

RESOLUTION 951 (Rev.WRC-07)

**Enhancing the international spectrum
regulatory framework**

The World Radiocommunication Conference (Geneva, 2007),

considering

- a) that radio spectrum is a finite resource and there is a continued increase and evolution in demand and multiplicity of existing and future applications for radiocommunications;
- b) that the current technological environment for some applications is substantively different from the one which prevailed when the current allocation principles and definitions were established;
- c) that past WRCs were able to respond to the developments mentioned under *considering a)* and *b)* in certain cases;
- d) that there is a keen interest in the rational, efficient and economic use of spectrum;
- e) that allocations to radiocommunication services should aim to reach the best outcome in terms of spectrum efficiency;
- f) that applications are emerging in which elements of different radiocommunication services (as defined in the Radio Regulations) are combined;
- g) that there is a convergence of radio technologies, inasmuch as the same radio technology can be used in systems that operate in different radiocommunication services or with different allocation status (primary or secondary), that might have an impact on the allocation scenario;
- h) that similar data rates and quality of service attributes are available with different radiocommunication systems operating in different radiocommunication services;
- i) that the use of modern underlying communication architectures and protocols, such as those used in packet radio systems, enables the concurrent provision of different applications from the same platform operating in the same frequency bands;
- j) that evolving and emerging radiocommunication technologies may enable sharing possibilities and may lead to more frequency-agile and interference-tolerant equipment and consequently to more flexible use of spectrum;

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k) that these evolving and emerging technologies may not require band segmentation within the traditional spectrum allocation framework;

l) that the regulatory procedures should be continually assessed in order to meet the demands of administrations,

recognizing

a) that the rights of administrations to deploy, operate and protect services should be the guiding principle;

b) that the studies in response to Resolution **951 (WRC-03)** have shown that any change intended to improve the flexibility of administrations in accommodating converging services has to rely on a combination of service definitions, allocations and procedures,

noting

a) that one of the purposes of the Radio Regulations is the effective management and use of spectrum;

b) that World Radiocommunication Conferences shall normally be convened every three to four years for possible amending of the Radio Regulations;

c) that the studies initiated under Resolution **951 (WRC-03)** have shown a need for additional studies,

resolves

1 that, as a matter of urgency, taking into account Annexes 1 and 2, studies are to be continued by ITU-R, in order to develop concepts and procedures for enhancing the Radio Regulations to meet the demands of current, emerging and future radio applications, while taking into account existing services and usage;

2 that the studies mentioned in *resolves* 1 shall be limited to general allocation or procedural issues relating to general spectrum management solutions, such as those already developed in Annex 1, in line with the process contained in Annex 2;

3 to invite WRC-11 to take into consideration the results of these studies, including sharing and their impact on allocations in the concerned frequency bands, and take appropriate action in accordance with Annex 2,

invites ITU-R

to conduct the necessary studies in time for consideration by WRC-11 and in accordance with this Resolution,

invites administrations

to participate actively in the studies by submitting contributions to ITU-R.

ANNEX 1 TO RESOLUTION 951 (Rev.WRC-07)

Options for enhancing the international spectrum regulatory framework*

The following four possible options have been so far identified in order to develop concepts and procedures for enhancing the Radio Regulations; a combination of these options as well as other options may also be used.

Option 1 is keeping the current practice as it is.

Option 2 is reviewing and possibly revising the current service definitions or adding a new service to the list of service definitions, which would encompass several of the existing ones.

Option 3 is the introduction of a new provision in the Radio Regulations enabling substitution¹ between assignments of specific services.

Option 4 is the introduction of composite services in the Table of Frequency Allocations.

NOTE – For Options 2, 3 and 4, improved forms of notices associated with existing Appendix 4, and/or relevant adjustments to this Appendix, should be considered.

1 Option 1: Keeping current practice

Under this option, it is considered that there is sufficient flexibility within the present Radio Regulations and the WRC process to meet any current or likely future requirements within the time-frame typically set forth for WRCs.

Under this option, national regulation may be appropriate to provide relevant solutions to the changing environment.

Although new applications may be introduced in a shorter time-frame, this would be without protection against harmful interference, which may not be practical for the vast majority of emerging wireless applications, including IMT, scientific, public safety, radiolocation, radio-navigation, broadcast and fixed/mobile/broadcast satellite systems.

The current service definitions in Article 1 of the Radio Regulations appear to have generally enabled the Radio Regulations to be adapted dynamically to latest technology evolution such as IMT, HAPS, RLANS, digital TV, public protection and disaster relief (PPDR) and scientific community interests.

* Further information can be found in Document 24 to WRC-07.

¹ This term needs to be clarified and defined properly.

It was noted that, in spite of different definitions for the fixed and mobile (except aeronautical and maritime) services, in most frequency bands where one of the two services is allocated, the other one is also allocated. This indicates that convergence is already achieved in the ITU Table of Frequency Allocations, except in some frequency bands, where allocations to both services may be considered on a band-by-band basis by future WRCs, as required.

2 Option 2: Review and possibly revise some of the service definitions

Under this approach, the current service definitions in Article 1 of the Radio Regulations would be reviewed in order to ensure that they adequately and clearly cover actual use while providing flexibility for emerging technologies. After an extensive consultation within the ITU-R Study Groups, this review may encompass the fixed and mobile (except aeronautical and maritime mobile) services and possibly other services, if considered appropriate². It may lead to reviewing the current definitions for these services and modifying them as necessary.

Possible changes to the service definitions would need to be addressed from the point of view of their regulatory implications in the assignment and use of frequencies, in particular in the ITU coordination, notification and recording processes, impact on assignments made under the current definitions, and impact on other services.

3 Option 3: Introduction of a new provision in the Radio Regulations enabling substitution between assignments of specific services

Under this approach, a new provision would be introduced in the Radio Regulations in order to enable substitution between assignments of specific services. For example, in the context of fixed and mobile (except maritime and aeronautical mobile) services, substitution could be applied in the same way as it is applied by Nos. 5.485 or 5.492 in the context of the fixed-satellite and broadcasting-satellite services.

Using the example of fixed and mobile services, this could reflect the current convergence between the services, address the current ambiguities between the definitions of these services, facilitate the timely implementation of new applications, provide adequate regulatory protection for such applications, and protect the rights of other administrations against interference caused by them.

A new provision enabling substitution would need to be addressed from the point of view of its regulatory implications in the assignment and use of frequencies, in particular in the ITU coordination, notification and recording processes, impact on assignments made under the current definitions, and impact on other services.

² The ITU-R studies indicated that the current definition of the fixed-satellite service has been able to accommodate new technologies and applications in the fixed-satellite service.

4 Option 4: Introduction of composite services in the Table of Frequency Allocations

Under this approach, which could reflect the convergence between some radiocommunication services in a specific frequency band, the Table of Frequency Allocations (Article 5 of the RR) could be modified by replacing the current separate allocations to some radiocommunication services by a joint allocation to these services (e.g. a specific frequency band allocated to the “fixed service” and to the “land mobile service” could be modified to a composite allocation of “fixed and land mobile service”). The above approach would only be applicable if all concerned services referred to in the allocation to the composite services have equal regulatory status.

This approach would provide administrations with increased flexibility. In the example above, administrations could opt for either the fixed service alone, for the land mobile service alone, for separate applications in both services in an independent manner, or for a composite application which would include both services. This option would not require any revision to the current definitions of the concerned radiocommunication services (i.e. neither to the fixed nor to the land mobile service).

To enable the notification and recording of frequency assignments in such a composite service, a new class of station could be introduced named “Station in the fixed and land mobile service” (with a separate symbol than those used for the fixed and land mobile service), with appropriate forms of notice, or other adequate notification mechanisms.

ANNEX 2 TO RESOLUTION 951 (Rev.WRC-07)

Guidelines for implementing this Resolution

These guidelines contain three steps:

1 *Step 1:* Evaluate various options including those in Annex 1 as to their usefulness regarding the enhancement of spectrum management solutions to meet the objectives of this Resolution.

2 *Step 2:* Develop concepts and procedures based on the options evaluated in Step 1 including sharing studies on a band-by-band basis.

3 *Step 3:* Prepare, based on Step 2, technical and regulatory solutions for consideration and appropriate action at WRC-11.