



# NATIONAL RADIO ASTRONOMY OBSERVATORY

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Before the  
Federal Communications Commission  
Washington, D.C. 20554

In the Matter of )  
 )  
Amendment of Part 90 ) WP Docket No. 07-100  
of the Commission's rules )

Comments of the  
National Radio Astronomy Observatory  
Charlottesville, VA 22903

## I. Introduction

1. The National Radio Astronomy Observatory (NRAO) is pleased to provide comments responding to the Commission's Notice of Proposed Rulemaking and Order FCC 07-85. Specifically, we comment on that portion of FCC 07-85 (at 19) which relates to the petition by M/A-COM requesting modification of the Part 90 service rules for operations in the 4.9 GHz band 4940-4990 MHz.
2. NRAO (<http://www.nrao.edu>), operated by Associated Universities, Inc., (<http://www.aui.edu>) under a cooperative agreement with the National Science Foundation, is the largest radio astronomy observatory and one of the largest astronomical observatories of any kind in the world. It operates stations within the National Radio Quiet Zone and in more than one dozen rural locations within the United States, all of which observe in the 4.9 GHz band and so stand to be affected by the Commission's Part 90 rules concerning its use.

## II. Use of permanent fixed stations in the 4.9 GHz band

3. In its Second Report and Order and Further Notice of Proposed Rule Making, FCC 02-47 at 17, the Commission made certain assumptions about the nature of public safety activities in the vicinity of radio astronomy stations. Specifically it stated “*We believe that, given the small number and remote locations of radio astronomy observatories, public safety deployment in the 4.9 GHz band in their vicinity would be unlikely and any public safety operations that may occur would likely be short-term. Public safety use of the band within the vicinity of radio astronomy observatories could be easily accommodated on a case by case basis within the existing framework set forth in footnote US311, which requires parties to make every practicable effort to protect radio astronomy facilities that operate on an unprotected basis in the band.*”
4. The Commission acted upon these assumptions (also at 17) stating: “*We therefore decline to exclude non-aeronautical mobile operations or to impose frequency coordination procedures on fixed or non-aeronautical mobile operations within the radio astronomy zones, as proposed by CORF.*”
5. At 19 in FCC 07-85, the Commission notes that M/A-COM has petitioned to change the Part 90 service rules for operation of *permanent*, fixed point-point and point-multipoint stations in the 4.9 GHz band as part of a public safety network. Specifically they have asked the Commission to grant primary status to such stations, as is afforded to the rest of the network consisting of mobile stations, hot-spots, *etc.* on a more temporary basis (corresponding to the actual response to a real emergency situation). These permanent fixed stations would act as (so to speak) the backbone of a public safety network, from which enhanced connectivity would ensue during actual emergency deployment, including “to the enterprise” (M/A-COM petition, p. 2).
6. However, the construction of a permanent infrastructure of fixed stations utterly changes the basic nature of the proposed operations. They are no longer short-term, perhaps hastily-arranged to meet the temporary exigencies of an emergency, but permanent. If they do interfere, the interference could permanently, rather than temporarily, affect a radio astronomy station. Frequency coordination is therefore warranted by the construction of permanent fixed stations, no matter whether they enjoy primary or secondary status.
7. Unlike response to an actual emergency, the construction of permanent infrastructure occurs gradually and entails a planning phase which should not be disrupted by the need for frequency coordination with radio astronomy. There is no operational reason to exclude frequency coordination with radio astronomy, which is in fact one of the more practicable steps which may be undertaken to protect radio astronomy stations.

### III. Summary

8. Deployment of permanent fixed stations in the 4.9 GHz band as part of a public safety network fundamentally changes the need for frequency coordination with radio astronomy. Without coordination the installation of such a permanent station within a radio astronomy coordination zone could cause permanent harm to radio astronomy operations. However, unlike the response to an actual emergency, permanent deployment affords the ability to coordinate, because of the lead times involved in planning. Therefore, frequency coordination is both needed and practicable. A frequency coordination requirement with radio astronomy stations should be imposed by the Commission whenever permanent fixed stations in the 4.9 GHz band are foreseen to operate within the radio astronomy zones cited in US311.

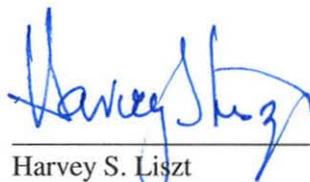
Respectfully submitted,

National Radio Astronomy Observatory  
By:



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