# A view from the administration of Japan

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Ministry of Internal Affairs and Communications

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　Future policy of the administration

# Outline of Japan’s radio use

# Current Situation of Spectrum Use in Japan (by frequency band)

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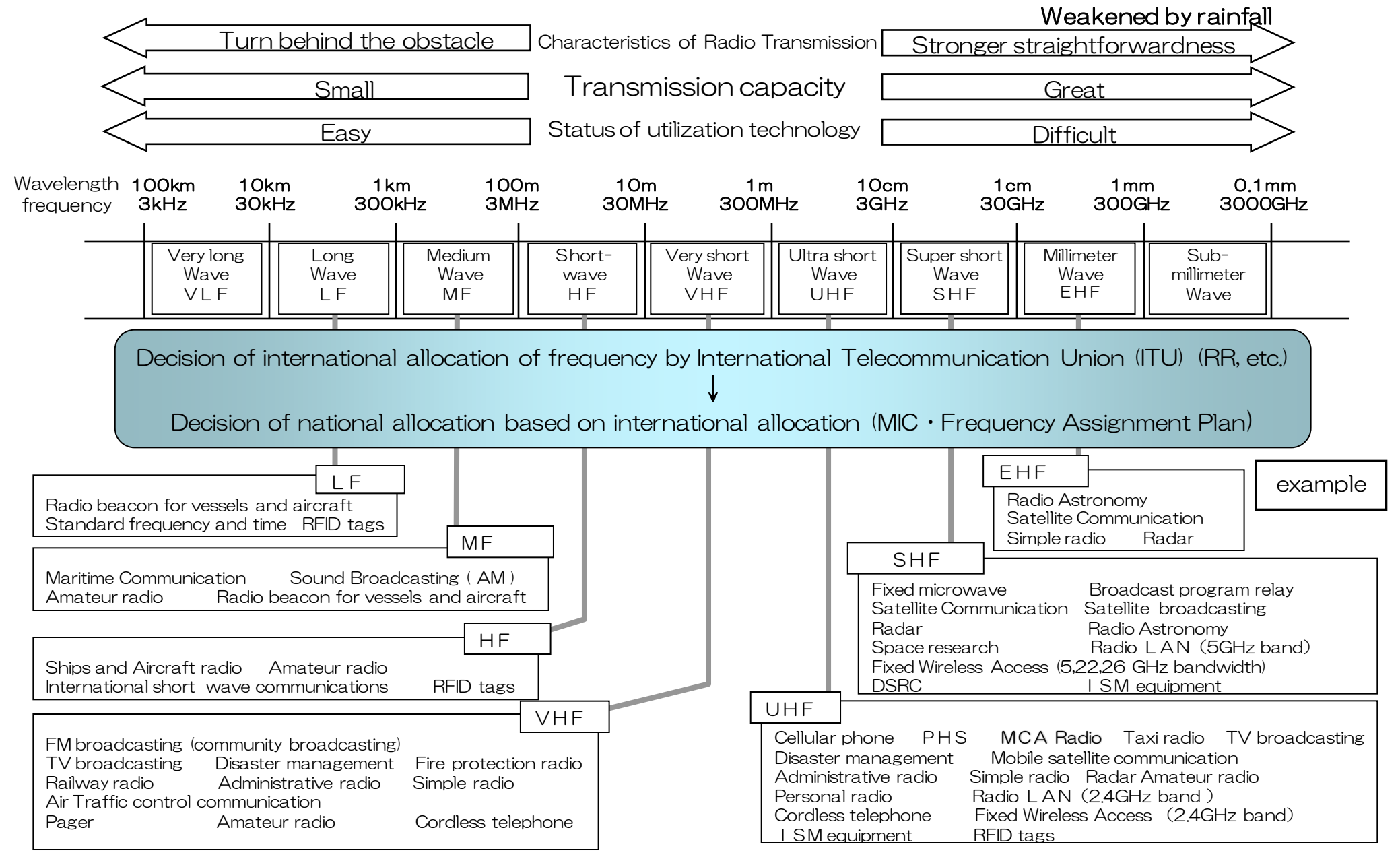

# Change in Wireless Usage in Japan

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## 1950

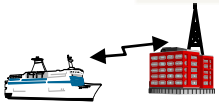
**Public service**

(broadcasting, communication systems for safety and security on ships and aircraft)

5,118 stations

Mobile stations 4,195 stations
Fixed stations 552 stations
Broadcast stations 80 stations
Others 291 stations

Broadcasting



Local public agency

Marine communication

Communication for security

Fire station

## 1985

Deregulation of market entry restrictions

**Wireless usage by private sectors expanded rapidly**

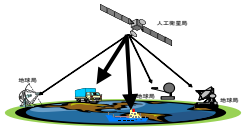
Approx. 3.81 million stations

Mobile stations
Approx. 1.07 million stations

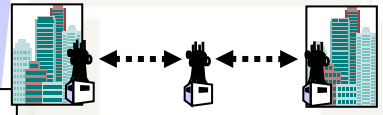
Fixed stations
Approx. 0.038 million stations

Broadcast stations
Approx. 0.024 million stations

Others
Approx. 2.68 million stations



Satellite communication



Fixed microwave network

## 2010

- **Mobile phone**
  100 million subscribers, increase of 3G System ratio (approx. 90%)
- **Wireless Access System** spreads

Approx. 115.87 million stations

Mobile stations
Approx. 113.96 million stations

Fixed stations
Approx. 0.105 million stations

Broadcast stations
Approx. 0.025 million stations

Others Approx. 1.788 million stations

Mobile phone
Internet connection via mobile phone

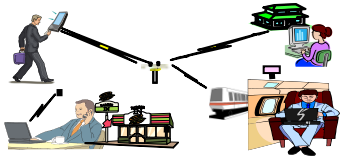
Wireless LAN

## Future

**Radio spectrum used in various ways** (expand need of new wireless usage)

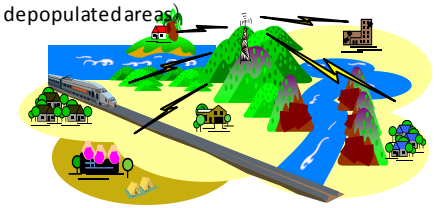
(Example new wireless usage)

Mobile Office /Home

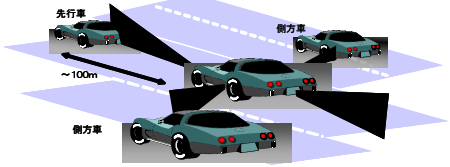


**Alterative for wire broadband communication**

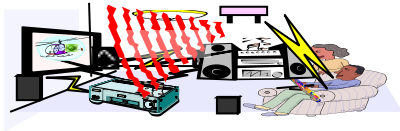
(realization of broadband communication in depopulated areas)



Safe/secure advanced ITS




Next-generation information appliances, home networks

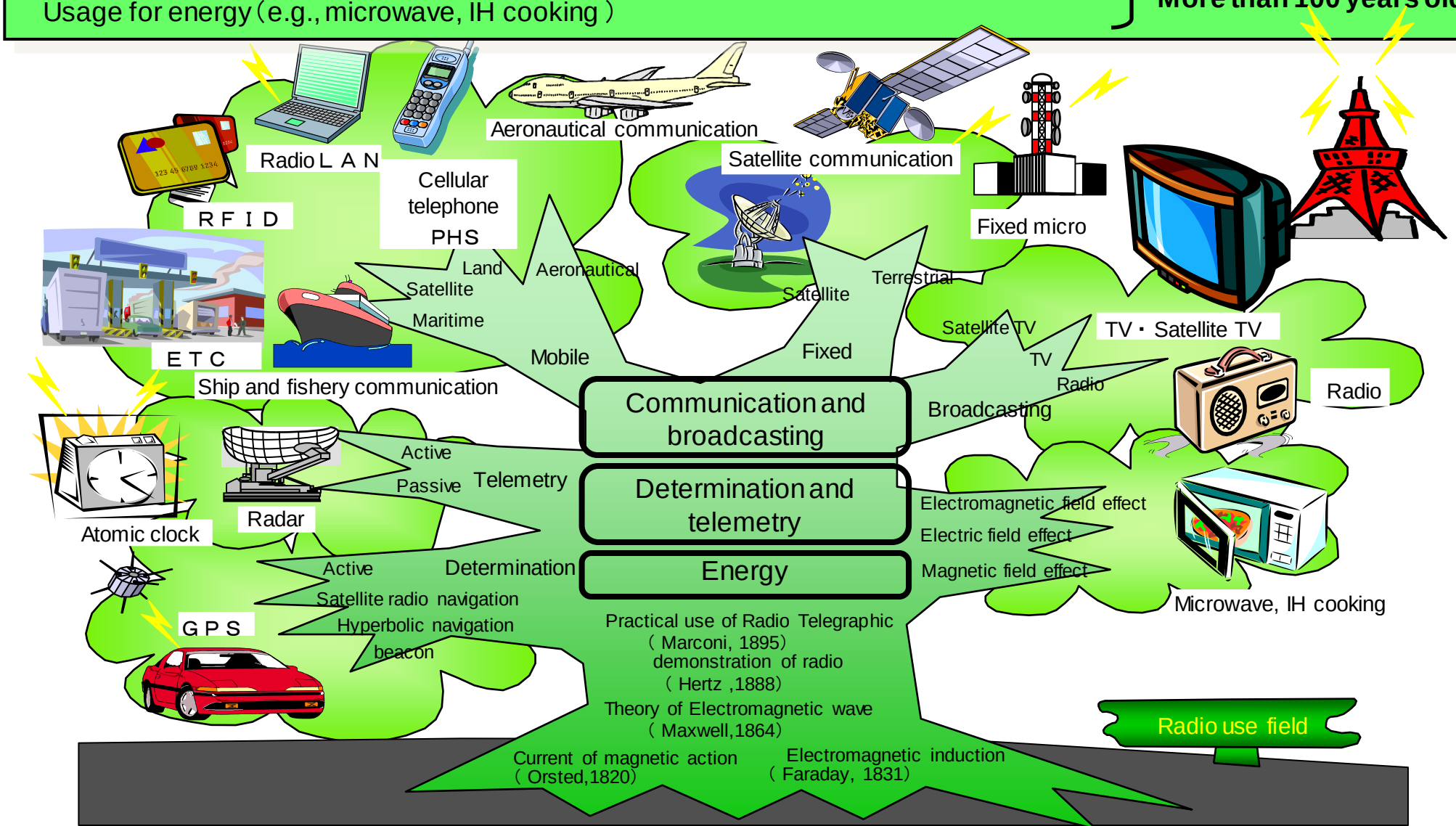


# Three major wireless Usage Fields

**The Radio is chiefly used in the following three fields according to characteristics ;**

Usage for communication and broadcasting （e.g., Cellular telephone, TV broadcasting）
Usage for determination and telemetry（e.g., GPS（global positioning system））
Usage for energy（e.g., microwave, IH cooking）

**「Radio tree」**
**More than 100 years old**



# Position of radio astronomy services

# "Frequency Assignment Plan"

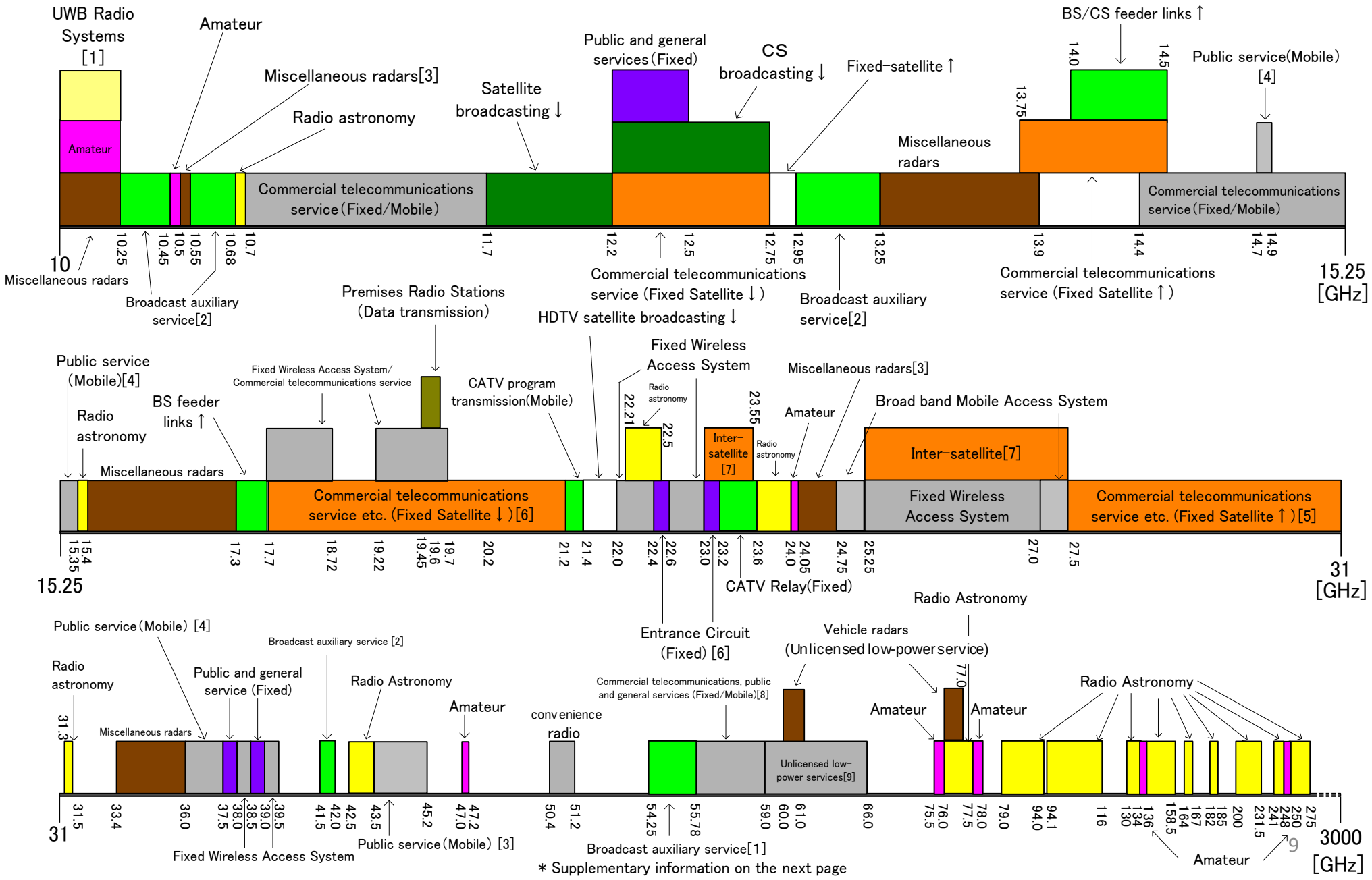
- The “Frequency Assignment Plan” is a table showing assignable frequencies in Japan.
- The Plan was established and disclosed by the Minister for Internal Affairs and Communications under the provisions of Item 1 of Article 26 of the Radio Act.

Radio Act (Act No. 131 of 1950) -Latest revision: Act No. 136 of December 28, 2007 -

Article 26 (Frequency Assignment Plan)

(1) The Minister shall prepare and offer for public perusal a list of available frequencies (hereinafter referred to as the "Frequency Assignment Plan") and shall issue a public notice of the Frequency Assignment Plan. The same shall apply when the Frequency Assignment Plan is revised.

# Above 10GHz


UWB Radio Systems [1]
Amateur
Miscellaneous radars[3]
Radio astronomy
Satellite broadcasting ↓
Public and general services (Fixed)
CS broadcasting ↓
Fixed-satellite ↑
BS/CS feeder links ↑
Public service(Mobile) [4]
Miscellaneous radars
Commercial telecommunications service (Fixed/Mobile)
10
15.25 [GHz]
Miscellaneous radars
Broadcast auxiliary service[2]
Commercial telecommunications service (Fixed Satellite ↓)
Broadcast auxiliary service[2]
Commercial telecommunications service (Fixed Satellite ↑)
Premises Radio Stations (Data transmission)
HDTV satellite broadcasting ↓
Fixed Wireless Access System
Public service (Mobile)[4]
Fixed Wireless Access System/ Commercial telecommunications service
CATV program transmission(Mobile)
Radio astronomy
Miscellaneous radars[3]
BS feeder links ↑
Broad band Mobile Access System
Radio astronomy
Amateur
Inter-satellite [7]
Inter-satellite[7]
Commercial telecommunications service etc. (Fixed Satellite ↓)[6]
Fixed Wireless Access System
Commercial telecommunications service etc. (Fixed Satellite ↑)[5]
15.25
31 [GHz]
CATV Relay(Fixed)
Entrance Circuit (Fixed) [6]
Radio Astronomy
Public service (Mobile) [4]
Broadcast auxiliary service [2]
Vehicle radars (Unlicensed low-power service)
Radio astronomy
Public and general service (Fixed)
Radio Astronomy
Amateur
Commercial telecommunications, public and general services (Fixed/Mobile)[8]
convenience radio
Amateur
Amateur
Radio Astronomy
Miscellaneous radars
Unlicensed low-power services[9]
31
3000 [GHz]
Fixed Wireless Access System
Public service (Mobile) [3]
Broadcast auxiliary service[1]
Amateur
* Supplementary information on the next page

# Approach to Spectrum Relocation/Reallocation

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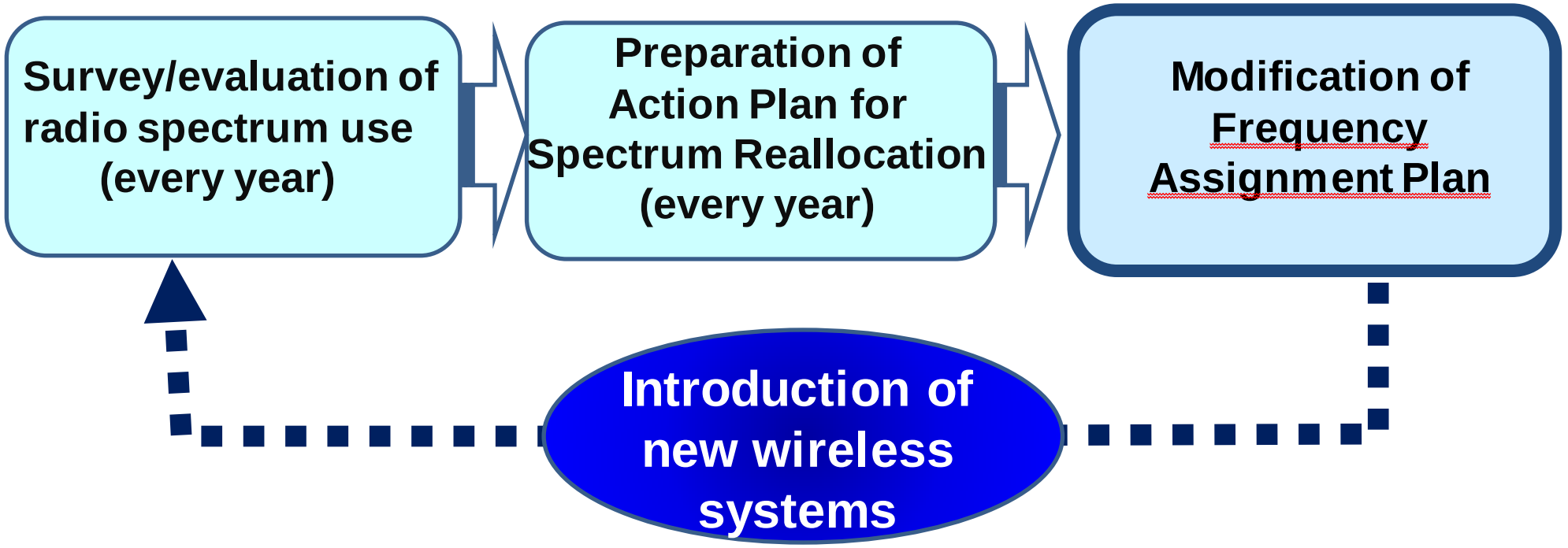
- In order to secure frequencies to introduce new wireless systems, radio spectrum usage is surveyed and evaluated every year. The Action Plan for Spectrum Reallocation defining relocation/reallocation policies is then prepared.
- Based on the results of the above and other inputs, the Minister for Internal Affairs and Communications prepares the Frequency Assignment Plan.

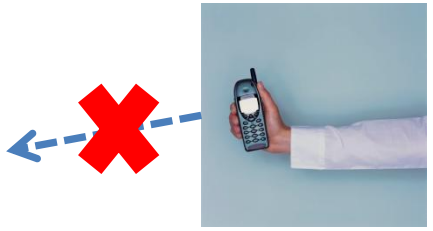
Cycle of Spectrum Relocation/Reallocation



# Designation as receiving equipment to be used for radio astronomy ①

- Application -

- Examination -
(standard: Ministerial ordinance)



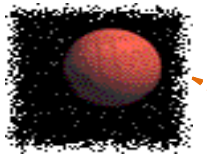
**Protection from other radio stations**

- Designation as receiving equipment to be used for radio astronomy -

Radio Act (Act No. 131 of 1950)
Latest revision: Act No. 136 of December 28, 2007

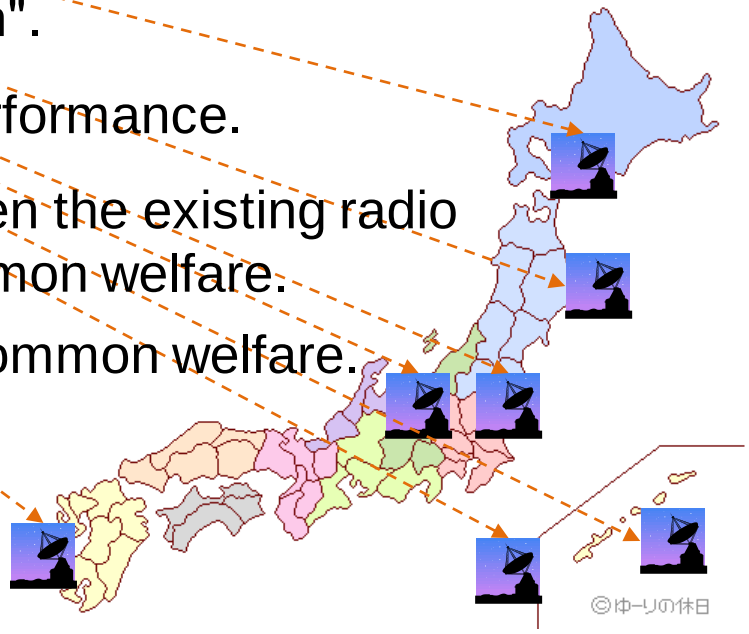
Article 56 (Prevention of Radio Interference, etc.)
(1) A radio station shall be operated in such a way as not to cause interference or any other disturbance that impairs the operation of other radio stations, receiving equipment that is used for radio astronomy (referring to a service to receive radio waves from outer space), or other receiving equipment specified by the applicable MIC ordinance (except equipment in radio stations), which is designated by the Minister. However, this shall not apply to the communications listed in Article 52 items (i) through (iv).
(2) The designation prescribed in the preceding paragraph shall be made upon application by a person who has installed receiving equipment pertaining to said designation.
(3) The Minister shall, upon making a designation prescribed in paragraph (1), issue a public notice of the matters specified by the applicable MIC ordinance, for the receiving equipment pertaining to said designation.
(4) In addition to the matters prescribed in the preceding two paragraphs, application procedures for the designation, standards for the designation, revocation of the designation, and other matters necessary for the designation prescribed in paragraph (1) shall be specified by the applicable MIC ordinance.

# Designation as receiving equipment to be used for radio astronomy ②



## ＜Screening criterion point＞

- ○ The receiving equipment use the frequency for radio astronomy services, that is shown in the “Frequency Assignment Plan".
- ○ The receiving equipment has the appropriate performance.
- ○ There is no obstacle in the passive services, when the existing radio station is provided that is necessary for the common welfare.
- ○ The passive services must be provided for the common welfare.




## ＜Current situation＞

The receiving equipment to be used for radio astronomy ; 130 station（2/2009）

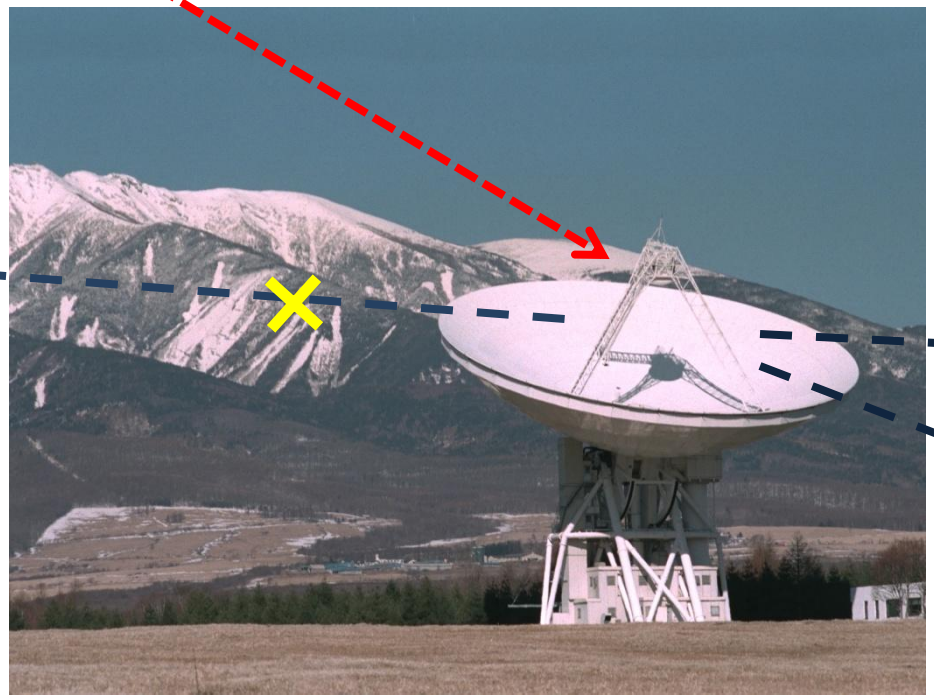
- Designated equipment by Radio Act ; 34 station

# Characteristics of radio astronomy
## — viewpoint of the administration —

# Characteristics of radio astronomy ①

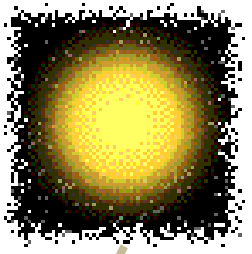
## ＜Characteristics 1＞

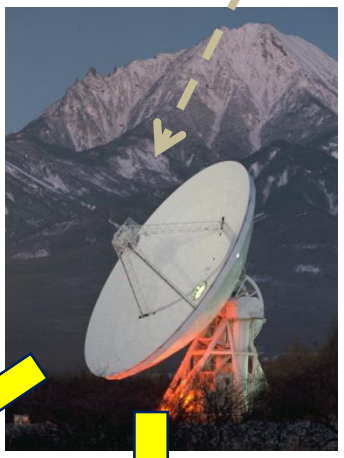
The equipment for radio astronomy has a receiving function only.



# Characteristics of radio astronomy ②

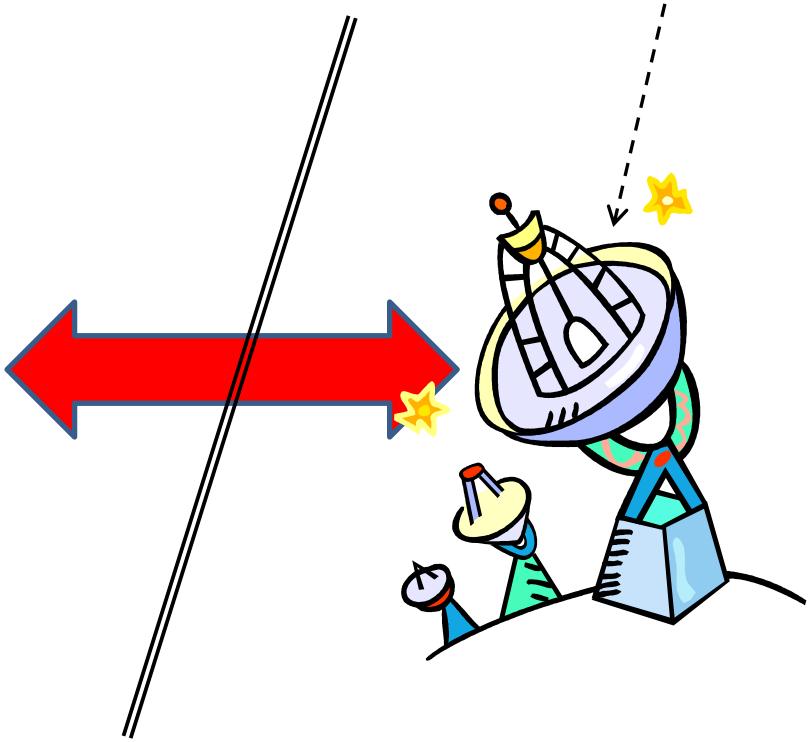
＜Characteristics 2＞
The purpose of the radio astronomy services is "Academic search of the cosmos and space“.





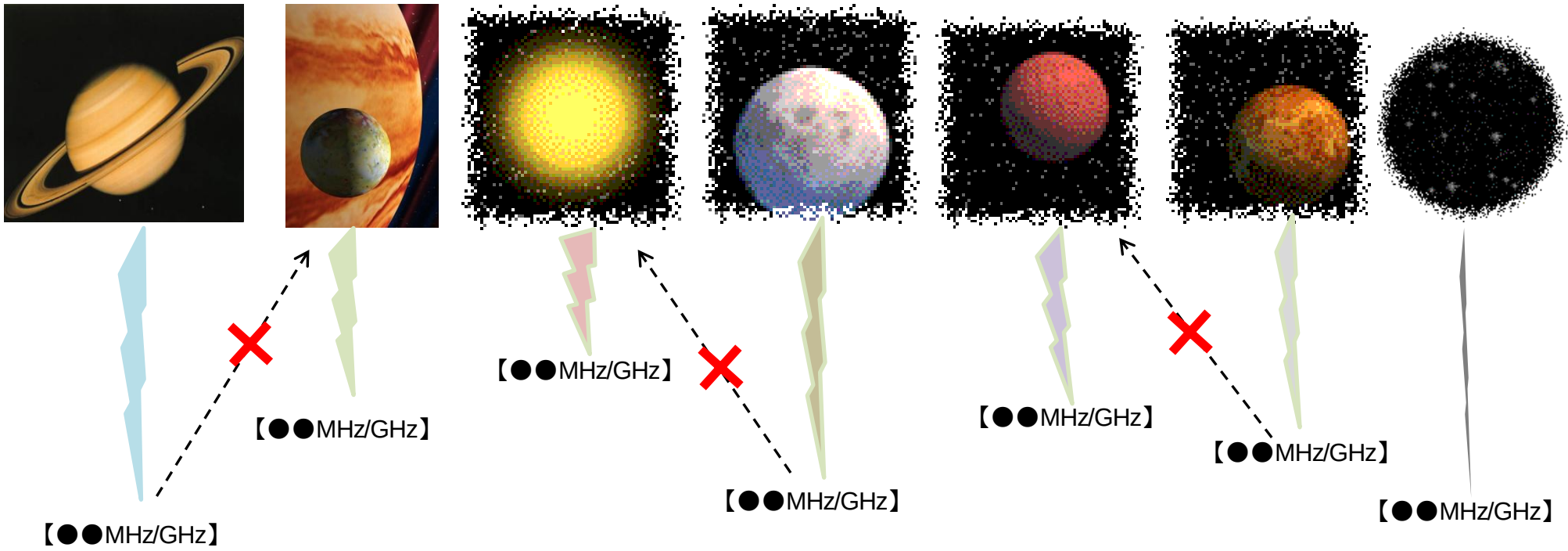
# Characteristics of radio astronomy ③

## ＜Characteristics 3＞
## Existence of dynamic range of the receiving equipment for radio astronomy

# Characteristics of radio astronomy ④

## ＜Characteristics 4＞
## Non-substitution of the frequency for the radio astronomy



# （For the radio astronomy services）
# Future policy of the administration

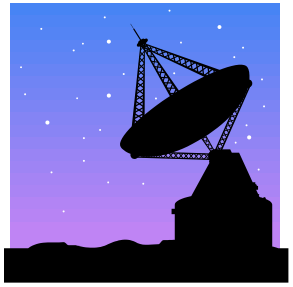
# Future policy of the administration

- Based on the different purposes of radio astronomy services and other radio station services, judgment from neutral stance and harmony of both services

- Construction of closely coordinated system of administration and radio astronomy, and mutual understanding

◆ Consider ;

Screening criterion to designation of the equipment for radio astronomy



- Material to judges right/wrong of designation of equipment
- The amount of permissible interference of the designated equipment is set.

# Thank you for your kind attention!

総務省
MIC Ministry of Internal Affairs and Communications