



DOCUMENT 704-97

FREQUENCY MANAGEMENT GROUP

## SPECTRUM JUSTIFICATION TOOL KIT

WHITE SANDS MISSILE RANGE  
KWAJALEIN MISSILE RANGE  
YUMA PROVING GROUND  
DUGWAY PROVING GROUND  
ABERDEEN TEST CENTER  
NATIONAL TRAINING CENTER

ATLANTIC FLEET WEAPONS TRAINING FACILITY  
NAVAL AIR WARFARE CENTER WEAPONS DIVISION  
NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION  
NAVAL UNDERSEA WARFARE CENTER DIVISION, NEWPORT  
PACIFIC MISSILE RANGE FACILITY

30TH SPACE WING  
45TH SPACE WING  
AIR FORCE FLIGHT TEST CENTER  
AIR FORCE DEVELOPMENT TEST CENTER  
AIR WARFARE CENTER  
ARNOLD ENGINEERING DEVELOPMENT CENTER  
GOLDWATER RANGE

DISTRIBUTION A: APPROVED FOR PUBLIC RELEASE;  
DISTRIBUTION IS UNLIMITED

**DOCUMENT 704-97**

**SPECTRUM JUSTIFICATION TOOL KIT**

**APRIL 1997**

**Prepared by**

**Frequency Management Group  
Range Commanders Council**

**Published by**

**Secretariat  
Range Commanders Council  
U.S. Army White Sands Missile Range  
New Mexico 88002-5110**

---

## **SPECTRUM JUSTIFICATION TOOL KIT**

### **1. BACKGROUND**

In the past several years, the U.S. Government has finally begun to realize the electromagnetic spectrum is a valuable and limited national resource. To help pay off the national debt, Congress has been aggressively seeking federal frequency bands that can be reallocated for nongovernment (commercial) use and auctioned off to the highest bidder. For the past several years, the DOD in particular, has been frequently called on (usually with little notice) to clarify and to justify its use of the electromagnetic spectrum. These requests must be dealt with in a timely and thorough manner. To do otherwise could very well cost DOD a crucial frequency band with no possibility of monetary compensation or band replacement. And since almost everyone at the ranges uses the spectrum in some capacity (radars, land-mobile, A/G/A AM/FM, telemetry, electronic countermeasures, and electronic countercountermeasures), spectrum loss will adversely affect their mission capabilities.

### **2. PURPOSE**

This Spectrum Justification Tool Kit (SJTK) provides the range spectrum user with an easy-to-complete emitter survey. Once completed, the survey data will permit Range Frequency Managers to respond quickly and efficiently to entreaties from the national level such as the Office of Assistant Secretary of Defense (OASD); Command, Control, Communications, and Intelligence (C<sup>3</sup>I); Air Force Frequency Management Office (AFFMO); Army Frequency Management Office (AFMO); Naval Electromagnetic Spectrum Center; and Joint Spectrum Center, when important range frequency bands are identified or proposed for reallocation.

Please respond as soon as possible by E-mailing or faxing the completed form to your test range Frequency Manager or DOD Area Frequency Coordinator.

# SPECTRUM JUSTIFICATION SURVEY

## Technical Data

(1) Emitter System Name/Model/Nomenclature:

(2) Current Frequency/Band Assignments (in Mhz):

(3) Does the system have any electromagnetic countermeasures or electromagnetic countercountermeasures (ECM/ECCM) capabilities such as frequency agility, frequency hopping, or direct frequency spread spectrum?

Yes    No   If Yes, please describe.

(4) Does the system have any characteristics specifically designed to enhance spectrum use efficiency?

Yes    No   If Yes, please describe.

(5) Are system upgrades planned?

Yes    No   If Yes, does the upgrade call for any significant changes to the radio frequency (RF) characteristics of the system?

Yes  No If Yes, please describe any RF changes such as operating frequency, bandwidth, transmitter power, waveform, or antenna parameters.

(6) Are new system being considered or planned for development in the same frequency band?

Yes  No If Yes, please describe.

### Usage Data

(1) A statement of the range mission accomplished by this equipment.

(2) Are copies of requirements documents such as the Operational Requirements Document (ORD) and Mission Needs Statement (MNS) available?

Yes  No

(3) Number of units currently in service:

(4) Typical Use

- Locations (for example, particular bases, naval op areas):

- Frequency of use (hourly, daily, weekly):

- Duration of use:

- Any operational restrictions (channels or geographical areas that must be avoided):

- Number of units in use at same time in same area:

(5) Has this equipment caused or suffered electromagnetic interference (EMI) to or from other systems (both DOD and commercial)?

Yes     No    If Yes, please describe.

(6) In the case of such EMI, what measures are taken to avoid such occurrences (for example, frequency separation)?

(7) What is the expected service life/date?

(8) Describe the **operational impact** if you were denied use of the threatened band within 1 year. Indicate the associated costs in equipment replacement time, money, manhours, and, if applicable, jobs lost.