

Report from the Meeting of APG2003-4  
(A. Roytblat/FCC)

The 4<sup>th</sup> Asia-Pacific Telecommunity (APT) Conference Preparatory Group Meeting for the World Radiocommunication Conference 2003 (APG2003-4), was held in Busan, Korea from 26 – 30 August 2002. The summary of APG2003-4 decisions with regard to WRC-03 agenda items is provided below:

**1.1 Deletion of names in country footnotes**

With regard to this agenda item, APG2003-4 agreed on the following provisional views:

- (1) Any footnotes should be deleted when they are no longer required.
- (2) In principle, additions should be confined to addition of country names to the existing footnotes and adoption of that should be evaluated based on its effect on other countries.
- (3) Any addition of a new footnote or modification of an existing footnote other than addition of country name to an existing footnote shall comply with the principle of further resolves 1 and 3 of Resolution **26(Rev. WRC-97)**.
- (4) Resolution **26(Rev. WRC-97)** should be reviewed to include more clear and explicit procedure for modification of existing footnotes.

**1.2 Introduction of new modulation techniques with particular reference to digital**

APG2003-4 noted that many of the previous APT proposals under this agenda item were incorporated in the Report of the SC. The APT members supported the following actions under this agenda item:

- (1) to facilitate the introduction of digital HF broadcasting technology such as DRM, for short-wave broadcasting in all HF broadcasting bands including the WARC-92 extension bands. APT members believe that WARC-92 extension bands are and should be available for both analogue and digital emissions.
- (2) the introduction of digital broadcasting. APT members were of the view that a long-term plan is needed for the introduction of digital broadcasting, taking into account the economic burden arising from the replacement of transmitters and receivers. APT members believe that digital emissions should be permitted in all bands allocated to HF broadcasting including the WARC-92 extension bands, employing the digital system in Recommendation ITU-R BS.1514.
- (3) the use of SSB may not have to be considered at this stage, especially now that there is a possibility of improving quality and efficiency through digital transmissions.
- (4) the final date for cessation of DSB should be reviewed, in accordance with the future development of the implementation of digital broadcasting and the deployment levels for digital broadcasting should be studied and reported to the future competent conferences. There was general agreement on the date of access as 1 April 2007 in order to ensure an adequate period for other services to shift their frequencies. One view was expressed that the bands should be available between 1 January 2005 and 1 April 2007, while another view was that access before 1 April 2007 should be made available for HF broadcasting.

Proposals to CPM-02

APG2003-4 agreed on the following proposals to CPM related to agenda item 1.3

- (1) APT members supported the SC version of No. 5.134 of the Radio Regulations as it appears in the SC modification to Annex 5.1-5 of the Draft CPM Report
- (2) APT members supported the SC version of Resolution 517 (Rev WRC-03) as it appears in the SC modification to Annex 5.1-1 of the Draft CPM Report, with additional MODs.
- (3) APT members proposed deletion of the Annex to Resolution 517 (Rev WRC-97), (ommission in the Draft CPM Report and Report of the SC).
- (4) APT members supported the SC version of Appendix 11 as it appears in the SC modified Annex 5.1-2 of the draft CPM Report.
- (5) APT supported the suppression of Resolution 537 (WRC-97) and Recommendations 515 (Rev.WARC-92) and 519 (WARC-92).
- (6) APT members supported the SC modifications to Article 23 and Resolution 535 (WRC-97).
- (7) APT supported the SC modifications to Article 23 of the Radio Regulations and Resolution 535 (WRC-97).
- (8) APT members supported the new Recommendation [YYY] (WRC-03) as it appears in Annex 5.1-3 of the draft CPM Report with modifications.
- (9) APT members supported the modifications to Recommendation 517 (Rev.WRC-03) as it appears in the Annex 5.1-4 of the Draft CPM Report.

### **1.3 Harmonized bands for Public Protection and Disaster Relief (PPDR)**

With regard to this agenda item, APG2003-4 agreed on the following provisional views:

- (1) APT members supported the principle of identification of globally/regionally harmonized bands for PPDR.
- (2) APT members supported the spectrum calculation methodology and note the range of spectrum estimates by the ITU-R as contained in the draft CPM Report relating to agenda item 1.3. The APT members encourage relevant ITU-R working party to further refine the spectrum estimates.
- (3) Most APT member administrations supported option C contained in the draft CPM text because as it gives greater visibility to harmonization objectives for PPDR and also follows the successful IMT2000 model. One APT member, however, has indicated its preference for option B. Some administrations felt that priority should be given for harmonization of frequency bands for narrowband PPDR applications.
- (4) Candidate bands could be chosen out of the following bands identified by ITU-R in the Draft CPM report or through inputs from APT members. It was also noted that ITU-R has identified the candidate bands through a process of a global survey of PPDR usage and based on contributions from members participating in the ITU-R study. APT members generally supported various parts of these bands for global/regional harmonization, recognizing that other APT administrations currently use these bands for non-PPDR applications and would continue to do so. These administrations sought careful consideration of frequency sharing with non-PPDR systems.
  - 3-30 MHz
  - 68-74.8 MHz and 75.2-88 MHz
  - 138-144 MHz and 148-174 MHz
  - 380-399.9 MHz
  - 406.1-430 MHz and 440-502 MHz

(Note: The band 470-502 has been added based on an APT member's contribution)

- 746-806 MHz
- 806-824 MHz and 851-869 MHz
- 870-876 MHz and 915-921 MHz
- 4400-4900 MHz
- 4900-4990 MHz
- 5850-5925 MHz

APT members were encouraged to consider the above bands and submit contributions to the next APG meeting indicating their views on these bands.

#### Proposals to CPM-02

APG2003-4 agreed on the following proposals to CPM related to agenda item 1.3

- (1) Update ANNEX 2.1-2 of the draft CPM report to indicate that some administrations in region 3 are using or plan to use or have identified parts of the frequency bands 68-88 MHz, 138-144 MHz, 148-174 MHz, 380-399.9 MHz, 406.1-430 MHz and 440-502 MHz, 746-806 MHz, 806-824 MHz and 851-869 MHz for PPDR applications.
- (2) Add new subparagraph under Paragraph 2.1.1.1 to emphasis the connection between PP and DR and the need for coordinated action between agencies dealing with PP and DR.

#### Views of Administrations at APG2003-4

Most administrations expressed support for the principle of identification of globally/regionally harmonized frequency bands for implementation of future advanced solutions to meet the needs of public protection agencies. Japan indicated that it is important to consider the candidate frequency bands and regulatory provisions with reference to the actual situation of the land mobile service in each country. New Zealand indicated preference for the bands 75-80 MHz, 138-144 MHz, 470-502 MHz, 812-814 MHz and 857-859 MHz band for narrow band PPDR services and proposed addition of the band 470-502 to the list of candidate bands listed in the draft CPM Report. Iran, New Zealand and Australia stated opposition to identification of 380-399.9 MHz as a global/regional harmonized band for PPDR. New Zealand proposed addition of the band 470-502 to the list of candidate bands listed in the draft CPM Report. ICAO expressed opposition to inclusion of the bands 136-137 MHz and 4200-4400 MHz and 5430-5470 MHz as a global/regional harmonized band for PPDR. Malaysia also indicated its support for all the bands included in the Draft CPM report except for the band 746-806 MHz. Thailand was in favor of the identification of 380-399.9 MHz, 400-430 and 806-869 MHz as a Global /regional harmonized band for PPDR. Singapore supported identification of bands 380-399.9 MHz, 410-430 MHz, 450-470MHz, 806-824MHz and 851-869MHz as a Global /regional harmonized band for PPDR. India continues to consider 380-399.9 MHz band and other bands.

#### **1.4 FSS (NGSO FSS feeder uplinks) and ANRS allocations at 5091-5150 MHz**

With regard to this agenda item APG2003-4 agreed that:

- 1) uncertainty of the introduction of Microwave Landing System (MLS) in the subject band,
- 2) undetermined development/requirements of new aeronautical radio navigation services,
- 3) continued requirement for FSS feeder links of the non-GSO mobile-satellite service, necessitate that the co-primary allocations in the 5 091-5 150 MHz band for each service should be continued for an agreed extended period.

### **1.5 New allocations to MS, FS EESS and SRS and review of RLS at 5150-5725 MHz**

With regard to this agenda item, APG2003-4 agreed on the following provisional views:

- (1) APT members supported an allocation to MS in 5150-5350MHz and 5470-5725MHz under *Resolves 1* subject to feasibility of sharing with the services to which the bands are currently allocated. Some administrations favored a primary allocation and some favored a secondary allocation. Administrations were of the view that the outcome of agenda item 1.6 will need to be taken into account when considering *Resolves 1* of Resolution 736.
- (2) APT members supported possible allocation to FS in 5250-5350MHz within Region 3 under *Resolves 2*. Some administrations favored a primary allocation and some favor a secondary allocation.
- (3) APT members supported allocation to EESS/SRS in 5460-5570MHz under *Resolves 3* subject to feasibility of sharing with the services to which the frequency band is currently allocated and possible other new allocations at WRC-03.
- (4) APT members supported upgrade of the allocation of Radiolocation Service under *Resolves 4* without undue constraints to other existing services and possible new allocations at WRC-03.

#### Proposals to CPM-02

APG2003-4 decided not to make proposals to the CPM related to Agenda Item 1.5.

#### Views of Administrations at APG2003-4

With regard to *Resolves 1* of Resolution 736, Korea, Japan, Malaysia and New Zealand supported the primary allocation to the mobile service (Method A in the draft CPM Report). Japan's support is condition on the outcome of studies on the feasibility of sharing with the existing services. Australia, Indonesia, Singapore and Thailand supported the secondary allocation to the mobile service (Method B in the draft CPM Report) in order to protect the existing services. Iran expressed its support to Method C of the draft CPM Report, or no allocation to the mobile service in the entire 5150-5350MHz and 5470-5725MHz bands. Nokia, representing an industry view, supported the primary allocation to progress the use of RLANs. Support for Method B of Indonesia, Australia and Philippines was conditioned on establishment of appropriate protection for MSS feeder links in the 5150-5250MHz band.

With regard to *Resolves 2*, Japan and Vietnam expressed support for the primary allocation to the fixed service in Region 3 in 5250-5350MHz (Method A in the draft

CPM Report). Korea supported Method B in the CPM Report, or primary allocation to the fixed service in specific countries in Region 3 with minimum interference potential to the existing services. Philippines found either Method A or Method B as acceptable. Singapore did not support the primary allocation. Australia and Thailand supported Method C of the draft CPM Report, or secondary allocation to the fixed service. Malaysia supported Method D in the draft CPM Report, or no allocation to the fixed service. With regard to *Resolves* 3, Australia, Iran, Malaysia and Japan expressed support for the primary allocation to EESS/SRS in 5460-5570 MHz (Method A in the draft CPM Report) subject to protection of the existing services. Korea supported Method B in the draft CPM Report, or no allocation to EESS/SRS in the band.

With regard to *Resolves* 4, Thailand supported the upgrade of Radiolocation service in 5350-5650 MHz. Australia, Japan and Malaysia also supported the upgrade but on the following conditions:

- Japan: allocation to the mobile service in 5470-5725MHz
- Australia: adequate protection to existing radionavigation services
- Malaysia: without undue constraints to existing services and possible other new allocations at WRC-03

Korea and Iran did not support the upgrade. Korea was of the opinion that sufficient spectrum would be made available to radiolocation service as a result of possible allocation in 2900-3100 MHz at WRC-03 under Agenda item 1.17. Iran considered that such an allocation upgrade would severely constrain other services in the band.

## **1.6 Protection of non-GSO MSS feeder links (Earth-to-space) in 5 150-5 250 MHz band**

With regard to this agenda item, APG2003-4 agreed on the following provisional views:

- (1) APT members recognized that the feeder links for non-GSO satellite networks should be protected from the interference generated by wireless access systems including RLANs in the mobile service which may be allocated at WRC-03. APT members also generally supported the incorporation of RLAN operational restrictions, i.e. e.i.r.p. density limits for RLAN terminals and indoor operation, set out in ITU-R Rec. M.1454 in the Radio Regulations, either by direct incorporation or incorporation by reference.
- (2) APT members supported continuation of ITU-R studies with regard to the control of the aggregate interference from MS into FSS taking due account of practical implementation for provision of regulatory measures.
- (3) APT members expressed concerns with:
  - practical regulatory measures to comply with aggregate pfd levels and its application by administrations,
  - the potentially wide deployment of RLANs would make it difficult to control and evaluate aggregate pfd limits.

### Proposals to CPM-02

APG2003-4 agreed on adjustments to RESOLUTION [RLAN 2.3-2] in Method B to exclude fixed service.

### Views of Administrations at APG2003-4

Japan, Korea, New Zealand, Singapore and Thailand expressed their support for Method A. Indonesia and Australia supported Method B. Indonesia stated that Method A fails to provide any protection to non-GSO MSS feeder links from the aggregate interference from RLANs. ICO expressed the same view as Indonesia. Australia also noted that any successful enforcement of aggregate pfd levels was likely to require cooperation among a number of adjacent administrations within a region. Iran generally supported ITU-R studies with further discussion on the adoption of either Method A or B. Malaysia expressed its general opinion in support of protection for feeder links for non-GSO satellite and incorporation of associated regulatory measures.

Regarding the draft CPM text, Australia and ICO pointed out that the current text for Resolution [RLAN 2.3-2] coupled with Method B includes references to the fixed service in addition to the mobile service. Since the fixed service is not relevant to this agenda item, a proposal to exclude those references to the fixed services from the CPM text was generated as an APT contribution.

## **1.7 Amateur and Amateur satellite**

### **1.7.1 Revision of Article S25**

The APG2003-4 supported the draft CPM text. With regard to No. **25.6** method C (§5.2.1.6.3) of CPM report was preferred.

### **1.7.2 Article S19**

With regard to this agenda item the APG2003-4 supported the draft CPM text.

### **1.7.3 Consequential changes to Article S1**

With regard to this agenda item the APG2003-4 supported the draft CPM text.

## **1.8 Unwanted emissions**

### **1.8.1 Boundary between spurious and out-of-band emissions**

With regard to this agenda item APG2003-4 agreed on the following provisional views:

- 1) APT Members were encouraged to use **Rec. ITU-R SM 1539** and **1541** as the basis for defining the boundary between spurious and out-of-band emissions.
- 2) APT Members generally support the Draft CPM report (Sec.6.1.1 of Doc. CPM02-2/1).
- 3) APT Members were also encouraged to review the Recommendations to ensure consistency with practical systems.

### Proposals to CPM-02

APG2003-4 agreed on the following proposals to CPM related to agenda Item 1.8.1:

- (1) Modify §6.1.1.3.2 of draft CPM text to include reference to Recommendation ITU-R SM.1541.
- (2) Modify §6.1.1.4.4 of draft CPM text to include consideration of constraints on Space Services.

### **1.8.2 Protection of passive services from unwanted emissions**

With regard to this agenda item APG2003-4 agreed on the following provisional views:

1. APT Members supported the provisions of *recommends* 5 and 6 of **Rec.66** and the draft CPM report for WRC-2003 agenda item 1.8.2 developed by ITU-R TG1/7 in principle.

2. In developing the regulatory measures, APT Members recognized that the principle of this agenda should be maintained and that “a fair balance” between the active and the passive services needs to be taken into consideration, when including any limit in the Radio Regulations, in order not to put undue constraint on other services.
3. APT Members believe that the compatibility conditions between passive and active services, provided within the Preliminary Draft New Recommendation SM.[BbB], should be explained by taking into account technical and economic factors.

### Proposals to CPM-02

APG2003-4 agreed on further clarification of §6.1.2.2, 6.1.2.3.1, 6.1.2.3.1.1 and 6.1.2.4 of draft CPM text to conform with Recommendation ITU-R SM.[BbB] and SC report.

### **1.9 - GMDSS**

APT members supported the Draft CPM text with the understanding that there is a requirement to:

- (1) Modify the Advantages for Method A to reflect a continuing need for 500 kHz for distress and safety communications until some time in the future;
- (2) Modify the Disadvantage for Method A to point out that some elements of Appendix 13 of the Radio Regulations are not relevant to most domestic or international ship carriage requirements.

#### **1.10.1 – Maritime mobile service identity numbering resource**

APT members supported the Draft CPM text.

#### **1.10.2 – Shore-to-ship communication priorities**

APT members supported the Draft CPM text and while monitoring developments at IMO and INMARSAT.

#### **1.11 Allocation to AMSS at 14.0 - 14.5 GHz Band**

With regard to this agenda item APG2003-4 agreed on the following provisional views:

- (1) APT members supported the removal from the existing MSS allocation of the phrase “*except aeronautical mobile-satellite*” and allow operation of AMSS in the band 14-14.5 GHz.
- (2) Some APT members expressed support for Method A of the draft CPM report and have cited reasons such as:
  - Adequate provisions already exist in the RR to allow implementation of the AMSS as a secondary service
  - A need not to complicate the RR’s with unnecessary regulations when existing regulations suffice.
  - Compliance with pfd limits could imply that the AMSS has a status higher than that of a normal secondary service
- (3) Other APT members expressed support for Method B of the draft CPM report reasoning that there is a need for a regulatory demonstration that AMSS will not cause harmful interference to primary services.
- (4) With regard to Method B, APT members were of the common view that one of the particular solutions identified under Method B, namely, that the relevant ITU-

R Recommendation could be incorporated by reference to an associated footnote, would be the preferred solution.

#### Proposals to CPM-02

APG2003-4 agreed to propose additional modifications to the SC Report on Section 2.4.3 of the draft CPM report to clarify the need for a case-by-case agreement with each potentially affected Administration.

#### Views of Administrations at APG2003-4

Iran insisted that a new Article 9 provision is required to effect coordination of AMSS networks with space services of other administration (using Appendix 8 criteria for Earth stations).

### **1.13 HAPS outside IMT-2000**

APT Members generally supported the results of ITU-R studies, however noted that they do not provide technical sharing criteria between systems using HAPS and other systems, therefore, APT members were of the view that the following studies should be continued in ITU-R and completed as a matter of urgency, with a view of providing protection to co-primary services:

- technical sharing criteria and regulatory procedures between FS using HAPS systems and other services in the ranges 47/48 GHz and 28/31 GHz,
- feasibility of identifying suitable frequency bands for the use of HAPS in the fixed service in the range 18-32 GHz in Region 3, focusing particularly, but not exclusively, on the bands 27.5-28.35 GHz and 31.0-31.3 GHz,
- identification of the feasible frequency bands and necessary regulatory procedures of the systems using HAPS for the fixed and mobile services in the bands above 3 GHz which are allocated exclusively to the terrestrial radiocommunication services.
- Due to the lack of study results, Resolutions 122 (Rev.WRC-2000) and 734 (WRC-2000) need to be revised to extend the time frame of the ITU-R studies to the WRC-05/06.

#### Proposals to CPM-02

APG2003-4 developed proposal to modify. paragraph 4.1.1.4 and 4.1.2.4 of the CPM text to account for results of compatibility studies between HAPS and passive services and to recognize that ITU-R did not provide technical sharing criteria between systems using HAPS and other services (except passive services).

#### Views of Administrations at APG2003-4

Japan was of the view that based on new ITU-R Recommendations concerning the compatibility with EESS and RAS in the 31 GHz band, RR 5.543A should be modified, and that studies should be continued on the feasibility of additional identification for HAPS in the fixed and mobile services in the bands above 3GHz allocated exclusively for the terrestrial services, taking into account the future possibility of the systems using HAPS for new applications.

Korea was of the view that the studies on the technical sharing criteria and regulatory procedures were not completed by WRC-2003, Resolutions 122 (Rev.WRC-2000) and

734 (WRC-2000) need to be revised to extend the time frame of the studies to the next WRC.

Iran was of the view that emergence of new technologies should be encouraged without any impact on already allocated services and that inter-regional issues should also be taken into account (e.g. when introducing HAPS in 18-32 GHz within Region 3).

Thailand was of the view that additional studies are required to assess the impact of HAPS on the GSO FSS operating in the band 27.5 - 28.35 GHz.

Singapore was of the view that changes to RR Nos. 5.537A and 5.543A are not supported unless specific regulatory and/or technical provisions are developed by ITU-R to protect existing services from the interference of HAPS, especially when the deployment of HAPS in one country may affect its neighboring countries.

China noted the inconclusive outcome of ITU-R studies. China proposed that in addition to unwanted emission limits in 5.543A, further operational restrictions such as guard band, appropriate separation distance etc. should be also included in that footnote.

#### **1.14 Harmful interference in the MMS and AM(R)S and review of MF/HF channels for digital use**

**ISSUE A:** APT members supported the Draft CPM text while noting that the feasibility of each method may need further evaluation. APT members also supported the draft modifications to Resolution **207 (Rev.WRC-2000)** developed by the SCRPM for inclusion in §5.5.4 except that there is a requirement for an amendment to technique 5 shown in the Annex to the modified resolution to ensure that warning messages are not transmitted without evidence of harmful interference. APG2003-4 agreed on a modification to the Annex to draft Resolution **207 (Rev.WRC-03)** as input to the CPM.

**ISSUE B:** APT members supported Method A in the Draft CPM text.

**ISSUE C:** APT members supported the Draft CPM text provided that any new technologies being introduced are on the basis of not causing any interference to safety allocated spectrum, and that the new technologies should be introduced considering the appropriate transition period.

#### **1.15 Radio Navigation Satellite Service**

The APT members expressed support for the development of new and competitive RNSS systems provided that existing co-primary services are adequately protected.

##### **a) Resolution 605 - Protection of ARNS at 1164-1215 MHz from RNSS (s-to-E)**

APT members noted the progress of studies within ITU-R WP8D for the sharing in the 1 164-1 215 MHz band between the existing ARNS and planned RNSS systems and support the method identified in the draft CPM text for Resolution **605**. They also noted the concept of milestones and consider that it requires further study in ITU-R in order to avoid duplication of regulatory procedures. APT members have not finalized their views on this issue.

##### **b) Resolution 606 - Protection of radiolocation and radionavigation in the 1215-1300 MHz band from RNSS space to Earth emissions**

APT members recognized the need for the protection of radars in the 1 215-1 300MHz band from RNSS signals. They noted that the ITU-R studies for Resolution **606**, to date, have been inconclusive to show a need for a pfd limit. Some APT members supported the pfd limit while others indicated that it will unnecessarily constrain radars and

development of RNSS. APT members agreed to oppose the adoption of method C in the draft CPM text (pfd only in part of the band).

**c) Resolution 604 - Protection of radioastronomy in the 4490-5000 MHz band from RNSS space to Earth emissions in the 5010-5030 MHz band**

APT members supported the outcome of ITU-R studies for Resolution 604 as outlined in the current method in the draft CPM text to protect the RAS from RNSS signals in the near adjacent band.

Proposals to CPM-02

APG2003-4 developed a proposal with regard to Resolution 606 to delete Method C (draft CPM report para.1.2.2.3.4).

**1.16 Worldwide allocation around 1.4 GHz for non-GSO MSS feeder links**

With regard to this agenda item some APT members developed the following provisional views:

- 1) APT members were generally of the view that new allocation to the MSS feeder links near 1.4 GHz could not be supported, taking into account the study results by the ITU and footnote 5.340.
- 2) APT members recognized that some Region 3 administrations expressed their needs to allocate new frequencies to the MSS feeder links. APT members agreed that this matter could be reviewed when sufficient techniques to mitigate harmful interference have been available to protect existing services, especially the Radio Astronomy Service and the Earth Exploration Satellite Service (passive).
- 3) APT members have not yet decided on suppression of Resolution 127 (Rev. WRC-2000).

**1.17 Upgrade of radiolocation to primary status in the band 2900-3100 MHz**

APG2003-4 agreed that the impact of upgrading the radiolocation service so as not to cause harmful interference to the radionavigation service should be considered. APT members were of the view that in order to eliminate the impact of upgrading the radiolocation service to primary, the use of this band by the radiolocation service should be limited to ground-based and maritime radars to protect radionavigation service from harmful interference caused by airborne radars.

Proposals to CPM-02

APG2003-4 decided not to make proposals to the CPM related to Agenda Item 1.17

**1.18 Primary allocation to FS at 17.3-17.7 GHz in Region 1**

With regard to this agenda item, APT Members concluded that no new allocation should be made to FS in Region 1 in the band 17.3-17.7 GHz.

**1.19 Regulatory provisions to avoid misapplication of the non-GSO FSS single-entry limits**

With regard to this agenda item, APG2003-4 was of the view that no further study or regulatory action is necessary on this issue. This is in line with the conclusions of the

ITU-R on this issue. APT also recognized that the suppression of Resolution 135 should be considered carefully, if such misapplication were to raise any difficulty in the future.

#### Proposals to CPM-02

APG2003-4 decided not to make proposals to the CPM related to Agenda Item 1.19

#### **1.21 Terrestrial Wireless Interactive Multimedia Systems**

With regard to this agenda item APG2003-4 agreed on the following provisional views:

- 1) APT Members have acknowledged that at this time there are no regulatory impediments to the development of TWIM applications. However, the development of definition of TWIM applications need further study. A study on the advantages and disadvantages of the spectrum harmonization of TWIM applications need to be conducted within the ITU-R.
- 2) Before spectrum allocations for TWIM applications can be made, the implication for all existing and planned services should be taken into account.

#### Proposals to CPM-02

APG2003-4 decided not to make proposals to the CPM related to Agenda Item 1.21

#### **1.22 IMT-2000 and Beyond**

With regard to this agenda item APG2003-4 agreed on the following provisional views:

- 1) All APT Members supported the identification of spectrum for systems beyond IMT-2000.
- 2) Most APT Members supported the identification of spectrum for systems beyond IMT-2000 at WRC-05/6, however any identification is dependent on ITU-R studies and spectrum needs of both developed and developing countries.
- 3) All APT Members recognized that Resolution 228 should be amended according to the result of ITU-R studies.
- 4) Most APT Members recognized that agenda item 1.21 and 1.22 should be discussed separately at WRC-03, however some APT Members consider that these agenda items are in some ways inter-related.

#### Proposals to CPM-02

APG2003-4 agreed to modify §7.2.1.4, 7.2.1.5, 7.2.2.4 and 7.3.1 of draft CPM text in accordance with the results of ITU-R WP8F (June'02) studies (e.g., PDNR M.[IMT.VIS]).

#### Views of Administrations at APG2003-4

Korea was of the view that current allocations may not provide enough bandwidth for systems beyond IMT-2000. Korea stated that WRC-2003 should review the study results of ITU-R WP8F and set a WRC-2006 agenda item to consider identification of suitable spectrum for systems beyond IMT-2000. Japan explained that the necessary regulatory provisions, including identification of the frequency bands for the systems beyond IMT-2000 should be included in the agenda of WRC-05/06, taking into account the progress of ITU-R studies. Japan emphasized that the “mobile access” element of the systems beyond IMT-2000 is particularly important, and noted the need to study the possible

frequency bands for this broadband mobile application. Thailand was also of the opinion that the issue of identification of the spectrum for systems beyond IMT-2000 referred to in Resolution 228 (WRC-2000) should be carefully reviewed at WRC-2003 and possibly identified at WRC-2005/06, recognizing the needs for advanced services with very high data rates and mobility. Japan, Korea and Thailand supported amendments to Resolution 228 (WRC-2000) in the light of studies conducted to date. Australia stated that WRC-03 should suitably modify Resolution 228 (WRC-2000) to encourage, amongst other things, completion of studies on spectrum requirements prior to WRC-05/06 to enable any necessary action to be taken by that Conference. New Zealand supported the adoption of beyond IMT-2000 agenda item for WRC 06 but only after the appropriate ITU-R studies have been progressed. Iran expressed a view that no additional spectrum should be made available for IMT-2000 and beyond unless this action is supported by the studies and that future agenda item should include the consideration of the particular requirements of developing countries. Malaysia supported the continuation of studies of overall objectives, service application, technical and operational issues for the future development of IMT-2000 and systems beyond.

### **1.23 Realignment around 7 MHz to provide the services on a worldwide basis**

With regard to this agenda item, APG2003-4 did not endorse any of the options (Methods A, B or C) proposed in the draft CPM text. Among the reasons for this are potential financial implications on the broadcasting service and impact on other existing services.

#### Proposals to CPM-02

APG2003-4 developed a contribution to the CPM addressing the economic impact of a potential broadcast service spectrum shift .

### **1.24 Sharing conditions in the band 13.75-14 GHz**

Most APT members preferred draft CPM Report Method B, taking into account the lack of FSS Ku band uplink frequency spectrum in Region 3, and the possibilities for sharing. Some member countries recognizing the lack of agreement on technical input parameters in ITU-R studies expressed preference for Method A. APT members were unable to agree on a single preferred method. All APT members were urged to participate in the technical studies of the ITU correspondence group, in order to arrive at agreed values for X, Y, f(D) with the expectation of developing a common APT proposal. It was agreed that APT member states should consider the preferred method at the next APG meeting using the proposed values, and discussions on the ITU-R studies,

#### Proposals to CPM-02

APG2003-4 decided not to make proposals to the CPM related to Agenda Item 1.24

### **1.25 HDFSS above 17.3 GHz**

APT Members were of the view that the objective of this agenda could be best achieved by the identification of HD-FSS band through a footnote in Article 5 which also references a WRC Resolution providing guidance for implementation. APT members also agreed that the footnote should express that this identification does not preclude the use of these bands by other services to which these bands are allocated.

APT Members agreed that the following bands are not suitable for identification of HD-FSS on a regional or global basis:

- 17.3-18.8 GHz;
- 19.3-19.7 GHz;
- 21.4-22.0 GHz; and
- 37.5-40.0 GHz.

APT Members consider that the bands 29.5-30.0 GHz (Earth-to-space) and 19.7-20.2 GHz (space-to-Earth) are suitable for identification of HD-FSS.

#### Proposals to CPM-02

APG2003-4 decided not to make proposals to the CPM related to Agenda Item 1.25

#### Views of Administrations at APG2003-4

Japan did not support the band 21.4-22.0 GHz for HD-FSS identification from the viewpoint of protection of BSS (HDTV) and ubiquitous nature of HD-FSS. Brunei, China, Indonesia, Mongolia, Pakistan, Philippines, Singapore and Thailand proposed bands 18.8-19.3 GHz (space-to-Earth)/28.6-29.1 GHz (Earth-to-space) and 19.7-20.2 GHz (space-to-Earth)/29.5-30.0 GHz (Earth-to-space) for HD-FSS identification as an APT common proposal. Australia supported the identification of HD-FSS spectrum above 17.3 GHz, recognizing that the only bands in which NGSO FSS systems have equal regulatory status with respect to GSO FSS systems are 18.8-19.3 GHz and 28.6-29.1 GHz and sharing with HDFSS would not be feasible in the same geographic area. Australia also supported the identification of HD-FSS spectrum in the bands 19.7-20.2 GHz and 29.5-30.0 GHz.

Korea, Iran, Japan and Vietnam expressed views that 18.8-19.3 GHz band is not suitable for HDFSS identification. Korea expressed concern that regarding sharing of the frequency bands of 17.7-19.7GHz, 37.5-40GHz, 40.5-43.5GHz and 47.2-50.2 GHz between HD-FSS and other services (e.g., radio astronomy service in the band 42.5-43.5 GHz). Iran indicated that it does not consider 17.3-19.3 GHz to be suitable for HD-FSS. Iran also expressed its support for the draft CPM Report on regulatory considerations and stated that the band 47.5-47.9 GHz and either of bands 48.2-48.54 GHz or 49.44-50.2 GHz or both are suitable for FSS (space-to-Earth) allocation and "HD-FSS" identification on global basis.

Brunei, China, Indonesia, Mongolia, Pakistan, Philippines, Singapore, Malaysia and Iran expressed their support for Method C of the draft CPM Report as the Method to satisfy this agenda item.

#### **1.26 Earth stations on-board vessels**

The APT is of the view that clear provisions in the Radio Regulations are required in order to authorize ESV operation in the 6 and 14 GHz bands, in order to adequately protect other services from ESV interference.

No agreement was reached in any other area concerning this agenda item.

#### Proposals to CPM-02

APG2003-4 decided not to make proposals to the CPM related to Agenda Item 1.26

#### Views of Administrations at APG2003-4

Australia, China, Iran, Japan, Malaysia, Thailand and Singapore were of the view that provisions in the radio regulations are required to protect other services from ESV interference. China supported Method A of the draft CPM Report; Iran and Korea supported Method B. Australia proposed that provisions to be developed permit ESVs to transmit in the 6 GHz band when rain attenuation precluded use of transmitters in the 14 GHz band. Japan stated that limitations on the minimum size of ESV antennas and the maximum occupied bandwidth per vessel proposed in the draft CPM Report gives rise to undue constraints for the operation and further development of ESVs, and proposed the following points:

- i. Delete limitations on the minimum size of ESV antennas and the maximum occupied bandwidth per vessel, and revise the maximum ESV's EIRP spectral density permitted to be radiated towards the horizon;
- ii. Technical limitations shall be applied only in bands shared with terrestrial services. There is no need to apply such limitations where bands are not shared with terrestrial services;
- iii. Technical limitations shall be applied only to the ESVs intended to be operated without authorization of the administration concerned. There is no need to apply such limitations to stations which are authorized by the administration concerned.

Based on the above points, Japan proposed changes to Attachment 2 to example RESOLUTION XXX and/or section 4.4.3 of the draft CPM report. There was no support for this proposal going forward, and as three administrations opposed this text going forward no further action was being considered at this APG 2003-4 meeting. Australia and Iran opposed any reduction in the dish size in Draft new Recommendation ITU-R SF.[Doc.4/95-9/154] until appropriate ITU-R studies show that such a reduction is feasible.

Iran states that:

- i. The application of operational procedures described in Resolution [ESV 4.4-1] and Resolution [ESV 4.4-2] inside the minimum distance could result in costs to the administrations involved. Any such cost should be borne by the ESV operators.
- ii. The reference point from which the minimum distance is referred to is determined by the concerned administration.
- iii. Coordination procedures must be initiated for the ESV network where the class of space and earth stations should match, and the space station and earth station have the same category of allocation. Iran is also of the opinion that the minimum distance referred to in Resolution [ESV 4.4-1] and Resolution [ESV 4.4-2] beyond which an ESV will not have the cause unacceptable interference to other services is based on certain technical characteristics of ESVs. This distance is dependent on a set of assumptions that are subject to change.

Indonesia proposed that ESVs operate in the bands 3400 – 4200 MHz and 5925 – 6725 MHz. Iran, Malaysia and Singapore opposed operation in the band 6425 – 6725 MHz because sharing studies have not been carried out. China believed that the radio regulations should not include provisions for operation of ESVs inside the minimum distance, but wants it left to each administration to determine their preferred positions.

### **1.27 Regulatory Procedures and sharing criteria in Appendices S30 and S30A**

With regard to this agenda item, APG2003-4 noted that the sharing criteria and the regulatory procedures in the BSS Planned bands are very important for the operation of BSS, FSS and FS in Region 3. APG2003-4 further noted the significance of an adequate rain fade margin in Region 3.

APT members expressed general support for the reduction of unnecessary coordination, while noting that sharing criteria should be established based on country/region specifics. Consequently, APT members were of the view that the minimum antenna size to be taken into account in the development of the pfd masks should be 45 cm for Region 3 BSS Plan and FSS and 60cm for Region 1 BSS.

With regard to the regulatory provisions Nos. 4.1.18 to 4.1.20 contained in Appendices 30 and 30A, APG2003-4 was of the view that further study is required to assess the possible limitation methodology of either the single entry interference caused by each of the assignments or the aggregate interference caused by all the assignments.

APT Members also considered a proposal from Iran that the Rules of Procedure permitting the grouping of multiple networks at a single orbital position need to be suppressed. However, it was felt that this issue required further consideration by APT Members.

#### Proposals to CPM-02

APG2003-4 developed modifications to Sections Section 3.2.2.3 and Section 3.2.3 regarding the minimum antenna diameter of the receiving earth station (Annex 1, 4, 6 of AP30). APG2003-4 also developed additional text to the CPM Report under Section 3.2.3 with respect to 5.2.1d) of Article 5 of Appendix 30.

#### Views of Administrations at APG2003-4

Japan was of the view that the minimum antenna size to be taken into account in the development of the pfd masks for protection of the BSS and FSS in Region 3 should be 45 cm. Australia was of the view that further study of 45cm dish size is required as these may preclude 4° satellite spacing for the BSS List. Korea noted that 45cm antennas have been used in other parts of the world for reception of TV signal transmitted from satellite, even though Regions 1 and 3 BSS Plan is based on 60cm antennas. Korea, therefore, expressed the view that 45cm should be considered as a minimal antenna diameter for sharing studies between BSS and FSS. Korea also proposed to develop an APT common proposal to modify No.5.492 and 5.2.1d) of AP30A regarding the use of BSS feeder-link assignments for GSO FSS (Earth-to-space) in the bands 14.5-14.8 GHz and 17.3-18.1 GHz. Asiasat stated that grouping concept is a desirable and required feature for administrations wishing to efficiently operate their BSS assignments now or in the future, and therefore to support its retention. Iran stated that any relaxation of the pfd masks that may lead to more constraint on BSS assignments in the Regions 1 and 3 Plan and List should be considered in conjunction with the deletion of provisions No. 4.1.18 and 4.1.18bis of Article 4 of Appendices 30 and 30A as well as Rules of Procedure currently permitting the grouping of multiple networks at single orbital position.

### **1.28 RNSS differential correction signals at 108-117.975 MHz**

APT members recognized that frequency spectrum is needed in the 108-117.975 MHz band for transmission of radionavigation satellite differential correction signals for aircraft precision approach, landing and aerodrome surface movement control functions. They were of the view, however, that the introduction of these systems shall not adversely impact existing services nor must it required more protection from FM broadcasting than already provided.

#### Proposals to CPM-02

APG2003-4 decided not to make proposals to the CPM related to Agenda Item 1.28

### **1.29 Sharing between GSO and non-GSO systems**

With regard to Resolution 78 (WRC-2000) - "*to develop procedures in case the operational or additional operational limits in Article 22 are exceeded,*" APG2003-4 was of the view that there is a need to develop necessary procedures to be applied in cases where the operational or additional operational limits in Article 22 are exceeded. Specifically, APG2003-4 considered that the existing procedures contained in Sections V and VI of Article 15 together with an ITU-R Recommendation, incorporated by reference in the Radio Regulations (Article 22), containing methodologies and procedures to identify and quantify the level of interference produced by a non-GSO system in excess of the operational limits contained in Article 22 could be an appropriate solution.

#### Proposals to CPM-02

APG2003-4 developed modifications to Sections 3.3.2.3 and 3.3.2.4 of the draft CPM Report.

#### Views of Administrations at APG2003-4

Japan was of the view that procedure for the case where the single-entry operational limits and/or the single-entry additional operational limits in Section II of Article 22 are not met should be based on the guideline in Annex 1 of Resolution 78 (WRC-2000). Korea supported Method B of the draft CPM text and proposed to delete the other Methods (A1, A2 and C). Iran expressed that the current Radio Regulations are adequate. However, a specific ITU-R Recommendation containing a set of procedures would be necessary without being incorporated by reference. This Recommendation would be used by administrations without the involvement of the Bureau. Thailand supported the use of existing provisions in the Radio Regulations, namely Section V and VI of Article 15, together with an ITU-R Recommendation containing methodologies and procedures to identify and quantify the level of interference produced by a non-GSO system when the operational limits contained in Article 22 are exceeded.

With regard to Resolution 136 (WRC-2000)- "*to undertake, as a matter of urgency, the appropriate technical, operational and regulatory studies on sharing arrangements which achieve an appropriate balance between GSO FSS networks and non-GSO FSS systems in the frequency range 37.5-50.2 GHz,*" APG2003-4 was of the view that sharing conditions between non-GSO FSS systems and GSO FSS networks in the frequency range 37.5-50.2 GHz must be based on the results of the ITU-R studies, taking into

account the principle of efficient spectrum utilization. APT members expect no decision on this issue at WRC-03, except for further studies to be reported for consideration by WRC-06.

#### Proposals to CPM-02

APG2003-4 decided not to make proposals to the CPM related to this issue.

#### Views of Administrations at APG2003-4

Japan indicated that introduction of sharing conditions between non-GSO FSS systems and GSO FSS networks in the frequency range 37.5-50.2GHz must be based on the concrete demands of non-GSO FSS systems from the viewpoint of efficient spectrum utilization. Iran submitted that no decision is expected at WRC-03, except the inviting the ITU-R for further studies to be reported for consideration by WRC-06. Malaysia was of the view that sharing between non-GSO FSS systems and GSO FSS systems in the frequency range 37.5-50.2 GHz should be studied with consideration given to the practical demands of non-GSO FSS systems from the viewpoint of effective frequency usage.

### **1.30 Possible changes to advance publication, coordination and notification**

With regard to this agenda item, APG2003-4 was of the view that:

1. In order to reduce the backlog related to the processing of satellite network filings in the BR, simplification of Appendix 4 and automation of examination for Article 5 compliance to be supported.
2. The effectiveness of the RRB Rules of Procedures relating to the elimination of backlog should be periodically monitored in order to enable the administrations and RRB to take appropriate action. APG2003-4 noted that the RRB's Rules of Procedures instructing the BR to apply the concept of coordination arc to all satellite services above 3 GHz need to be revised in order to exclude its application to MSS due to the fact that the coordination arc concept have not yet been studied by ITU-R SGs with respect to the MSS.
3. Member states should be provided with a user friendly software for the validation of all electronic filings before these files are submitted to the BR in order to minimize the exchange of correspondences between the administrations and BR as well as the submission of incorrect or improper data elements to the BR.
4. The scope of Agenda item 1.30, which stems from the Resolution 86 (PP-98, Minneapolis), must be strictly limited to those intended at WRC-03. Difficulty arising from the application of the Radio Regulations should be included in the Report of the Director of the Radiocommunication Bureau and reported to the Conference under Agenda item 7.1, as appropriate.
5. Any Rules of Procedures relating to the elimination of backlog and simplification of satellite coordination and notification procedures shall be fully consistent with the Provisions of the Radio Regulations.
6. In order that the Due Diligence Information provided under Resolution 49 (Rev. WRC-2000) properly reflect the actual spectrum utilization, paragraph *f* of Annex 2 to this Resolution to be modified along the line of that concluded by SC, e.g.:

MOD

- f)* Frequency band(s) of satellite network transponder(s) that are intended to be brought into use in conformity with the relevant time-limits included in the Radio Regulations
7. The Rule of Procedure relating to application of RR 9.35 will drastically alter the very principles of the Radio Regulations. This rule shifts the Bureau's responsibilities to administrations, which would result in considerable burden in particular on administrations of the developing countries. It also shifts the backlog from the coordination stage to the notification stage. The implications of delay in processing time at the notification stage are unclear. Consequently the applicability of the Rules should be decided and brought into force only by a WRC decision. This preliminary view is in line with the conclusions reached by the SC.
  8. The simplification of provision No. 5.416 to remove unnecessary duplication of regulatory procedures and the subsequent associated modifications to other regulatory provisions is forwarded to APG2003-5.
  9. With regard to regulatory procedures applicable to FSS earth stations deployed in large numbers and typical BSS earth stations in frequency bands not subject to Appendix 30, the existing regulatory procedures are adequate.
  10. The API publication does not require any technical examination to be conducted by the Bureau. Moreover the API would provide the responsible administration a 6 months period to submit the technical parameters (Ap4/II) that would reflect the actual requirements of their satellite network; consequently the API should be maintained.

#### Proposals to CPM-02

APG2003-4 agreed that a proposal should go to the CPM concerning the inclusion of the text of Section 6.4.3 of the report of the SC into Section 6.4 of the CPM report as a possible example of modifications to Resolution 33. APG2003-4 also agreed that a proposal, based on APG2003-4 view 6 (above), should go to the CPM supporting the modifications to Annex 2 to Resolution 49 included in Section 3.4.3 of the report of the SC to the CPM.

#### Views of Administrations at APG2003-4

Japan was of the view that the coordination arc concept has not yet been studied by ITU-R SGs with respect to the MSS. Korea had the view that in order that the Due Diligence Information provided under Resolution 49 (Rev. WRC-2000) properly reflect the actual spectrum utilization, paragraph f of Annex 2 to this Resolution to be modified along the line of that concluded by SC. Iran noted that RRB has adopted a Rule of Procedure on the suspension of No. 9.35 examinations (other than conformity with respect to the Table of Frequency Allocations). Iran explained that the suspended examinations will be performed in the No. 11.31 notification phase and that this rule has been applied to those networks for which complete coordination information has been received by the Bureau on and after 1 June 1999. Iran was of the view that this Rule drastically alters the very principles of the Radio Regulations and, as such, its applicability should be decided and brought into force only by a WRC decision. Iran was of the opinion that the Rules of Procedure mentioned must be suppressed and all those satellite networks for which the Rules have been applied need to be re-examined in application of No. 11.31 of the Radio

Regulations, otherwise, these FSS networks would not be recognized as being in conformity with that provision and thus would no longer be protected by any subsequent satellite networks. Brunei described the complexity of the current regulatory regime applicable to frequency assignments in the band 2 520-2 670 MHz (subject to No 5.416) and proposed a simplification (Document APG2003-4/57 refers) in the light of past or on-going regulatory discussions. Brunei sought to remove the ambiguity in the current version of Res. 33 and proposed that the APT support the inclusion of the text of Section 6.4.3 of the report of the SC into Section 6.4 of the CPM report as a possible example of modifications to Resolution 33 and also requested the APG to consider these proposals as an APT Common Proposal to WRC-03. Vietnam advocated NOC with regard to FSS earth stations deployed in large numbers.. Vietnam also stated that typical BSS earth stations operating in frequency bands not subject to Appendix 30, “have the same nature as FSS earth stations deployed in large numbers. Therefore this matter should be resolved as the matter of FSS earth stations deployed in large numbers.” Malaysia was in favor of achieving simplification in the advance publication, coordination and notification process and stated that administrations should be provided with more user-friendly software for the validation of all electronic filings. Malaysia also believes that any duplication in examination under coordination and notification could be removed.

### **1.31 Additional MSS allocations at 1-3 GHz**

With regard to this agenda item some APT members developed the following provisional views:

On *Resolution 226 (WRC 2000)*

- APG2003-4 was of the view that existing services in bands under consideration pursuant to Resolution 226 (WRC 2000) should be appropriately protected if any new allocation is made to the MSS.
- It was recommended that APT administrations check whether they have services operating in this band to determine whether MSS allocation would have any effect in their country.
- It was recommended that the APT administrations study all the option in draft CPM report and technical justification on each option.

On *Resolution 227 (WRC 2000)*

- APG2003-4 was of the view that the study between ITU-R WP7D and 8D need to be completed.
- APT Members were of the view that existing services in bands under consideration pursuant to Resolution 227 (WRC 2000) should be appropriately protected if any new allocation is made to the MSS.
- APT administrations plan to consider this issue at the next (APG2003-5) meeting once the information on the number of MetAids and MetSat earth stations in the band 1670-1675 MHz is available.

### **1.32 Sharing at 37.5-43.5 GHz**

With regard to this agenda item APG2003-4 was of the view that APT Members support the current power flux density limits adopted by WRC-2000. APG2003-4 decided that the provisional pfd limits adopted by WRC-2000 should be retained in Radio Regulations on permanent basis.

Proposals to CPM-02

APG2003-4 agreed to propose another Method to satisfy this agenda item. Under this Method there will be no change to the Radio Regulations, except elimination of the last sentence “These limits are provisional and will be reviewed in accordance with **Resolution 128.**” in footnote **5.551G**.

Views of Administrations at APG2003-4

Japan, Korea and Iran expressed the view that the current pfd limits set out in Table 21-4 on the Resolution 84 issues and those in footnote 5.551G on the Resolution 128 issues are adequate. Australia, Korea and Japan expressed that radio astronomy facilities in the 42.5-43.5 GHz band will need to be adequately protected.

**1.34 Non-GSO BSS (sound) sharing with the terrestrial service at 2630-2655 MHz**

With regard to this agenda item, APG2003-4 was of the view that:

1. WRC-2003 should focus on the sharing and regulatory matters between non-GSO BSS (sound) and the other services in strict accordance with the agenda item 1.34.
2. Majority of the APT Members supported the current pfd coordination thresholds specified in Resolution 539 (WRC-2000). Some Members of APT were of the view that the ITU-R studies on the pfd threshold values should continue.
3. No. 9.11 of the Radio Regulations should be applied as the coordination procedure between non-GSO BSS (sound) and terrestrial service. Some Members of APT were of the view that this application should be studied further in order to protect terrestrial services in the long term.

Proposals to CPM-02

APG2003-4 proposed that the following text to be inserted in the beginning of Sections 3.5.1 and 3.5.4 on the agenda item 1.34 of the draft CPM Report.

“It is noted that WRC-2003 should focus on the sharing and regulatory matters between non-GSO BSS (sound) and the other services in strict accordance with the agenda item 1.34.”

Views of Administrations at APG2003-4

Japan and Australia were of the opinion that agreement on proposals to modify the pfd thresholds in the Resolution in the case of sharing with terrestrial services is contingent on the clarification of the regulatory procedures. Furthermore the potential for sharing between BSS(S) and terrestrial (fixed and mobile) services without placing undue constraint on either space or terrestrial services will depend on the respective terrestrial and BSS(S) arrangements that are actually implemented. Japan and Australia supported the adoption of internationally harmonized IMT-2000 spectrum arrangements, and would also support arrangements that would permit successful sharing of the band with other services. Singapore was of the view that the implementation of the non-GSO BSS (sound) system in the band 2630 – 2655 MHz should not place undue constraint on fixed or IMT-2000 services. Japan and Australia sought to ensure that the restrictions placed on the use of the non-GSO for BSS(S) in Resolution **539** (e.g., elevation angles of 40° or

higher over the service area) are retained. Japan, Malaysia and Australia were of the opinion that it is preferable to include the procedures for coordination and notification under Articles 9 and 11 of the Radio Regulations. This would be in common with GSO BSS(S) in the band 2 630 ~ 2 655 MHz and BSS(S) in other bands identified via Resolution 528 at WARC-92, and would support the development of procedures that do not unduly constrain the development of any service allocated in the band, as per *invites 2* of Resolution 539 (WRC 2000). Malaysia was of the view that sharing in this band requires further study by WRC-2006. Australia was of the view that given the uncertainty surrounding both the specific technical arrangements and timing for the deployment of IMT-2000 in the band 2 630 ~ 2 655 MHz, and the slower than anticipated deployment of non-GSO BSS(S) in this band, there is merit in clarifying the regulatory issues associated with non-GSO BSS at WRC-03, but to make provision for a possible further revision of the pfd limits at a subsequent WRC. Iran insisted on ensuring that should the concept of current implicit coordination agreement seeking process be changed to explicit agreement seeking process or should the regulatory time limit associated with terrestrial services be changed from current three years (be prolonged or be shortened), then these concepts should be equally applied to “other areas of the Radio Regulations, e.g. Appendices 30/30A and 9.11A coordination procedures.”

Vietnam proposed that the following thresholds should be used rather than the provisional thresholds in Resolution 539 (WRC-2000) for BR to identify the affected administrations.

-132 dB(W/m<sup>2</sup>) in 1 MHz for  $0^\circ \leq \theta \leq 5^\circ$ ;

-132 + 0.5 ( $\theta - 5$ ) dB(W/m<sup>2</sup>) in 1 MHz for  $5^\circ < \theta \leq 25^\circ$ ;

-122 dB(W/m<sup>2</sup>) in 1 MHz for  $25^\circ < \theta \leq 90^\circ$

where  $\theta$  is the angle of arrival of the incident wave above the horizontal plane, in degrees.

### 1.35 Remarks columns in Regions 1 and 3 Plans in Appendices 30/30A

With regard to this agenda item, the APG2003-4 developed the following provisional views:

- (1) the RRB suspended of the examination of FSS filings received after 01.06.1999 as a temporary measure in the attempt to eliminate the FSS filing backlog. APG2003-4 also noted that in accordance with Resolution 53, the BSS earth station shall effect coordination with and not claim protection from specific earth station in the fixed-satellite service for which notice was received by the Bureau prior to 3 June 2000. Because the unexamined FSS earth stations may not be in conformance with ITU RR, APG2003-4 concluded that “FSS assignments received by the Bureau after 01.06.1999 should not be taken into account in relation to compatibility with the BSS.” Some APT Members were of the opinion that the Bureau should carry out the pfd examinations for these limited numbers of FSS assignments so that they could also be taken into account in the BSS/other services compatibility analysis.
- (2) in determining the requirement of coordination for feeder-link earth stations, the exact location and characteristics of the earth stations are required. Since at this stage the information is not available, the identification of the requirement of coordination of feeder-link earth stations with respect to terrestrial stations and earth stations in the opposite direction of the transmission should not be

performed. However, under Resolution 53 (Rev.2000), the Bureau could indicate in a footnote in the remark column that such coordination needs to be affected at the time of the implementation of the feeder-link earth stations.

#### Proposals to CPM-02

APG2003-4 decided not to make proposals to the CPM related to this issue.

#### Views of Administrations at APG2003-4

Australia and Japan expressed the view that no follow up action is necessary at this time, however results of the analysis in accordance with Resolution **53 (Rev.WRC-2000)** should be reviewed when they become available. Iran expressed the view that the Bureau should only indicate the general obligation of the coordination against each feeder link earth station in the appropriate column of the Circular letter in which the results of application of Resolution 53(Rev. WRC-2000) are published. Malaysia expressed the view that APG should wait for the BR to publish the result in a ITU Report

### **1.36: Assessment of Adequacy of Frequency Spectrum for HF Broadcasting Service**

There was general support for the Draft CPM Report on this agenda item. One view was that studies on possible migration of existing services in the bands should be taken into consideration. WRC-06 may consider allocation of additional spectrum to HF broadcasting, based on the decisions taken at WRC-03. Some proposals have been made in the past to use Tropical bands for inter-Europe/ pan-Europe broadcasting. APT members have serious concerns and strongly oppose the use of the Tropical bands for inter-Europe/pan-Europe broadcasting. Some APT members consider that to the extent possible, this agenda item should be considered in conjunction with agenda item 1.23.

#### Proposals to CPM-02

No APG2003-4 proposals under this agenda item.

### **1.37 Technical and regulatory provisions relating to highly elliptical orbit satellite networks**

APG2003-4 was of the view that the work at the ITU-R on this agenda item has gone much beyond the intention and objectives of WRC-2000. APG2003-4 noted that this situation is not appropriate considering limited resources and time available to study these issues. APG2003-4 concluded that to facilitate the use of highly elliptical orbits it is necessary to develop appropriate regulatory and technical provisions so that existing or planned services can share with HEO satellite systems without imposing significant additional constraints on those services, or potentially causing harmful interference to other services. Any new regulatory provisions should not unduly restrict GSO systems.

#### Proposals to CPM-02

APG2003-4 proposed a number of modifications to paragraph 3.7 of the draft CPM text on this agenda item. Substantive changes are consistent with the outcome of SCRPM.

### **1.39 TT&C spectrum for FSS systems operating above 17GHz**

With regard to this agenda item, APG2003-4 concluded that, under the current regulatory environment, TT&C links for FSS networks may be implemented in any FSS band.

Therefore, no additional frequency bands other than those currently available for the use are required to satisfy this agenda item.

Proposals to CPM-02

No APG2003-4 proposals under this agenda item.

**Meeting Documents**

The meeting documents are available at: <http://www.aptsec.org/radio/APG2003/apg2003-4/APG2003-4.htm>. Please consult these documents for further information on the result of the APG2003-4 meeting.

**Next Meeting**

The next meeting (APG2003-5) is scheduled to be held from 19-25 February, 2002 in Tokyo, Japan.