

International Telecommunication Union

ITU-R
Radiocommunication Sector of ITU

Recommendation ITU-R SM.1131-0
(10/1995)

**Factors to consider in allocating spectrum
on a worldwide basis**

SM Series
Spectrum management

Foreword

The role of the Radiocommunication Sector is to ensure the rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including satellite services, and carry out studies without limit of frequency range on the basis of which Recommendations are adopted.

The regulatory and policy functions of the Radiocommunication Sector are performed by World and Regional Radiocommunication Conferences and Radiocommunication Assemblies supported by Study Groups.

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Series of ITU-R Recommendations

(Also available online at <http://www.itu.int/publ/R-REC/en>)

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BR	Recording for production, archival and play-out; film for television
BS	Broadcasting service (sound)
BT	Broadcasting service (television)
F	Fixed service
M	Mobile, radiodetermination, amateur and related satellite services
P	Radiowave propagation
RA	Radio astronomy
RS	Remote sensing systems
S	Fixed-satellite service
SA	Space applications and meteorology
SF	Frequency sharing and coordination between fixed-satellite and fixed service systems
SM	Spectrum management
SNG	Satellite news gathering
TF	Time signals and frequency standards emissions
V	Vocabulary and related subjects

Note: This ITU-R Recommendation was approved in English under the procedure detailed in Resolution ITU-R 1.

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RECOMMENDATION ITU-R SM.1131-0*, **

Factors to consider in allocating spectrum on a worldwide basis

(Question ITU-R 205/1)

(1995)

The ITU Radiocommunication Assembly,

considering

- a) that the Radio Regulations (RR) specify three “Regions” (RR Nos. 5.2 to 5.9);
- b) that, between the three Regions, there are many differences in allocated services and allocated band limits;
- c) that worldwide allocations can:
 - simplify the Table of Frequency Allocations;
 - ease coordination requirements;
 - promote equipment availability for international markets and reduce production costs, thus helping to meet the requirements of developing countries in particular;
 - facilitate activities that depend on internationally operable equipment (i.e. flight traffic control);
- d) that the factors to consider when evaluating the need for a worldwide allocation versus separate regional allocations in a specific frequency range need to be delineated,

recommends

- 1** that, when evaluating, for a specific frequency range, whether to allocate on a worldwide versus a regional basis, administrations should consider the factors in Annex 1.

ANNEX 1

Factors to consider for allocating spectrum on a worldwide basis**1 Introduction**

Several factors need to be considered when evaluating where worldwide allocations are needed. The factors described below should be understood in the context of the time available to achieve a worldwide allocation where differing regional allocations currently exist. In achieving a worldwide allocation, a considerable period of time is required to plan and arrange for the many aspects of changing service allocations or service designations. An orderly approach to implementation of a worldwide allocation, will not only allow technical and operational issues to be resolved, but could permit attrition and obsolescence of equipment. It can minimize service disruption and dislocation, while permitting region specific services to continue operation under the proviso that continued operation does not retard the worldwide implementation programme.

* This Recommendation should be brought to the attention of Telecommunication Development Study Groups 1 and 2 (ITU-D).

** Radiocommunication Study Group 1 made editorial amendments to this Recommendation in the years 2011, 2015 and 2018 in accordance with Resolution ITU-R 1.

2 Technical factors

Technical factors, predominantly frequency/propagation, and space location must be considered when allocating spectrum. Signals communicating over very long distances due to the propagation characteristics (primarily HF) cannot be localized as a border coordination issue. Space systems with wide area transmission footprints often require worldwide allocations; however, in some cases, space systems may be capable of varying frequencies based on the direction of transmission or the position of the satellite during transmission.

3 Operational factors

Certain radio services or types of radio services require allocation on a worldwide basis because the functions that they serve require international mobility of operation and/or interoperability. Some unique operational functions, such as maritime and aeronautical mobile services often require worldwide allotment and/or channelling plans. Examples of services or types of services generally requiring worldwide allocations include:

- aeronautical mobile (R) and (OR),
- maritime mobile service,
- safety services (i.e. radionavigation, and distress signalling),
- radio astronomy,
- space services,
- services below 30 MHz.

Other radio systems require worldwide allocations because they provide, or are capable of providing a worldwide service available to all administrations as desired. Some examples, of such systems are:

- the mobile-satellite service operated by public and private sector telecommunications providers,
- the fixed-satellite service,
- the radionavigation-satellite service,
- the land mobile service such as that provided by IMT.

4 Economic factors

The costs of allocating spectrum on a worldwide basis versus the benefits achieved must be considered. Worldwide allocations may assist in the development of equipment for international markets, leading to possible reduction in equipment costs and simplification of the equipment acquisition process. However, frequency re-assignment of existing equipment may not always be possible due to equipment limitations, or because existing service will be impaired as a result of a required change. Therefore, costs may include such items as the elimination of equipment operating under non-aligned regional allocations and losses to equipment manufacturers heavily invested in associated technology. Technical improvements such as frequency synthesizers decrease the costs associated with changing frequencies; however, they also lower the costs associated with different regional allocations such as production inefficiencies and market availability.

5 Other factors

The RR and the Table of Frequency Allocations therein permit administrations to deviate from a particular allocation by use of footnotes. Such deviation takes the form of additional or alternative allocations. Although such allocations can be a disruptive influence, they remain an issue of national sovereignty and flexibility. The elimination of regional differences in allocations will not eliminate the existence of such deviations.
