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**APT REPORT ON**

**FREQUENCY USAGE OF THE BANDS 8 700-9 300 MHZ AND 9 900-10 500 MHZ**

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**APT Report on Frequency Usage of the Bands**

**8 700-9 300 MHz and 9 900-10 500 MHz**

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1. **Introduction**

At the 15th Meeting of the APT Wireless Group (AWG-15), 27-30 August 2013 in Bangkok, Thailand, it was agreed to survey the usage of the bands 8 700-9 300 MHz and 9 900-10 500 MHz in the Asia Pacific region.

There is a growing demand for very high resolution pictures produced by synthetic aperture radars (SAR) operating in the Earth exploration-satellite service (EESS) (active). This image resolution needed for global environmental monitoring can only be achieved by correspondingly transmission bandwidth.

Report ITU-R RS.2178 describes in detail the essential role and global importance of radio spectrum use for Earth observations and related applications in general. Such a high resolution will enable unprecedented features for long-term global monitoring as well as for environmental monitoring and land-use purposes.

Agenda item 1.12 of WRC-15 provides for consideration of an extension of the current worldwide allocation to the Earth exploration-satellite (active) service (EESS) in the frequency band 9 300-9 900 MHz by up to 600 MHz in accordance with Resolution **651 (WRC-12)**. The bands where the additional EESS allocation is being considered under the WRC agenda item are 8 700-9 300 MHz and 9 900-10 500 MHz.

1. **Scope**

This Report outlines information of current spectrum usage and future plan in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in the Asia Pacific region.

This will assist APT Members to consider the possible allocation of spectrum to the EESS and can be used to ensure that appropriate studies are completed prior to an allocation being considered at WRC‑15.

1. **Vocabulary of terms**

EESS Earth exploration satellite service

SAR Synthetic aperture radar

WRC World Radiocommunication Conference

1. **References**

Report ITU-R RS.2178 – "The Essential Role and Global Importance of Radio Spectrum use for Earth Observations and for Related Applications".

ITU-R Recommendations and Reports developed to assist in understanding compatibility between EESS (active) and existing uses include:

* Recommendation ITU-R RS.2043 “Characteristics of synthetic aperture radars operating in the Earth exploration-satellite service (active) around 9 600 MHz”;
* Report ITU-R RS.2274 “Spectrum requirements for spaceborne synthetic aperture radar applications planned in an extended allocation to the Earth exploration-satellite service around 9 600 MHz”
* Draft new Report ITU-R RS.[EESS-9 GHz\_OOBE] “RF compatibility of unwanted emissions from 9 GHz EESS synthetic aperture radars (SAR) with the EESS (passive), SRS (passive), SRS and RAS operating in the frequency bands 8 400-8 500 MHz and 10.6-10.7 GHz, respectively”;
* Preliminary draft new Report ITU-R RS.[EESS-9 GHz\_RDS] “Sharing analyses of very wideband EESS SAR transmissions with stations in the radio determination service operating in the frequency bands 8 700-9 300 MHz and 9 900-10 500 MHz”;
* Preliminary draft new Report ITU-R RS.[EESS-9 GHz\_FS/MS/AS] “Sharing analyses of very wideband EESS SAR transmissions with stations in the fixed, mobile and amateur radio services operating in the frequency bands 8 700-9 300 MHz and 9 900-10 500 MHz”;
* Preliminary draft new Recommendation ITU-R RS.[EESS9GHz-SRS-Mitigation] “Protection of space research (deep space) space-to-Earth links in the 8 400-8 450 MHz and from unwanted emissions of synthetic aperture radars operating in the earth exploration-satellite service (active) near 9 600 MHz”;
* Preliminary draft new Recommendation ITU-R RS.[EESS9GHz-RAS-Mitigation] “Protection of radio astronomy stations in the 10.6-10.7 GHz from unwanted emissions of synthetic aperture radars operating in the earth exploration-satellite service (active) near 9 600 MHz”.

1. **ITU-R Allocations**
   1. **The Band 8 400-9 300 MHz**

In the Radio Regulations (2012 edition), the frequency band 8 400-9 300 MHz is allocated in three Regions as follows:

Table: ITU-R allocations in 8 400 –9 300 MHz

|  |  |  |
| --- | --- | --- |
| **Allocation to services** | | |
| **Region 1** | **Region 2** | **Region 3** |
| 8 400-8 500 FIXED  MOBILE except aeronautical mobile  SPACE RESEARCH (space-to-Earth) 5.465 5.466 | | |
| 8 500-8 550 RADIOLOCATION  5.468 5.469 | | |
| 8 550-8 650 EARTH EXPLORATION-SATELLITE (active)  RADIOLOCATION  SPACE RESEARCH (active)  5.468 5.469 5.469A | | |
| **8** **650-8** **750** RADIOLOCATION  5.468 5.469 | | |
| **8** **750-8** **850** RADIOLOCATION  AERONAUTICAL RADIONAVIGATION 5.470  5.471 | | |
| **8** **850-9** **000** RADIOLOCATION  MARITIME RADIONAVIGATION 5.472  5.473 | | |
| **9** **000-9** **200** RADIOLOCATION  AERONAUTICAL RADIONAVIGATION 5.337  5.471 5.473A | | |
| **9** **200-9** **300** RADIOLOCATION  MARITIME RADIONAVIGATION 5.472  5.473 5.474 | | |

**5.337** The use of the bands 1 300-1 350 MHz, 2 700-2 900 MHz and 9 000-9 200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.

5.465 In the space research service, the use of the band 8 400-8 450 MHz is limited to deep space.

5.466 *Different category of service:*in Singapore and Sri Lanka, the allocation of the band 8 400-8 500 MHz to the space research service is on a secondary basis (see No. **5.32**).    (WRC‑12)

**5.468** *Additional allocation:*in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burundi, Cameroon, China, Congo (Rep. of the), Costa Rica, Djibouti, Egypt, the United Arab Emirates, Gabon, Guyana, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Jordan, Kenya, Kuwait, Lebanon, Libya, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, Oman, Uganda, Pakistan, Qatar, Syrian Arab Republic, the Dem. People’s Rep. of Korea, Senegal, Singapore, Somalia, Sudan, Swaziland, Tanzania, Chad, Togo, Tunisia and Yemen, the band 8 500-8 750 MHz is also allocated to the fixed and mobile services on a primary basis.    (WRC‑12)

**5.469** *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Hungary, Lithuania, Mongolia, Uzbekistan, Poland, Kyrgyzstan, the Czech Rep., Romania, Tajikistan, Turkmenistan and Ukraine, the band 8 500-8 750 MHz is also allocated to the land mobile and radionavigation services on a primary basis.    (WRC‑12)

5.469A In the band 8 550-8 650 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radiolocation service.     (WRC-97)

**5.470** The use of the band 8 750-8 850 MHz by the aeronautical radionavigation service is limited to airborne Doppler navigation aids on a centre frequency of 8 800 MHz.

**5.471** *Additional allocation:*in Algeria, Germany, Bahrain, Belgium, China, Egypt, the United Arab Emirates, France, Greece, Indonesia, Iran (Islamic Republic of), Libya, the Netherlands, Qatar, Sudan and South Sudan, the bands 8 825-8 850 MHz and 9 000-9 200 MHz are also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars only.    (WRC‑12)

**5.472** In the bands 8 850-9 000 MHz and 9 200-9 225 MHz, the maritime radionavigation service is limited to shore-based radars.

**5.473** *Additional allocation:*in Armenia, Austria, Azerbaijan, Belarus, Cuba, the Russian Federation, Georgia, Hungary, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Romania, Tajikistan, Turkmenistan and Ukraine, the bands 8 850-9 000 MHz and 9 200-9 300 MHz are also allocated to the radionavigation service on a primary basis. (WRC-07)

**5.473A** In the band 9 000-9 200 MHz, stations operating in the radiolocation service shall not cause harmful interference to, nor claim protection from, systems identified in No. **5.337** operating in the aeronautical radionavigation service, or radar systems in the maritime radionavigation service operating in this band on a primary basis in the countries listed in No. **5.471**.    (WRC-07)

**5.474** In the band 9 200-9 500 MHz, search and rescue transponders (SART) may be used, having due regard to the appropriate ITU-R Recommendation (see also Article **31**).

* 1. **The Band 9 900-10 600 MHz**

In the Radio Regulations (2012 edition), the frequency band 9 900-10 600 MHz is allocated in three Regions as follows:

Table: ITU-R allocations in 9 900-10 600 MHz

|  |  |  |  |
| --- | --- | --- | --- |
| **Allocation to services** | | | |
| **Region 1** | **Region 2** | | **Region 3** |
| **9** **900-10** **000** RADIOLOCATION  Fixed  5.477 5.478 5.479 | | | |
| **10-10.45**  FIXED  MOBILE  RADIOLOCATION  Amateur | **10-10.45**  RADIOLOCATION  Amateur | | **10-10.45**  FIXED  MOBILE  RADIOLOCATION  Amateur |
| 5.479 | 5.479 5.480 | | 5.479 |
| **10.45-10.5** RADIOLOCATION  Amateur  Amateur-satellite  5.481 | | | |
| 10.5-10.55  FIXED  MOBILE  Radiolocation | | 10.5-10.55  FIXED  MOBILE  RADIOLOCATION | |

|  |  |  |
| --- | --- | --- |
| **Allocation to services** | | |
| **Region 1** | **Region 2** | **Region 3** |
| 10.55-10.6 FIXED  MOBILE except aeronautical mobile  Radiolocation | | |

**5.477** *Different category of service:* in Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Japan, Jordan, Kuwait, Lebanon, Liberia, Malaysia, Nigeria, Oman, Pakistan, Qatar, Syrian Arab Republic, the Dem. People’s Rep. of Korea, Singapore, Somalia, Sudan, South Sudan, Trinidad and Tobago, and Yemen, the allocation of the band 9 800-10 000 MHz to the fixed service is on a primary basis (see No. **5.33**).    (WRC‑12)

**5.478** *Additional allocation:*in Azerbaijan, Mongolia, Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 9 800-10 000 MHz is also allocated to the radionavigation service on a primary basis.     (WRC-07)

**5.479** The band 9 975-10 025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.

**5.480** *Additional allocation:*in Argentina, Brazil, Chile, Costa Rica, Cuba, El Salvador, Ecuador, Guatemala, Honduras, Mexico, Paraguay, the Netherlands Antilles, Peru and Uruguay, the band 10‑10.45 GHz is also allocated to the fixed and mobile services on a primary basis. In Venezuela, the band 10-10.45 GHz is also allocated to the fixed service on a primary basis.     (WRC‑07)

**5.481** *Additional allocation:* in Germany, Angola, Brazil, China, Costa Rica, Côte d'Ivoire, El Salvador, Ecuador, Spain, Guatemala, Hungary, Japan, Kenya, Morocco, Nigeria, Oman, Uzbekistan, Pakistan, Paraguay, Peru, the Dem. People’s Rep. of Korea, Romania, Tanzania, Thailand and Uruguay, the band 10.45-10.5 GHz is also allocated to the fixed and mobile services on a primary basis.    (WRC‑12)

1. **Consideration of the frequency arrangements in APT**
   1. **The Band 8 700-9 300 MHz**

The band 8 700-9 300 MHz is mainly used for

* Radiolocation incl precision approach radar, 9-9.2 GHz (Japan, Singapore, Australia, Sri Lanka, New Zealand, China, Vietnam, Thailand, Bangladesh, Malaysia)
* Radionavigation, incl maritime radar (Japan, New Zealand, China, Bangladesh, Malaysia)
* (Footnote 5.468) Fixed (China, Bangladesh)
* (Footnote 5.468) Mobile (China)
* UWB (Singapore)
* Motion sensors (Bangladesh)
  1. **The Band 9 900-10 500 MHz**

The band 9 900-10 500 MHz is mainly used for

* Radiolocation (Japan - experimental services; Vietnam, Thailand – Weather radar; Australia – Airborne radar, Sri Lanka, China)
* Fixed (STL – Japan; Bangladesh, Malaysia, Indonesia)
* Mobile (TVOB – Japan; FWA – Malaysia, Indonesia)
* Amateur (Japan, Australia, New Zealand, China)
* UWB (Singapore)
* \*EESS (active) (China)

Provided studies undertaken by the ITU-R on the proposed EESS (active) allocation, in accordance with the WRC agenda item 1.12, include all the APT Member's identified use and also demonstrate compatibility with those uses, there should be no impediment to the APG considering the possible extension of the existing EESS (active) frequency band 9 300-9 900 MHz by up to 600 MHz. However, not all APT Members may support this approach.

Attachment

**Current usage and future plans for the bands 8 700-9 300 MHz and 9 900-10 500 MHz**

In order to collect information on current usage and future planning, a Survey Questionnaire entitled "APT Frequency Usage of the Bands 8 700-9 300 MHz and 9 900-10 500 MHz in Asia Pacific Region" was made available to all APT Member countries. The questionnaire include the following questions:

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
|  |  |  |  |  |  |

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

If you answered “Yes” to Question 3 above, please answer Question 4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:**

|  |  |  |
| --- | --- | --- |
|  | **Planned/Future services and applications** | **Timeline** |
| 1 |  |  |
| 2 |  |  |
|  |  |  |

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The following summarises information on the current usage and future plan of the band:

* 1. **Australia**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band [MHz]** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | **8 650 – 8 750** | RADIOLOCATION  AUS87 AUS100 | Radiodetermination  transmitters  operated in  radiofrequency-shielded enclosures for fluid level measurement (8 500-10 600 MHz)  Airborne radar,  surface movement radar, precision approach radar,  airborne weather radar  Primary surveillance radars operating in the band 9 000-9 200 MHz are a component of the Advanced Surface Movement Guidance and Control System (ASMGCS) used for airport surveillance at major airports | Various enterprises plus non-commercial use by governments, community & volunteer groups | Licences in these frequency ranges include class licences for low interference potential devices (no fees or formal licence application required) and apparatus licences which are generally issued with the assumption of renewal on a year-by-year basis  ASMGCS operation in the band 9 000-9 200 MHz is required until 2030 and likely beyond |
| 2 | **8 750 – 8 850** | RADIOLOCATION  AERONAUTICAL  RADIONAVIGATION  470 AUS87 |
| 3 | **8 850 – 9 000** | RADIOLOCATION  MARITIME  RADIONAVIGATION  472 AUS87 |
| 4 | **9 000 – 9 200** | AERONAUTICAL  RADIONAVIGATION  337 RADIOLOCATION  473A AUS87 |
| 5 | **9 200 – 9 300** | RADIOLOCATION  AUS101A  MARITIME  RADIONAVIGATION  472 474 AUS87 |
| 6 | **9 900 – 10 000** | RADIOLOCATION  AUS101A Fixed  AUS101A  Mobile AUS101A  479 AUS87 | Radiodetermination  transmitters  operated in  radiofrequency-shielded enclosures for fluid level measurement (8 500-10 600 MHz)  Airborne radar, government fixed and mobile, amateur repeaters, amateur beacons  Amateur service: Terrestrial and Earth-moon-Earth operation using both portable and fixed stations (10 000-10 450 MHz). | Various enterprises plus non-commercial use by governments, community & volunteer groups | Licences in these frequency ranges include class licences for low interference potential devices (no fees or formal licence application required) and apparatus licences which are generally issued with the assumption of renewal on a year-by-year basis |
| 7 | **10 000 – 10 450** | FIXED AUS101A  MOBILE AUS101A  RADIOLOCATION  AUS101A Amateur 479 |
| 8 | **10 450 – 10 500** | RADIOLOCATION  AUS101A Amateur  Amateur–satellite |

Note: Primary services are expressed in upper case letters and secondary services are expressed in lower case letters.

Australian footnotes:[[1]](#footnote-1)

AUS87 Radio astronomy facilities operated by the CSIRO at the Paul Wild Observatory Narrabri (latitude 30° 18' 46.40" S, longitude 149° 33' 0.44" E), the Parkes Observatory (latitude 32° 59' 54.25" S, longitude 148° 15' 48.65" E) and the Mopra Observatory Coonabarabran (latitude 31° 16' 04.12" S, longitude 149° 05' 58.72" E) and by the University of Tasmania at the Mount Pleasant Observatory Hobart (latitude 42° 48' 12.92" S, longitude 147° 26' 25.86" E) and the Ceduna Observatory (latitude 31° 52' 03.69" S, longitude 133° 48' 35.40" E), and at the Canberra Deep Space Communication Complex (latitude 35° 23' 54.46" S, longitude 148° 58' 39.66" E) conduct passive observations in the frequency bands 1.2–1.8 GHz, 2.2–2.7 GHz, 4.5–6.7 GHz, 8–10 GHz and 16–26 GHz using receivers that are highly sensitive to interference. The Paul Wild and Mopra observatories also operate in the bands 30–50 GHz and 75–115 GHz.

There are also other Australian specific footnotes relating to government use of the bands.

Currently[[2]](#footnote-2), there are:

* 64 devices licensed for operation in the 8 700-9 300 MHz band. Locations of these are at the red dots in Figure 1[[3]](#footnote-3), and
* 49 devices licensed for operation in the 9 900-10 500 MHz band. Locations of these are at the green dots in Figure 1[[4]](#footnote-4).



**Figure 1: Locations of licensed devices in the 8 700-9 300 MHz and 9 900-10 500 MHz bands in Australia**

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:**

There are currently services used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz.

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:**

Yes

If you answered “Yes” to Question 3 above, please answer Question 4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:**

|  |  |  |
| --- | --- | --- |
|  | **Planned/Future services and applications** | **Timeline** |
| 1 | Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan for radio astronomy services and some additional services. The band plan is to establish a radio quiet zone, and provide for the establishment of supplementary radio quite zones, to prevent harmful interference to radio astronomy services. The band plan applies to certain parts of Australia for the frequency range 70 MHz-25.25 GHz. See the Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan 2011 for detail. | Ongoing |
| 2 | ASMGCS system for Perth and possibly Adelaide. | 12 months |

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:**

Australia supports in principle an extension of the current allocation to the Earth exploration-satellite service (active) in the 9 300-9 900 MHz band by up to 600 MHz, on a primary or secondary basis as appropriate, in accordance with Resolution **651 (WRC-012)**, specifically ensuring protection of existing primary services in the band, and in bands adjacent to the existing allocation and proposed new allocations as identified in recognizing d), e) and f) of the Resolution.

As specified in Resolution **651 (WRC-012)**, there are compatibility issues with existing services in the extended bands that need to be considered in accommodating the proposed allocation. It is understood that work regarding the compatibility issues are being conducted within the ITU-R.

**Others**

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:**

Yes, ACMA Spectrum Embargo 41 - no new assignments are to be made within the frequency range 230 MHz -25.25 GHz within 100 km radius of latitude 26° 42’ 15” South and longitude 116° 39’ 32” East. This spectrum embargo is ongoing to support the development of the Mid-West Radio Quiet Zone and the Square Kilometre Array.

* 1. **Bangladesh**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | 8650-8750 MHz | RADIOLOCATION  FIXED  MOBILE | Fixed Links |  |  |
| 2 | 8750-8850 MHz | RADIOLOCATION  AERONAUTICAL  RADIONAVIGATION |  |  |  |
| 3 | 8850-9000 MHz | RADIOLOCATION  MARITIME  RADIONAVIGATION |  |  |  |
| 4 | 9000-9200 MHz | AERONAUTICAL  RADIONAVIGATION  RADIOLOCATION | Aeronautical Primary Radars |  |  |
| 5 | 9200-9300 MHz | RADIOLOCATION  MARITIME  RADIONAVIGATION | Motion Sensors, Maritime Primary Radars |  |  |
| 6 | 9900-10000  MHz | RADIOLOCATION  FIXED  ( According to RR Footnote The band 9 975-10 025 MHz is also allocated to the meteorological-satellite  on a secondary basis for use by weather radars.) | Fixed Links |  |  |
| 7 | 10.00-10.15 GHz | FIXED  MOBILE  RADIOLOCATION  Amateur  ( According to RR Footnote the band 9 975-10 025 MHz is also allocated to the meteorological-satellite  on a secondary basis for use by weather radars.)  (According to National footnotes this band may be used for civil systems is shared with government systems on a coordinated basis) | Fixed Links  Amateur applications  SAB |  |  |
| 8 | 10.15 -10.30  GHz | FIXED  MOBILE  RADIOLOCATION  Amateur  (According to National footnotes this band may be used for civil systems is shared with government systems on a coordinated basis) | Fixed Links including FWA | ADN Telecom Ltd. | Till 2015 |
| 9 | 10.30-10.45 GHz | FIXED  MOBILE  RADIOLOCATION  Amateur  (According to National footnotes this band may be used for civil systems is shared with government systems on a coordinated basis) | Fixed Links  Amateur applications  SAB |  |  |
| 10 | 10.45-10.50  GHz | RADIOLOCATION  FIXED  Amateur  Amateur Satellite  (According to National footnotes this band may be used for civil systems is shared with government systems on a coordinated basis) | Fixed Links  Amateur applications  SAB |  |  |

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:** According to Bangladesh National Frequency Allocation Plan (NFAP) , Radiolocation service, Aeronautical radio navigation service, Maritime radio navigation service, Fixed service, Mobile service, Space research service, Meteorological-satellite service, Amateur services are currently allocated in the bands 8 700-9 300 MHz and 9 900-10 500 MHz . Here is to mention that According to RR Footnote the band 9 975-10 025 MHz is also allocated to the meteorological-satellite on a secondary basis for use by weather radars

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:** No

If you answered “Yes” to Question 3 above, please answer Question 4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:**

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:**

**Others**

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:** Currently there are no issues regarding the bands 8 700-9 300 MHz and 9 900-10 500 MHz.

* 1. **P. R China**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band(MHz)** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | 8700-9300 | RADIOLOCATION | Radiolocation system | Non-commercial | N/A |
| 2 | 8700-8750 | FIXED  MOBILE | Fixed Wireless System | Non-commercial | N/A |
| 3 | 8750-8850 | AERONAUTICAL RADIONAVIGATION | N/A | N/A | N/A |
| 4 | 8825-9300 | MARITIME RADIONAVIGATION | GMDSS(Global Maritime Distress and Safety System) | Non-commercial | N/A |
| 5 | 9000-9200 | AERONAUTICAL RADIONAVIGATION | ASDE(Airport Surface Detection Equipment) /PAR(Precision Approach Radar) /ASMR(Airport Surface Movement Radar) | Non-commercial | N/A |
| 6 | 9900-10500 | RADIOLOCATION | Radiolocation system | Non-commercial | N/A |
| 7 | 9900-10000 | Earth exploration-satellite (active)  Space research (active)  Fixed | EESS (active) experiment system | Non-commercial | N/A |
| 8 | 10000-10500 | FIXED  MOBILE  Amateur | Amateur radio experiment system | Non-commercial | N/A |
| 9 | 10450-10500 | Amateur-satellite | N/A | N/A | N/A |

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:**

N/A

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:**

Yes

If you answered “Yes” to Question 3 above, please answer Question 4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:**

|  |  |  |
| --- | --- | --- |
|  | **Planned/Future services and applications** | **Timeline** |
| 1 | EESS (active) | N/A |
| 2 | The existing services as shown in the above table of Question 1 | N/A |

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:**

There is possibility for EESS (active) systems using the extended bands to coexist with exiting services.

**Others**

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:**

China supports ITU-R sharing studies between EESS (active) and the existing services and supports the extension of EESS (active) bands on the condition that studies show compatibility with the existing services.

* 1. **Indonesia**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radio navigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed inthe bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band**  **[MHz]** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | 8 650–8 750 | FIXED  MOBILE  RADIOLOCATION | N/A | N/A | N/A |
| 2 | 8 750–8 850 | MARITIME RADIONAVIGATION  RADIOLOCATION  AERONAUTICAL RADIONAVIGATION | N/A | N/A | N/A |
| 3 | 8 850–9 000 | RADIOLOCATION  MARITIME RADINAVIGATION | N/A | N/A | N/A |
| 4 | 9 000–9 200 | RADIOLOCATION  AERONAUTICAL RADIONAVIGATION | N/A | N/A | N/A |
| 5 | 9 200–9 300 | RADIOLOCATION  MARITIME RADIONAVIGATION | N/A | N/A | N/A |
| 6 | 9 900–10 000 | FIXED  RADIOLOCATION | N/A | N/A | N/A |
| 7 | 10 000–10 450 | FIXED  MOBILE  RADIOLOCATION  Amateur | Fixed | Commercial use | 5 years (renewal may be allowed) |
| Fixed Service – PMP for BWA | Indosat at 10 157–10 287MHz | 10 years |
| 8 | 10 450–10 500 | RADIOLOCATION  Amateur  Amateur satellite | N/A | N/A | N/A |
| 9 | 10 500–10 550 | FIXED  MOBILE  RADIOLOCATION | Wireless Broadband (to be allocated) |  |  |

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:**

Indonesia will be studied further

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:**

Yes.

If you answered “Yes” to Question 3 above, please answer Question4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:**

The existing services, written in Question 1, will be continuously used in these bands.

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:**

N/A

**Others**

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:**

Indonesia supports the study conducted by ITU-R regarding the sharing and compatibility issues for the extension of EESS (active) bands in agenda item 1.12 of WRC-15.

* 1. **Japan**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band**  **[MHz]** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | 8 700 - 8 750 | RADIOLOCATION | Radio system in experiment, etc. | Non-commercial use | 5 years at most （renewal may be allowed.） |
| 2 | 8 750 - 8 850 | RADIOLOCATION | Radio system in experiment, etc. | Non-commercial use | 5 years at most （renewal may be allowed.） |
| AERONAUTICAL RADIONAVIGATION | Radio system in experiment, etc. | Non-commercial use | 5 years at most （renewal may be allowed.） |
| 3 | 8 850 - 9 000 | RADIOLOCATION | Radiolocation System | Non-commercial use | 5 years at most （renewal may be allowed.） |
| MARITIME RADIONAVIGATION | N/A | N/A | N/A |
| 4 | 9 000 - 9 200 | Radiolocation | N/A | N/A | N/A |
| AERONAUTICAL RADIONAVIGATION | PAR（precision approach radar） | Non-commercial use | 5 years at most （renewal may be allowed.） |
| 5 | 9 200 - 9 300 | RADIOLOCATION | Radio system in experiment, etc. | Non-commercial use | 5 years at most （renewal may be allowed.） |
| MARITIME RADIONAVIGATION | Radio system in experiment, etc. | Non-commercial use | 5 years at most （renewal may be allowed.） |
| 6 | 9 900 - 10 000 | RADIOLOCATION | Radio system in experiment, etc. | Non-commercial use | 5 years at most （renewal may be allowed.） |
| 7 | 10 000 - 10 450 | RADIOLOCATION | N/A | N/A | N/A |
| FIXED | TSL（Transmitter to Studio Link） / STL（Studio to Transmitter Link）/ TTL（Transmitter to Transmitter Link） | Broadcaster etc. | 5 years at most（renewal may be allowed.） |
| MOBILE | TVOB(TeleVision Outside Broadcast), ENG(Electronic News Gathering), EFP(Electronic Field Production)  See Recommendation ITU-R M.1824 | Broadcaster etc. | 5 years at most（renewal may be allowed.） |
| Amateur | Amateur Radio | Non-commercial use | 5 years at most （renewal may be allowed.） |
| 8 | 10 450 - 10 500 | AMATEUR | Amateur Radio | Non-commercial use | 5 years at most （renewal may be allowed.） |
| AMATEUR SATELLITE | N/A | N/A | N/A |

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:**

These frequency bands are widely used in Japan.

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:**

Yes.

If you answered “Yes” to Question 3 above, please answer Question 4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:**

The existing services, written in Question 1, will be continuously used in these bands.

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:**

N/A

**Others**

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:**

Japan supports current ITU-R studies concerning the sharing and compatibility issues for the extension of EESS (active) bands in agenda item 1.12 of WRC-15. Japan also is of the view that the protection of the primary services currently allocated in these frequency bands and adjacent frequency bands should be ensured.

* 1. **Malaysia**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | 8650-8750 | RADIOLOCATION  FIXED  MOBILE | Radiolocation  Radionavigation | Commercial and Non- commercial users | Annual license |
| 2 | 8750-8850 | RADIOLOCATION  AERONAUTICAL RADIONAVIGATION |
| 3 | 8850-9000 | RADIOLOCATION  MARITIME RADIONAVIGATION |
| 4 | 9000-9200 | AERONAUTICAL RADIONAVIGATION  RADIOLOCATION |
| 5 | 9200-9300 | RADIOLOCATION  MARITIME RADIONAVIGATION |
| 6 | 9900-10000 | RADIOLOCATION  FIXED | Radio relay point to point  Fixed Wireless Access | Commercial and Non- commercial users | Annual license |
| 7 | 10000-10450 | FIXED  MOBILE  RADIOLOCATION  Amateur |
| 8 | 10450-10500 | RADIOLOCATION  Amateur  Amateur-satellite |

Note: Primary services are expressed in upper case letters and secondary services are expressed in lower case letters.

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:** There are existing users in the bands of 8 700-9 300 MHz and 9 900-10 500 MHz. Possibility of use of the bands for EESS applications will depend on the outcome of sharing studies and coexistence of services within or adjacent to these bands with protection to be given to the existing services.

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:** No plans for potential future services.

If you answered “Yes” to Question 3 above, please answer Question 4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:**

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:**

**Others**

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:**

* 1. **New Zealand**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | 8 700-8 750 MHz | RADIOLOCATION | Very low power general use | General user licence[[5]](#footnote-5) | Ongoing – no fixed expiry date |
| 8 750-8 850 MHz | AERONAUTICAL RADIONAVIGATION | Airborne weather Radar | Aircraft operators | Ongoing – no fixed expiry date |
| 8 850-9 000 MHz | RADIOLOCATION | Very low power general use | General user licence | Ongoing – no fixed expiry date |
| 9 000-9 200 MHz | Radiolocation | Very low power general use | General user licence | Ongoing – no fixed expiry date |
| 9 200-9 300 MHz | RADIOLOCATION  MARITIME RADIONAVIGATION | Maritime radionavigation radar | Maritime operators | Ongoing – no fixed expiry date |
| 2 | 9 900-10 000 MHz | RADIOLOCATION | Very low power general use | General user licence | Ongoing – no fixed expiry date |
| 10-10.5 GHz | RADIOLOCATION | Very low power general use | General user licence | Ongoing – no fixed expiry date |
| Amateur |  | Amateur operators on non-interference basis with other users | Ongoing – no fixed expiry date |

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:** Although there are licences across the bands, there appears to be little actual use. The exception is the aeronautical and maritime radar bands, where ongoing protection of these existing services is required.

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:** No

If you answered “Yes” to Question 3 above, please answer Question 4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:** Not applicable

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:** Not applicable

**Others**

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:** While specific plans for the operation of future EESS (active) systems in extended allocated in accordance with WRC-15 AI 1.12 have not been developed in New Zealand, availability may lead to the licensing of the systems. The concern is to ensure protection of the existing services, primarily the maritime and aeronautical radionavigation systems. Provided these are compatible, there should be no difficulty with implementing the proposed EESS (active) systems as proposed in agenda item 1.12.

* 1. **Singapore**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | 8700-8750 | Radiolocation,  UWB | Radar, UWB |  | Long term |
| 2 | 8750-8850 | Radiolocation,  Aeronautical Radionavigation,  UWB | Radar, UWB |  | Long term |
| 3 | 8850-9000 | Radiolocation,  Maritime Radionavigation,  UWB | Radar, UWB |  | Long term |
| 4 | 9000-9200 | Radiolocation,  Aeronautical Radionavigation,  UWB | Radar, UWB |  | Long term |
| 5 | 9200-9300 | Radiolocation,  Maritime radionavigation,  UWB | Radar, UWB |  | Long term |
| 6 | 9900-10000 | Radiolocation,  Radionavigation,  UWB | Radar, UWB |  | Long term |
| 7 | 10000-10450 | Fixed,  Radiolocation,  UWB | UWB |  | Long term |
| 8 | 10450-10500 | Fixed,  Radiolocation,  UWB | UWB |  | Long term |

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:**

Not Applicable

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:**

No

If you answered “Yes” to Question 3 above, please answer Question 4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:** Not applicable

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:** Not applicable

**Others**

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:**

Yes, could affect existing users. The new applications must not cause interference to existing applications.

* 1. **Sri Lanka**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | 8700-9300 MHz | Radio location  Aeronautical radio navigation  Maritime radio navigation | - | - | - |
| 2 | 9 900-10 500 MHz | -Radio location aeronautical radio navigation | - | - | - |
|  |  |  |  |  |  |

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:** This has to be further investigated

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:** Not immediately

If you answered “Yes” to Question 3 above, please answer Question 4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:**

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:**

**Others**

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:** not at the moment

* 1. **Thailand**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed in the bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band (MHz)** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | **8** **650-8** **750** | RADIOLOCATION | MetSat | - | - |
| 2 | **8** **750-8** **850** | RADIOLOCATION  AERONAUTICAL RADIONAVIGATION | MetSat | - | - |
| 3 | **8** **850-9** **000** | RADIOLOCATION  MARITIME RADIONAVIGATION | - | - | - |
| 4 | **9** **000-9** **200** | RADIOLOCATION  AERONAUTICAL RADIONAVIGATION | Air traffic control  Radar positioning | - | - |
| 5 | **9** **200-9** **300** | RADIOLOCATION  MARITIME RADIONAVIGATION | Radar /SART Positioning | - |  |
| 6 | **9** **900-10** **000** | RADIOLOCATION  Fixed | Weather radar | - | - |
| 7 | **10-10.45** | FIXED  MOBILE  RADIOLOCATION  Amateur | Radar positioning | - | - |
| 8 | **10.45-10.5** | RADIOLOCATION  FIXED  MOBILE  Amateur  Amateur-satellite | - | - | - |

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:** Thailand has existing services in these bands.

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:** No

If you answered “Yes” to Question 3 above, please answer Question 4.

**Question 4:** What is/are planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:**

|  |  |  |
| --- | --- | --- |
|  | **Planned/Future services and applications** | **Timeline** |
| 1 |  |  |
| 2 |  |  |
|  |  |  |

**Question 5:** If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:**

**Others**

**Question 6:** Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:** Thailand is of the views that the existing services must be safeguard and required further studies on frequency sharing where is appropriated.

* 1. **Vietnam**

**Current usage**

**Question 1:** What is/are current allocation(s) (e.g. radiolocation service, aeronautical radionavigation service, maritime radionavigation service, fixed service, mobile service, space research service, meteorological-satellite service, amateur service), application(s) and assigned/licensed inthe bands 8 700-9 300 MHz and 9 900-10 500 MHz in your country?

**Answer:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency Band**  **(MHz)** | **Service** | **Applications** | **Commercial**  **Operator** | **License duration** |
| 1 | 8650-8750 | RADIOLOCATION |  |  |  |
| 2 | 8750-8850 | RADIOLOCATION  AERONAUTICAL RADIONAVIGATION 5.470 |  |  |  |
| 3 | 8850-9000 | RADIOLOCATION  MARITIME RADIONAVIGATION 5.472 |  |  |  |
| 4 | 9000-9200 | AERONAUTICAL RADIONAVIGATION 5.337  RADIOLOCATION  5.473A |  |  |  |
| 5 | 9200-9300 | RADIOLOCATION  MARITIME RADIONAVIGATION 5.472  5.474 | Airport Surveillance | Vietnam Air Traffic Management Corporation | 2 years |
| 6 | 9900-10 000 | RADIOLOCATION  Fixed  5.479 |  |  |  |
| 7 | 10 000 – 10 450 | FIXED  MOBILE  RADIOLOCATION  Amateur  5.479 | Rain characteristics determination | Geoscience Center | 1 years |
| 8 | 10 450-10 500 | RADIOLOCATION  Amateur  Amateur-satellite |  |  |  |

**Question 2**: If there are no services currently used in the bands 8 700-9 300 MHz and 9 900-10 500 MHz, is there any difficulty with use of the bands and/or obstacles to the use of the bands for EESS applications?

**Answer:**

There are a number of radiocommunication services operating in these bands. It is needed to take into account the current networks if the frequency bands are used for EESS applications.

**Future plans**

**Question 3:** Do you have planned or potential future services and applications in the bands 8 700-9 300 MHz and 9 900-10 500 MHz? (Yes / No)

**Answer:**

The bands continue to be used for current systems.

If you answered “Yes” to Question 3 above, please answer Question4.

**Question 4:** What is/are planned or potential future services and applications inthe bands 8 700-9 300 MHz and 9 900-10 500 MHz?

**Answer:**

**Question 5:**If your response to Question 4 is that you plan to operate future EESS (active) systems in any extended bands that may be allocated in accordance with WRC-15 AI 1.12, do you foresee co-existence issues with existing services?

**Answer:**

Currently, Viet Nam is considering to use the frequency band 9 300-9 900 MHz for EESS (active). In the near future, we do not have any plan to use more spectrum for EESS (active).

**Others**

**Question 6:**Do you have any issues to be considered relating to the use of the bands 8 700-9 300 MHz and 9 900-10 500 MHz? If so, what are the issues?

**Answer:**

The future development and protection of current services should be ensured. This administration considers that it is necessary to anticipate the future resolution requirement for the picture of EESS (active).

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. These footnotes are identified in the ACMA Australian Radiofrequency Spectrum Plan (ARSP) [↑](#footnote-ref-1)
2. As of 1 February 2014 [↑](#footnote-ref-2)
3. Note 1: It is not possible to show the locations of all licensed services in Figure 1. This is because of either the mobile nature of the service or that there is no requirement for the service to record their location in the national database. [↑](#footnote-ref-3)
4. See Note 1 [↑](#footnote-ref-4)
5. A general user licence (GUL) provides for certain classes of radio transmitters to be used without the need for the user to obtain an individual licence in New Zealand. This is similar to a licence-exempt regime where frequency use is on a no-interference no-protection basis. [↑](#footnote-ref-5)