United States of America

Contribution on "Definitions" and Agenda Item 1.5

At the meeting of ITU-R Working Party 8B held in September 2004, the French Administration presented a paper (Document 8B/30) which proposed the adoption of definitions for the terms "aeronautical telemetry," and "aeronautical telecommand." WP8B square-bracketed the definitions in the CPM text and agreed to carry the matter forward for resolution at the next meeting. See Chairman's Report of the 15th Meeting of Working Party 8B, Document 8B/98, Annex 6.

Definitions are not necessary for resolution of this Agenda Item. Aeronautical mobile telemetry has been conducted for many years internationally without special definitions for the terms "aeronautical telemetry" or "aeronautical telecommand." See, e.g., No. 5.342 (e.g., Russian Federation and Ukraine, among a number of Administrations); No. 5.343 (Region 2); No. 5.394 (United States, Canada); and No. 5.395 (France). This approach is not only the least restrictive of the options for implementing AMT, but has a long and successful history in the ITU.

Moreover, a search for definitions would impose increased burdens on the Special Committee for Regulatory and Procedural Matters and ITU staff. Since there would not appear to be a material benefit to definitions under this Agenda Item, the effort should not be undertaken.

Accordingly, the attached CPM text proposes deletion of definitions from Annex 6.

INTERNATIONAL TELECOMMUNICATION UNION

RADIOCOMMUNICATION STUDY GROUPS

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Annex 6 to WP 8B Chairman's Report

DRAFT CPM TEXT FOR CHAPTER 1

1.3 Agenda item 1.5:

*"to consider spectrum requirements and possible additional spectrum allocations for aeronautical telecommand and high bit-rate aeronautical telemetry, in accordance with Resolution **230 (WRC-03)**"*

1.3.1 Summary of technical and operational studies, including a list of relevant ITU-R Recommendations

1.3.1.1 Introduction

This agenda item seeks to address a growing demand in spectrum that is allocated for aeronautical telemetry and associated telecommand. There is a large and growing shortfall in spectrum that is necessary to conduct aeronautical telemetry. The shortfall is due to rapidly increasing telemetry data rates associated with the testing of new technologies. The shortfall is exacerbated by the loss of telemetry spectrum diverted to other than telemetry applications. As indicated in the responses to ITU-R Question 231/8, additional spectrum is necessary due to rapidly increasing data rates associated with the testing of new and emerging technologies. For example, newer technologies rely increasingly on high resolution video for monitoring aircraft functions or increased use of computer based aircraft systems. Without access to additional spectrum, aeronautical development could be subject to escalating delays and costs, and the impairment of global competitiveness of the aerospace industry (including equipment manufacturers, civilian space programs and test ranges, and airlines). In addition, the benefits of new worldwide telemetry spectrum will aid numerous other countries and the international aeronautical community as administrations continue to support their national airlines and some administrations initiate their own space programs. Existing international allocations used for aeronautical telemetry will need to remain available without additional constraints for current applications.

A more complete description of flight test operations, equipment characteristics, and data rate growth is set forth in the draft new Report ITU-R M.[AMT], (See Annex 4 to Doc. 8B/98), entitled "Operational Description of Aeronautical Telemetry."

1.3.1.2 Spectrum required to satisfy justified wideband aeronautical telemetry requirements and associated telecommand above 3 GHz

First investigations in Region 1 show that the future air flight testing will require a 60 MHz bandwidth for aeronautical telemetry and telecommand communications. Due to industrial and economic constraints, it is preferable to find such a bandwidth under 7 GHz. Nevertheless, this requirement might be divided, for example, in 5 channels of 12 MHz but the extreme channels cannot be separated by more than 500 MHz.

The future use of unmanned air vehicles will require other spectrum bandwidth, which is under further study.

[To be completed]

1.3.1.3 Review, with a view to upgrading to primary, of secondary allocations to the mobile service in the frequency range 3-16 GHz for the implementation of wideband aeronautical telemetry and associated telecommand

[To be completed]

1.3.1.4 Possible additional allocations to the mobile service, including aeronautical mobile, on a primary basis in the frequency range 3-16 GHz for the implementation of wideband aeronautical telemetry and associated telecommand

To answer the need of 60 MHz bandwidth required in Region 1, it is proposed to study the feasibility of the use of the band 5 030-5 150 MHz. This band is presently used by the MLS (Microwave Landing System) under the AERONAUTICAL RADIO NAVIGATION service (active in 5 030-5 091 MHz). The band 5 091-5 150 MHz is an extension band [not yet in use by aeronautical assets and is scheduled as an extension band] for the MLS. Currently precedence must be given to MLS in accordance with RR 5.444 and to other international standard systems of the aeronautical radionavigation service in the band 5 030-5 150 MHz. Nevertheless, the worldwide use of the extension band by MLS is uncertain and then the future telemetry and telecommand high bit-rate frequencies could partly take place in the bands just quoted above subject to the study references.

Practically it is worth studying sharing the five 12 MHz bandwidth required between 5 030 and 5 150 MHz.

5 091-5 150 MHz band is already allocated to the ARNS on a primary basis in all Regions and is also allocated to the fixed-satellite service (Earth-to-space) on a primary basis. This FSS allocation is limited to feeder links of non-geostationary mobile-satellite systems in the mobile-satellite service and is subject to coordination under No. **9.11A**. In the band 5 091-5 150 MHz, the following conditions also apply:

– prior to 1 January 2018, the use of the band 5 091-5 150 MHz by feeder links of non-geostationary-satellite systems in the mobile-satellite service shall be made in accordance with Resolution **114 (Rev.WRC-03)**;

– prior to 1 January 2018, the requirements of existing and planned international standard systems for the aeronautical radionavigation service which cannot be met in the 5 000-5 091 MHz band, shall take precedence over other uses of this band;

– after 1 January 2012, no new assignments shall be made to earth stations providing feeder links of non-geostationary mobile-satellite systems;

– after 1 January 2018, the fixed-satellite service will become secondary to the aeronautical radionavigation service. (WRC-03)

The proposals set forth above are intended to be illustrative of various possible bands that could be used to satisfy the agenda item. This proposal should also be brought to the attention of ICAO. Also, the 5 091-5 150 MHz band is being considered by studies in response to WRC-07 agenda item 1.6.

[To be completed]

1.3.1.5 Designation of existing mobile allocations between 16 and 30 GHz for wideband aeronautical telemetry and associated telecommand

[To be completed]

1.3.1.6 Studies to facilitate sharing between aeronautical telemetry and the associated telecommand, on the one hand, and existing services, on the other hand

[To be completed]

1.3.2 Analysis of the results of studies

[To be completed]

1.3.3 Methods to satisfy the agenda item and their advantages and disadvantages

[To be completed]

1.3.4 Regulatory and procedural considerations