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Digital Terrestrial Broadcasting for Mobile Environment

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Mobile Reception of Broadcasting Services

- Before the 1990s

  -AM, FM sound broadcasting over car or portable radios

- In the 1990s

  -Data broadcasting by FM multiplexing broadcasts

  Traffic information, weather casts, etc.

- In the 2000s

  -Digital terrestrial sound broadcasting begins in Tokyo and Osaka areas in October 2003.

  -Digital terrestrial television broadcasting begins in Tokyo, Osaka, and Nagoya areas in December 2003.

Substantial mobile broadcasting services will be launched !

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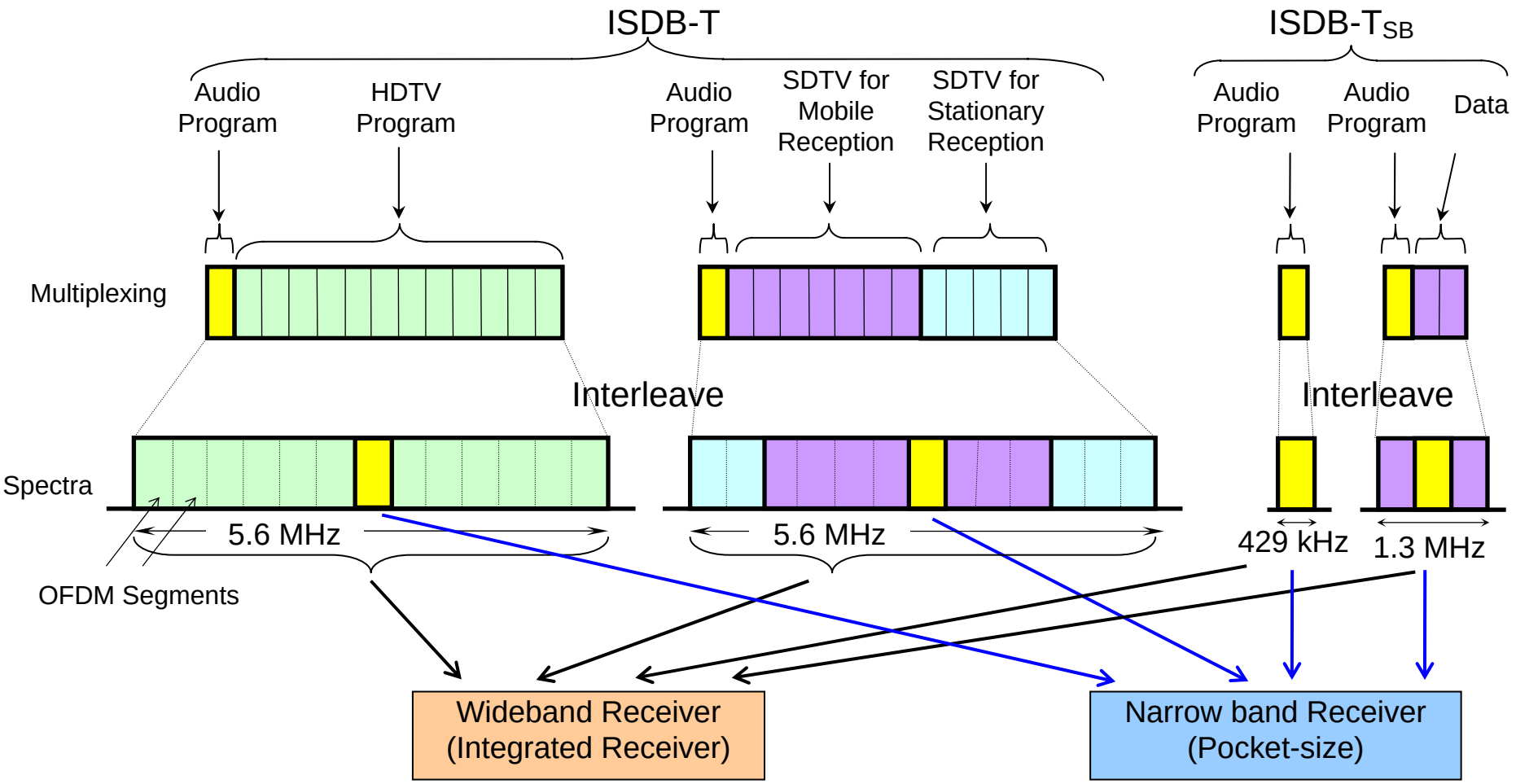
Digital Terrestrial Broadcasting Transmission Spectrum Example



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Service Example

Example 1

Stationary Reception

HDTV

or

3 SDTV Programs

+ Data +

Mobile Reception

Audio and Data

Example 2

Stationary Reception

SDTV

+ Data +

Mobile Reception

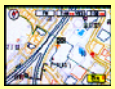
SDTV

+ Data

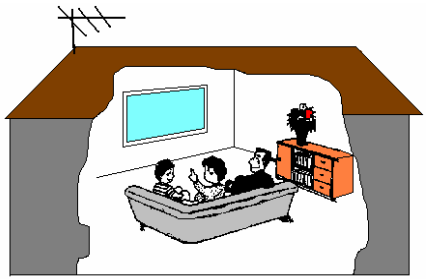
Example 3

Mobile Reception

Still Pictures

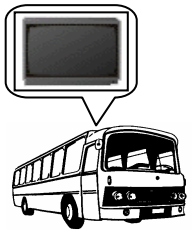


+ Data



Integrated Receiver
(All Services)

Car Receiver
(Audio and Data)



Mobile Receiver
(SDTV, Audio and Data)

Pocket-size Receiver
(Audio and Data)

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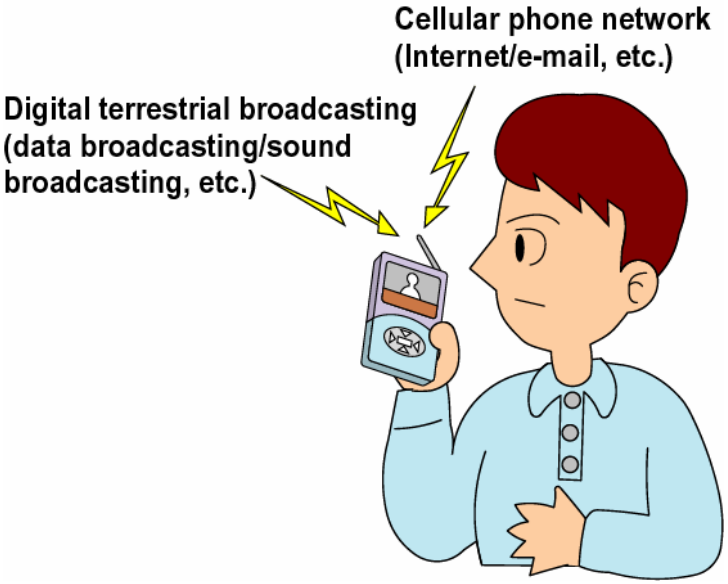
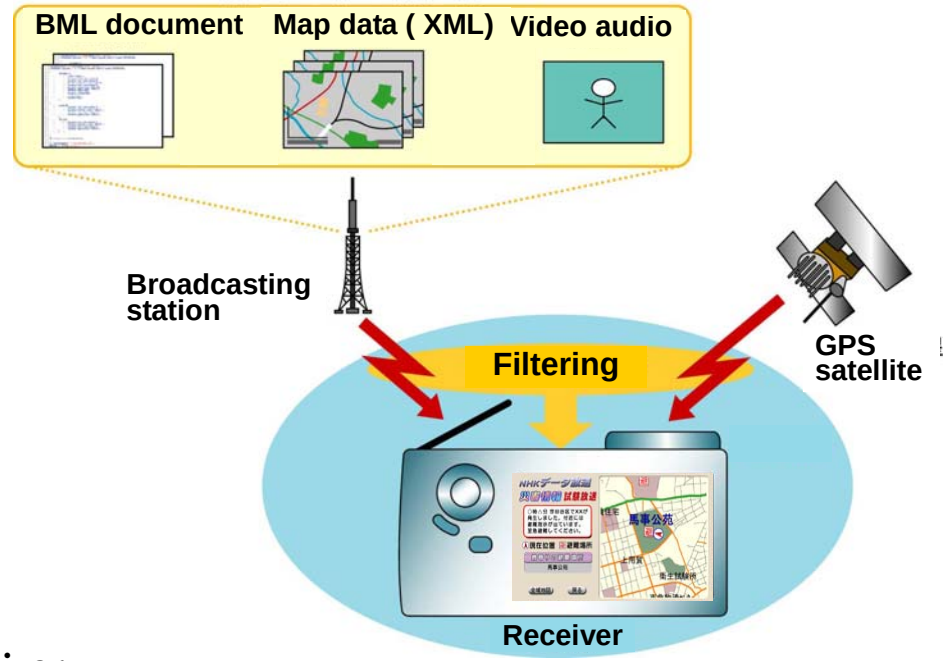
Data Services for Digital Terrestrial Broadcasting

- By combining an **ISDB-T receiver with GPS**, you can obtain location-specific information at your receiving site.
- Example: If a disaster occurs, a map of the nearest evacuation site will be displayed on receivers near the disaster and news of the disaster will be broadcast outside of the area.



Broadcast viewed on a portable receiver



Location-linked data service

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Network-linked Mobile Broadcasting Services

Mobile phone model

PDA model

Car navigation system model

Mobile terminals for integrated internet and broadcasting services

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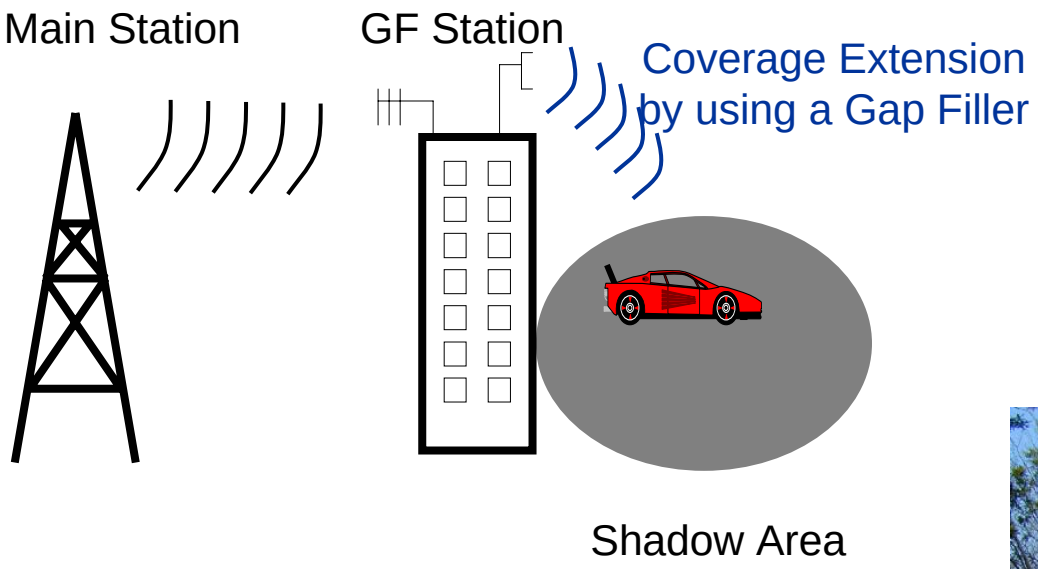
Mobile Reception Field Experiments using a Gap Filler



Re-transmission from
GF Station

Field Experiment

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Very High-speed Mobile Reception in Shinkansen (bullet train)

Maximum speed : 275 km/hour

Correct reception rate: 90.3% (except for tunnels)

Area of Field Measurement

Shinkansen Super Express Train

Receiving Antenna
(Cross dipole, Omni-directional)

Further Remarks

- Development of technologies that improve mobile reception characteristics at the receiving site
  - diversity reception, wave signal equalization, etc.
- Development of various types of mobile services combined with broadcasting and telecommunication networks
- Introduction of digital terrestrial broadcasting in the ITS (Intelligent Transportation System)