

February 26, 1999

Ms. Regina M. Keeney
Chief of the International Bureau
Federal Communications Commission
Washington, D.C. 20554

Dear Ms. Keeney:

The National Telecommunications and Information Administration on behalf of the Executive Branch Agencies, has approved the release of two preliminary view documents.

The first preliminary view drafted by the FCC addresses the use of High Frequency (HF) bands by the aeronautical mobile (R) and maritime service. Our changes are shown with strikeout and underline markings.

The second preliminary view is concerned with the identification of frequencies to support the Radionavigation-Satellite Service (RNSS). Recently two additional frequencies were selected to support RNSS systems. This revised preliminary view now includes the new candidate frequencies along with a brief explanation of their intended use.

Sincerely,

Original Signed
William T. Hatch
Acting Associate Administrator
Office of Spectrum Management

Enclosures

United States Preliminary View

WRC-2000 AGENDA ITEM 1.7: *review of the use of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting operational, distress and safety communications, taking into account Resolution 346 (WRC-97);*

ISSUE: Use of High Frequency (HF) Bands by Aeronautical Mobile (R) and Maritime Service

AGENDA ITEM: ~~1.7—review the issue of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting the operational, distress and safety communications, taking into account Resolution 346;~~

BACKGROUND: The HF bands allocated for the distress and safety communications of the maritime and aeronautical mobile (R) services have been subjected to harmful interference caused by unauthorized use. This unauthorized use of safety related HF frequencies has increased in recent years and is resulting in considerable worldwide interference to the operational, distress and safety communications spectrum utilized by the maritime and aeronautical communities. ~~Considering that~~ Radio is the sole means of communications for the aeronautical and maritime mobile services and ~~that~~ frequencies in the bands allocated to these services are reserved or used for distress and safety purposes and that the aeronautical mobile (R) service is a safety service, ~~It is essential for the safety of life and property that of paramount importance that the~~ distress and safety channels of the maritime mobile service and the allocations to the aeronautical mobile (R) service be kept free from unauthorized use and harmful interference. ~~and unauthorized use since they are essential for safety of life and property.~~

The protection of maritime HF distress and safety frequencies, in particular the frequencies 12,290 kHz and 16,420 kHz, is addressed in Resolution **346 (WRC-97)** ~~(COM-4-9)~~. The problem of interference to distress traffic on these frequencies is due to their use as calling frequencies. Resolution **346** calls for administrations to minimize the use of these frequencies for non-safety calling purposes by coast and ship stations.

The interference to HF frequencies allocated to the aeronautical mobile (R) service between 2850 kHz and 22,000 kHz appears to be the result of unauthorized non-aviation use of aeronautical mobile (R) frequencies. In some parts of the world the aeronautical mobile (R) HF frequencies are being used for land mobile, broadcast, fixed point to point communications and unlicensed applications to support fishing fleets. These unauthorized applications have diminished the spectrum available for the aeronautical mobile (R) safety of life applications.

U.S. VIEW: U.S. PRELIMINARY VIEW: The United States will work to ensure these safety services are protected. Administrations should ensure that stations of services other than the aeronautical mobile (R) and maritime mobile service abstain from using frequencies in the distress and safety channels and their guard bands and in the bands allocated exclusively to either the aeronautical mobile (R) or the maritime mobile service. That Administrations make every effort to identify and located the source of any unauthorized emission capable of endangering human life and property and the safe and regular conduct of aircraft operations, and to take necessary measures to prevent stations from operating in contravention of ITU radio regulations.

United States Preliminary View for WRC-2000

WRC-2000 Agenda Item 1.15.1: *to consider new allocations to the radionavigation- satellite service in the range from 1 to 6 GHz required to support developments;*

ISSUE: Identification of a new civil frequency for RNSS

BACKGROUND: Additional Radionavigation-Satellite Service (RNSS) signals will greatly enhance the accuracy, reliability and robustness of the civil Global Positioning System (GPS) by enabling more effective corrections to be made for the time delay effects of the ionosphere on the signals from space. GPS currently provides signals that are used for radionavigation on two frequencies, one of which is available for civil applications. Additional civil signals, that are widely separated in frequency, will allow receivers to measure the time of arrival for two signals that have passed through the ionosphere and correct for the delay introduced by passage from space to earth. This will result in improved accuracy in the navigation solution. Improved location accuracy allows safety-critical users requiring dynamic, reliable capability to use RNSS; improves the overall accuracy of the system for the average user; and allows high-accuracy users (aeronautical, surveying, geodesy, weather forecasters, and others) to determine their data in a faster, more reliable manner. In addition, the protected civil signal will provide increased signal robustness that will help protect safety-critical users from the effects of radio frequency interference. The International Civil Aviation Organization (ICAO) has stated the requirement for an additional civil signal on GPS to support Global Navigation Satellite System (GNSS) requirements and for space-based augmentation systems. A requirement for aeronautical users is having the protected signal operate within radio spectrum allocated to the Aeronautical Radionavigation Service (ARNS), which would also include the possibility of terrestrial augmentation systems.

The United States has identified a second new civil signal at 1227.6 MHz and a third signal at 1176.45 MHz to support GNSS developments. The third signal is proposed to be an international civil aviation safety-of-life service signal with a required bandwidth on the order of 24 MHz. The U.S. will be working in the ITU-R and ICAO on the requirements and characteristics of these signals. Technical studies tentatively show compatibility between existing operational ARNS systems and the proposed GPS signal at 1176.45 MHz.

PRELIMINARY VIEW: The United States plans to seek a new RNSS frequency allocation on a worldwide basis within the 960-1215 MHz Aeronautical Radionavigation Service band. This allocation would be used in conjunction with the ARNS/RNSS allocation at 1559-1610 MHz for aeronautical safety services as well as other applications.

This is a copy of the current preliminary view with the strikeout and underline markings shown.

United States Preliminary View for WRC-2000

WRC-2000 Agenda Item 1.15.1: *to consider new allocations to the radionavigation-satellite service in the range from 1 to 6 GHz required to support developments;*

ISSUE: Identification of a ~~second~~ new civil frequency for GPS/RNSS

BACKGROUND: ~~The a~~Additional ~~of a second frequency~~ Radionavigation-Satellite Service (RNSS) signals will greatly enhance the accuracy, reliability and robustness of civil Global Positioning System (GPS) ~~receivers~~ by enabling ~~them to make~~ more effective corrections to be made for the ~~distorting~~time delay effects of the ionosphere on the signals from space. GPS ~~has always currently~~ provides signals that are used for radionavigation on two frequencies, ~~for military users,~~ one of which is available for civil applications for this purpose. ~~A second civil~~Additional civil signals that are widely separated in frequency, will allow receivers to measure the time of arrival for two signals that have passed through the ionosphere and correct for the ~~distortion~~delay introduced by passage from space to earth. This will result in improved accuracy in the navigation solution. ~~An~~ Improved location accuracy calculation will allow safety-critical users requiring dynamic, reliable capability to use GPS RNSS; improves the overall accuracy of the system for the average user; and allows the high-accuracy users (aeronautical, surveying, geodesy, weather forecasters, and others) to determine their data in a faster, more reliable manner. In addition, the protected civil signal will allow provide increased signal robustness that will help protect the safety-critical users from the effects of radio frequency interference to have a backup signal in the event of disruption of the current civil signal, the GPS SPS ~~The new signals will be available to all civil users worldwide by 2005~~ The new signals are intended to be added to the GPS Block IIF satellites. ~~An important consideration for aeronautical users is having the protected signal operate under a frequency allocation to the Aeronautical Radionavigation Service (ARNS), which would also include the possibility of terrestrial augmentation systems.~~ The International Civil Aviation Organization (ICAO) has stated the requirement for an additional civil signal on GPS to support Global Navigation Satellite System (GNSS) requirements and for space-based augmentation systems. A requirement for aeronautical users is having the protected signal operate within radio spectrum allocated to the Aeronautical Radionavigation Service (ARNS), which would also include the possibility of terrestrial augmentation systems.

The U.S. United States has ~~is reviewing options related to the frequencies to be identified for the~~ second new civil signal at 1227.6 MHz and a third signal at 1176.45 MHz to support GNSS developments, and potentially and a ~~The~~ third signal is to add to the Standard Positioning Service now operating on 1575.42 MHz. Further, a decision on which of these two new signals will be proposed to become the an civil aviation safety-of-life service signal ~~is also under review~~ with a required bandwidth on the order of 24 MHz. The U.S. will be working in the ITU-R and ICAO on the requirements and characteristics of these signals. Technical studies tentatively show

compatibility between existing operational ARNS systems and the proposed GPS signal at 1176.45 MHz.

PRELIMINARY VIEW: The United States ~~It is appropriate to identify a second~~ RNSS frequency on a worldwide basis that can be used in conjunction with the RNSS allocation at 1559-1610 MHz for a variety of applications including aeronautical sole means of navigation plans to seek a new RNSS frequency allocation on a worldwide basis within the 960-1215 MHz Aeronautical Radionavigation Service band. This allocation would be used in conjunction with the ARNS/RNSS allocation at 1559-1610 MHz for aeronautical safety services as well as other applications. ~~(8September98)~~(22February99)
