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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 toDocument 25-E** |
|  | **10 September 2015** |
|  | **Original: Arabic** |
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| Arab States Common Proposals |
| 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

Resolution 646 (Rev.WRC-12) on Public Protection and Disaster Relief (PPDR) encourages administrations, for the purpose of achieving regionally harmonized frequency bands/ranges for advanced public protection and disaster relief solutions, to consider certain identified frequency bands/ranges or parts thereof when undertaking their national planning.

WRC-15, under agenda item 1.3, will review and revise, as appropriate, Resolution 646 (Rev.WRC‑12) for broadband PPDR applications in accordance with Resolution 648 (WRC-12).

In accordance with ITU-R studies and a study by CEPT, it is expected that in some countries narrowband PPDR technology will continue to play an important role in the medium term (i.e. at least in the next 10‑15 years), even when future broadband technologies may be capable of meeting mission critical voice requirements.

Pursuant to the results of ITU-R studies and to provide administrations with sufficient flexibility to address the necessary requirements for broadband PPDR, the signatory parties propose addressing the requirements for PPDR, including broadband PPDR, by including a global tuning range and regional 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.

This method also takes account of major technological breakthroughs as well as the evolution of existing technologies that have taken place since its initial adoption in 2003. The proposed revisions recognize that the use of data applications has gone beyond voice applications and is now supporting high speed data, Internet access and video applications, a trend that is considered to be continuously growing. The proposed changes also support the emerging IMT-based mobile broadband technologies, as described in Report ITU‑R M.2291.

Moreover, this proposal complies with *invites ITU-R* in Resolution 646 (Rev.WRC-12) and Resolution 648 (WRC-12) and also covers *resolves* in Resolution 648 (WRC-12), to review and revise Resolution 646 (Rev.WRC‑12) for broadband public protection and disaster relief (PPDR).

Proposals

The Arab States administrations support the modification of Resolution 646 (Rev.WRC-12), to include spectrum for broadband PPDR and frequency bands/ranges to facilitate harmonization.

MOD ARB/25A3/1

RESOLUTION 646 (Rev.WRC‑15)

Public protection and disaster relief

The World Radiocommunication Conference (Geneva, 2015),

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;

*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 promote interoperability and interworking between systems used for public protection and disaster relief (PPDR), both nationally and for cross-border operations in emergency situations and for disaster relief;

*e)* that legacy public protection and disaster relief systems are mostly narrow-band supporting voice and low data-rate applications or wideband with data rates below 1 Mbit/s, typically for systems with a channel bandwidth between 25 kHz and 100 kHz or less;

*f)* that, although narrow-band and wideband systems continue to be used for meeting PPDR requirements, many PPDR agencies have stated a need for broadband applications with data rates in the order of 1‑100 Mbit/s for systems requiring larger channel bandwidths of 5 MHz and above based on International Mobile Telecommunications (IMT) technologies;

*g)* that some administrations have started using IMT technologies such as LTE and LTE-Advanced to meet the needs of their PPDR agencies for data and multimedia capabilities; and considering that Report ITU‑R M.2291 provides details of the capabilities of IMT technologies for meeting broadband PPDR requirements;

*h)* that continuing development of new technologies and systems, such as International Mobile Telecommunications (IMT) and Intelligent Transportation Systems (ITS), may be able to support or supplement advanced public protection and disaster relief applications;

*i)* that disasters and emergency events require response not only from PPDR agencies but also from humanitarian agencies;

*j)* that some commercial terrestrial and satellite systems are complementing the dedicated systems in support of public protection and disaster relief;

*k)* 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;

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

*m)* that some administrations may have different operational needs and spectrum requirements for public protection and disaster relief applications depending on the circumstances;

*n)* 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;

*o)* that some administrations are of the view that common RF spectrum will enable efficient deployment and will ease coordination and harmonization between different PPDR agencies and will advance international aid during disasters and major events; and considering that, in addition to the benefits of scale production, regional harmonization will improve interoperability among first responders and will drive suitable devices and standards dedicated to broadband PPDR;

*p)* 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[[1]](#footnote-2)1;

*q)* that in Region 2, CITEL has recommended the use of the 700 MHz band for PPDR and those PPDR frequency arrangements are determined by administrations;

*r)* that in Region 2, some countries are using the band 380-399.9 MHz for narrowband PPDR,

recognizing

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

– 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 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 public protection and disaster relief 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[[2]](#footnote-3)2, for low-cost communication equipment;

*f)* that the adoption of IMT should be encouraged for broadband PPDR because of the spectral and other operating efficiencies that these technologies offer;

*g)* that currently some bands or parts thereof have been designated for existing public protection and disaster relief operations[[3]](#footnote-4)3;

*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 public protection and disaster relief efforts;

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

*j)* that some administrations are of the view that studies carried out by various user agencies in different countries indicate that broadband PPDR spectrum bandwidth requirements vary to a significant extent between countries, regardless of whether the PPDR network is owned/operated by a government PPDR agency, commercial entity or a hybrid commercial/government solution, and they consider that these studies indicate a need for a spectrum bandwidth of 20 MHz (e.g. 10 + 10 MHz) or more in some countries for broadband PPDR, and that some other administrations may have different bandwidth requirements;

*k)* that certain amounts of spectrum are already in use in various countries for narrowband applications, and that in response to a disaster, access to additional spectrum on a temporary basis may be required for narrowband PPDR operations;

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

*m)* that not all frequencies within an identified common frequency range will be available within each country;

*n)* 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;

*o)* that when a disaster occurs, the public protection and disaster relief 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;

*p)* that some countries in Region 1 have identified certain parts of the frequency range 694‑790 MHz for broadband PPDR deployments,

noting

*a)* that many administrations currently use frequency bands below 1 GHz for narrow-band and some broadband public protection and disaster relief applications and some administrations also use certain frequency bands above 1 GHz for broadband PPDR applications;

*b)* that applications requiring large coverage areas and providing good signal availability would generally be accommodated in lower frequency bands and that applications requiring wider bandwidths would generally be accommodated in progressively higher bands;

*c)* that it would be efficient to use the lower frequency bands, e.g. around 300 MHz, in some countries in Region 3;

*d)* that public protection and disaster relief agencies and organizations have a 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.2033[[5]](#footnote-6)\*, Report ITU‑R M.2291 and Report ITU‑R M.2377;

*e)* that many administrations have made significant investments in public protection and disaster relief systems;

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

*g)* that broadband PPDR services can be realized and deployed in the frequency bands identified for IMT,

emphasizing

*a)* that the frequency bands identified in 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 the fixed, mobile, mobile satellite and broadcasting services;

*b)* that some administrations are of theviewthat only some of the frequency bands/ranges identified in *resolves* 2 of this Resolution are suitable for supporting broadband PPDR applications;

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

– to determine, at national level, how much spectrum to make available for public protection and disaster relief from the bands identified in 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 for public protection and disaster relief in order to meet specific national situations,

resolves

1 to strongly recommend administrations to use regionally harmonized bands for public protection and disaster relief 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, for the purposes of achieving regionally harmonized frequency bands/ranges for advanced public protection and disaster relief solutions, to consider the following identified frequency bands/ranges or parts thereof when undertaking their national planning:

– in Region 1: 380-470 MHz as the frequency range within which the band 380‑385/ 390‑395 MHz is a preferred core harmonized band for permanent public protection activities within certain countries of Region 1;

– the frequency range 694-790 MHz, within which parts thereof are preferred for broadband public protection and disaster relief solutions in some countries in Region 1;

– in Region 2: 380-399.9 MHz, 698-806 MHz, 806-869 MHz, 4 940-4 990 MHz;

– in Region 3[[6]](#footnote-8)6: 406.1-430 MHz, 440-470 MHz, 806-824/851-869 MHz, 4 940‑4 990 MHz and 5 850-5 925 MHz;

NOTE – Some administrations are of the view that administration-specific frequency bands/ranges for public protection and disaster relief (PPDR) solutions should not be included in the “*resolves* 2” of Resolution **646 (Rev.WRC-12)** since the frequency bands/ranges in Resolution **646 (Rev.WRC‑12)** were identified for the purpose of achieving “regionally harmonized” frequency bands/ranges for PPDR. Instead, these should be moved to “*recognizing* *g)*” footnote 3.

3 that the identification of the above frequency bands/ranges for public protection and disaster relief does not preclude the use of these bands/frequencies by any application within the services to which these bands/frequencies are allocated and does not preclude the use of nor establish priority over any other frequencies for public protection and disaster relief in accordance with the Radio Regulations;

4 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;

5 that administrations encourage public protection and disaster relief agencies and organizations to utilize both existing and new technologies, systems and solutions (satellite and terrestrial), to the extent practicable, to satisfy interoperability requirements and to further the goals of public protection and disaster relief;

6 that administrations encourage agencies and organizations to use broadband PPDR radiocommunication systems/applications taking into account *considering h)* and *j)* for providing complementary support to public protection and disaster relief;

7 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;

8 that administrations encourage public protection and disaster relief agencies and organizations to utilize relevant ITU‑R Recommendations in planning spectrum use and implementing technology and systems supporting public protection and disaster relief;

9 to encourage administrations to continue to work closely with their public protection and disaster relief community to further refine the operational requirements for public protection and disaster relief activities;

10 that manufacturers should be encouraged to take this Resolution into account in future equipment designs, including the need for administrations to operate within different parts of the identified bands,

invites ITU‑R

1 to continue its technical studies and to make recommendations concerning technical and operational implementation, as necessary, to meet the needs of public protection and disaster relief 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.

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1. 1 The Working Group on Emergency Telecommunications (WGET), convened by the United Nations Office for Humanitarian Affairs (OCHA), is an open forum to facilitate the use of telecommunications in the service of humanitarian assistance comprising United Nations entities, major non-governmental organizations, the International Committee of the Red Cross (ICRC), ITU and experts from the private sector and Academia. [↑](#footnote-ref-2)
2. 2 Taking into account, for example, the ITU‑D Handbook on disaster relief. [↑](#footnote-ref-3)
3. 3 3-30, 68-88, 138-144, 148-174, 380-400 MHz (including CEPT designation of 380-385/390-395 MHz), 400-430, 440-470, 764-776, 794-806 and 806-869 MHz (including CITEL designation of 821-824/866-869 MHz). [↑](#footnote-ref-4)
4. 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)
5. \* NOTE – Depending on the results of Report ITU‑R M.2377, Report ITU‑R M.2033 will be suppressed and would no longer be referenced in this *noting*. [↑](#footnote-ref-6)
6. 6 Some countries in Region 3 have also identified the bands 174-205 MHz, 351-370 MHz, 380‑400 MHz, 698-806 MHz and 1 447-1 467 MHz for public protection and disaster relief applications. Some administrations have concerns with changing the 746-806 MHz band to 698‑806 MHz. [↑](#footnote-ref-8)