

ARIB's Activities after the Last Meeting - Standardization for Radio Systems -

Association of Radio Industries
and Businesses
(ARIB)

March 29, 2005

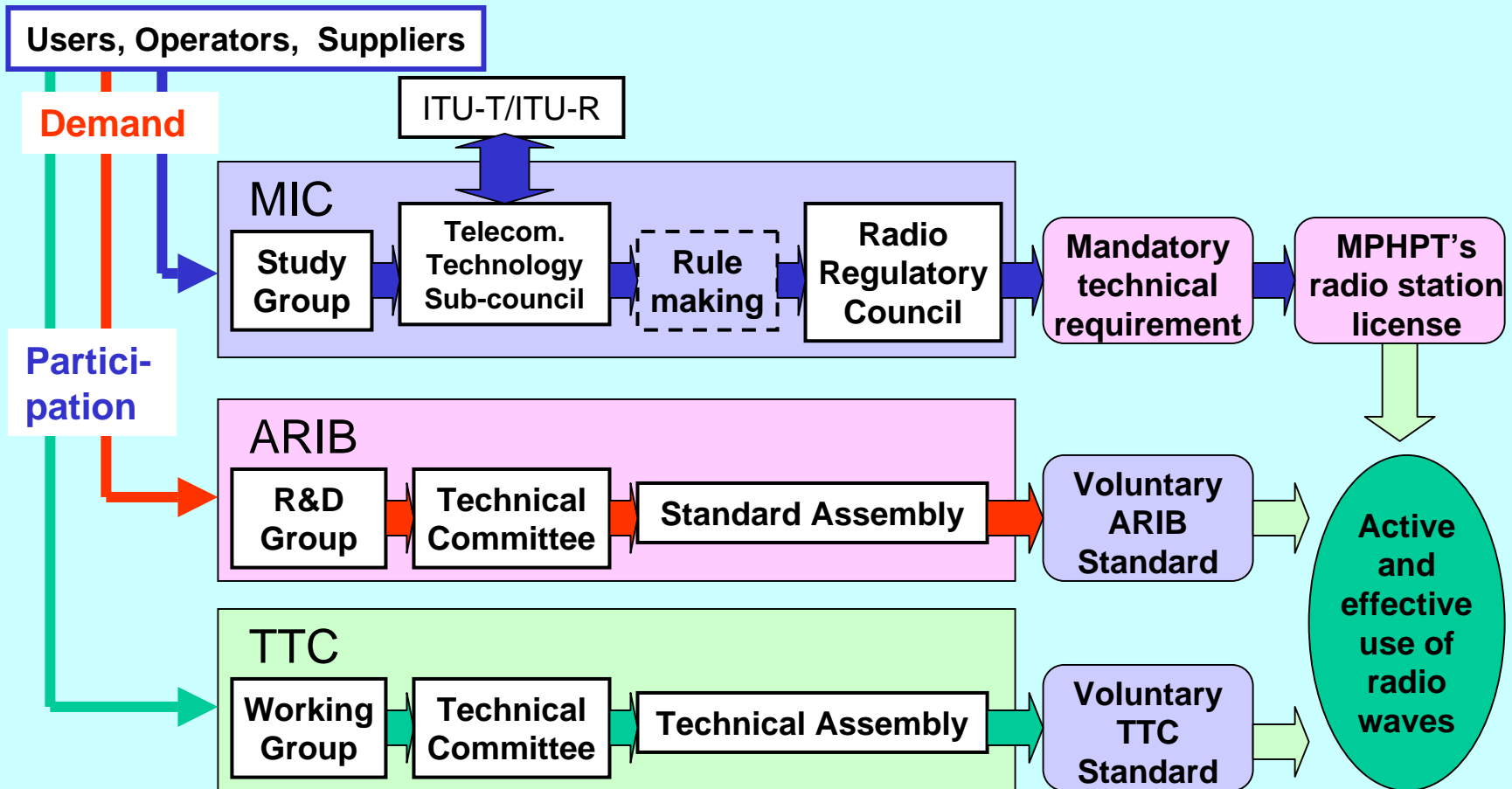
ARIB

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Standardization Flow in Japan

Standardization Flow in Japan



(Note) MIC: Ministry of Internal Affairs and Telecommunications

Government Regulations and ARIB Standards for radio systems

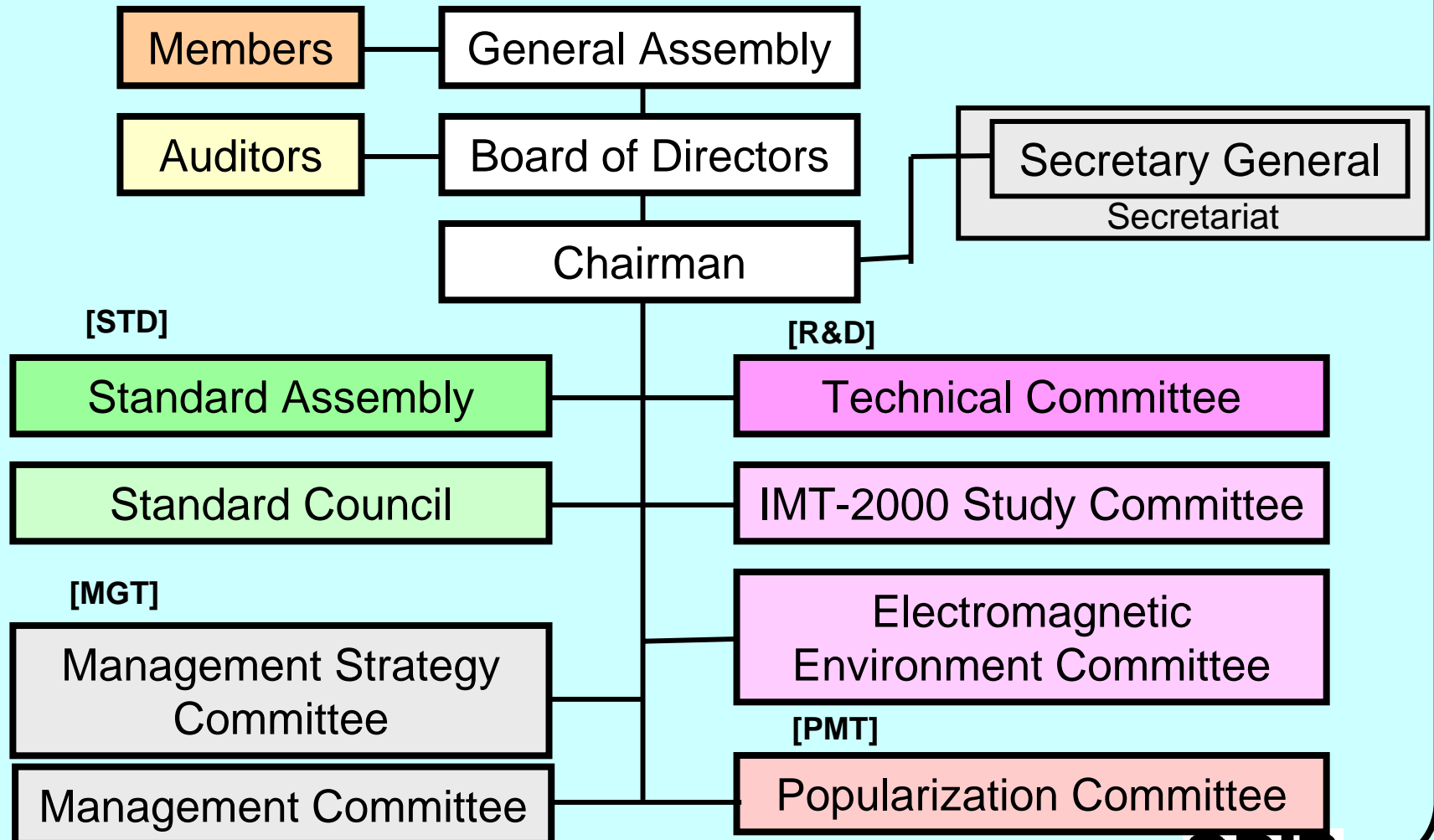
	Government Regulations	ARIB Standards
Nature	Mandatory	Voluntary
Purpose	<ul style="list-style-type: none"> ◆ To promote efficient use of frequency ◆ To protect from interference ◆ etc. 	<ul style="list-style-type: none"> ◆ To ensure common air interface ◆ To ensure suitable quality ◆ etc.
Technical items	<ul style="list-style-type: none"> ◆ Frequency band ◆ Spurious emission ◆ Frequency tolerance ◆ Occupied bandwidth ◆ etc. 	<ul style="list-style-type: none"> ◆ Communication protocol ◆ Sencitivity ◆ Carrier to Noise ratio ◆ Bit error rate ◆ Measurement method ◆ etc.

R & D and Standardization Activities for Radio Systems in ARIB

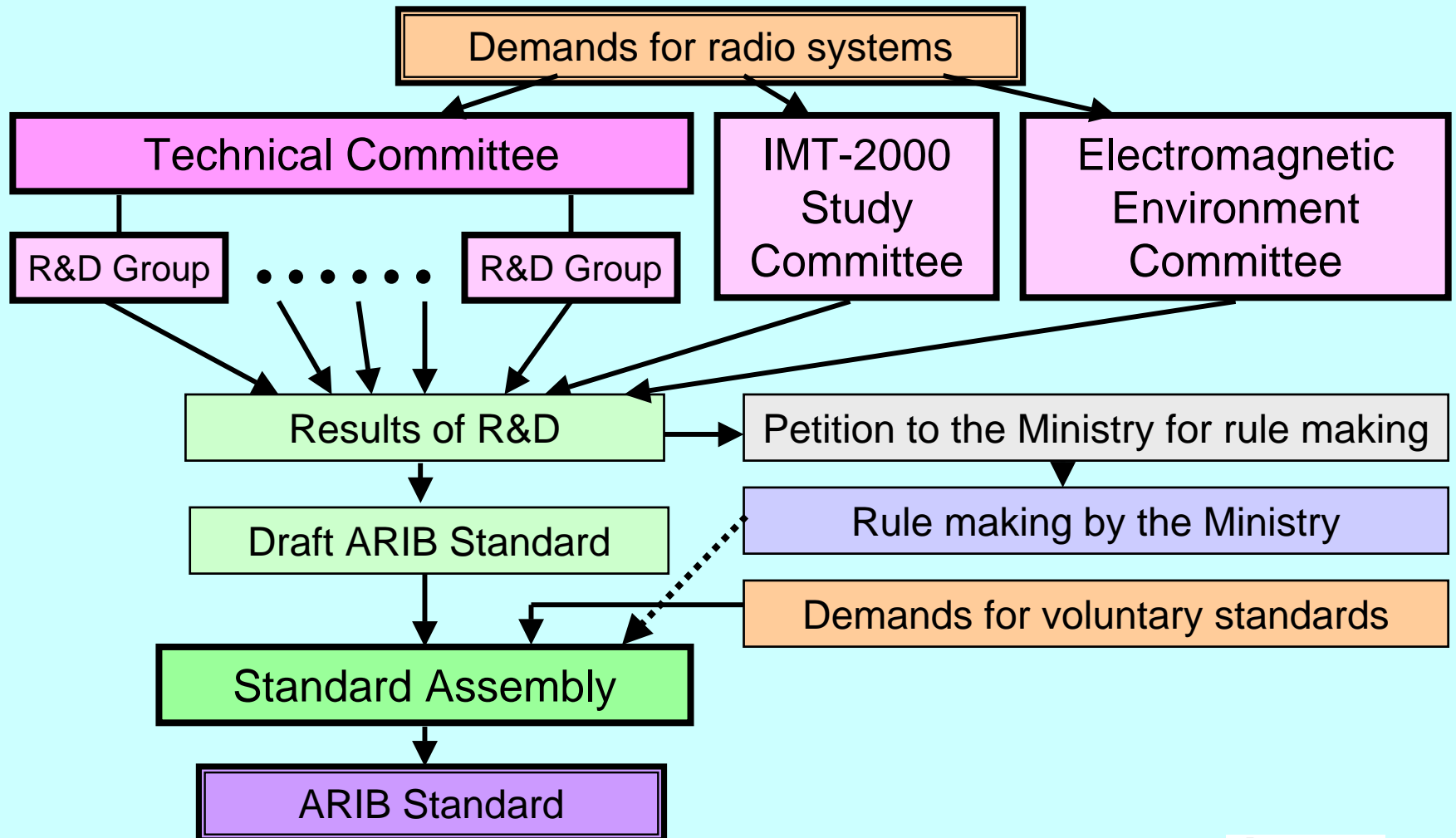
Outline of ARIB

- **Establishment:** merge of two organizations in 1995:
 - Research & Development Center for Radio Systems (RCR)
 - Broadcasting Technology Association (BTA)
- **Objective:** promotion of public welfare by means of:
 - conducting investigation, R&D and consultation of utilization of radio waves
 - promoting realization and dissemination of new radio systems
- **Main Activities:**
 - investigation and R&D on utilization of radio waves
 - establishment of voluntary technical standards for radio systems
 - consultation, dissemination, collection and publication of information on utilization of radio waves
 - frequency change support for terrestrial digital TV broadcasting
 - **frequency expiration support** for re-allotment of radio spectrum

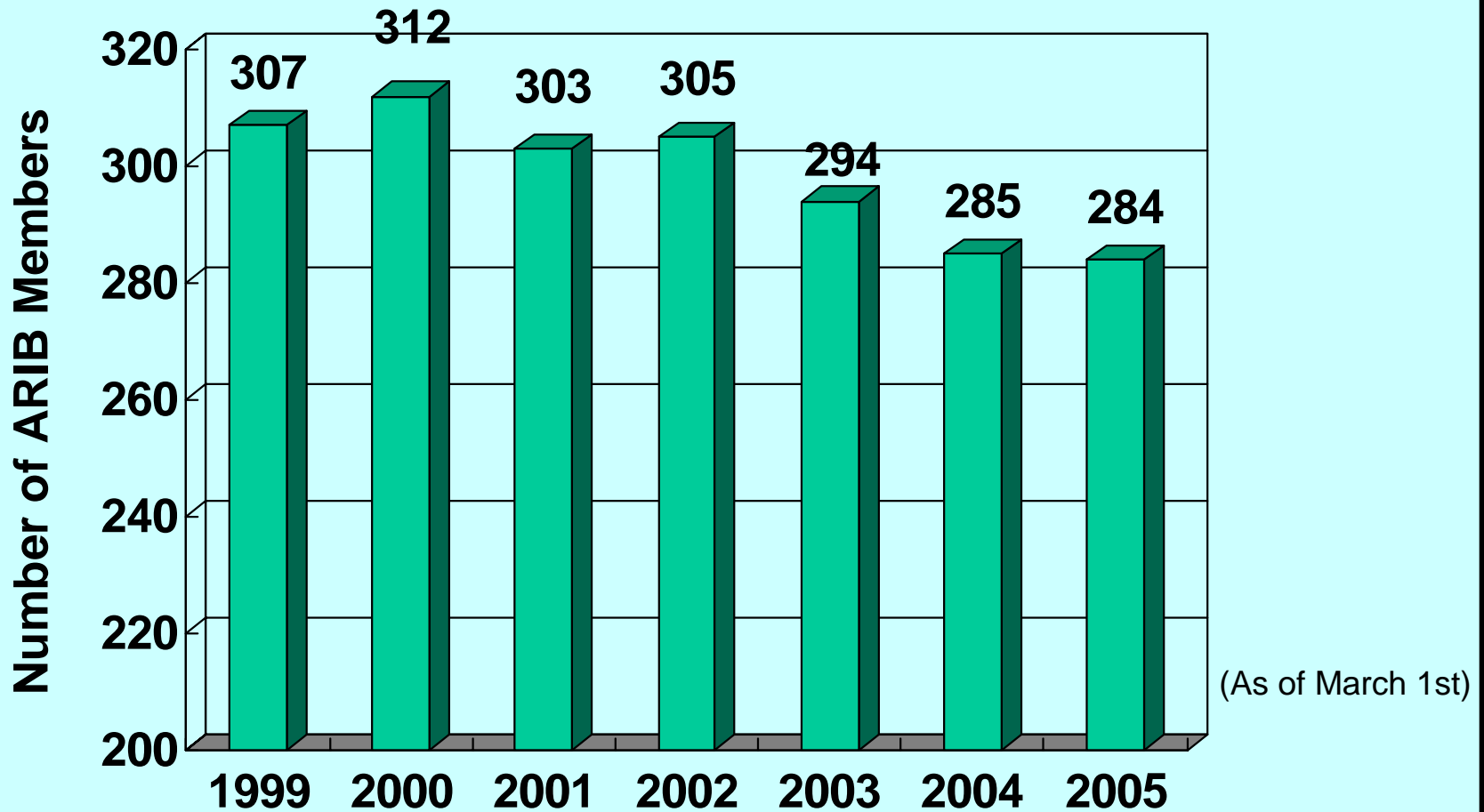
Organization of ARIB



ARIB's R&D and Standardization

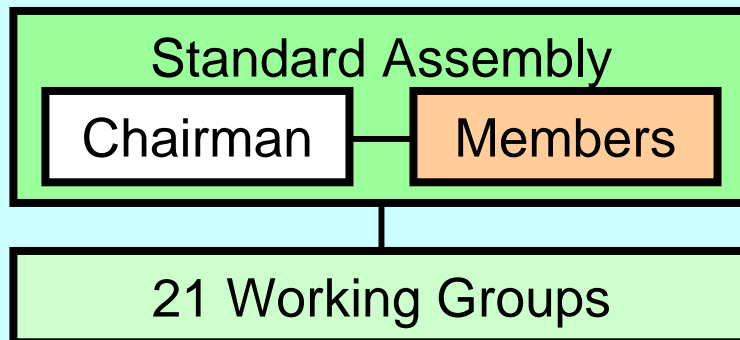


Evolution of ARIB membership



ARIB Standard Assembly

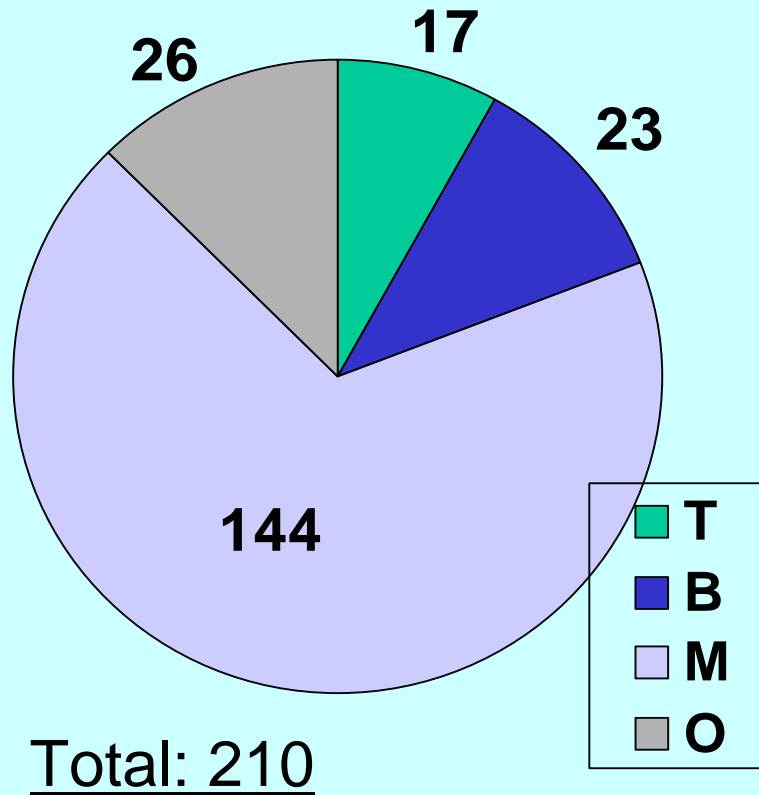
- **Establishment:** 1995
(reorganized from the RCR Standard Assembly and the BTA)
- **Members:** 202 (including 20 foreign affiliated members, as of March 1, 2005)
 - open to any entity, organization and person
 - no limitation on nationality
 - independent from ARIB membership
- **Organization:**



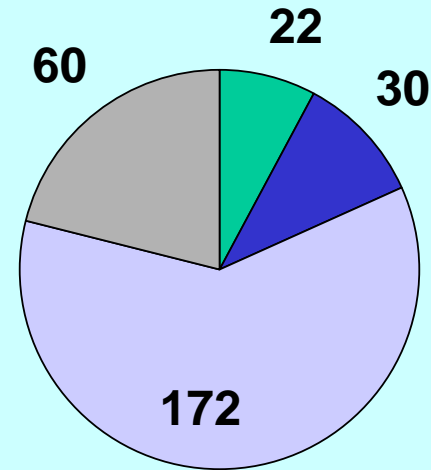
For maintenance and enhancement of ARIB standards

Members of ARIB Standard Assembly

Members of ARIB Standard Assembly



Ref.: ARIB Members



Total: 284

- T
- B
- M
- O

T: Telecommunications companies
 B: Broadcasting companies and organizations
 M: Research, Development and manufacture companies of radio equipment
 O: Wholesaler, bank, electricity, gas and service companies and corporations

(as of March 1, 2005)



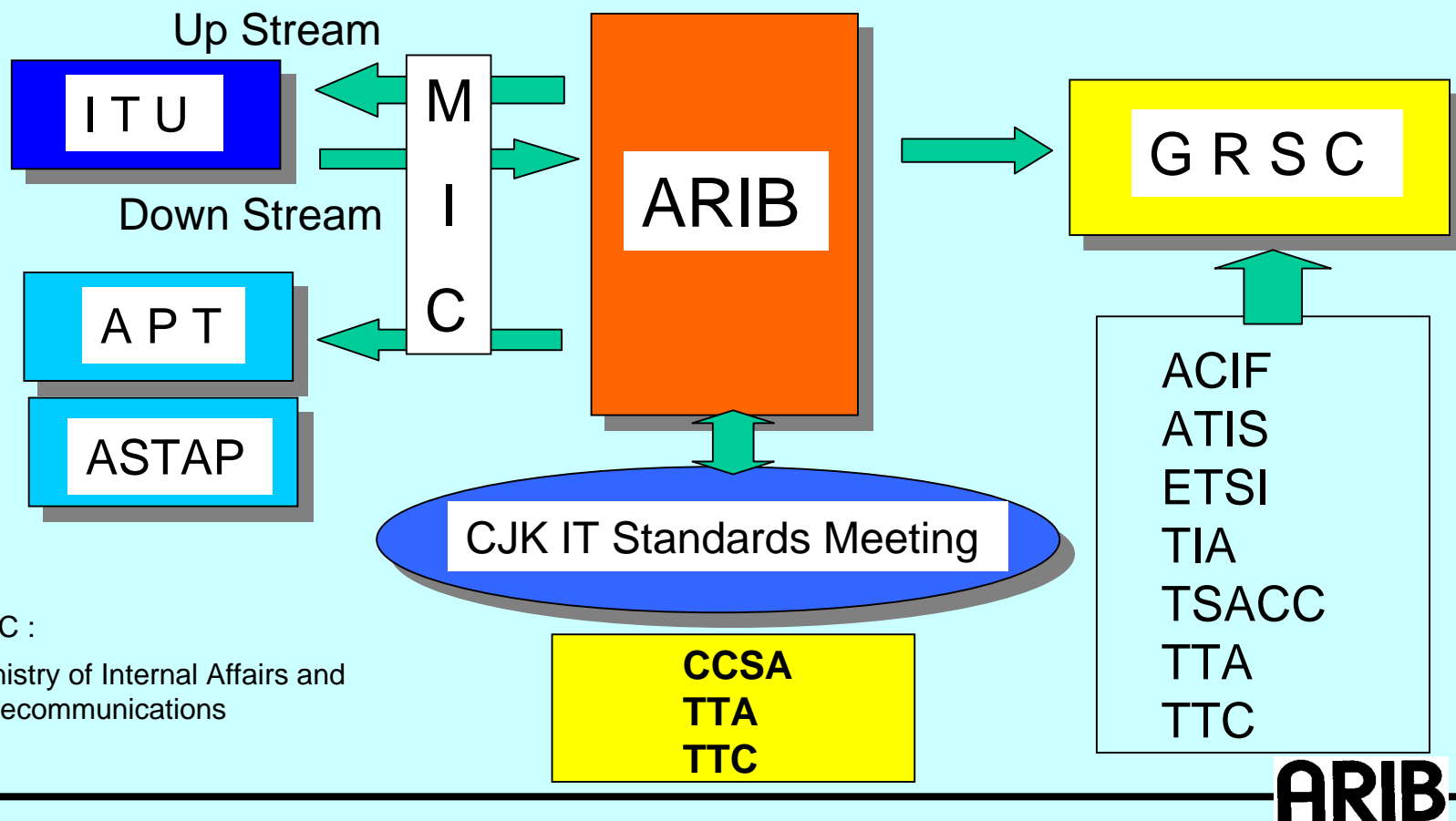
Outcome from Standard Assembly

- **ARIB Standards (STDs):**
 - voluntary standards of private sector
- **ARIB Technical Reports (TRs):**
 - technical information not including standards
- **No change of Number of STDs and TRs**

	STD	TR
Telecommunications	71(71)	18(18)
Broadcasting	51(51)	37(37)

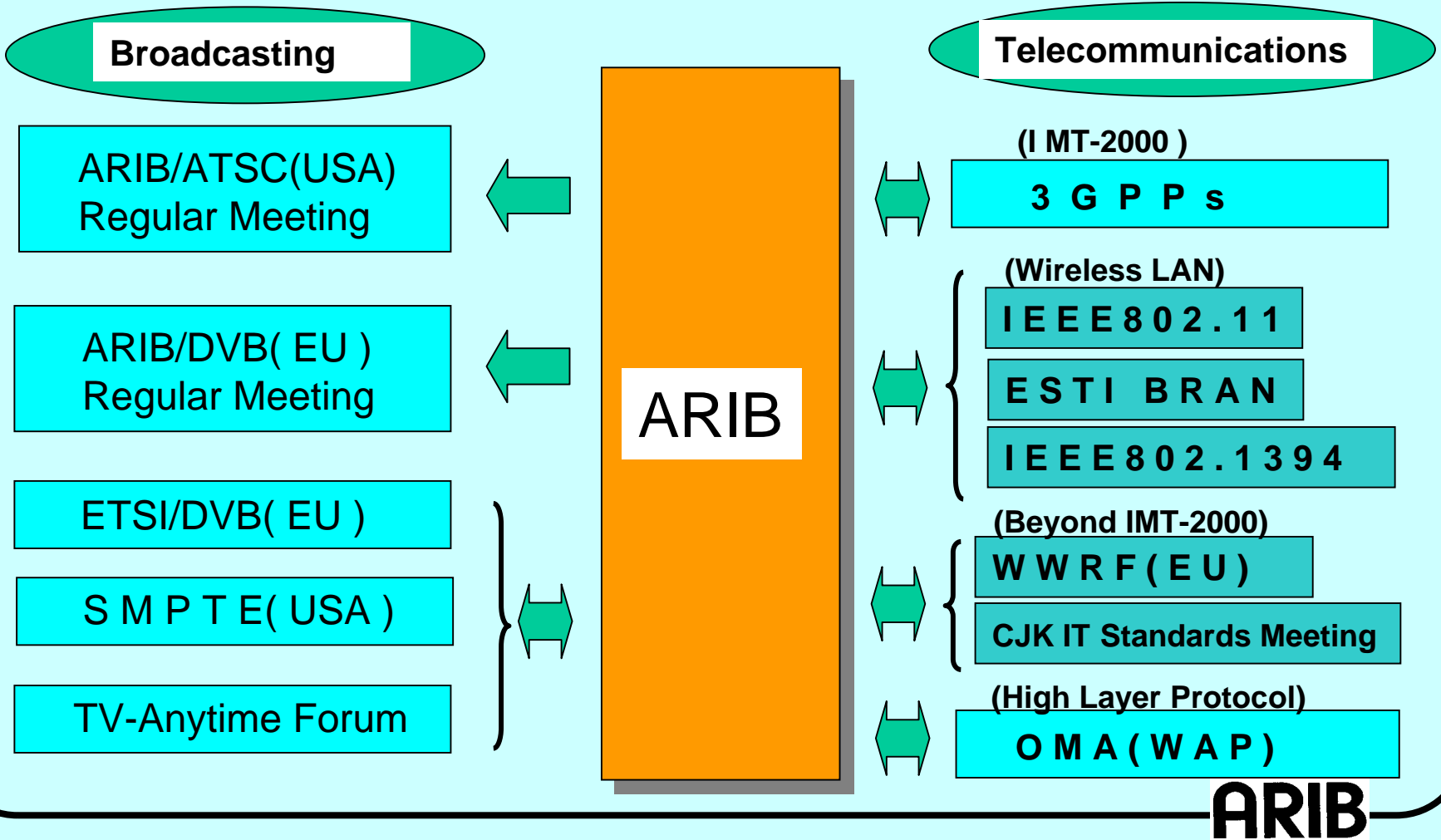
As of March 1 2005 (June, 2004)

Liaison among International Standard Organizations (General)



MIC :
Ministry of Internal Affairs and
Telecommunications

Liaison among International Standard Organizations (Specific Projects)



Recent Activities of ARIB -1-

Public Telecommunications field

- **IMT-2000 & Beyond**
 - Active participation in the work of ITU-R, 3GPPs, APG, Mobile IT Forum (mITF), etc.
 - STDs and TRs (including English version) for each of DS-CDMA and MC-CDMA systems were revised and further work in progress
- **Other Communication Systems**
 - STD for Personal Handy Phone System was revised

Recent Activities of ARIB -2-

Radio Communications field

- **Low Power Radio Stations**
 - STD for Millimeter-Wave Video Transmission Equipment was revised
- **Business and Government Applications**
 - STD for Digital Mobile Telecommunication System for Local Government was revised

Recent Activities of ARIB -3-

Broadcasting field

- **Following STDs for Digital Broadcasting were revised**
 - Service Information
 - Exchange Format of the Digital Closed caption File
 - Structure and Operation of Closed Caption Data Conveyed by Ancillary Data Packets
 - Data Coding and Transmission Specification
 - Video Coding, Audio Coding and Multiplexing Specifications
- **System based on Home Servers**
 - STD for Coding, Transmission and Storage Specification for broadcasting system based on Home Servers was revised

Recent Activities of ARIB -4-

ITS field and EMC field

- **ITS (Intelligent Transportation System)**
 - Development of DSRC technologies and applications using ARIB's STD
- **EEC (Electromagnetic Environment Committee)**
 - Leaflets and booklets;
Published a scientific book on the safety of RF-EMF for junior high school students (distributed ~5000 schools)

Recent Activities of ARIB -5-

Analog TV Frequency Change Support field

- ARIB acts for the Minister of MIC to support smooth introduction of terrestrial digital broadcasting.
- ARIB provides financial support to frequency change of broadcasting facilities at about 800 sites, adjustment of TV receiving sets and facilities of about 4 Million households, etc.
(about 2 Million households completed)
- Total cost will be about 180 Billion Yen for the period from 2002 to around 2009.

Recent Activities of ARIB -6-

Frequency Expiration Support field

- New Rules for re-allotment of radio spectrum
- ARIB acts for the ministry of MIC to take proper steps to support the frequency expiration
- ARIB pays to radio station licensees compensation for the loss resulted from earlier re-allocation of frequencies

Recent Activities of ARIB -7-

Digital Broadcasting Experts Group (DiBEG)

- DiBEG is one of the committees of ARIB.
- Research of the trend toward digital broadcasting in the world.
- Exchange of digital broadcasting technologies and facilitation of common understanding.
- Information Exchange Meeting with SET(Brazilian Society of Television and Communication Engineering)
- DTV Workshop at the Inter BEE 2004 (traces the history and development of DTTB in Japan)

Recent Topics in Japan

Drastic Review of Radio Spectrum Allocation -1-

Wireless LAN in 5GHz

- Large increase in demands for radio spectrum

Frequency	5.15~5.25 (GHz)	5.25~5.35 (GHz)	5.47~5.725 (GHz)	5.725~5.825 (GHz)
After WRC-03	In service (In door)	Available (In door) FWA Available	Available (In/Out door)	NO service
Before WRC-03	In service (In door)	No service	NO service	NO service

Drastic Review of Radio Spectrum Allocation -2-

Mobile Communication Systems

- Impact of new rules for re-allotment of frequency bands
- 270MHz (BW in current status)
- 330-340MHz (BW at 5 year later)
- 1,060-1,380MHz (BW at 10 years later)



- Seeking major candidates for additional frequency bands beside 800MHz in 1.7GHz and 2GHz
- Radio spectrum allocation in 800/900MHz is reviewed and going to re-allot

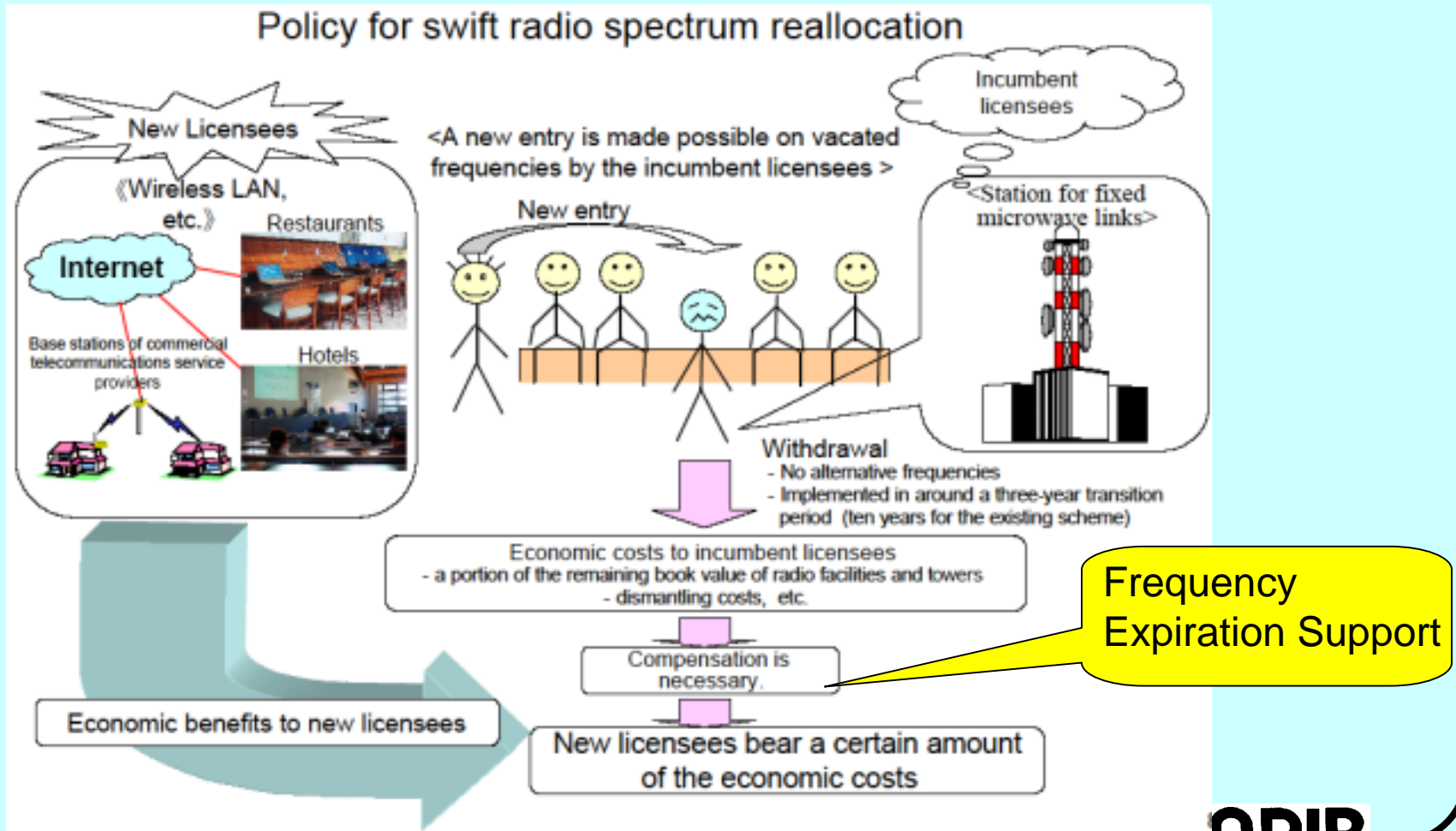
Drastic Review of Radio Spectrum Allocation -3-

TD-SCDMA System

- Discussion on the systems 3G/B3G in 2GHz band
- New NCN candidate is planning to use this system
- Efficient use of bulk (single carrier) in 2GHz band
- TD is flexible and suitable mode to adapt the asymmetry
- Accommodate packet data service in asymmetric traffic channels

[Information] Frequency Expiration Support

- new rules for re-allotment of radio spectrum



Thanks for your attention!

ARIB

Association of Radio Industries and Businesses

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