

RESOLUTION 646 (REV.WRC-19)

Public protection and disaster relief

The World Radiocommunication Conference (Sharm el-Sheikh, 2019),

considering

- a)* that the term “public protection radiocommunication” refers to radiocommunications used by agencies and organizations responsible for the 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 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 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;
- g)* that new technologies for broadband PPDR applications are being developed in various standards organizations, e.g. International Mobile Telecommunications (IMT) technologies that support higher data rates and higher capacity for PPDR applications, and these technologies are also being used to meet the needs of PPDR agencies and organizations;
- h)* that continuing development of new technologies and systems, such as IMT and intelligent transportation systems (ITS), may be able to further support or supplement advanced PPDR applications;
- 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;

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- j)* that administrations may have different operational needs and spectrum requirements for PPDR applications depending on the circumstances;
- k)* that an approach based on global and/or regional frequency ranges¹ may enable administrations to benefit from harmonization while continuing to meet national planning requirements,
- recognizing*
- a)* the benefits of spectrum harmonization such as:
- increased potential for interoperability;
 - clear guidance for standardization;
 - increased volume of equipment resulting in economies of scale, more cost-efficient equipment and expanded equipment availability;
 - improved spectrum management and planning;
 - more effective international aid during disasters and major events; 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)* that the Tampere Convention on the Provision of Telecommunication 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;
- e)* 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;
- f)* that Recommendation ITU-R M.1637 offers guidance to facilitate the global cross-border circulation of radiocommunication equipment in emergency and disaster relief situations;
- g)* that Recommendation ITU R M.2009 identifies radio interface standards applicable to PPDR operations;
- h)* that Report ITU-R M.2291 provides details of the capabilities of IMT technologies to meet the requirements of applications supporting broadband PPDR operations;

¹ In the context of this Resolution, the term “frequency range” means a range of frequencies over which radio equipment is envisaged to be capable of operating but limited to specific frequency band(s) according to national conditions and requirements.

- i)* that Report ITU-R M.2377 provides details of systems and applications supporting PPDR operations in narrowband, wideband and broadband use;
- j)* 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 Reports ITU-R M.2377 and ITU-R M.2291;
- k)* that Report ITU-R BT.2299 provides a compilation of supporting evidence to the effect that terrestrial broadcasting plays an important role in disseminating information to the public in times of emergencies;
- l)* that Recommendation ITU-R M.2015 contains regionally harmonized PPDR frequency arrangements, as well as frequency arrangements of individual administrations²;
- m)* 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;
- n)* that the amount of spectrum needed for public protection on a daily basis differs significantly between countries, and that certain amounts of spectrum are already in use in various countries for PPDR applications;
- o)* that, in response to a disaster or emergency, access to additional spectrum on a temporary basis may be required for PPDR operations;
- p)* that not all frequencies within an identified common frequency range will be available for PPDR use within each country;
- q)* that the identification of common frequency ranges within which equipment could operate may ease interoperability and/or interworking, with mutual cooperation and consultation, especially in national, regional and cross-border emergency situations and disaster relief operations;
- r)* that when a disaster occurs, the PPDR agencies and organizations are usually the first responders on the scene using their day-to-day communication systems and, additionally, other agencies and organizations may also become involved in disaster relief operations;
- s)* that some countries in Region 1 have identified certain parts of the frequency range 694-791 MHz for broadband PPDR deployment;
- t)* that some countries in Region 1 have identified certain parts of the frequency range 790-862 MHz for broadband PPDR deployment;

² For example, as of November 2015 some countries in Region 3 had adopted parts of the frequency ranges 138-174 MHz, 351-370 MHz and 380-400 MHz for narrowband PPDR applications and the frequency ranges 174-205 MHz and 1 447-1 467 MHz for broadband PPDR applications.

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- u) the provisions contained in Nos. **5.266** and **5.267**, and Resolution **205 (Rev.WRC-19)**;
- v) that the meteorological aids and meteorological-satellite services operate on a globally harmonized basis in the frequency band 400.15-406 MHz;
- w) that the radio astronomy service operates on a primary basis in the frequency band 406.1-410 MHz and there may be PPDR operations adjacent to that frequency band,

noting

- a) that many administrations will continue to use different frequency bands below 1 GHz for narrowband systems and applications supporting PPDR and may decide to use the same range for future PPDR systems;
- b) that some administrations also use certain frequency bands above 1 GHz for broadband PPDR applications;
- c) that applications requiring large coverage areas and providing good signal availability would generally be accommodated in lower frequency bands;
- d) that many administrations have made significant investments in PPDR systems;
- e) that flexibility allows disaster relief agencies and organizations to use current and future radiocommunications, so as to facilitate their humanitarian operations;
- f) that disasters and emergency events require response not only from PPDR agencies and organizations but also from humanitarian agencies and organizations;
- g) that broadband PPDR can be realized and deployed in the frequency bands identified for IMT;
- h) 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;
- i) the needs of countries, particularly the developing countries³, for cost-efficient communication equipment;
- j) that the use of technologies based on Internet protocols is well established,

emphasizing

- a) that the frequency ranges that are covered by 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 the fixed, mobile, mobile-satellite and broadcasting services;

³ Taking into account, for example, the latest version of the ITU Telecommunication Development Sector (ITU-D) Handbook on disaster relief.

- b) that PPDR applications in the ranges listed in *resolves* 2 and 3 are intended to operate in the mobile service allocated on a primary basis according to the provisions of the Radio Regulations;
- c) that flexibility must be afforded to administrations to determine:
- how much spectrum to make available at a national level for PPDR from the ranges in the *resolves* part of this Resolution in order to meet their particular national requirements;
 - the need and timing of availability as well as the conditions of usage of the frequency bands used for PPDR, including those covered in this Resolution and Recommendation ITU-R M.2015, in order to meet specific regional or national situations⁴;
- d) that the provisions of Nos. **1.59** and **4.10** of the Radio Regulations do not apply to PPDR;
- e) that administrations can adopt their frequency arrangements for the terrestrial component of IMT from those detailed in Recommendation ITU-R M.1036,

resolves

1 to encourage administrations to use harmonized frequency ranges 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 to consider parts of the frequency range 694-894 MHz, as described in the most recent version of Recommendation ITU-R M.2015, when undertaking their national planning for their PPDR applications, in particular broadband, in order to achieve harmonization, taking into account *emphasizing c) and e) above*;

3 to further encourage administrations to also consider parts of the following regionally harmonized frequency ranges for their PPDR applications:

- in Region 1: 380-470 MHz;
- in Region 3: 406.1-430 MHz, 440-470 MHz and 4 940-4 990 MHz;

4 that PPDR frequency arrangements within the frequency ranges specified in *resolves* 2 and 3, as well as countries' frequency arrangements for PPDR, should be included in Recommendation ITU-R M.2015;

5 that the use of the frequency ranges for PPDR in *resolves* 2 and 3 above, 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 they are allocated in the Radio Regulations;

⁴ For example, some countries in Region 1 have identified certain parts of the frequency range 694-862 MHz for broadband PPDR applications.

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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 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 PPDR agencies and organizations to utilize relevant ITU Radiocommunication Sector (ITU-R) Recommendations in planning spectrum use and implementing technology and systems supporting PPDR;

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

invites the ITU Radiocommunication Sector

1 to continue its technical studies and to make recommendations concerning technical and operational implementation, as necessary, 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 revise Recommendation ITU-R M.2015 and other relevant ITU-R Recommendations and Reports, as appropriate.