**Exhibit C**
**PETITION FOR WAIVER OF SECTION 25.137 AND 25.114 AND OF THE U.S. TABLE OF FREQUENCY ALLOCATIONS**

## I. TO THE EXTENT THEY APPLY, GOOD CAUSE EXISTS FOR A WAIVER OF CERTAIN PORTIONS OF SECTIONS 25.137 AND 25.114

Universal Space Network, Inc. (USN) is provided limited legal and technical information for the GALILEO (FOC8 and FOC9), eight and ninth spacecraft of the "Full Operational Capability" series) Satellites.[1] Pursuant to Section 25.137 of the Federal Communications Commission's ("Commission" or "FCC") rules, the same technical information required by Section 25.114 for U.S.-licensed space station, and certain legal information, must be submitted by earth station applicants "requesting authority to operate with a non-U.S. licensed space station to serve the United States…"[2] USN seeks authority to support the needed Telemetry, Tracking, and Control ("TT&C") during launch and early orbit support ("LEOP") of the GALILEO (FOC8 and FOC9) spacecraft from launch to medium earth orbit , not commercial service to the United States, and thus believes that Section 25.137 does not apply.

To the extent the Commission determines, however, that USN's request for authority to provide LEOP on a special temporary basis is a request to serve the United States with a non-U.S-licensed satellite, USN respectfully requests a waiver of Sections 25.137 and 25.114 of the Commission's rules, to the extent that USN has not herein provided the information required by these rules. [3] The Commission may grant a waiver for good cause shown.[4] A waiver is therefore appropriate if special circumstances warrant a deviation from the general rule, and such a deviation will serve the public interest.

In this case, good cause for a waiver of portions of Section 25.114 exists. USN seeks authority only to conduct LEOP support for GALILEO (FOC8 and FOC9). Thus, any information sought by Section 25.114 that is not relevant to the LEOP – e.g., antenna patterns, energy and propulsion and orbital debris - USN does not have. In addition, USN would not easily be able to obtain such information because USN is not the operator of the GALILEO (FOC8 and FOC9) satellites, nor is USN in contractual privity with that operator. Rather, USN has contracted with Swedish Space Corporation, Solona Sweden (SSC) to support the Launch and Early Orbit (LEOP) portion in S-Band of the satellite prior to its operation.

As evidenced by the Comsearch report attached to this request, USN has coordinated the LEOP of the GALILEO (FOC8 and FOC9) satellites with potentially affected terrestrial operators. Moreover, as with any STA, USN will conduct the LEOP on an unprotected, non-interference basis to government operations.

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[1] FCC Form 312 Section B

[2] 47 C.F.R. § 25.137(a)

[3] 47 C.F.R. §§25.137 and 25.114

[4] 47 C.F.R. §1.3

Because it is not relevant to the service for which USN seeks authorization, and because obtaining the information would be a hardship, USN seeks a waiver of all the technical and legal information required by Section 25.114, to the extent it is not provided herein. As noted above, USN has provided the required information to the extent that it is relevant to the LEOP service for which USN seeks authorization.

Good cause also exists to waive portions of Section 25.137, to the extent the information required is not herein provided. Section 25.137 is designed to ensure that "U.S.-licensed satellite systems have effective competitive opportunities to provide analogous services" in other countries. Here, there is no service being provided by the satellite; USN is providing TT&C while the satellite is on the way to it's medium earth orbit. Thus, the purpose of the information required by Section 25.137 is not implicated here. For example, Section 25.137(d) requires earth station applicants requesting authority to operate with a non-U.S.-licensed space station that is not in orbit and operating to post a bond. [5] The underlying purpose in having to post a bond – i.e., to prevent warehousing of orbital locations by operators seeking to serve the United States – would not be served by requiring USN to post a bond in order to conduct 14 days of LEOP support of the GALILEO (FOC8 and FOC9) satellite.

It is USN's understanding that GALILEO (FOC8 and FOC9) is licensed by ESA (European Space Agency). GALILEO (FOC8 and FOC9) are the third and forth spacecraft of the European navigation constellation. The spacecraft family is primarily meant to serve the EU. Thus, the purpose of Section 25.137 – to ensure that U.S. satellite operators enjoy "effective competitive opportunities" to serve foreign markets and to prevent warehousing of orbital locations service the United States – will not be undermined by grant of this waiver request.

Finally, USN notes that it expects to communicate with the GALILEO (FOC8 and FOC9) satellite using its U.S. earth station for a period of 14 days. Requiring USN to obtain technical and legal information from an unrelated party, where there is no risk of interference and the operation will cease within 14 days would pose undue hardship without serving underlying policy objectives. Given these particular facts, the waiver sought herein is appropriate.

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[5] 47 C.F.R. §25.137(d)(4)

## II. GOOD CAUSE EXISTS FOR A WAIVER OF THE UNITED STATES TABLE OF FREQUENCY ALLOCATIONS

USN further requests a waiver of the United States Table of Frequency Allocations ("U.S. Table") as described in section 2.106 of the rules for the frequency bands 2025 – 2110 MHz (Earth-to-Space) and 2200 – 2290 MHz (Space-to-Earth).[6] Section footnotes allow for non-federal Government use of these bands in the United States on a case-by-case non-interference basis. Such use by USN necessitates a waiver of the U.S. Table.

Good cause exists to grant USN a limited waiver of the U.S. Table to allow LEOP of the GALILEO (FOC8 and FOC9) satellites. In considering request for case-by-case spectrum uses, the Commission has indicated that is would generally grant such waivers "where there is little potential for interference into any service authorized under the Table of Frequency Allocations and when the case-by-case operator accepts any interference from authorized services." [7] USN will coordinate with other parties operating communication systems in compliance with the Table of Frequency Allocations to ensure that no harmful interference is caused. USN seeks to operate only pursuant to special temporary authorization and thus agrees to accept any interference from authorized services. In summary, USN's operation on a non-interference, non-protected basis support waiver of the U.S. Table.

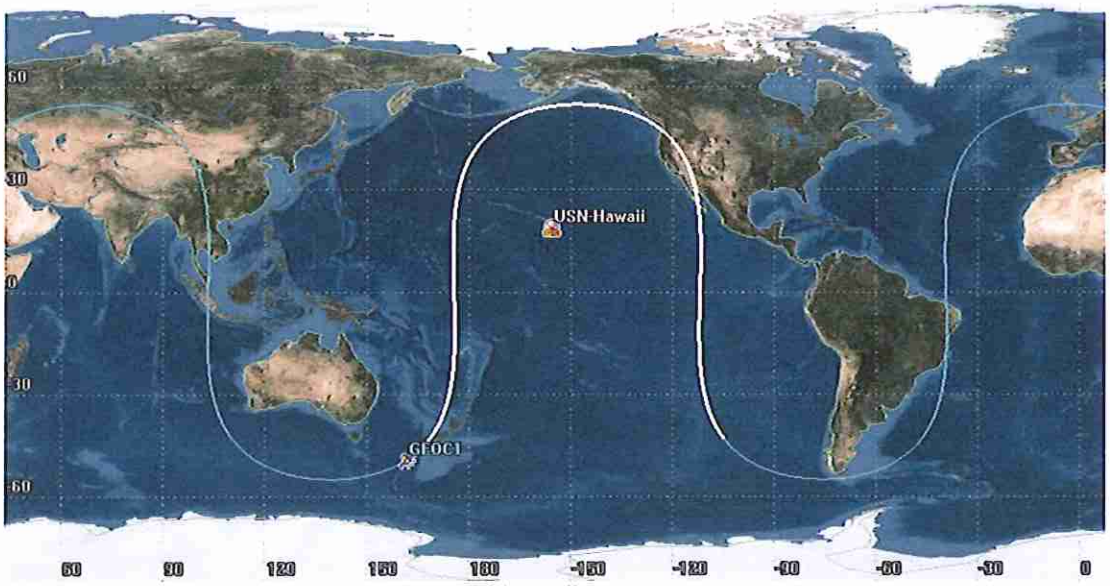
[6] 47 C.F.R. §2.106

[7] Previously approved STA's for Universal Space Network SES-STA-20020725-01174; SES-STA-20021112-02008; SES-STA-20040315-00475

# LEOP support of Galileo Constellation (FOC8 and FOC9) from USN's Hawaii ground station

Galileo FOC8 and FOC9 are the eigth and ninth spacecraft of the "Full Operational Capability" of the Galileo navigation constellation for the EU. The launch consists of 2 spacecraft (FOC8 and FOC9) that will be launched from French Guiana on a Soyuz vehicle on December 17th 2015 at 11:51:55 UTC. USN has been contracted to support the Galileo spacecraft LEOP(s) for a period of up to 14 days.

The spacecraft(s) are a Medium Earth Orbiting (MEO) spacecraft in a high mid-latitude orbit (55 degrees) with a near circular orbit of altitude of 23400 Km. This orbit allows a nominal 1 visibility over the USN Hawaii station every day. Each spacecraft contact is on the order of 1 to 16 hours.



FOC8 and FOC9 nominal orbit and Hawaii coverage

The spacecrafts will be supported from injection and three subsequent orbital maneuvers for spacing of FOC8 and FOC9. The below analysis covers all possible visibilities from USN Hawaii, but not all visibilities will be supported.

## FOC8 and FOC9 injection and coverage of pass #1-5

Both spacecraft are still in same antenna beamwidth after injection for the first several passes and then begin to drift apart. For the first several passes FOC8 and FOC9 are supported by selecting different RF frequencies. Subsequent to the first several hours the spacecraft(s) are supported separately. Post maneuver TLE's and maximum visibilities are shown below for each event and each spacecraft.

| | Downlink | Uplink |
|---|---|---|
| FOC8 | 2234.232 MHz | 2057.355 MHz |
| FOC9 | 2215.818 MHz | 2040.399 MHz |

**GFOC8-injection**
**1 99995 50999A 15351.65269097 +.00000000 +00000-9 +69797-3 2 00007**
**2 99995 054.9196 207.4891 0004850 255.8430 346.3826 01.67807186000008**

**GFOC9-injection**
**1 99996 50999B 15351.65269097 +.00000000 +00000-9 +69797-3 2 00008**
**2 99996 054.9196 207.4891 0003729 044.2960 197.9195 01.68014404000004**

### FOC8

| Access | Start Time (UTCG) | Stop Time (UTCG) |
|---|---|---|
| 1 | 17 Dec 2015 17:57:20 | 18 Dec 2015 05:25:40 |
| 2 | 19 Dec 2015 03:35:48 | 19 Dec 2015 11:16:08 |
| 3 | 19 Dec 2015 12:50:39 | 19 Dec 2015 18:58:51 |
| 4 | 20 Dec 2015 17:21:50 | 21 Dec 2015 04:46:17 |

### FOC9

| | | |
|---|---|---|
| 1 | 17 Dec 2015 17:57:25 | 18 Dec 2015 05:24:03 |
| 2 | 19 Dec 2015 03:31:22 | 19 Dec 2015 11:13:04 |
| 3 | 19 Dec 2015 12:51:07 | 19 Dec 2015 18:52:53 |
| 4 | 20 Dec 2015 17:14:53 | 21 Dec 2015 03:01:15* |

* Note that spacecraft stays in view of Hawaii during TLE update V1 below, therefore visibility continues into pass #5.

## FOC8 Maneuvers and possible support times pass # 5 - 15

GFOC8-V1
1 99995 50999A 15355.93631944 +.00000000 +00000-9 +73173-3 2 00009
2 99995 054.9688 206.7773 0003802 210.8032 099.1407 01.67889800000001

| Access | Start Time (UTCG) | Stop Time (UTCG) |
|---|---|---|
| 5 | 22 Dec 2015 02:55:36 | 22 Dec 2015 10:45:56 |
| 6 | 22 Dec 2015 12:39:08 | 22 Dec 2015 18:21:13 |

GFOC8-V2
1 99995 50999A 15357.42545139 +.00000000 +00000-9 +73173-3 2 00005
2 99995 054.9743 206.7288 0004720 252.9359 237.0679 01.67968340000004

| Access | Start Time (UTCG) | Stop Time (UTCG) |
|---|---|---|
| 7 | 23 Dec 2015 16:46:08 | 24 Dec 2015 04:03:52 |

GFOC8-V3
1 99995 50999A 15358.58303241 +.00000000 +00000-9 +73173-3 2 00009
2 99995 054.9738 206.6975 0004889 255.0058 214.9839 01.67974194000002

| Access | Start Time (UTCG) | Stop Time (UTCG) |
|---|---|---|
| 8 | 25 Dec 2015 02:04:12 | 25 Dec 2015 10:11:08 |
| 9 | 25 Dec 2015 12:32:46 | 25 Dec 2015 17:36:44 |
| 10 | 26 Dec 2015 16:06:02 | 27 Dec 2015 03:12:41 |
| 11 | 28 Dec 2015 01:04:34 | 28 Dec 2015 09:34:12 |
| 12 | 28 Dec 2015 12:28:49 | 28 Dec 2015 16:50:37 |
| 13 | 29 Dec 2015 15:26:25 | 30 Dec 2015 02:15:59 |
| 14 | 30 Dec 2015 23:53:23 | 31 Dec 2015 08:56:30 |
| 15 | 31 Dec 2015 12:27:31 | 31 Dec 2015 16:02:48 |

## FOC9 Maneuvers and possible support times pass # 5 - 18

GFOC9-V1
1 99996 50999B 15355.12586806 +.00000000 +00000-9 +73176-3 2 00000
2 99996 054.9557 206.8080 0022126 009.4180 173.4940 01.68498491000006

| Access | Start Time (UTCG) | Stop Time (UTCG) |
|---|---|---|
| 5 | 21 Dec 2015 03:01:15 | 21 Dec 2015 04:37:59 |
| 6 | 22 Dec 2015 02:32:55 | 22 Dec 2015 10:31:57 |
| 7 | 22 Dec 2015 12:42:56 | 22 Dec 2015 15:48:50* |

*Note that spacecraft stays in view of Hawaii during TLE update V2 below, therefore visibility continues into pass #8.

GFOC9-V2
1 99996 50999B 15356.65891204 +.00000000 +00000-9 +73176-3 2 00000
2 99996 054.9554 206.7663 0009563 281.9257 110.9595 01.69108329000002

| Access | Start Time (UTCG) | Stop Time (UTCG) |
|---|---|---|
| 8 | 22 Dec 2015 15:48:50 | 22 Dec 2015 17:56:49 |
| 9 | 23 Dec 2015 16:13:47 | 23 Dec 2015 21:34:41* |

*Note that spacecraft stays in view of Hawaii during TLE update V3 below, therefore visibility continues into pass #10.

GFOC9-V3
1 99996 50999B 15357.89908565 +.00000000 +00000-9 +73176-3 2 00006
2 99996 054.9551 206.7322 0011443 275.4279 152.4858 01.69165086000009

| Access | Start Time (UTCG) | Stop Time (UTCG) |
|---|---|---|
| 10 | 23 Dec 2015 21:34:41 | 24 Dec 2015 03:08:51 |
| 11 | 25 Dec 2015 00:30:43 | 25 Dec 2015 09:21:23 |
| 12 | 25 Dec 2015 12:52:53 | 25 Dec 2015 16:22:30 |
| 13 | 26 Dec 2015 08:15:39 | 26 Dec 2015 10:28:52 |
| 14 | 26 Dec 2015 14:57:05 | 27 Dec 2015 00:44:53 |
| 15 | 27 Dec 2015 21:39:06 | 28 Dec 2015 08:06:06 |
| 16 | 29 Dec 2015 06:30:39 | 29 Dec 2015 10:50:59 |
| 17 | 29 Dec 2015 13:43:09 | 29 Dec 2015 22:01:30 |
| 18 | 30 Dec 2015 19:39:32 | 31 Dec 2015 06:48:03 |

**Flux Density impinging on the ground in Hawaii from Galileo FOC8 and FOC9**

The Flux density is calculated as:

$$Flux\ density = EIRP \div (4\,\pi\, Rse^2)$$

Where $Rse$ is the distance from spacecraft to the ground?
Where $EIRP$ is the Effective Isotropic Radiated Power of the spacecraft?

Data from the spacecraft vendor indicates that the nominal EIRP of each FOC spacecraft is -1.10 dBW. Being a near circular orbit, the altitude (and thus the closest distance to earth during an overhead pass) is = 23,400 Km.

Converting -1.10 dBW to scalar watts = 0.776 watts transmitted at 2221.9 MHz

Therefor:

$$Flux\ density = 0.776 \div (4\,\pi * 23{,}400{,}000\ meters^2)$$

**Flux density = 1.127 x $10^{-16}$ Watts/meter$^2$**
Or
**Flux density = 1.127 x $10^{-17}$ mW/cm$^2$**