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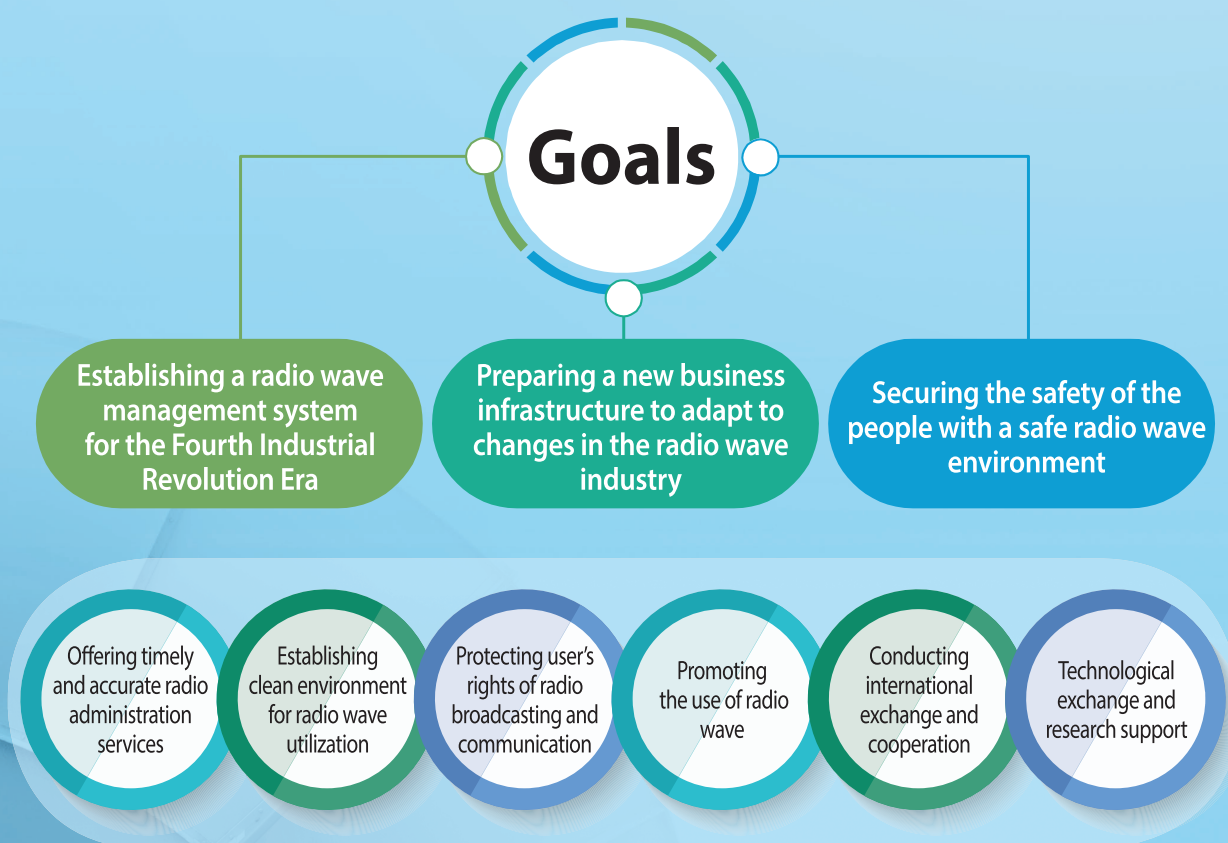
CRMS secures radio wave,  
the core resource of the Fourth Industrial Revolution!



# Vision



Leading the society of intelligent hyper-connectivity through innovative radio wave management

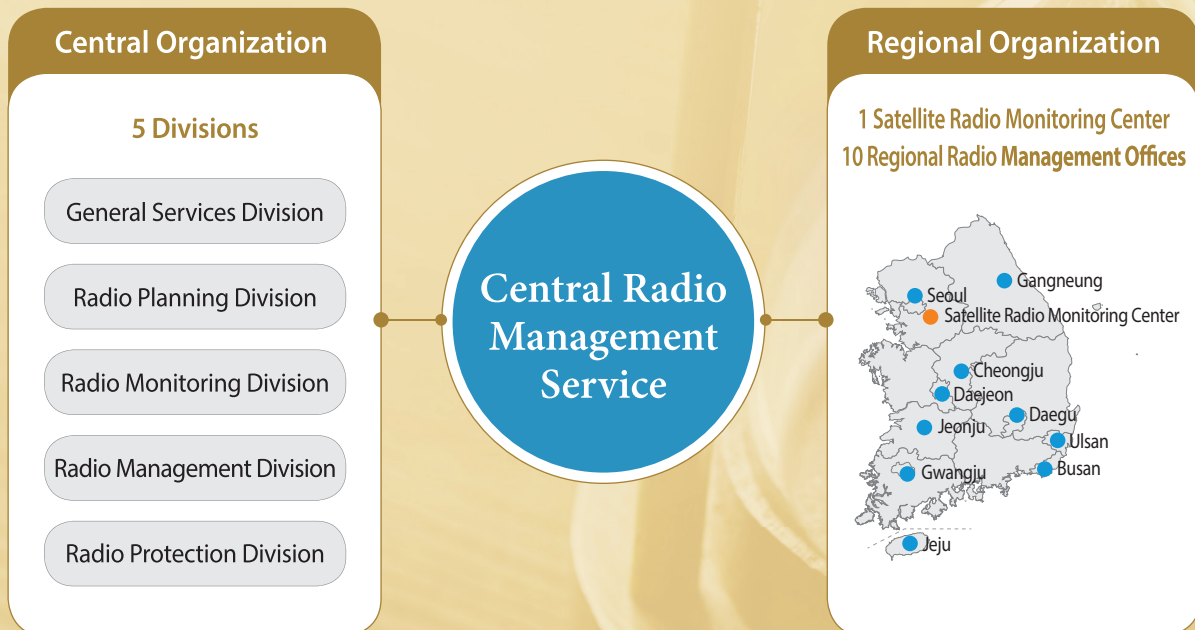


# History

In 1947, for the first time, Gwangjang Monitoring Branch was organized within the Radio Information Division of the Ministry of Communication which marked the beginning of radio management in Korea. Central Radio Management Service(CRMS) has been evolved into the organization covering a wide range of radio broadcasting and communication by expanding its business area until 2008.

Now CRMS has 5 divisions, 1 satellite radio monitoring center and 10 regional branch offices on a national scale to provide customer-oriented services.

# Organization





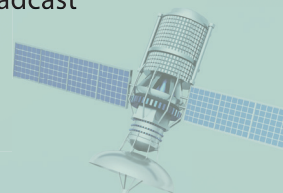
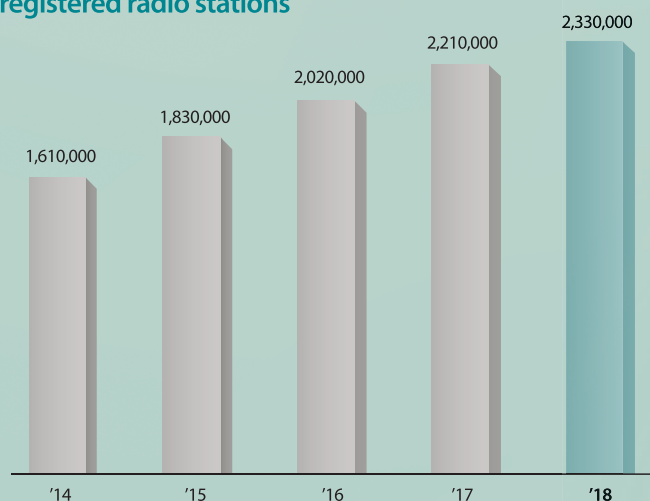
# Radio wave

Radio waves are a crucial resource for the Fourth Industrial Revolution. The Fourth Industrial Revolution is the next-generation industrial revolution and it is based on the convergence of information and communications technologies (ICT), such as hyperconnectivity, ultra-high speed and low latency networks, and various other scientific technologies. The Fourth Industrial Revolution will be an important watershed moment for the society of the future. In particular, as the use of big data technologies and AI become more widespread and similar technologies are combined with hyperconnectivity, the ubiquity of the Fourth Industrial Revolution will be felt. The importance of radio resources, which is the foundation of ICT, is increasing every day.

As demands of radio wave are rapidly increasing, it becomes much more important for countries to discover, distribute and manage radio resources in order to secure their national competitiveness.

As the organization for integrated management of radio broadcasting and communication, CRMS is responsible for efficient use of radio waves, which are becoming more and more valuable. CRMS is also committed to establishing safe and clean radio broadcasting and communication service environment by cracking down on unfair practices such as the distribution of illegal broadcast communications equipment and the operation of illegal radio monitoring facilities.

List of licensed and registered radio stations





01 Offering timely and accurate radio administration services	<ul style="list-style-type: none"><li>• Licensing and inspecting radio stations</li><li>• Inspecting broadcasting stations</li><li>• Registering and managing telecommunication operators</li><li>• Licensing non-profit organizations in radio broadcasting and communication areas</li><li>• Offering public services</li></ul>
02 Establishing clean environment for radio wave utilization	<ul style="list-style-type: none"><li>• Operating Radio Monitoring Control Center (RMCC)</li><li>• Monitoring Radio Spectrum</li><li>• Investigating and regulating illegal radio stations</li><li>• Responding to radio jamming and handling radio interference</li><li>• Protecting domestic satellites and monitoring domestic and international satellites</li></ul>
03 Protecting user's rights of radio broadcasting and communication	<ul style="list-style-type: none"><li>• Investigating unauthorized broadcasting and communication equipment, covert listening devices and duplication of mobile phones</li><li>• Supervising electrical and telecommunication facility provision</li><li>• Investigating technical conformity of broadcasting and communication facilities</li><li>• Investigating the broadcast programming ratio</li><li>• Evaluating DTV broadcasting programs for compliance with default volume standards</li></ul>
04 Promoting the use of radio wave	<ul style="list-style-type: none"><li>• Conducting survey on radio frequency usage</li><li>• Investigating radio interference</li><li>• Conducting survey on TV signal reception condition</li><li>• Offering radio environment measurement service</li><li>• Conducting survey on satellite radio signal reception condition</li></ul>
05 Conducting international exchange and cooperation	<ul style="list-style-type: none"><li>• Cooperating with neighboring countries for radio management</li><li>• Participating in activities for international standards</li><li>• Participating in international exchange for radio management</li><li>• Supporting developing and undeveloped countries in technical assistance in radio management</li></ul>
06 Technological exchange and research support	<ul style="list-style-type: none"><li>• Supporting radio communication technology</li><li>• Providing measurement data for satellite radio signals</li></ul>

## Offering timely and accurate radio administration services

CRMS provides public services required to use radio waves, broadcasting and communication services.





### Licensing and inspecting radio stations

- CRMS receives applications from applicants who want to open new radio stations and processes them to grant licenses for safe radio station utilization and efficient radio control and management.
- CRMS conducts inspection services through specialized inspection bodies for quality control in major radio stations of governmental organizations.

\* For radio station permits and civil complaints, go to [emsit.go.kr](http://emsit.go.kr)

### Inspecting broadcasting stations

- CRMS conducts inspection against terrestrial broadcasting stations such as UHD broadcasting support stations to eliminate shadow areas for broadcasting and maintain optimized broadcasting quality.

### Registering and managing telecommunication operators

- CRMS registers and manages special categories and value added telecommunication operators, and charged telecommunication service providers.
- CRMS contributes to maintaining the safety and security of the Internet as a special supplementary communications business by providing services such as Webhard, peer-to-peer networking, Internet broadcast text service, and verifying that Internet broadcasters are upholding the requirements for registration.
- CRMS contributes to the establishment of a safe Internet environment by evaluating telecommunication operators for their compliance with registration requirements.

### Licensing non-profit organizations in radio broadcasting and communication areas

- CRMS approves the registration of non-profit organizations in radio broadcasting and communication areas, and supervises and oversees operation of their legal entities.

### Offering public services

- CRMS provides a one-stop radio broadcast communications related civil complaint management system, that is focused on the customer.
- CRMS dispatches its radio interference response teams to onsite to resolve issues with interfering radio facilities.

\* Civil complaints related to radio broadcast communications are received at Tel. 080-700-0074



# 02

## Establishing clean environment for radio wave utilization

CRMS works 24 hours a day to protect radio broadcasting  
and communication environment.



## Operating Radio Monitoring Control Center (RMCC)

- RMCC operates and manages radio management systems installed nationwide for 24 hours, everyday.
- RMCC responds to various situations by promptly eliminating interference in major communication networks.

## Monitoring radio spectrum

- CRMS has established fixed radio management systems nationwide to detect and eliminate illegal radio waves and harmful interference.



## Investigating and regulating illegal radio stations

- CRMS regulates illegal radio stations to ensure stable operation of legal radio stations.
- CRMS continues to guide and promote legit use of radio stations.

## Responding to radio jamming and handling radio interference

- CRMS focuses on identifying radio jamming on GPS, satellite, marine, aerospace and EMP environment, and distributing of relevant information to minimize consequent damages.
- In particular, CRMS operates an emergency response task force to promptly eliminate interference in major telecommunication networks during nighttime and holidays.

## Protecting domestic satellites and monitoring domestic and international satellites

- Satellite Radio Monitoring Center(SRMC) protects domestic satellite telecommunication networks and facilitates the use of domestic and international satellites.

\* Range of satellite monitoring: geostationary orbit satellites located within the range between east longitude 55° and west longitude 160° and non-geostationary orbit satellites passing over the Korean Peninsula.



## Protecting user's rights of radio broadcasting and communication

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CRMS protects user's rights by regulating a variety of illegal and unauthorized actions related to broadcasting and communication.





### Investigating unauthorized broadcasting and communication equipment, covert listening devices and duplication of mobile phones

- CRMS investigates and cracks down on the importing and selling of illegal broadcasting and communications equipment that has been manufactured without conformity assessments in order to prevent damage to consumers and domestic businesses.
- CRMS protects people's private lives by investigating and cracking down on unauthorized illegal eavesdropping facilities.
- CRMS investigates and regulates duplicated mobile phones used for various crimes.

\* Report or counsel regarding illegal broadcasting equipment, illegal eavesdropping facilities, and mobile phone replication at Tel. 080-700-0074

### Managing electrical and telecommunication facility provision

- CRMS manages the appropriateness of facilities' provided services in order to maintain a fair environment for electric telecommunications facilities and to improve the effectiveness of communications resources.

### Investigating technical conformity of broadcasting and communication facilities

- CRMS investigates whether network lines and telecommunication facilities installed and operated by broadcasting and communication businesses meet safety requirements.
- CRMS supports arrangements of aerial cables to improve urban landscapes and prevent safety accidents.

### Investigating the broadcast programming ratio

- CRMS investigates whether broadcasting companies comply with the broadcast programming ratio to protect the rights of viewers and keep the broadcasting market in order..

### Evaluating DTV broadcasting programs for compliance with default volume standards

- CRMS evaluates DTV broadcasting programs for their compliance with default volume standards to eliminate inconvenience of viewers due to irregular volumes and realize viewer satisfaction for audio services.

## Promoting the use of radio wave

CRMS manages radio environment to ensure efficient use of radio waves as limited resources.



### Conducting survey on radio frequency usage

- CRMS utilizes fixed radio monitoring systems installed in different locations to analyze the use of radio frequency and the analysis data serves as a ground for radio frequency policy covering retrieval and relocation of radio frequency for efficient use of radio resources.

### Investigating radio interference

- CRMS identifies causes of interference in radio equipment, such as stations and TVs, to promptly resolve issues.

### Conducting survey on TV signal reception condition

- CRMS measures TV signal reception conditions and continues to eliminate shadow areas to provide fully covered broadcasting services.
- CRMS conducts on-site investigation and takes timely actions against causes of issues in residents watching TVs due to high rise buildings.

### Offering radio environment measurement service

- CRMS measures electromagnetic waves in radio stations to investigate whether they are harmful to the human body, measures the strength of electromagnetic waves in TV and radio broadcasting and provides measurement results.

### Conducting survey on satellite radio signal reception condition

- CRMS analyzes satellite broadcasting service reception conditions available in Korea and the impact of climate conditions on satellite radio signals, conducts surveys on satellite radio signal reception conditions among different countries and provides relevant data to international organizations and satellite service providers.

## Conducting international exchange and cooperation

As a council member of the International Telecommunication Union (ITU), CRMS complies with the ITU Constitution and Convention and contributes to the protection of national rights and promotion of international cooperation in radio communication.

### Cooperating with neighboring countries for radio management

- CRMS prevents radio interference among Korea and its neighboring countries, and establishes a network of international cooperation for radio management through technical cooperation.
- CRMS operates international monitoring systems for safe operation of ships and airplanes and implements 24-hour monitoring for international distress frequency.

### Participating in activities for international standards

- CRMS proactively participates in international activities to enact and revise international standards of ITU for international radio monitoring technology standardization.

### Participating in international exchange for radio management

- CRMS invites personnel involved in radio management from different countries to introduce radio management work and policy in Korea, and enters into MOUs with overseas organizations for cooperation to enhance CRMS's presence in the global radio management market.

### Supporting developing and undeveloped countries in technical assistance in radio management

- CRMS has been providing radio management system based on Korean technology to developing and undeveloped countries as the form of the grant project to reduce the technical gap in radio management.



## Technological exchange and research support

CRMS engages in exchanges with domestic universities, research institutes, and domestic companies to support their technical researches to foster experts in radio waves and facilitate technical development.



### Supporting radio communication technology

- Regional radio management offices and the Satellite Radio Monitoring Center support students majored in radio and electronic communication related areas for their practices in advanced radio measuring devices.
- CRMS enters into agreements for technical exchange with domestic universities and research institutes to support the development of the radio communication industry.

### Providing measurement data for satellite radio signals

- SRMC provides customized satellite radio measurement data to secure satellite technology as important resources for the country and establish satellite related policy.
- Measurement data are used for various purposes such as registration of domestic satellite communication networks, research on basic technology and satellite monitoring for radio signal reception conditions.





# System

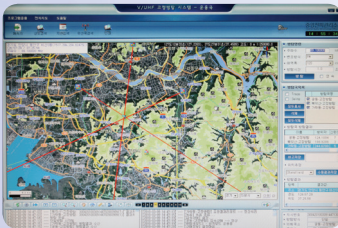
## Main radio management systems

CRMS has established fixed radio management systems, direction finding systems and information systems for effective radio resource management and clean radio environment.



### ■ Fixed radio monitoring systems

- Conducting survey on radio frequency usage
- Measuring radio noise
- Measuring radio environment
- Detecting unauthorized radio signals
- Overseeing licensing requirement violations



### ■ VHF/UHF direction finding systems

- Detecting radio interference and directions of unauthorized radio signals within VHF/UHF signal ranges
- Automatically calculating locations of radio signals and indicating them on a map
- Connecting to mobile direction finding systems in real time



### ■ Information systems and control systems

- Collecting and controlling radio management data
- Controlling and operating Radio Monitoring Control Center (RMCC)





## Mobile radio monitoring systems

Mobile radio monitoring systems are operated either in mobile environment or in fixed locations to measure various radio signal characteristics while finding directions of multiple signals. Measurement data are used for radio management in connection with statistical analysis systems.

- Conducting survey on radio frequency usage
- Measuring radio noise
- Measuring radio environment
- Detecting unauthorized radio signals
- Overseeing licensing requirement violations



## Satellite radio monitoring systems

CRMS utilizes geostationary satellite monitoring system(2002), mobile satellite monitoring system(2009), non-geostationary satellite monitoring system(2016), satellite radio interferer search system(2018) to conduct satellite radio monitoring activities covering wider ranges.

- Managing satellite radio signals and overseeing their movements
- Identifying and eliminating causes of radio interference
- Investigating conditions to receive signals from overseas satellites by region
- Investigating satellite related surrounding conditions of radio stations to receive signals

### ■ Geostationary satellite monitoring system

- Composition: 2 antennas with a diameter of 13m, 2 monitoring systems, 1 set of software and database

### ■ Non-geostationary satellite monitoring system

- Composition: 1 omni-directional antenna, 1 antenna with a diameter of 4.6m, 2 antennas with a diameter of 11m, 4 monitoring systems, 1 set of software and database

### ■ Mobile satellite monitoring system

- Composition: 1 foldable parabolic antenna with a diameter of 1.8m, satellite radio monitoring system, ground interference monitoring system

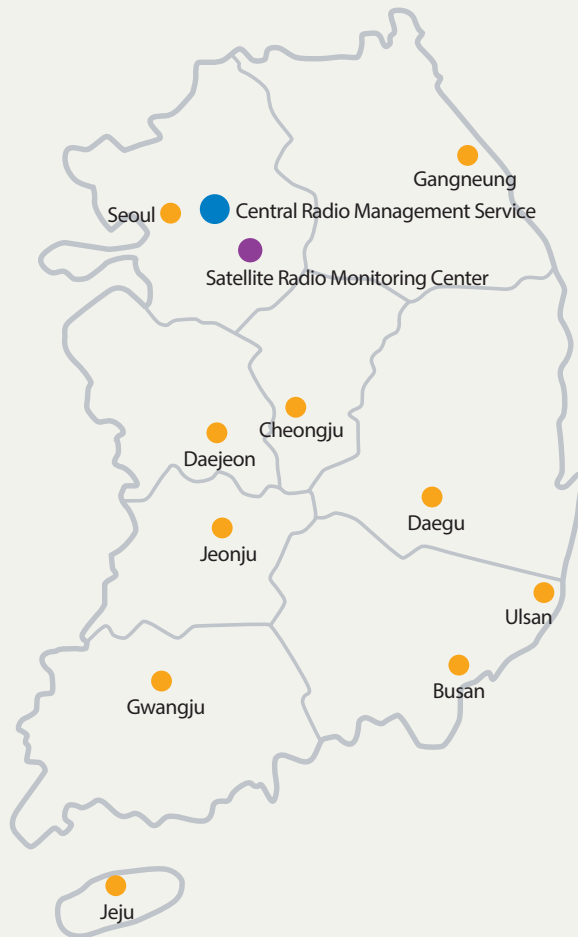
### ■ Satellite Radio Interferer Search System

- Composition: interfering source detection receiver, frequency down converter, interference source analyzer, S/W





# Offices



- **Central Radio Management Service** Tel: 82-2-3400-2000  
234, Songpa-daero, Songpa-gu, Seoul
- **Satellite Radio Monitoring Center** Tel: 82-31-644-5900  
100, Sinam-ro, Seolseong-myeon, Icheon-si, Gyeonggi-do
- **Seoul** Tel: 82-2-2680-1700  
13-43, Ori-ro 22da-gil, Guro-gu, Seoul
- **Busan** Tel: 82-51-974-5100  
67-17, Cheyukgongwon-ro 6beon-gil, Gangseo-gu, Busan
- **Gwangju** Tel: 82-61-330-6800  
178-24, Maeseong-gil, Sanpo-myeon, Naju-si, Jeollanam-do
- **Gangneung** Tel: 82-33-660-2980  
40-31, Seongan-gil, Yeongok-myeon, Gangneung-si, Gangwon-do
- **Daejeon** Tel: 82-42-520-4100  
64, Singalma-ro 86beon-gil, Seo-gu, Daejeon
- **Daegu** Tel: 82-53-749-2800  
90, Dongwon-ro, Suseong-gu, Daegu
- **Jeonju** Tel: 82-63-260-0070  
114, Dunsan3-ro, Bongdong-eup, Wanju-gun, Jeollabuk-do
- **Jeju** Tel: 82-64-740-2800  
385, dochidol-gil, Aewol-eup, Jeju-si, Jeju-do
- **Cheongju** Tel: 82-43-261-5811  
30, Sajik-daero 157beon-gil, Seowon-gu, Cheongju-si, Chungcheongbuk-do
- **Ulsan** Tel: 82-52-231-8810  
157-6, Wigok2-gil, Seosaeng-myeon, Ulju-gun, Ulsan

# Services

- |  |                                     |
|--|-------------------------------------|
| • Central Radio Management Service Website                           | : crms.go.kr                        |
| • Complaints related to radio broadcasting and communication         | : 080-700-0074                      |
| • Information to receive licenses and inspections for radio stations | : Regional Radio Management Offices |
| • Complaints related to licenses for radio stations                  | : emsit.go.kr                       |
| • Application for measurement of radio environment                   | : Regional Radio Management Offices |
| • Provision and guide for satellite measurement data                 | : Satellite Radio Management Center |

CRMS will always be with  
the people to preserve a sound  
and efficient radio wave  
environment of Korea

