Radio Spectrum Management in the Asia-Pacific region

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1. Introduction

The Asia-Pacific region primarily comprises countries in ITU-R Region 3 from South and East Asia, Oceania and the Pacific islands, while excluding the Americas. Organisations in the Asia- Pacific region face special challenges in coping with the very diverse cultures and languages of the different nations. Telecommunications in each country are usually administered by a single National Communications Administration, which in the case of Australia is the Australian Communications Authority (ACA).

The main organisations in the region of relevance to Radio Astronomy are:

- The Asia Pacific Telecommunity (APT)
- The Radio Astronomy Frequency Committee in the Asia Pacific region (RAFCAP)
- The Pacific Telecommunications Council (PTC)

Brief descriptions of these organisations are given below. Detailed and constantly updated information on all of these is available on the web via the links shown.

2. APT (www.aptsec.org/)

The Asia-Pacific Telecommunity was established in 1979 via a treaty-level inter-governmental agreement. It has 32 full members and 4 associate members, mainly represented by national communication ministries or communication administrations. Enterprises and other organisations active in telecommunications services or information infrastructure within the region are eligible for affiliate membership, so there are 96 affiliate members in the APT.

2.1 Objectives of the APT

The objective of the Telecommunity is to foster the development of telecommunications services and information infrastructure throughout the region, with a particular focus on the expansion thereof in less developed areas. To achieve this, the Telecommunity may:

(a) Promote the expansion of telecommunication services and information infrastructure and the maximization of the benefits of information and telecommunications technology for the welfare of the people in the region;

(b) Develop regional cooperation in areas of common interest, including radio-communications and standards development;

(c) Undertake studies relating to developments in telecommunications and information-infrastructure technology, policy, and regulation in coordination with other international organizations, where pertinent;

(d) Encourage technology transfer, human resource development, and the exchange of information for the balanced development of telecommunications services and information infrastructure within the region; and

(e) Facilitate coordination within the region with regard to major issues pertaining to telecommunications services and information infrastructure with a view to strengthening the region's international position.

2.2 APT Programs

The APT fosters a diverse program of activities in telecommunications in the region, with a particular focus on Information and Communications Technology (ICT). Some of the current major programs are:

- **AIIS - Asia-Pacific Initiatives for the Information Society,** to focus on assisting members to bridge the digital divide and make the most of digital opportunities
- **ASTAP - Asia-Pacific Telecommunity Standardization Program,** to establish regional cooperation and to harmonize standardization activities in the region
- **AWF - APT Wireless Forum,** to promote a harmonised vision of wireless communication systems and services in the Asia-Pacific region
- **IWG - The Regional Interagency Working Group on ICT,** to enhance synergies in ICT in the Asia-Pacific region
- **HRD - APT Human Resource Development (HRD) Program,** a collaborative program for the exchange of ICT Researchers and Engineers
- **APTYPS - APT Young Professionals and Students Forum,** to encourage young professional's interest in the field of ICT and to utilize their huge, untapped enthusiasm and energy

The APT also runs four major **Study Groups (SG),** to conduct studies on telecommunications issues that are of concern to members. The study groups operate in three year cycles, broadly in line with the ITU WRC cycles. Currently, the APT study groups are:

- **Study Group 1: Networks**
- **Study Group 2: User issues**

- **Study Group 3: Applications and Services**
- **Study Group 4: Broadband issues**

However, the program that has the most impact on radio astronomy is the **APG,** the **APT Preparatory Group** for the ITU World Radiocommunications Conference (WRC). The APG aims to harmonise the views of APT Members and develop common proposals for submission to the WRC. Regionally harmonised proposals are very influential at the WRC and are often very successful in promoting the views and interests of the APT members. The APG is the natural arena to represent radio astronomy interests in the region and garner support for issues at the ITU.

3. RAFCAP (www.atnf.csiro.au/rafcap/)

The Radio Astronomy Frequency Committee in the Asia-Pacific region (RAFCAP), was established at the regional URSI meeting AP-RASC'01 (August 2001, Tokyo). It arose from a perceived need for a radio-astronomy committee to coordinate spectrum management activities in the region. It is modelled on the European Committee on Radio Astronomy Frequencies (CRAF). The main forum for RAFCAP activities is the APT, and more specifically the WRC preparations at the APG. RAFCAP is recognised in the APT as a regional organisation, and is invited to participate in APT activities.

RAFCAP acts as the scientific expert committee on frequency issues for the Asia-Pacific radio astronomy and related sciences. The **mission** of RAFCAP is:

(a) to keep the frequency bands used for radio astronomical observations free from interference

(b) to argue the scientific needs of radio astronomy for continued access to and availability of the radio spectrum for radio astronomy within the Asia-Pacific region

(c) to support related science communities in their need for interference-free radio frequency bands for passive use.

The RAFCAP membership at the founding date was:

- **Chairperson** -- Masatoshi Ohishi (NAO, Japan)
- **Secretary** -- Tasso Tzioumis (ATNF, Australia)
- Makoto Inoue (NRO, NAO, Japan)
- S. Ananthakrishnan and T.L. Venkatasubramani (GMRT, TIFR, India)
- Uday Shankar (RRI, India)
- X. Hong (Shanghai Obs., China)
- S. Wu (National Astr. Obs., China)
- H.S. Chung (Korea Astr. Obs., South Korea)
- Jeremy Lim (IAA, Chinese Taipei)

RAFCAP is supported by the parent institutions of its members, and membership is periodically changed to reflect organisational changes.

As a new regional organization, RAFCAP faces many challenges to become recognized and effective in the region. It needs to increase the involvement of all regional radio astronomy observatories, especially in countries that radio astronomers

have little past involvement in radio spectrum issues. The focus of RAFCAP activity are the APG meetings and it is intended for RAFCAP to actively participate in all future APG activities. RAFCAP meetings will generally be held in conjunction with participation at the APG.

4. PTC (www.ptc.org)

The Pacific Telecommunications Council (PTC) is a unique international, non-profit, non-governmental membership organisation. The Council is regional in nature, embracing members from all countries that play a role in the development of Pacific Telecommunications and thus includes Asia Pacific and countries from the Americas. The PTC was founded in 1980 and now boasts more than 900 member representatives from over 40 countries.

The people who comprise PTC cover every aspect of communications: carriers, communication- satellite service providers, cable entities, broadcasters, equipment manufacturers, users of telecom services, universities, law firms, consultancies, government ministries and agencies, and a wide variety of individuals encompassing other aspects of telecommunications and information systems and services.

4.1 PTC Purposes

From the Articles of Incorporation of the PTC, the purposes of its Council are:

A. To provide a forum for discussion and interchange of information, ideas, and the expression of views regarding telecommunications and related aspects of the information society and economy in the Pacific for a multi-faceted, diverse body of members, which includes policy-makers, planners, regulators, users, researchers, academics, and providers of equipment, software, and content

B. To promote a general awareness of the varied telecommunications requirements of the Pacific area

C. To organize conferences and seminars to promote the free flow and interchange of the varied views and requirements of the Pacific area, as well as to address specific tele-communications issues to assist in solving near-term and future issues

D. To communicate viewpoints and recommendations of the Council to the established national, regional, and international organizations responsible for policies in telecommunications

E. To advance the Council's role for social and economic good

4.2 PTC activities

PTC serves the communication world by organizing a major annual conference, regional seminars, research activities, by publishing the PTR (Pacific Telecommunications Review) as well as a variety of other publications, and through various other services and activities. Some recent activities include:

- PTC2002 (Hawaii) – "Next Generation Communications: Making IT Work"
- PTC2003 – "Global Broadband – Global Challenges"
- PTC mid-year 2002 – "Building Strong Partnerships"
- WWW2002 & WWW2003 conferences

5. References

1. The CRAF Handbook for frequency management, 2002. Editor: T. Spoelstra. www.astron.nl/craf/
2. APT – www.aptsec.org
3. RAFCAP – www.atnf.csiro.au/rafcap/
4. PTC – www.ptc.org