
De : <jmberges@voila.fr>
À : <telemetry.frequency@see.asso.fr>
Envoyé : mardi 8 octobre 2002 16:06
Objet : TR: R00-WP8B-C-0208!!MSW-E[1]

pièce à joindre

----- Entête Initiale -----

De : "jean isnard" <jisnard-isti@club-internet.fr>
A : <jisnard-isti@club-internet.fr>
Copie : <jmberges@voila.fr>
Date : Wed, 2 Oct 2002 19:01:24 +0200
Objet : R00-WP8B-C-0208!!MSW-E[1]

INTERNATIONAL TELECOMMUNICATION UNION

RADIOCOMMUNICATION

STUDY GROUPS

Delayed Contribution

Document 8B/208-E

17 April 2002

English only

Received: 16 April 2002

Source: CA/109, WP 8B/184 Attachment 1-1

Subject: WRC-06 Preliminary Agenda item 2.12

United States of America

REPLY TO ITU CIRCULAR LETTER CA/109

REQUEST FOR INFORMATION ON EXISTING AND PLANNED

WIDEBAND AERONAUTICAL TELEMETRY SYSTEMS

OPERATING AT FREQUENCIES ABOVE 3 GHz

1 Background

The 2000 Radiocommunication Assembly approved Question ITU-R 231/8, titled: Operation of wideband aeronautical telemetry in bands above 3 GHz. The 2000 Radiocommunication Assembly directed that Question ITU-R 231/8 studies are to be completed by 2005.

The World Radiocommunication Conference 2000 included item 2.12 in the preliminary agenda for the World

Radiocommunication Conference 05/06. It reads: to consider spectrum requirements for wideband aeronautical telemetry in the band between 3 GHz and 30 GHz.

ITU-R Circular letter CA/109 was a "request for administrations and Sector Members to supply data on existing and planned wideband aeronautical telemetry systems operating at frequencies above 3 GHz".

2 Conclusions

Three basic questions were asked in the CA/109 survey. Those questions and their answers are

shown below:

.. What is the spectrum requirement for wideband aeronautical telemetry in the bands above 3 GHz?

A: 300 MHz contiguous spectrum

.. What are the appropriate frequency bands and in which bands is harmonized worldwide usage possible?

A: Specific bands cannot be identified at this time. However, based on infrastructure and technical characteristics

bands below 6 GHz should be given priority consideration.

.. What are the technical and operational characteristics, or practical arrangements that could be made, to facilitate

sharing between wideband aeronautical mobile telemetry and incumbent radio services?

A: By utilizing a mobile primary allocation with no restrictions against aeronautical mobile, no special technical and

operational characteristics are required. A footnote should be added to the selected band identifying that band as a

harmonized aeronautical telemetry band for wideband telemetry use. Detailed studies of sharing conditions with existing

services are needed to ensure protection of both the existing services and the proposed wideband aeronautical telemetry use.

Results of the survey can be found in Annex 1.

It should be noted that neither the wideband allocation proposed herein, nor Question ITU-R 231/8 or Agenda item 2.12,

contemplate a substitute for existing aeronautical telemetry allocations below 3 GHz. The requirement for these allocations will

continue.

Rather, the allocation addressed herein is for new and emerging wideband requirements.

ANNEX 1

Questionnaire on spectrum requirements for existing and planned wideband aeronautical telemetry at frequencies above 3 GHz

I Focal point regarding correspondence on this questionnaire

1. Mr. Charles T. Glass

2. Country: United States of America

3. Name of Administration/Organization: United States of America

4. Title: Telecommunications Specialist

5. Address:

NTIA

U.S. Department of Commerce, Room 4606

14th & Constitution Avenue, N.W.

Washington, D.C. 20230

USA

6. Telephone: +(202) 482-1896; Fax: +(202)501-8189; E-mail: cglass@ntia.doc.gov

II Definition

Wideband Aeronautical Telemetry is defined as:

Emerging Telemetry Systems with large data transfer requirements to support new and different telemetry

capabilities (such as high resolution video and associated data for remotely-piloted aeronautical vehicles). It is further defined

as telemetry generally requiring a bandwidth of 20 MHz or greater.

This questionnaire will be used to further refine this definition by providing technical and operational characteristics of the data

transfer requirements and new telemetry capabilities.

III Wideband aeronautical telemetry spectrum requirements above 3 GHz

1. Does your administration or organization employ or plan to employ wideband aeronautical telemetry systems at frequencies above 3 GHz?

A: Yes

2. If the answer to Question 1 is affirmative, please complete relevant details in the table in Annex 1, and supply any additional information which you feel may assist in identifying spectrum requirements for wideband aeronautical telemetry above 3 GHz. In particular, the following points may assist in compiling the requested information:

a) Does your administration or organization contemplate a need for wideband aeronautical telemetry spectrum above 3 GHz?

A: Yes, as spectrum in addition to that already allocated for aeronautical telemetry.

b) If so, what kinds of systems/programs are contemplated, and how much spectrum is needed to accommodate such systems/programs?

A: The future technologies and performance expectations for commercial and military airborne platforms contemplate a need for real-time monitoring of large data systems with multiple video (HDTV) streams, high definition sensors, and integrated high speed avionics.

Some single platform systems have requirements of up to 300 MHz.
300 MHz contiguous spectrum.

c) Which frequency bands does your administration have with appropriate national allocations and with sufficient spectrum, such that provisions could be made for use by wideband aeronautical telemetry?

A: Detailed sharing studies are required before specific bands can be identified. However, due to technical characteristics priority should be given to consideration of bands below 6 GHz.

d) In which geographic areas or regions does your administration or organization employ or plan to employ wideband aeronautical telemetry systems at frequencies above 3 GHz?

A: Throughout the Continental U.S. and its possessions.

e) What are the technical and operational characteristics of projected wideband aeronautical telemetry systems that would operate above 3 GHz?

A: These systems are in the planning stage. Technical and operational characteristics are not complete. An extrapolation of existing aeronautical telemetry systems characteristics coupled with testing shortfalls for large bandwidth systems has been performed to determine the need and requirements for wideband telemetry systems. Projected technologies would include spectrum efficient trunked systems dynamically configured to match the immediate data requirements of several test vehicles operating in the same geographic area simultaneously.

f) Are there arrangements that could be made to facilitate sharing between wideband aeronautical mobile telemetry and incumbent radio services (particularly terrestrial radio services) in the candidate bands above 3 GHz?

A: Yes.

g) If so, please identify these arrangements.

A: A worldwide harmonized aeronautical mobile telemetry band should be established in existing primary mobile allocated bands where aeronautical mobile is not restricted. Sharing is not practical in bands allocated to the Mobile Satellite

Service (MSS) and, hence, these bands have been excluded as potential candidates for an allocation.

TABLE 1

Technical & operational parameters of wideband aeronautical mobile telemetry systems

Technical parameters of existing and planned wideband aeronautical telemetry systems operating at frequencies above 3 GHz

Parameter

System/

Function 1

System/

Function 2

System/

Function 3

System/

Function 4

Frequency Range (MHz)

TBD

Tuning Range of Equipment

(Min and Max Frequencies)

TBD

Necessary Bandwidth (MHz)

20 - 300

Transmit Power e.i.r.p. (dBW)

1-15

Duration of Transmissions (hours)

..1-8

Vehicle Speed

0 - Mach 2+

Vehicle Antenna Type(s)

Multiple types (blade, conformal, etc.)

Vehicle Antenna Beamwidth(s)

Multiple (omni, 90o or less, etc.)

Ground Station Antenna Type(s)
Parabolic or Phased Array

Ground Station Antenna Beamwidth(s)
<1 to > 10

Ground Station Antenna Tracking Accuracy (degrees)
<25% of beamwidth

Required Data Rate
10-100 MB/s

Required Quality of Data (BER)
< 1e-6

Maximum Allowable Signal Degradation (I+N)/N
<1dB

Area or Region Where Aeronautical Telemetry Employed
US&P

Purpose/Function of System
Various aeronautical telemetry missions

Sharing Arrangements
Utilize a band allocated primary Mobile with no restrictions on Aeronautical Mobile and excluding MSS

Jean-Marie Bergès
SEE 17 rue Hamelin 75783 Paris cedex 16
web : www.see.asso.fr
Tél: 01 56 90 37 15 Fax: 01 56 90 37 19
Port:06 22 27 06 90 e-mail: jmberges@voila.fr

Faites un voeu et puis Voila ! www.voila.fr