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| **Radiocommunication Study Groups** |  |
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| Annex 4 to Working Party 5A Chairman’s Report | |
| working document towardS THE DRAFT CPM text for WRC-15 Agenda item 1.4 | |
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*1.4 to consider possible new allocation to the amateur service on a secondary basis within the band 5 250-5 450 kHz in accordance with Resolution* ***649 (WRC‑12)****;*

Resolution **649 (WRC‑12)**: *Possible allocation to the amateur service on a secondary basis at around 5 300 kHz*

## 1/1.4/1 Executive Summary

[Text of the executive summary, not more than half a page of text.]

[TBD]

## 1/1.4/2 Background

[Noting Resolution **649** **(WRC-12)**, an allocation of an appropriate amount of spectrum, not necessarily contiguous, to the amateur service at around 5 300 kHz would be adequate to better satisfy its needs associated with use for providing communications in disaster situations and during relief operations.]

The frequency range 5 250-5 450 kHz is allocated to fixed and mobile (except aeronautical mobile) services in all three Regions on a primary basis. Radiolocation services are also allocated in the range 5 250 to 5 275 kHz as a secondary service in Regions 1 and 3 and Primary in Region 2. Accordingly, a range of possible allocations to the amateur service may be proposed such that administrations might determine how much accommodation can be made to the amateur service.

Based on the recommendation of the 1978 CCIR Special Preparatory Meeting, WARC-79 accepted the principle that, like other high-frequency radio services, the amateur service should have access to a family of frequency bands such that communications can be maintained as propagation conditions change. The amateur radio service has access to allocations in the vicinity of 3 500 and 7 000 kHz; however, there are frequent occasions when ionospheric conditions render either or both of these allocations unsatisfactory for communications over the distances which amateur radio operators are frequently requested to cover in the course of facilitating emergency and disaster relief operations. These distances might be relatively short (less than 1000 km) when providing direct support to first responders or relatively longer (greater than 1000 km) when exchanging information, for example, with international organizations.

Depending on the time of day, season and other propagation factors including the progress of the sunspot cycle, propagation conditions are often such that access to spectrum around 5 300 kHz is essential for operation of amateur stations. A number of administrations including, e.g. Bahrain, Bangladesh, the Czech Republic, Cayman Islands, the Dominican Republic, Finland, Ireland, Norway, Sweden, the United Kingdom, the United States and others have authorized, subject to the provisions of Section II, Article **4.4** of the Radio Regulations, operation by amateur radio licensees within the 5 250‑5 450 kHz frequency range.

Therefore, to be equipped to provide communications at any time, including in times of emergency and disaster-relief, radio amateurs require access to frequencies in the vicinity of 5 300 kHz.

Depending upon the results of studies as requested by Resolution **649 (WRC-12)**, possible methods are set out in [Section 1/1.4/5.](#_1/1.4/6_Methods_to)

## 1/1.4/3 Summary of technical and operational studies, including a list of relevant ITU-R Recommendations and Reports

*[Editor’s Note: Studies undertaken in support of this Agenda item should identify the nature of the radio transmissions amateurs would typically make should the requested allocation be realized. Other studies should demonstrate the ability of the amateur service to co-exist in the capacity of a secondary user with other services in the frequency range sought in the agenda item. In particular, these studies should include an analysis of the occupancy by existing users of individual channels and frequency segments in the spectrum range referenced in the agenda item as a function of location and time-of-day.]*

[Relevant ITU Recommendations would include …

* Recommendation [ITU-R P.533](http://www.itu.int/rec/R-REC-P/en)-11 - Method for the prediction of the performance of HF circuits.
* Recommendation [ITU-R P.372](http://www.itu.int/rec/R-REC-P/en)-10 - Radio noise.
* Recommendation [ITU-R P.368](http://www.itu.int/rec/R-REC-P/en)-9 - Ground-wave propagation curves for frequencies between 10 kHz and 30 MHz.
* Recommendation [ITU-R F.240-7](http://www.itu.int/rec/R-REC-F.240-7-200602-I/en) - Signal-to-interference protection ratios for various classes of emission in the fixed service below about 30 MHz.

– Recommendation [ITU-R F.339-8](http://www.itu.int/rec/R-REC-F.339/en) - Bandwidths, signal-to-noise ratios and fading allowances in complete systems.

– Recommendation [ITU-R M.1677-1](http://www.itu.int/rec/R-REC-M.1677/en) - International Morse code.

– Recommendation [ITU-R M.1732-1](http://www.itu.int/rec/R-REC-M.1732/en) - Characteristics of systems operating in the amateur and amateur-satellite services for use in sharing studies.

– Recommendation [ITU-R F.1761](http://www.itu.int/rec/R-REC-F.1761-0-200602-I/en) - Characteristics of HF fixed radiocommunication systems.

– Recommendation [ITU-R F.1762](http://www.itu.int/rec/R-REC-F.1762-0-200602-I/en) - Characteristics of enhanced applications for high frequency (HF) radiocommunication systems.

– Recommendation [ITU-R F.1821](http://www.itu.int/rec/R-REC-F.1821-0-200709-I/en) - Characteristics of advanced digital high frequency (HF) radiocommunication systems.

– [Recommendation ITU-R.SM.1541-4 - Unwanted emissions in the out-of-band domain.](http://www.itu.int/rec/R-REC-SM.1541/en)

– Report ITU-R M.[HF-SO].

– Report ITU-R М.[5 MHz CHAR].

* Report ITU-R М.[5 MHz compat].
* Recommendation [ITU-R M.1874-1](http://www.itu.int/rec/R-REC-M.1874/en) - Technical and operational characteristics of oceanographic radars operating in sub-bands within the frequency range 3-50 MHz.
* Report [ITU-R M.2234](http://www.itu.int/pub/R-REP-M.2234) - The feasibility of sharing sub-bands between oceanographic radars operating in the radiolocation service and fixed and mobile services within the frequency band 3-50 MHz.

[*Editor’s Note: This statement is for information only it can be removed in the final version.*

Procedures to be followed in the conduct of sharing studies will take account of the methodology in the liaison statement provided by WP 5C to WP 5A [Document 5A/77](http://www.itu.int/md/choice_md.asp?id=R12-WP5A-C-0077!!MSW-E&lang=en&type=sitems) dated 29 May 2012.]

## 1/1.4/4 Analysis of the results of studies

Compatibility of amateur stations with the fixed service systems is quite difficult and it may require operational constraints on the amateur stations.

**1/1.4/5 Methods to satisfy the agenda item**

[Editor’s note: Methods to satisfy the agenda item should be developed and refined pursuant to studies identifying the required protection criteria of the existing users vis-à-vis the proposed secondary allocation. These methods may include a single contiguous secondary allocation or a few smaller allocations within the frequency range of 5 250 to 5 450 kHz.]

## 1/1.4/6 Regulatory and procedural considerations

*[Editor’s note: For reference, the applicable portion of the Table of Frequency Allocations, including the modifications made at WRC-12, is provided below.*

5 060-5 680 kHz

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| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| . . . | | |
| 5 060-5 250 FIXED  Mobile except aeronautical mobile  5.133 | | |
| 5 250-5 275  FIXED  MOBILE except aeronautical mobile  Radiolocation  5.132A   5.133A | 5 250-5 275  FIXED  MOBILE except aeronautical mobile  RADIOLOCATION  5.132A | 5 250-5 275  FIXED  MOBILE except aeronautical mobile  Radiolocation  5.132A |
| 5 275-5 450 FIXED  MOBILE except aeronautical mobile | | |
| 5 450-5 480  FIXED  AERONAUTICAL MOBILE (OR)  LAND MOBILE | 5 450-5 480  AERONAUTICAL MOBILE (R) | 5 450-5 480  FIXED  AERONAUTICAL MOBILE (OR)  LAND MOBILE |
| 5 480-5 680 AERONAUTICAL MOBILE (R)  5.111 5.115 | | |
| . . . | | |

5.111 The carrier frequencies 2 182 kHz, 3 023 kHz, 5 680 kHz, 8 364 kHz and the frequencies 121.5 MHz, 156.525 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the procedures in force for terrestrial radiocommunication services, for search and rescue operations concerning manned space vehicles. The conditions for the use of the frequencies are prescribed in Article **31**.

The same applies to the frequencies 10 003 kHz, 14 993 kHz and 19 993 kHz, but in each of these cases emissions must be confined in a band of  3 kHz about the frequency.     (WRC‑07)

5.115 The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be used, in accordance with Article **31**, by stations of the maritime mobile service engaged in coordinated search and rescue operations.  (WRC‑07)

**5.132A** Stations in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the fixed or mobile services. Applications of the radiolocation service are limited to oceanographic radars operating in accordance with Resolution **612 (Rev.WRC‑12)**. (WRC‑12)

**5.133** *Different category of service:*in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Latvia, Lithuania, Moldova, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5 130-5 250 kHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **5.33**). (WRC‑12)

**5.133A** Alternative allocation: in Armenia, Austria, Belarus, Moldova, Uzbekistan and Kyrgyzstan, the frequency bands 5 250-5 275 kHz and 26 200-26 350 kHz are allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC‑12)

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