300K, the Commission waived its venting rules based on undue hardship associated with requiring modification of this in-orbit satellite.²⁶ The other four proposed satellite points of communication are based on spacecraft designs that also will retain a

²³ 47 C.F.R. § 25.283(c).

²⁴ 47 C.F.R. § 25.114(d)(14)(ii).

²⁵ 47 C.F.R. § 1.3.

²⁶ See *ESAA Authorization* at Special Condition 90169.

small amount of gas under pressure at EOL.²⁷ Accordingly, Panasonic seeks a waiver of the Commission's venting requirements for these satellites via this consolidated waiver request.

The Technical Appendix includes detailed orbital debris mitigation and satellite EOL statements for each of the subject satellites. In all cases, the satellite manufacturer -- including a U.S. manufacturer -- has employed industry-accepted standards and practices to minimize the risk of orbital debris and accidental explosion throughout the satellite's mission life. Consistent with the purpose of Sections 25.283(c) and 25.114(d)(14)(ii) of the rules, these satellite models are specifically designed to close valves during transfer operations or otherwise maintain a small amount of gas in tanks rated for pressures many times greater than that anticipated at EOL, making it extremely unlikely that the tanks will fail.

Eutelsat 70B was constructed on the EADS Astrium S.A. Eurostar 3000 spacecraft platform. The Commission has waived its orbital debris mitigation requirements for the Eurostar 3000 spacecraft based on undue hardship of modifying an in-orbit satellite.²⁸ The JCSAT-5A and NSS-6 satellites were constructed on the Lockheed Martin A2100 model spacecraft platform, which has also been the subject of multiple waivers of the Commission's orbital debris mitigation requirements.²⁹ Finally, the Commission previously granted a waiver for Panasonic to

²⁷ Panasonic notes that the Commission reviewed a prior orbital debris mitigation and satellite end-of-life showing for the JCSAT-5A satellite and authorized U.S. market access, but updated information is provided herein out of an abundance of caution. *See* File No. SES-MFS-20061109-01976.

²⁸ *See, e.g.,* Hispamar Satellites, S.A., File No. SAT-PPL-20100506-00093, Call Sign S2793, at Additional Condition 1 (Dec. 21, 2010); *See also* Telesat Canada, File Nos. SAT-PPL-20110630-00123 & SAT-APL20111117-00222, Call Sign S2703, grant-stamped Apr. 11, 2012, Attachment at ¶ 3 (granting partial waiver of Section 25.283(c) for Anik F3, another EADS Astrium E3000 series satellite unable to vent residual helium at end of life).

²⁹ Stamp Grants, SES Americom, Inc., File No. SAT-MOD-20121224-00221, Call Sign S2181, at condition 5 (Mar. 22, 2013); SES Americom, Inc., File No. SAT-MOD-20111220-00243, Call Sign S2162, at condition 7 (June 28, 2012); Intelsat License LLC, File No. SAT-RPL-20120216-

access the Yamal 300K satellite, which is based on the same Ekspress-series design as the Yamal 401 satellite. Because all of the proposed satellite points of communication are in orbit and operating, strict application of the Commission's venting requirements would pose undue hardship in this case and should be waived as in prior, similar circumstances.

Panasonic's global GCS system depends on access to commercial Ku-band satellite capacity to deliver broadband connectivity to aircraft flying all over the world. Foreign airlines equipped with the GCS system are not constrained by the orbital debris and satellite EOL considerations that arise in the context of FCC licensing of ESAA terminals onboard U.S.-registered aircraft. Thus, in addition to avoiding undue hardship, the public interest would be served by allowing U.S. airlines to access the same range of satellites to offer in-flight broadband connectivity worldwide as their foreign competitors.

B. Waiver of Section 2.106 for ESAA Receive Operations

Panasonic respectfully requests a waiver of Section 2.106 of the Commission's rules, 47 C.F.R. § 2.106, to permit space-to-Earth operations in relevant portions of the 10.7-12.75 GHz band. Although the Commission has modified the U.S. Table of Allocation to recognize ESAA receive operations in portions of this band, including primary status in the 11.7-12.2 GHz band, U.S.-registered aircraft traveling outside the United States would not have the benefit of this domestic allocation decision. Panasonic therefore requests a waiver of Section 2.106 to permit the proposed ESAA terminal receive operations outside the United States and, to the extent necessary, to permit ESAA receive operations in U.S. airspace outside the 11.7-12.2 GHz band.

The requested waiver would serve the public interest because use of this downlink (receive)

00018, Call Sign S2854, at condition 4 (May 25, 2012); New Skies Satellites B.V., File No. SAT-MPL-20120215-00017, Call Sign S2463, at condition 7 (May 25, 2012); SES Americom, Inc., File No. SAT-MOD-20110718-00130, Call Sign S2445, at condition 2 (Oct. 13, 2011); EchoStar Satellite Operating Corp., File No. SAT-LOA-20071221-00183, at condition 4 (Mar. 12, 2008).

spectrum is essential to offering in-flight broadband connectivity in Ku-band spectrum and presents a negligible risk of interference to other spectrum users.

The Commission previously waived Section 2.106 with respect to operation of Panasonic's eXConnect System and other in-flight connectivity providers in Ku-band downlink spectrum.³⁰ In doing so, the Commission concluded that use of this downlink (receive) spectrum presents a negligible risk of interference to other operations. Panasonic does not and will not claim protection from conforming uses of the spectrum, and will cease transmission upon receiving notification that its downlink operations are causing interference to any conforming use of the band.

Use of the FSS downlink bands proposed in this application is consistent with the use of Ku-band FSS satellites for global AMSS operations. In addition to Panasonic, many other U.S. licensees utilize this spectrum worldwide for ESAA terminal receive operations to provide satellite-based, in-flight broadband connectivity. Waiver of Section 2.106 is an essential aspect of affording access to these next-generation aeronautical broadband services to passengers and crew aboard U.S. and foreign-registered aircraft.

³⁰ See, e.g., *ESAA Authorization* at Special Condition 90170.

IV. CONCLUSION

Panasonic requests that the Commission modify the Panasonic ESAA blanket license by authorizing Panasonic to add six satellites as authorized points of communication for the previously licensed PPA ESAA terminal, and one of these satellites as an authorized point of communication for the previously licensed MELCO ESAA terminal.

Respectfully submitted,

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On behalf of Panasonic Avionics Corporation

June 9, 2015

**CERTIFICATION OF PERSON RESPONSIBLE
FOR PREPARING ENGINEERING INFORMATION
SUBMITTED IN THIS APPLICATION**

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this Application, that I am familiar with Part 25 of the Commission's Rules, that I have either prepared or reviewed the engineering information submitted in this Application, and that it is complete and accurate to the best of my knowledge.

By:



Christopher McLain
Principal Satellite Network Engineer
GCS TECH OPS
Panasonic Avionics Corporation

June 9, 2015