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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| PLENARY MEETING | **Addendum 3 to Document 62-E** |
|  | **16 October 2015** |
|  | **Original: Chinese** |
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| China (People’s Republic of) | |
| Proposals for the work of the conference | |
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| Agenda item 1.3 | |

1.3 to review and revise Resolution **646** **(Rev.WRC‑12)** for broadband public protection and disaster relief (PPDR), in accordance with Resolution **648 (WRC‑12)**;

Introduction

WRC-15 agenda item 1.3 is to review and revise Resolution 646 (Rev.WRC‑12) for broadband public protection and disaster relief (PPDR), in accordance with Resolution 648 (WRC‑12).

Resolution 648 (WRC-12): Studies to support broadband public protection and disaster relief. Resolution 646 (Rev.WRC-12) on Public Protection and Disaster Relief (PPDR), encourages administrations to consider certain globally or regionally harmonized frequency bands/ranges or parts thereof when undertaking their national planning.

The benefits resulting from the use of global or regionally harmonized frequency bands have been well documented in Resolution 646 and in many studies and reports. These benefits include, among others, achieving economies of scale and expanded equipment availability, increasing competition and improved spectrum management and planning.

Since the initial adoption of Resolution 646 in 2003, major technological developments in radiocommunications have taken place. Moreover, the use of PPDR multimedia applications in certain countries has increased. New broadband mobile technologies, such as Long-Term Evolution (LTE) proposed by 3GPP, have emerged for which today there are already practical applications, and PPDR agencies and organizations increasingly recognize the importance of multimedia applications to carry out their activities more efficiently. In addition, some countries have designated new frequency bands for their national broadband PPDR applications.

For WRC-15 agenda item 1.3 there are four proposed methods included in the CPM Report. These methods can be summarized as follows:

• Method A proposes that no change will be made to Resolution 646 (Rev.WRC-12), other than editorial amendments to Footnote 1 of Resolution 646 (Rev.WRC-12) and the text surrounding it as well as the related ITU-R Report(s). The broadband PPDR requirements will be addressed through ITU-R studies.

• Method B proposes that the requirements of broadband PPDR would be addressed in the revision of Resolution 646 (Rev.WRC-12) in accordance with Resolution 648 (WRC-12).

• Method C also proposes revision of Resolution 646 (Rev.WRC-12) and further proposes that all referenced frequency bands/ranges for PPDR from Resolution 646 (Rev.WRC-12) be removed and be replaced with a cross reference to the latest version of Recommendation ITU-R M.2015, which contains the recommended global or regionally harmonized frequency bands/ranges for PPDR operations.

• Method D proposes that the requirements of PPDR, including broadband PPDR, would be addressed by including global or regionally harmonized frequency bands/ranges in the revision of Resolution 646 (Rev.WRC-12). Further details and explanation on regionally harmonized arrangements in those ranges, and specific frequency arrangements adopted by individual administrations, are described in the most recent version of Recommendation ITU-R M.2015.

Considering the advantages and disadvantages of the four proposed methods, the following modification to Resolution 646 (Rev.WRC‑12) is proposed.

MOD CHN/62A3/1

RESOLUTION 646 (Rev.WRC‑12)

Public protection and disaster relief

The World Radiocommunication Conference (Geneva, 2012),

considering

*a)* that the term “public protection radiocommunication” refers to radiocommunications used by responsible agencies and organizations dealing with maintenance of law and order, protection of life and property and emergency situations;

*b)* that the term “disaster relief radiocommunication” refers to radiocommunications used by agencies and organizations dealing with a serious disruption of the functioning of society, posing a significant widespread threat to human life, health, property or the environment, whether caused by accident, natural phenomena or human activity, and whether developing suddenly or as a result of complex, long-term processes;

*c)* the growing telecommunication and radiocommunication needs of public protection agencies and organizations, including those dealing with emergency situations and disaster relief, that are vital to the maintenance of law and order, protection of life and property, disaster relief and emergency response;

*d)* that many administrations wish to enhance interoperability and interworking between systems used for public protection and disaster relief (PPDR), so as to satisfy both nationally and for cross-border operations in emergency situations and for disaster relief;

*e)* that Report ITU‑R M.2377 provides broad objectives and requirements in respect of PPDR applications, ranging from narrowband through wideband to broadband radiocommunications;

*f)* that Recommendation ITU‑R M.2009 identifies radio interface standards applicable to PPDR operations in some parts of the UHF band;

*g)* that Report ITU‑R M.2291 provides the capabilities of International Mobile Telecommunication (IMT) technologies to meet the requirements of applications supporting broadband PPDR operations;

*h)* that current PPDR applications are mostly narrow-band and wideband, supporting voice and low data-rate applications;

*i)* that, although narrowband and wideband systems will continue to be used to meet PPDR requirements for many administrations, many PPDR agencies and organizations are already calling for broadband applications to support improved data and multimedia capabilities;

*j)* that new technologies for wideband and broadband PPDR applications are being developed in various standards organizations;

*k)* that some administrations have started using broadband technologies such as LTE and LTE-Advanced to meet the needs of their PPDR agencies and organizations for data and multimedia capabilities;

*l)* that continuing development of new technologies such as IMT systems and Intelligent Transportation Systems (ITS) may be able to support or supplement advanced PPDR applications;

*m)* 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;

*n)* that Resolution 36 (Rev. Guadalajara, 2010) of the Plenipotentiary Conference urges Member States Parties to the Tampere Convention to take all practical steps for the application of the Tampere Convention and to work closely with the operational coordinator as provided for therein;

*o)* that Recommendation ITU‑R M.1637 offers guidance to facilitate the global cross-border circulation of radiocommunication equipment in emergency and disaster relief situations;

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

*q)* that the Tampere Convention on the Provision of Telecommunications Resources for Disaster Mitigation and Relief Operations (Tampere, 1998), an international treaty deposited with the United Nations Secretary-General and related United Nations General Assembly Resolutions and Reports are also relevant in this regard;

*r)* that some administrations are of the view that there is a growing requirement for more capacity for broadband PPDR, including mobile multimedia applications;

*s)* that some administrations are of the view that additional spectrum needs to be identified to meet the growing needs of mobile broadband PPDR, including mobile multimedia applications;

*t)* that some administrations are of the view that regionally harmonized spectrum will enhance economies of scale, enable efficient deployment and ease coordination and harmonization between different PPDR agencies and organizations, benefiting international aid during disasters and major events;

*u)* that regional or global spectrum harmonization will improve interoperability among first responders and will drive the development of suitable devices and standards dedicated to broadband PPDR,

recognizing

*a)* the benefits of spectrum harmonization such as:

– increased potential for interoperability;

– 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 the organizational distinction between public protection activities and disaster relief activities are matters for administrations to determine at the national level;

*c)* that national spectrum planning for PPDR needs to have regard to cooperation and bilateral consultation with other concerned administrations, which should be facilitated by greater levels of spectrum harmonization;

*d)* the benefits of cooperation between countries for the provision of effective and appropriate humanitarian assistance in case of disasters, particularly in view of the special operational requirements of such activities involving multinational response;

*e)* the needs of countries, particularly the developing countries[[1]](#footnote-2)2, for cost-efficient communication equipment;

*f)* that the trend is to increase the use of technologies based on Internet Protocols;

*g)* that currently some bands[[2]](#footnote-3)3 or parts thereof have been designated for existing PPDR operations, as documented in Recommendation ITU‑R M.2015;

*h)* that in times of disasters, if most terrestrial-based networks are destroyed or impaired, amateur, satellite and other non‑ground-based networks may be available to provide communication services to assist in PPDR efforts;

*i)* that the amount of spectrum needed for public protection on a daily basis differs significantly between countries, that certain amounts of spectrum are already in use in various countries, and that in response to a disaster, access to additional spectrum on a temporary basis may be required;

*j)* that studies have shown that countries’ demands for broadband PPDR spectrum is quite different, regardless of whether the PPDR network is owned/operated by a government PPDR agency, a commercial entity or a hybrid commercial/government solution;

*k)* that in order to achieve spectrum harmonization, an approach based on regional or global frequency tuning ranges[[3]](#footnote-5)4 may enable administrations to benefit from harmonization while continuing to meet national planning requirements;

*l)* that not all frequencies within an identified common frequency range are available within each country;

*m)* that the identification of a common frequency range within which equipment couldoperate may ease the interoperability and/or inter-working, with mutual cooperation and consultation, especially in national, regional and cross-border emergency situations and disaster relief activities;

*n)* that when a disaster occurs, the PPDR agencies are usually the first on the scene using their day-to-day communication systems, but that in most cases other agencies and organizations may also be involved in disaster relief operations;

*o)* that during emergency/disaster events, networks that provide PPDR applications should be able to handle excessive usage;

*p)* that during emergency/disaster events requiring immediate response and actions, some commercial wireless communication networks, owing to their design, may be more susceptible to overload because of excessive usage in a short time;

*q)* that there are issues for delivery of PPDR applications through use of commercial wireless communication networks, as described in Report ITU‑R M.2291 and Report ITU‑R M.2377, which need to be addressed;

*r)* that the initial response to emergency situations by public protection agencies is critical, and that any delay in that response may lead to greater loss of life and property,

noting

*a)* that many administrations will continue using frequencies below 1 GHz for narrow-band PPDR systems, and may decide to use the same range for broadband PPDR systems, in which case account needs to be taken of the impact of such new broadband systems on existing systems operating in and adjacent to the range;

*b)* that applications requiring large coverage areas and providing good signal availability would generally be accommodated in lower frequency bands (e.g. around 200-400 MHz) and that applications requiring wider bandwidths would generally be accommodated in progressively higher bands;

*c)* that PPDR agencies and organizations have an initial set of requirements, including but not limited to interoperability, secure and reliable communications, sufficient capacity to respond to emergencies, priority access in the use of non-dedicated systems, fast response times, ability to handle multiple group calls and the ability to cover large areas as described in Report ITU‑R M.2377;

*d)* that, while harmonization may be one method of realizing the desired benefits, in some countries, the use of multiple frequency bands can contribute to meeting the communication needs in disaster situations;

*e)* that many administrations have made significant investments in PPDR systems;

*f)* that flexibility should be afforded to disaster relief agencies and organizations to use current and future radiocommunications, so as to facilitate their humanitarian operations;

*g)* that Recommendation ITU‑R M.2015 contains specific frequency arrangements for narrow-, wide-, and broadband PPDR operations as identified both by individual countries and regional organizations;

*h)* that broadband technologies may offer a high degree of flexibility for supporting PPDR applications and that there are a number of different approaches for using and deploying these technologies to meet the broadband communication needs of PPDR agencies and organizations, which are outlined in Reports ITU‑R M.2291 and ITU‑R M.2377,

emphasizing

*a)* that the frequency ranges listed in the *resolves* part of this Resolution are allocated to a variety of services in accordance with the relevant provisions of the Radio Regulations and are currently used intensively by several different services;

*b)* that PPDR applications in the ranges listed in *resolves*2 and 3 are intended to operate in the mobile service;

*c)* that some administrations are of the view that only some of the frequency bands/ranges identified in the *resolves* part of this Resolution are suitable for supporting broadband PPDR applications;

*d)* that flexibility must be afforded to administrations:

– to determine, at national level, how much spectrum to make available for PPDR from the ranges listed in the *resolves* part of this Resolution in order to meet their particular national requirements;

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

– to determine the need and timing of availability as well as the conditions of usage of the bands identified in this Resolution and Recommendation ITU‑R M.2015 for PPDR in order to meet specific regional or national situations;

*e)* that not all of the frequency bands listed in Recommendation ITU‑R M.2015 may be suitable for every type of PPDR application (narrow-band, wideband or broadband),

resolves

1 to strongly recommend administrations to use regionally harmonized bands for PPDR 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 to encourage administrations in all Regions to consider the frequency tuning range 698-894 MHz or parts thereof, as described in *resolves*3, for PPDR applications in order to achieve global harmonization;

3 to encourage administrations to consider the following regionally harmonized frequency tuning ranges, or parts thereof, for their planned and future PPDR operations:

– in Region 1: 380-470 MHz and 698-862 MHz;

– in Region 2[[4]](#footnote-6)5: 698-869 MHz and 4 940-4 990 MHz;

– in Region 3[[5]](#footnote-7)6: 406.1-430 MHz, 440-470 MHz, 698-894 MHz and 4 940‑4 990 MHz;

4 that information on the frequency arrangements for PPDR in these ranges, as well as further details of frequency bands deployed or planned to be deployed by various Regions and/or administrations be provided in Recommendation ITU‑R M.2015;

5 that the inclusion of the above frequency tuning ranges for PPDR does not preclude the use of these ranges by any application within the services to which these frequencies are allocated and does not preclude the use of nor establish priority over any other frequencies for PPDR in accordance with the Radio Regulations;

6 to encourage administrations, in emergency and disaster relief situations, to satisfy temporary needs for frequencies in addition to what may be normally provided for in agreements with the concerned administrations;

7 that administrations encourage PPDR agencies and organizations to utilize both existing and new technologies and solutions, to the extent practicable, to satisfy interoperability requirements and to further the goals of PPDR;

8 that administrations may encourage agencies and organizations to use broadband PPDR solutions taking into account *considering g), h)* and *i)* for providing complementary support to PPDR;

9 to encourage administrations to facilitate cross-border circulation of radiocommunication equipment intended for use in emergency and disaster relief situations through mutual cooperation and consultation without hindering national legislation;

10 that administrations encourage PPDR agencies and organizations to utilize relevant ITU‑R Recommendations and Reports in planning spectrum use and implementing technology and systems supporting PPDR;

11 to encourage administrations to continue to work closely with their PPDR community to further refine the operational requirements for PPDR activities,

invites ITU‑R

1 to continue its technical studies and to make recommendations concerning technical and operational implementation, as necessary, for advanced solutions to meet the needs of PPDR radiocommunication applications, taking into account the capabilities, evolution and any resulting transition requirements of the existing systems, particularly those of many developing countries, for national and international operations;

2 to review and, as appropriate, revise Recommendation ITU‑R M.2015 and other relevant ITU‑R Recommendations and Reports.

**Reasons:** China supports the APT common proposal for agenda item 1.3 adopted by APG15-5. China has allocated the band 351-370 MHz and 1 447-1 467 MHz for PPDR and proposes that the information on the Chinese PPDR band be included in the relative documents.

Accordingly, it is proposed that Resolution 646 be modified as above.

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1. 2 Taking into account, for example, the updated ITU‑D Handbook on disaster relief. [↑](#footnote-ref-2)
2. 3 3-30, 68-88, 138-144, 148-174, 380-400,400-430, 440-470, 764-776, 794-806 and 806-869 MHz. [↑](#footnote-ref-3)
3. 4 In the context of this Resolution, the term “frequency range” means a range of frequencies over which a radio equipment is envisaged to be capable of operating but limited to specific frequency band(s) according to national conditions and requirements. [↑](#footnote-ref-5)
4. 5 Venezuela has identified the band 380-400 MHz for public protection and disaster relief service. [↑](#footnote-ref-6)
5. 6 Some countries in Region 3 have also identified the bands 174-205 MHz, 351-370 MHz, 380-400 MHz and 1 447-1 467 MHz for public protection and disaster relief service. [↑](#footnote-ref-7)