

**ARIB Activities  
after the Last Meeting  
- Standardization for Radio Systems -**

Association of Radio Industries  
and Businesses  
(ARIB)

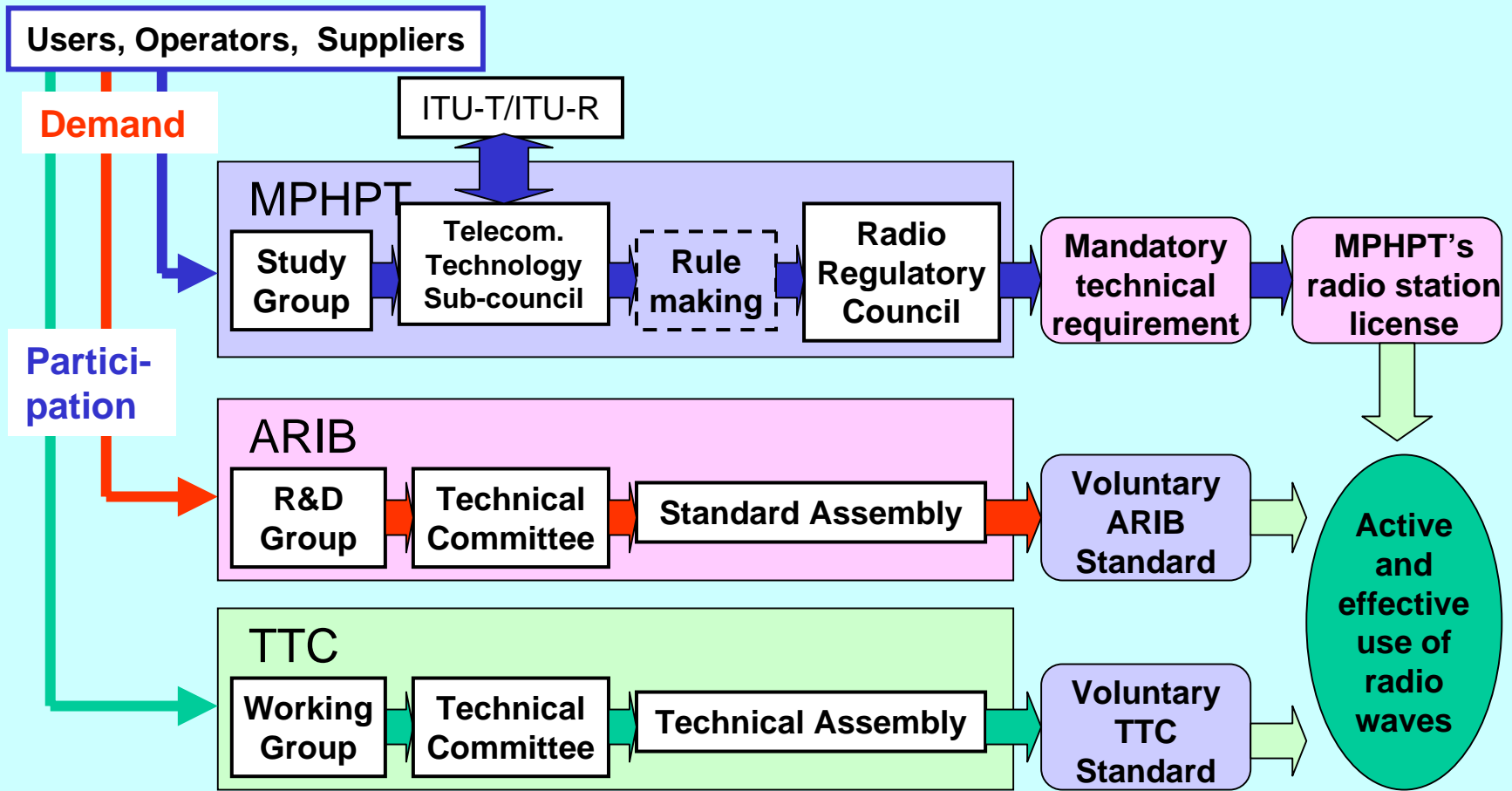
November 7, 2002

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# Standardization Flow in Japan

# Standardization Flow in Japan



(Note) MPHPT: Ministry of Public Management, Home Affairs, Posts and Telecommunications

# Government Regulations and ARIB Standards for radio systems

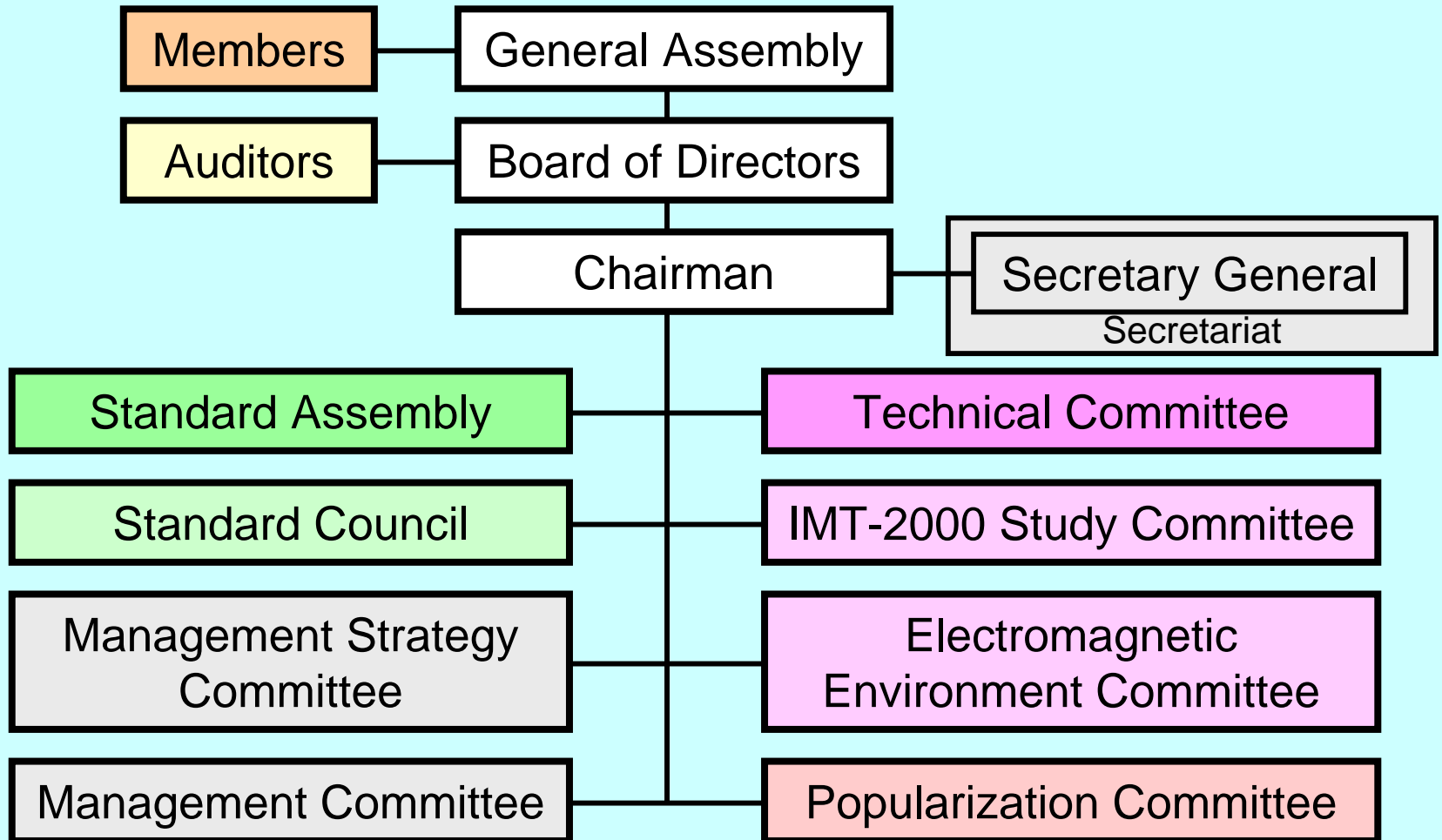
	Government Regulations	ARIB Standards
Nature	Mandatory	Voluntary
Purpose	<ul style="list-style-type: none"> <li>◆ To promote efficient use of frequency</li> <li>◆ To protect from interference</li> <li>◆ etc.</li> </ul>	<ul style="list-style-type: none"> <li>◆ To ensure common air interface</li> <li>◆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

# **R & D and Standardization Activities for Radio Systems in ARIB**

# Outline of ARIB

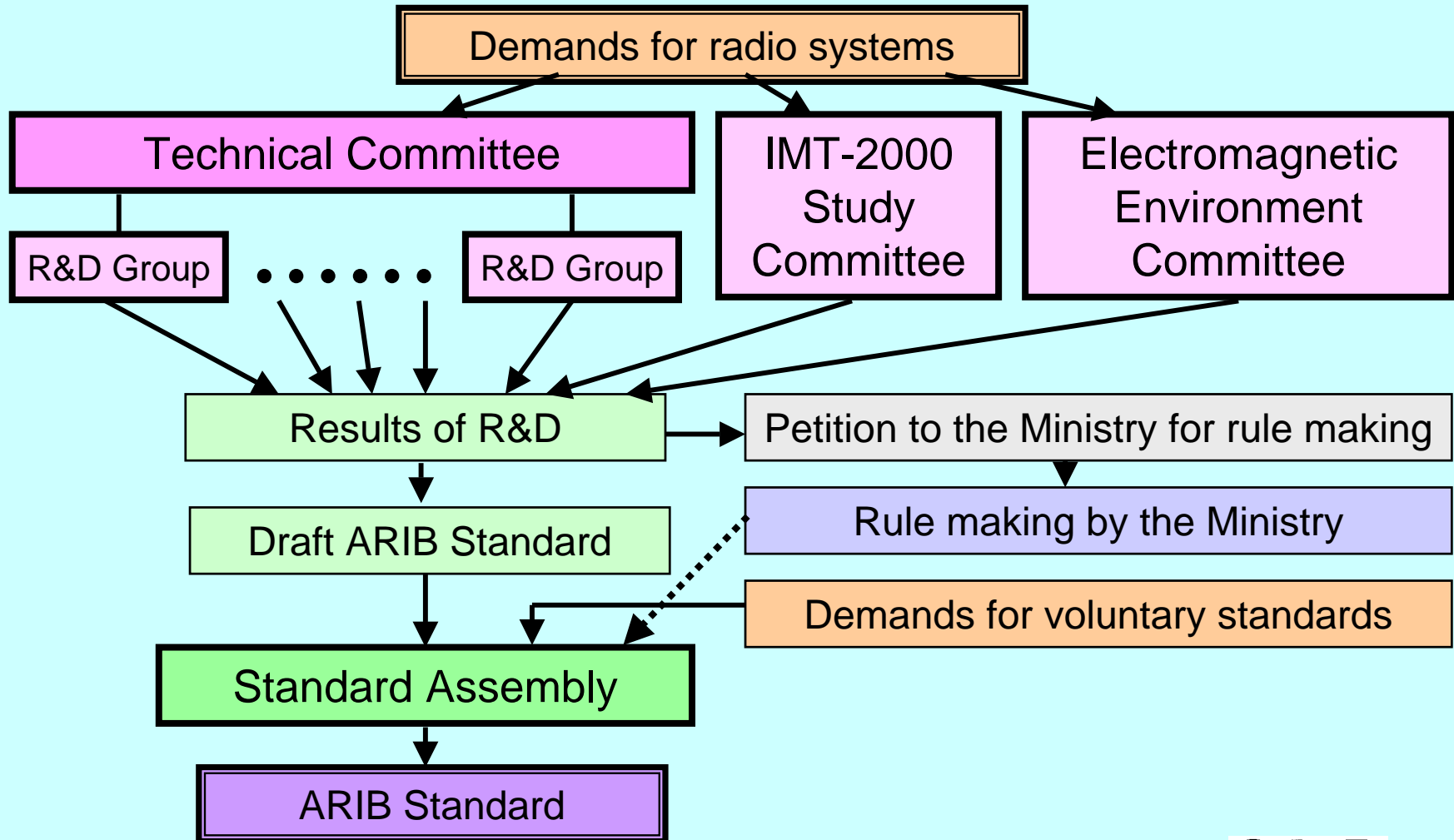
- **Establishment:** merge of two organizations in 1995:
  - Research & Development Center for Radio Systems (RCR)
  - Broadcasting Technology Association (BTA)
- **Objective:** promotion of public welfare by means of:
  - conducting investigation, R&D and consultation of utilization of radio waves
  - 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

# Organization of ARIB

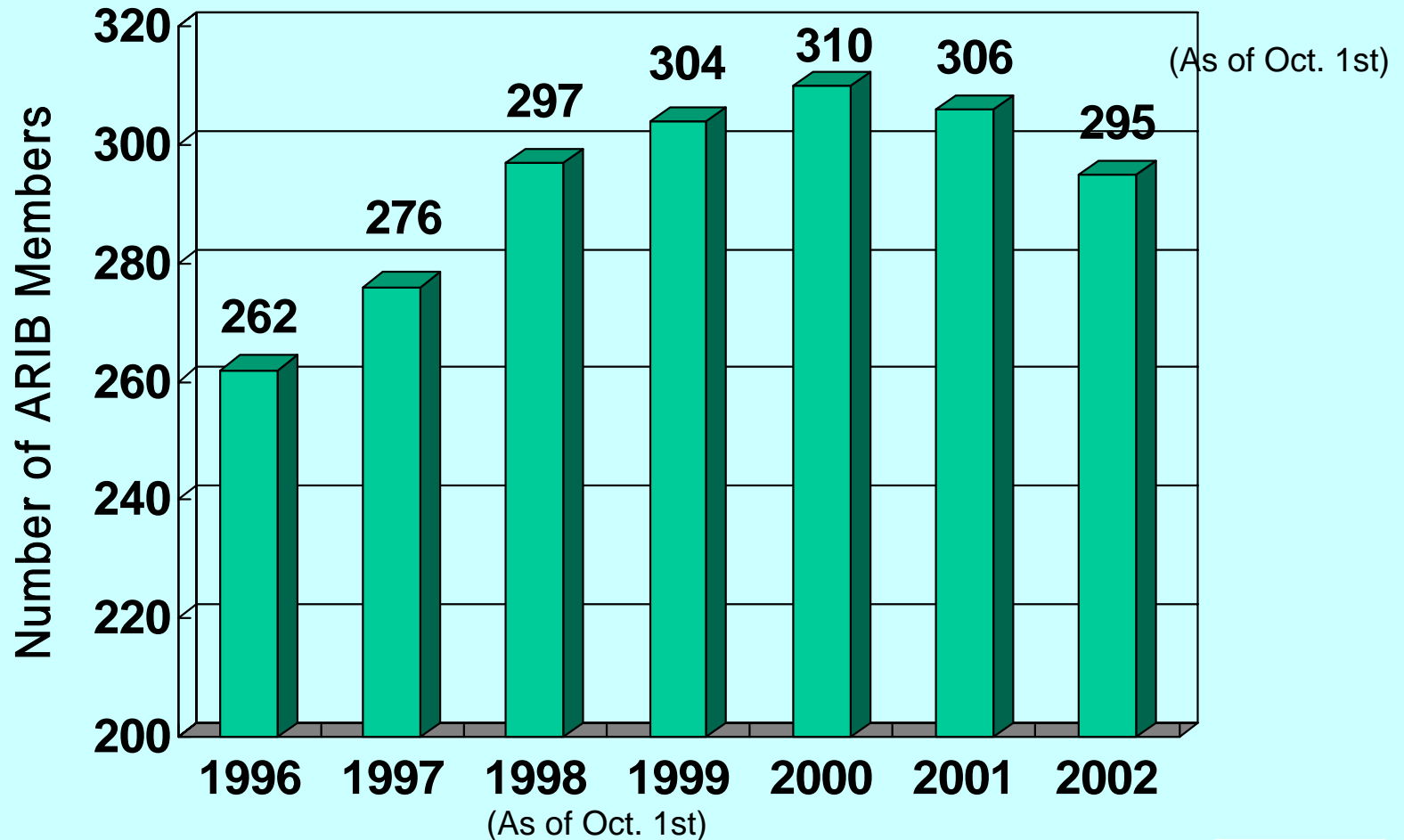




# ARIB's R&D and Standardization

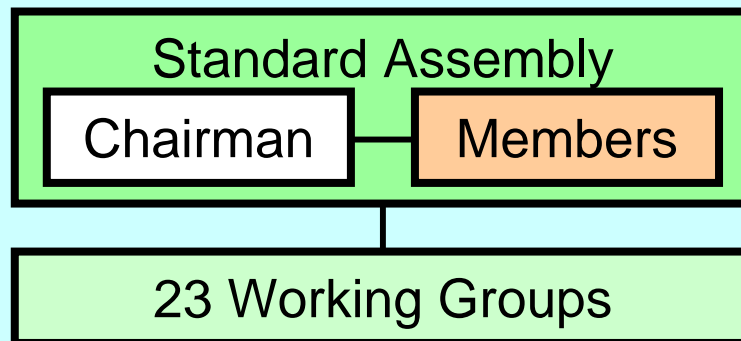


# Evolution of ARIB membership



# ARIB Standard Assembly

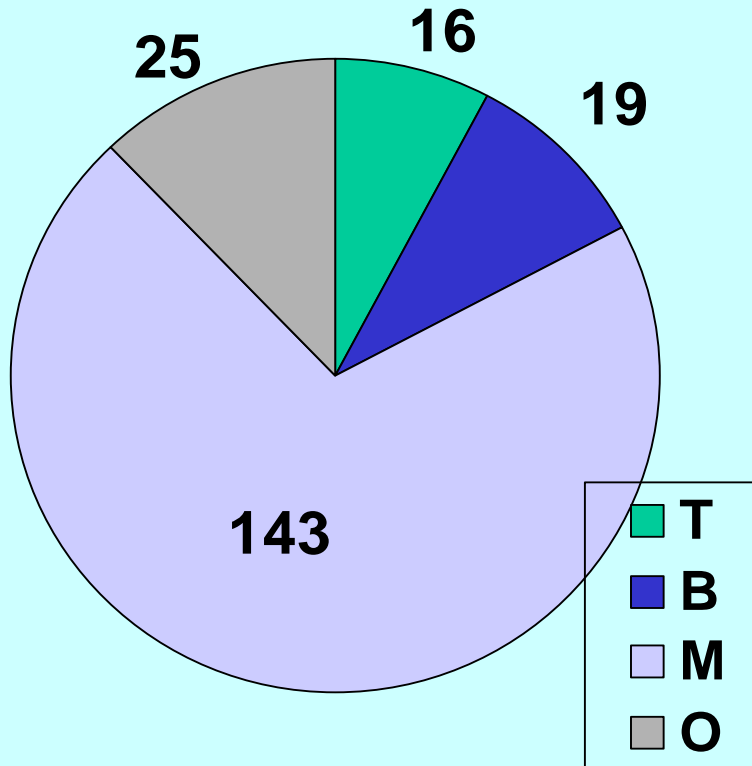
- **Establishment:** 1995  
(reorganized from the RCR Standard Assembly and the BTA)
- **Members:** 201 (including 16 foreign affiliated members, as of June 1, 2001)
  - open to any entity, organization and person
  - no limitation on nationality
  - independent from ARIB membership
- **Organization:**



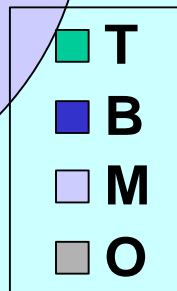
For maintenance and enhancement of ARIB standards

# Members of ARIB Standard Assembly

## Members of ARIB Standard Assembly

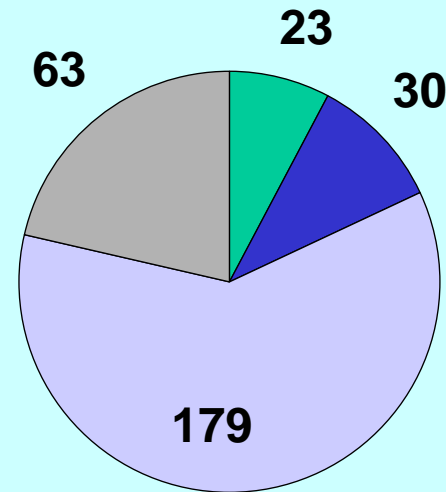


Total: 203



- 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

## Ref.: ARIB Members



Total: 295

(as of Oct.1, 2002)

# Outcome from Standard Assembly

- **ARIB Standards (STDs):**  
voluntary standards of private sector
- **ARIB Technical Reports (TRs):**  
technical information not including standards

## Number of STDs and TRs in force

Oct. 1 2002

	STD	TR
Telecommunications	71(70)	22(22)
Broadcasting	46(41)	29(28)

(as of June. 1, 2002)

# Recent Activities -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 for each of DS-CDMA and MC-CDMA systems revised and further work in progress
- **Advanced Digital Mobile Communication Systems**
  - STD for CDMA cellular revised
- **FWA (Fixed Wireless Access) System**
- **Satellite Communication System**

# Recent Activities -2-

## Low Power Radio Stations

- **STDs for the following applications established or revised**
  - Wireless Card System (13.56 MHz band)
  - Second Generation Low Power Data Communication / Wireless LAN Systems (2.4GHz band)
  - Broadband Access Communication Systems (5 GHz band)
    - HiSWANa
    - CSMA (IEEE 802.11a)
    - Wireless 1394
  - Ultra High Speed Wireless LAN System (60 GHz band)
  - Millimeter-wave Video Transmission Equipment (60 GHz band)

# Recent Activities -3-

## Broadcasting field

- **Digital satellite TV broadcasting**
  - STDs and TR were revised to accommodate copyright management system
- **Digital terrestrial TV broadcasting**
  - STDs and TR were revised to accommodate copyright management system
  - Work is in progress to revise them to accommodate an advanced broadcasting system based on Home Servers
- **Digital terrestrial sound broadcasting**
  - TR was revised



# Recent Activities -4-

## ITS field and EMC field

- **ITS (Intelligent Transportation System)**
- **EMC (Electromagnetic Compatibility)**

## Business and Government Applications

- STDs for VHF radio station for simplified services revised
- STD for Narrow Band Digital Telecommunication System (SCPS/FDMA) revised

# Recent Activities -5-

## UWB field

- **UWB (Ultra Wide Band Systems)**
  - Study begin to develop UWB provides a great demand of capacities
  - Adequate for short-range communication
  - High-speed (more than 100Mbps) short-range wireless links such as wireless personal area networks

Thanks for your attention!

