

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In re:)
)
Spectrum Policy Task Force Inquiry) ET Docket No. 02-135
)

ARINC COMMENTS

Aeronautical Radio, Inc. (ARINC), by its attorneys, hereby responds to the Public Notice issued June 6, 2002, requesting comment on the full range of spectrum policy issues confronting the Commission. The breadth of the inquiry and brevity of time to respond dictate that these comments be preliminary and concise.

ARINC is the communications company of the air transport industry and has been entrusted by that industry and the Commission with the management of the aeronautical enroute spectrum. ARINC has participated in domestic and international fora providing aviation industry expertise to resolve issues pertaining to the use of spectrum in support of the safe, economic, and efficient operation of aircraft, and the safety of life and property in the air. ARINC, on behalf, of United State civil aviation has managed the HF and VHF communication resources available for air navigation with such care and efficiency that ARINC actually has less spectrum available for aviation today than it had 50 years ago, notwithstanding the prodigious growth of air transport in the United States and around the globe.

Allocations should reflect market realities, but the Commission is also charged with

acting in the public interest. The “highest and best use” of spectrum is hard to define.

Allocations will always be needed to provide for safety functions, especially where radio is the only means of communication. Land lines can cover most of the land area of the United States, but aircraft in flight can only be accessed by radio. The FCC will have to make judgments to protect the public interest and not permit vital resources to be squandered.

Flexibility in use of spectrum is good if it encourages the licensees and spectrum users to satisfy growing requirements within an allocation. Flexibility should not be so broad as to permit the licensees to divert safety spectrum to non-safety uses or to divert broadcast spectrum to mobile communications. The FCC will still be required to define broad service categories and technical parameters to prevent harmful interference to other spectrum users.

The FCC has begun to use geographic area licenses. This can be beneficial, but only if the boundary conditions are defined in terms of area and frequency. Recent experience in the 800 MHz band has shown that the failure to police the engineering and siting of stations can result in interference to other licensed operations within a band or in adjacent bands.

ARINC, in its aeronautical enroute stations, is an example of a practical geographic license. Although the Aviation Radio Services issue licenses on a site-by-site basis, ARINC as a practical matter is the only licensee in this service in the conterminous United States and Hawaii. Because the users of ARINC’s licensed stations come from a homogeneous group with common goals—safe and efficient flight—interference problems are quickly identified and corrected by ARINC and the affected parties. This control of the entire band throughout the United States has permitted ARINC and the industry to introduce new technology and spectrum efficient facilities on a regular basis. The FCC has always worked

with ARINC to enable it the maximum flexibility in use of the spectrum consistent with the needs of flight safety.

Air-ground communications must be ubiquitous in the United States. The Federal Aviation Regulations require U.S. air carriers to have communications throughout their assigned air routes. A nationwide geographic license makes sense for this type of operation. A different picture is presented by aviation's land mobile requirements. The unique aviation requirements for land mobile are found on, and in the immediate vicinity of, the nation's major airports. The use of wide-area geographic licenses are unnecessary for this service and wasteful. Moreover, aviation has found that the operators of wide-area public telecommunications systems cannot, or will not, provide service on the airports that meet the coverage, availability, capacity, and priority requirements of aviation. The aviation land mobile systems at airports are vital public safety communications facilities supporting the nation's critical aviation infrastructure. This cannot be offered on a system that will become overloaded in time of crisis. For this, local area or site-by-site licensing remains the best alternative.

The interference rights of existing systems should not be redefined. If we are to encourage innovation and investment, some assurance is necessary that the rules of the game will not be changed in midcourse. This observation also applies to reallocation of spectrum or reassignment of licensees. For example, ARINC has invested millions of dollars in advanced technology to improve the efficiency of its trunked radio systems at some of the nation's airports. The current inquiry by the FCC into possible reassignment of frequencies to alleviate interference caused by other parties in WT Docket No. 02-55 is having a chilling effect on additional investments in spectrum efficient technology. ARINC and other private

radio licensees who have undertaken to improve the use of the spectrum is facing possible punishment for doing what the Commission should want them to do.

In this regard, some “economic” definition of harmful interference would be counter productive. Unless the licensee is given assurance that the operation will be protected up to specific levels of electromagnetic interference, investments in new technology will be discouraged.

The Commission should not redefine harmful interference to lessen the protection given existing services. The term “harmful interference” is defined in the Constitution of the International Telecommunication Union (ITU) (see ITU Const. Art 1, ¶ 11; Annex 1003), and described in the ITU Convention (177). This term cannot unilaterally be changed by one Administration. Similarly, the ITU Radio Regulations define “interference” (S1.166), permissible interference (S1.167), and acceptable interference (S1.168), and these may be changed at any competent World Radio Conference. The ITU Constitution and Convention, however, must await a Plenipotentiary Meeting, and success in changing this language is doubtful.

Harmful interference is difficult to quantify for all times and all places because it depends upon systems in place and their interaction. The receiver characteristics are not regulated by the FCC, but are an inherent part of any determination of interference. It is fair to expect improvements in receiver technology over time, but it would be unfair to force technology on the public before it is ready for it or before the public has had an opportunity to amortize its investments in current equipment. Ten years is the minimum time to amortize existing investment in equipment after improved technology becomes available.

Generally, the FCC should apply the “last in/last to modify” rule in seeking to

mitigate interference. This is generally the approach of aviation, and it has worked very well. The “last in/last to modify” rule does not make the newcomer solely responsible for eliminating interference—cooperation of all is required—but the newcomer is primarily responsible for taking steps to avoid problems with existing operations.

Spectrum efficiency is very difficult to define. ARINC operates an efficient air-ground data system and a VHF voice network service. Which is more efficient? In terms of information transmitted per unit of time, the data system is far more efficient. In terms of solving an inflight emergency that requires coordination of the flight crew, the airline dispatcher, and airline maintenance people, voice is far more efficient. How do we account for high availability requirements in measuring efficiency? ARINC is constantly working to improve the efficiency of aviation communications, but how can we compare the efficiency of an aeronautical mobile system with a broadcast system, or a radionavigation system? Measures of efficiency are difficult enough within a service; they seem to have little meaning across differing services.

The issues raised by the Spectrum Policy Task Force are far ranging and important to the future use of radio frequency technology in the United States. Critical to any policies that will further innovation and encourage investment are stable well-defined rules and services. The public interest dictates that any spectrum policies adopted by this Commission recognize the need for spectrum to support safety services, such as aviation, and the need to accord these services protection from interference. Efficiency is difficult to measure when comparing different technologies within a service, and probably impossible to measure when comparing different radio services. ARINC has a seventy-year history of sound frequency management and the promotion of innovation and efficiency in aeronautical

communications and welcomes the opportunity to work with the Task Force in a review of current policies.

Respectfully submitted,
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