

## **ANNEX O**

### **Relocation of Federal Government Radio Systems In Accordance With the Commercial Spectrum Enhancement Act**

#### **O.1 INTRODUCTION**

Title II of Public Law 108-494, 118 Stat.3896 (2004), (Commercial Spectrum Enhancement Act) amended the National Telecommunications and Information Administration Organization Act, hereinafter the NTIA Organization Act, to provide that Federal Government entities will be reimbursed for relocation of their radio frequency-dependent systems from one or more frequencies due to reallocation. Reimbursement costs are funds to be paid by non-government entities as a result of competitive bidding (auction) of frequencies vacated by the federal government entities. Proceeds from the competitive bidding are transferred to a fund (Spectrum Relocation Fund), administered by the Office of the Management and Budget (OMB), on which the Federal entities can withdraw the reimbursement funds. The total proceeds of the competitive bidding must be at least 110 percent of the total estimated relocation costs, as provided to the Federal Communications Commission (FCC) by NTIA on behalf of the Federal entities.

This Annex contains relevant information with regard to relocating federal government radio systems from affected bands to other bands or to alternate technology.

##### **O.1.1 PURPOSE**

The purpose of this Annex is to provide guidance regarding the relocation of federal government radio systems from frequency bands specified under subsection 3.0 of this Annex to other bands or to alternate technology.

#### **O.2 ELIGIBLE FEDERAL ENTITIES**

Any federal entity that operates a federal government station assigned to a band of frequencies specified in subsection 3.0 of this Annex and that incurs relocation costs because of the reallocation of frequencies from federal use to non-federal use shall receive payment for such costs from the Spectrum Relocation Fund.

##### **O.2.1 FEDERAL POWER AGENCIES**

For the purposes of this Annex, the federal power agencies are the Tennessee Valley Authority, the Bonneville Power Administration, the Western Area Power Administration, the Southwestern Power Administration, or the Southeastern Power Administration.

Exempted federal power agencies, identified in the eligible frequency bands below, that choose to relocate from the frequencies identified for reallocation are eligible to receive payment under this paragraph.

### **O.3 ELIGIBLE FREQUENCY BANDS**

The bands of eligible frequencies are as follows:

- a. the 216-220 MHz band,<sup>1</sup> the 1432-1435 MHz band,<sup>2</sup> the 1710-1755 MHz band, and the 2385-2390 MHz band<sup>3</sup> of frequencies; and
- b. any other band of frequencies reallocated from federal use to non-federal use after January 1, 2005, that is assigned by competitive bidding pursuant to section 309(j) of the Communications Act of 1934 (47 U.S.C. 309(j)), except for bands of frequencies previously identified by NTIA in the Spectrum Reallocation Final Report, NTIA Special Publication 95-32 (1995).

### **O.4 NOTIFICATION OF ESTIMATED RELOCATION COSTS AND TIMELINES TO THE FCC**

NTIA, on behalf of the federal entities and after review by OMB shall provide the federal entities' estimated relocation cost and timelines information to the FCC six (6) months prior to the commencement of any auction of eligible frequencies defined in subsection 3.0 of this Annex.

Upon notification by NTIA, federal entities that may be required to relocate or modify radio frequency dependent systems shall notify NTIA at least nine (9) months before the auction of the relocation costs and timelines anticipated to be associated with relocation or with modifications necessary to accommodate prospective licensees in the format required by NTIA for a particular band.

Agencies should work with their respective budget offices and OMB contacts in the Resource Management Offices to determine what, if any, additional information is required for the review and approval of relocation cost estimates and timelines.

#### **O.4.1 SPECIFIC INFORMATION TO BE PROVIDED TO FCC**

To the extent practicable and consistent with national security considerations, the NTIA shall provide the following specific information to the FCC that is attributable to the costs and timelines:

- a. List of federal government frequency assignments and/or stations;
- b. Federal government agency operating each frequency assignment and/or station;
- c. Geographic location of each station using these frequency assignments; and
- d. Technical characteristics associated with an assignment and/or station, if appropriate.

Notwithstanding Section 9.8.2, Part 2, Paragraph 41 of the NTIA Manual regarding designation of frequency assignment data exempt from release under the Freedom of Information Act, NTIA will provide the information about all unclassified assignments to the FCC in this format six (6) months prior to commencement of an auction.

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<sup>1</sup> The 216-220 MHz band has been reallocated on a mixed-use basis for federal and non-federal users. The FCC has not auctioned this band.

<sup>2</sup> The 1432-1435 MHz band has been reallocated on a mixed-use basis for federal and non-federal users. Federal operations are protected at the sites defined in subsection 8.1 of this Annex.

<sup>3</sup> The 2385-2390 MHz band had been considered for reallocation for exclusive non-federal use; however, the federal allocation for primary mobile use will be retained and the band will be shared to support aeronautical telemetering (see FCC Seventh Report and Order, ET Docket No. 00-258, Oct. 2004).

With respect to classified assignments and systems, federal entities located on the spectrum to be auctioned will provide a single, consolidated and unclassified figure to NTIA for the cost of relocating or modifying all classified systems and NTIA will provide this information to the FCC six (6) months prior to the commencement of an auction.

## **O.5 DEFINITION OF RELOCATION COSTS AND TIMELINES**

### **O.5.1 Relocation Costs**

Relocation costs as defined in Section 113(g) of the NTIA Organization Act (47 U.S.C. 923(g)) means the costs incurred by a federal entity to achieve comparable capability of systems, regardless of whether that capability is achieved by relocating to a new frequency assignment or by utilizing an alternative technology. These costs include:

- a. the costs of any modification or replacement of equipment, software, facilities, operating manuals, training costs, or regulations that are attributable to relocation;
- b. the costs of all engineering, equipment, software, site acquisition and construction costs, as well as any legitimate and prudent transaction expense, including outside consultants, and reasonable additional costs incurred by the federal entity that are attributable to relocation, including increased recurring costs associated with the replacement facilities;
- c. the costs of engineering studies, economic analyses, or other expenses reasonably incurred in calculating the estimated relocation costs that are provided to the FCC pursuant to this Act;
- d. the one-time costs of any modification of equipment reasonably necessary to accommodate commercial use of such frequencies prior to the termination of the federal entity's primary allocation or protected status, when the eligible frequencies as defined in this Act are made available for private sector uses by competitive bidding and a federal entity retains primary allocation or protected status in those frequencies for a period of time after the completion of the competitive bidding process; and
- e. the costs associated with the accelerated replacement of systems and equipment if such acceleration is necessary to ensure the timely relocation of systems to a new frequency assignment.

### **O.5.2 RELOCATION TIMELINES**

Relocation timelines are projected dates or date on which a federal entity's relocation or modification of radio communications systems/stations from the eligible frequencies defined in subsection 3.0 of this Annex will be completed.

### **O.5.3 DEFINITION OF COMPARABLE CAPABILITY OF SYSTEMS**

The term comparable capability means that the replacement facility restores the capabilities of the original facility to an equal or superior level taking into account at least four factors: communications throughput; system reliability; operating costs; and operational capability.

#### **(A) Communications Throughput**

The term communications throughput means the amount of information transferred within the system for a given amount of time. For digital systems, the communications throughput is measured in bits per second (bps); for analog systems, the communications throughput is measured by the number of voice, video or data channels.

### (B) Systems Reliability

The term system reliability means the percentage of time information is accurately transmitted within a system. The reliability of a system is a function of equipment failures (e.g., transmitters, feed lines, antennas, receivers and battery back-up power), the availability of the frequency channel given the propagation characteristics (e.g., frequency, terrain, atmospheric condition and noise), and equipment sensitivity. System reliability also includes the ability of a radio-communications station to perform a required function under stated conditions for a stated period of time. System reliability may involve three concepts: attaining a specified level of performance; the probability of achieving that level; and maintaining that level for a specified time. For digital systems, system reliability shall be measured by the percentage of time the bit error rate (BER) exceeds a desired value; and for analog transmissions, this would be measured by the percentage of time that the received carrier-to-noise ratio exceeds the receiver threshold.

### (C) Operating Costs

The term operational costs mean the cost to operate and maintain the Federal entity's replacement facility. Relocation costs include any increased recurring costs associated with the replacement facilities. Recurring costs shall include, but not be limited to, additional rental payments and increased utility fees.

### (D) Operational Capability

The term operational capability means the measure of a system's ability to perform its validated functions within doctrinal requirements, including service, joint service, and allied interoperability requirements with related systems.

## **O.6 NOTIFICATION OF ESTIMATED RELOCATION COSTS AND TIMELINES TO CONGRESSIONAL COMMITTEES AND GOVERNMENT ACCOUNTABILITY OFFICE (GAO)**

The NTIA shall, at the time of providing an initial estimate of relocation costs to FCC under subsection 4.0 of this Annex, submit to Committees on Appropriations and Energy and Commerce of the House of Representatives, to the Committees on Appropriations and Commerce, Science, and Transportation of the Senate, and to the Comptroller General, a copy of such estimate and the timelines for relocation.

## **O.7 NTIA ANNUAL REPORT TO VARIOUS COMMITTEES AND GAO**

The NTIA will submit an annual report to the various committees, as defined in subsection 6.0 of this Annex, and the Comptroller General on:

- a. the progress made in adhering to the timelines applicable to relocation from eligible frequencies, as defined under subsection 3.0 of this Annex, separately stated on a communication system-by-system basis and on auction-by-auction basis; and
- b. with respect to each relocated communication systems and auction, a statement of the estimate of relocation costs required under subsection 4.0 of this Annex, the actual relocation costs incurred, and the amount of such costs paid from the Spectrum Relocation Fund.

## O.8 FEDERAL GOVERNMENT PROTECTED SITES

### O.8.1 1432-1435 MHz Band

Essential federal government operations at the sites listed below are protected indefinitely.

LOCATION	COORDINATES	Protection Radius
China Lake/Edwards AFB, CA	35 29'N 117 16'W	100 km
White Sands Missile Range/Holloman AFB, NM	32 11'N 106 20'W	160 km
Utah Test and Training Range/Dugway Proving Ground/Hill AFB, UT	40 57'N 113 05'W	70 km
Patuxent River, MD	38 17'N 076 24'W	70 km
Nellis AFB, NV	36 14'N 115 02'W	130 km
Fort Huachuca, AZ	31 33'N 110 18'W	80 km
Eglin & Tyndall AFB, FL/Gulfport ANG Range, MS/Ft. Rucker, AL	30 28'N 086 31'W	140 km
Yuma Proving Ground, AZ	32 29'N 114 20'W	160 km
Fort Greely, AK	63 47'N 145 52'W	80 km
Redstone Arsenal, AL	34 35'N 086 35'W	80 km
Alpena Range, MI	44 23'N 083 20'W	80 km
Camp Shelby, MS	31 20'N 089 18'W	80 km
AUTEC	24 30'N 078 00'W	80 km
MCAS Beaufort, SC	32 26'N 080 40'W	160 km
MCAS Cherry Point, NC	34 54'N 076 53'W	100 km
NAS Cecil Field, FL	30 13'N 081 53'W	160 km
NAS Fallon, NV	39 30'N 118 46'W	100 km
NAS Oceana, VA	36 49'N 076 01'W	100 km
NAS Whidbey Island, WA	48 21'N 122 39'W	70 km
NCTAMS, GUAM	13 35'N 144 51'W	80 km
Lemoore, CA	36 20'N 119 57'W	120 km
Naval Space Operation Center, ME	44 24'N 068 01'W	80 km
Savannah River, SC	33 15'N 081 39'W	3 km

### O.8.2 1710-1755 MHz Band

The Department of Defense operates communications systems in this band at 16 protected sites (see FCC Service Rules).

At the Yuma, AZ and Cherry Point, NC sites, all operations shall be protected indefinitely. At the remaining 14 sites, airborne and military test range operations shall be protected until such time as these systems are relocated to other spectrum, and precision guided munitions (PGM) operations shall be protected until such time as these systems are relocated to other spectrum or until PGM inventory at each facility is exhausted.

LOCATION	COORDINATES	Radius of Operation
Cherry Point, NC	34 58'N 076 56'W	100 km
Yuma, AZ	32 32'N 113 58'W	120 km
China Lake, CA	35 41'N 117 41'W	120 km
Eglin AFB, FL	30 29'N 086 31'W	120 km
Pacific Missile Test Range, Point Mugu, CA	34 07'N 119 30'W	80 km
Nellis AFB, NV	36 14'N 115 02'W	160 km
Hill AFB, UT	41 07'N 111 58'W	160 km
Patuxent River, MD	38 17'N 076 25'W	80 km
White Sands Missile Range, NM	33 00'N 106 30'W	80 km
Fort Irwin, CA	35 16'N 116 41'W	50 km
Fort Bragg, NC	35 09'N 079 01'W	50 km
Fort Rucker, AL	31 13'N 085 49'W	50 km
Fort Campbell, KY	36 41'N 087 28'W	50 km
Fort Lewis, WA	47 05'N 122 36'W	50 km
Fort Benning GA	32 22'N 084 56'W	50 km
Fort Stewart, GA	31 52'N 081 37'W	50 km

## O.9 OTHER DEFINITIONS

For the purposes of this Annex, the terms below are defined as follows:

- a. The term auction means the use of competitive bidding as set forth in Section 309(j) of the Communications Act of 1934(47 U.S.C. 309(j)).
- b. The term classified assignment means a frequency assignment and information related to a frequency assignment that has been determined pursuant to Executive Order 12958 or any predecessor order or successor executive order to require protection against unauthorized disclosure and that is marked as "confidential," "secret," or "top secret" to indicate its classified status when in documentary form.
- c. The term federal entity means any department, agency or other instrumentality of the federal government that utilizes a government station authorization obtained under section 305 of the Communications Act of 1934 (47 U.S.C. 305).
- d. The term frequency assignment means authorization issued by NTIA for a government radio station to use a radio frequency or frequencies or radio frequency channel or channels under specified conditions.
- e. The term licensee refers to a person awarded a license by the FCC for use of the bands identified in subsection 3.0 of this Annex.

**(Last Page in Annex O)**