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| **Radiocommunication Study Groups** |  |
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| Annex 22 to Working Party 5A Chairman’s Report |
| WORKING DOCUMENT TOWARD A PRELIMINARY DRAFT REVISION OF RECOMMENDATION ITU-R M.1826 |
| Harmonized frequency channel plan for broadband public protection and disaster relief operations at 4 940-4 990 MHz in Regions 2 and 3 |

(2007)

Summary of the revision

Since Recommendation ITU-R M.1826 was published in 2007, some of the references cited in the Recommendation have been revised or suppressed. This revision updates material in the Recommendation to align the text with the in-force documents and to provide editorial improvements to conform with the mandatory common format for ITU-R Recommendations. No revisions have been made to the operative section of the Recommendation, i.e., the *recommends*.

Scope

This Recommendation addresses harmonized frequency channel plans in the band 4 940‑4 990 MHz for broadband public protection and disaster relief radiocommunications in Regions 2 and 3.

The ITU Radiocommunication Assembly,

considering

*a)* that addressing the growing telecommunication and radiocommunication needs of public protection and disaster relief (PPDR) agencies and organizations is vital to the maintenance of law and order, protection of life and property, disaster relief and emergency response;

*b)* that many administrations wish to facilitate interoperability and interworking between systems used for PPDR radiocommunication, both nationally and for cross-border operations in emergency situations and for disaster relief;

[Editor’s note: Moved *c)* and *d)* to *recognizing* and revised.]

[*c)* that Resolution **646 (WRC-15)** identifies particular bands/ranges, including the range 4 940-4 990 MHz in Region 3, for the purposes of achieving regionally harmonized frequency bands/ranges for advanced PPDR solutions and encourages administrations to consider these bands/ranges for their PPDR applications;

*d)* that Resolution **646 (WRC-15)** does not identify the range 4 940-4 990 MHz for Regions 1 and 2;]

[Editor’s note: Consider revising *considering* *e)* and *f)* based on *considering* *e)* and *f)* from Resolution **646 (Rev.WRC-15)**:

*"e)* that existing systems for PPDR applications mainly support narrowband/wideband voice and data applications;

*f)* that, although narrowband and wideband systems will continue to be used to meet PPDR requirements, there is a growing need for broadband applications to support improved data and multimedia capabilities, which require higher data rates and higher capacity, and appropriate spectrum may need to be made available on a national basis to meet these growing needs;"

[*e)* that there will continue to be narrowband, wideband and broadband requirements for future applications;

*f)* that in some cases, on-site broadband PPDR applications are used on a temporary basis by emergency service organizations during the event of a disaster;]

[Editor’s note: Considering *revising* *g)* based on *i)* from Resolution **646 (Rev.WRC-15)**: "i) that some commercial terrestrial and satellite systems are complementing the dedicated systems in support of PPDR, and that the use of commercial solutions will be in response to technology development and market demands;"]

[*g)* that commercial systems may serve and support PPDR organizations including, in particular, new systems/technologies;]

*h)* that some administrations may have different operational needs and spectrum requirements for PPDR applications depending on the circumstances;

*i)* that national spectrum planning for PPDR radiocommunication systems needs to have regard for cooperation and bilateral consultation with other concerned administrations, in order to facilitate greater levels of spectrum harmonization;

*j)* that usage of the same frequencies of the same allocation will enable administrations to benefit from harmonization while continuing to meet national planning requirements,

recognizing [moved from considerings and revised]

*a)* that Resolution **646 (WRC-15)** identifies particular bands/ranges, including the range 4 940-4 990 MHz in Region 3, for the purposes of achieving regionally harmonized frequency bands/ranges for advanced PPDR solutions and encourages administrations to consider these bands/ranges for their PPDR applications;

*b)* that Resolution **646 (WRC-15)** does not identify the range 4 940-4 990 MHz for Regions 1 and 2;

noting

[Editor’s note: See *recognizing* *a)-c)* in Resolution **646**.]

[*a)* that the benefits of spectrum harmonization are:

– increased potential for interoperability;

– a broader manufacturing base and increased volume of equipment resulting in economies of scale and expanded equipment availability;

– improved spectrum management and planning; and

– enhanced cross-border coordination and circulation of equipment;

*b)* that spectrum planning for PPDR radiocommunication is done at the national level, taking into account the need for interoperability and benefits of neighbouring administrations using harmonized or common frequency bands;

*c)* the benefits of cooperation between countries for the provision of effective and appropriate humanitarian assistance during disasters;]

*d)* the needs of countries, particularly the developing countries, for cost-efficient communication equipment; [Editor’s note : *noting* i in Res. 646]

*e)* that not all frequencies within an identified common frequency range will be available within each country of the relevant Region;

[Editor’s note: See *emphasizing* *c)* in Res. **646**]

[*f)* that flexibility must be afforded to administrations:

– to determine, at the national level, how much spectrum to make available for PPDR from the band identified in this Recommendation in order to meet their particular national requirements;

– to have the ability for the band identified in this Recommendation to be used by all services having allocations according to the provisions of the Radio Regulations, taking into account the existing applications and their evolution; and

– to determine the need and timing of availability as well as the conditions of usage of the band identified in this Recommendation for PPDR in order to meet specific national situations;]

*g)* that CITEL adopted a Recommendation (PCC.II/Rec.16(VII-06)) on the use of the 4 940-4 990 MHz band in Region 2 for PPDR, which includes the example frequency channel plan in Annex 1 of this Recommendation; [Editor’s note: To be verified]

*h)* that the APT adopted a Recommendation (No. APT/AWF/1(Edition 2005)) on use of the band 4 940-4 990 MHz for PPDR applications in Region 3, which includes the example frequency channel plan in Annex 2 of this Recommendation; [Editor’s note: To be verified]

[Editor’s note: Res. **646** *resolves* 5]

[*i)* that Resolution **646 (Rev.WRC-15)** states that the use of the frequency ranges in the Resolution in *resolves* 2 and 3, as well as the use of the countries’ frequency arrangements for PPDR, as described in the most recent version of Recommendation ITU-R M.2015, "must not cause unacceptable interference, nor constrain the use of these frequency ranges by applications of the services to which these ranges are allocated in the Radio Regulations"],

recommends

1 that harmonized bands for PPDR should be used to the maximum extent possible, taking into account the national and regional requirements and also having regard to any needed consultation and cooperation with other concerned countries;

2 that for the purposes of achieving harmonized frequency bands/ranges for PPDR, administrations in Regions 2 and 3 should consider the band 4 940-4 990 MHz, or parts thereof, when undertaking their national planning for broadband PPDR applications;

3 that administrations in Regions 2 and 3 should consider the frequency channelling plans indicated in Annexes 1 and 2 when allocating spectrum for use by users who are directly involved with PPDR.

Annex 1

Channelling plan A for the band 4 940-4 990 MHz for broadband
public protection and disaster relief operations [Editor’s note: To be verified]

This frequency channelling plan consists of ten 1 MHz channels, at the edges of the allocation, and eight 5 MHz channels in the centre of the allocation, as detailed below in Fig. 1 and Table 1. Channels may be aggregated into channel bandwidths of up to 20 MHz for higher capacity or higher bandwidth applications to allow maximum flexibility and implementation of broadband technologies.

Figure 1

Frequency channelling plan A



TABLE 1

Frequency channelling plan A

|  |  |  |
| --- | --- | --- |
| Channel | Lower frequency(MHz) | Upper frequency(MHz) |
| 1 | 4 940 | 4 941 |
| 2 | 4 941 | 4 942 |
| 3 | 4 942 | 4 943 |
| 4 | 4 943 | 4 944 |
| 5 | 4 944 | 4 945 |
| 6 | 4 945 | 4 950 |
| 7 | 4 950 | 4 955 |
| 8 | 4 955 | 4 960 |
| 9 | 4 960 | 4 965 |
| 10 | 4 965 | 4 970 |
| 11 | 4 970 | 4 975 |
| 12 | 4 975 | 4 980 |
| 13 | 4 980 | 4 985 |
| 14 | 4 985 | 4 986 |
| 15 | 4 986 | 4 987 |
| 16 | 4 987 | 4 988 |
| 17 | 4 988 | 4 989 |
| 18 | 4 989 | 4 990 |

Annex 2

Channelling plan B for the band 4 940-4 990 MHz for broadband
public protection and disaster relief operations [Editor’s note: To be verified]

The following channelling plan (see Table 2), which supports channel widths from 5 MHz to 20 MHz, to provide the flexibility needed for administrations to support a variety of PPDR operational requirements. Because these channels overlap one another, administrations may take precautions in their assignment procedures to ensure that overlapping channels do not occur in close enough proximity to cause conflicts between multiple PPDR users. Note that not all of the channels are available in some countries.

TABLE 2

Example channelling plan B for 4 940-4 990 MHz

|  |  |  |  |
| --- | --- | --- | --- |
| Channel numbers(*nch*) | Channel centre5 MHz | Channel centre10 MHz | Channel centre20 MHz |
| 1 | 4 942.5 |  |  |
| 2 |  | 4 945.0 |  |
| 3 | 4 947.5 |  |  |
| 4 |  | 4 950.0 | 4 950.0 |
| 5 | 4 952.5 |  |  |
| 6 |  | 4 955.0 | 4 955.0 |
| 7 | 4 957.5 |  |  |
| 8 |  | 4 960.0 | 4 960.0 |
| 9 | 4 962.5 |  |  |
| 10 |  | 4 965.0 | 4 965.0 |
| 11 | 4 967.5 |  |  |
| 12 |  | 4 970.0 | 4 970.0 |
| 13 | 4 972.5 |  |  |
| 14 |  | 4 975.0 | 4 975.0 |
| 15 | 4 977.5 |  |  |
| 16 |  | 4 980.0 | 4 980.0 |
| 17 | 4 982.5 |  |  |
| 18 |  | 4 985.0 |  |
| 19 | 4 987.5 |  |  |

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