

**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 METOP-A Satellite.<sup>1</sup> 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..."<sup>2</sup> USN seeks authority to support the needed testing ranging calibration campaign using METOP-A in preparation for the 2Q-2012 launch and (LEOP) support of METOP-B , 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.<sup>3</sup> The Commission may grant a waiver for good cause shown.<sup>4</sup> 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 testing (pre-LEOP) support for METOP-A . 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 METOP-A satellite, nor is USN in contractual privity with that operator. Rather, USN has contracted with Swedish Space Corporation, Solna Sweden (SSC) to support the calibration campaign in preparation for the Launch and Early Orbit (LEOP) portion in S-Band of the METOP-B satellite prior to its operation.

As evidenced by the Comsearch report attached to this request, USN has coordinated the test of the METOP-A satellite with potentially affected terrestrial operators. Moreover, as with any STA, USN will conduct the test on an unprotected, non-interference basis to government operations.

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<sup>1</sup> FCC Form 312 Section B

<sup>2</sup> 47 C.F.R. § 25.137(a)

<sup>3</sup> 47 C.F.R. §§25.137 and 25.114

<sup>4</sup> 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 its low 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.<sup>5</sup> 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 the 4 days of testing support of the METOP-A satellite.

It is USN’s understanding that METOP-A is licensed by ESA (European Space Agency). METOP-A is the first of the series spacecraft 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 METOP-A satellite using its U.S. earth station for a period of 4 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 4 days would pose undue hardship without serving underlying policy objectives. Given these particular facts, the waiver sought herein is appropriate.

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<sup>5</sup> 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).<sup>6</sup> 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 testing of the METOP-A satellite in preparation for the LEOP of the METOP-B satellite. In considering request for case-by-case spectrum uses, the Commission has indicated that it 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."<sup>7</sup> 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.

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<sup>6</sup> 47 C.F.R. §2.106

<sup>7</sup> Previously approved STA's for Universal Space Network SES-STA-20020725-01174; SES-STA-20021112-02008; SES-STA-20040315-00475

# USN ranging campaign using METOP-A from Hawaii

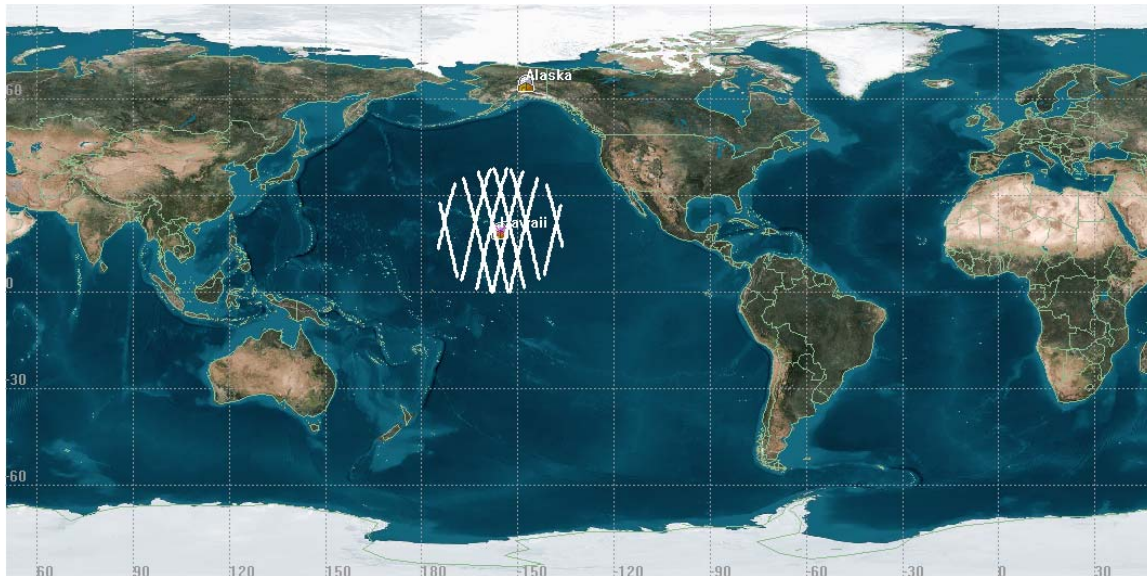
METOP-A is an on-orbit weather satellite for the European Union. The spacecraft is the first of a series with METOP-B to follow 2Q-2012. USN has been contracted to support the METOP-B spacecraft LEOPS when launched in 2012. As part of this LEOP support ESA requires calibration of the USN antenna systems for the production of ranging data. To calibrate the USN systems requires test passes conducted with the on orbit METOP-A spacecraft (Norad ID = 29499). Downlink Frequency = 2230.0 MHz and Uplink = 2053.4583 MHz

The spacecraft is a Low Earth Orbiting (LEO) spacecraft in a polar Sun-synchronous with a near circular orbit of altitude of 820 Km.

The ranging campaign consists of 8 possible passes over a 4 day period at the USN tracking station in Hawaii. The possible passes are shown below.

## METOP-A

1 29499U 06044A 11220.26407016 .00000196 00000-0 10972-3 0 4914  
2 29499 98.6838 278.5347 0000614 127.1035 233.0208 14.21497690249122



## USN Hawaii possible passes 6 Sep 2011 thru 9 Sept 2011 utc

1	6 Sep 2011 08:01:13	6 Sep 2011 08:11:21
2	6 Sep 2011 20:30:30	6 Sep 2011 20:40:21
3	7 Sep 2011 07:40:14	7 Sep 2011 07:50:55
4	7 Sep 2011 20:09:29	7 Sep 2011 20:20:05
5	8 Sep 2011 07:19:37	8 Sep 2011 07:30:10
6	8 Sep 2011 19:48:46	8 Sep 2011 19:59:26
7	9 Sep 2011 06:59:23	9 Sep 2011 07:09:07
8	9 Sep 2011 19:28:21	9 Sep 2011 19:38:24

## Flux Density impinging on the ground in Hawaii from METOP-A

The Flux density is calculated as:

$$\text{Flux density} = \text{EIRP} \div (4 \pi Rse^2)$$

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 METOP-A is 13.8 dBW. The altitude (and thus the closest distance to earth during an overhead pass) is = 820 Km.

Converting 13.8 dBW to scalar watts = 23.9 watts transmitted at 2230.0 MHz

Therefor:

$$\text{Flux density} = 23.9 \div (4 \pi * 820,000 \text{ meters}^2)$$

$$\text{Flux density} = 2.828 \times 10^{-12} \text{ Watts/meter}^2$$

Or

$$\text{Flux density} = 2.828 \times 10^{-13} \text{ mW/cm}^2$$