



International Telecommunication Union

Current Status of Mobile Satellite Services in Japan and Next Stage

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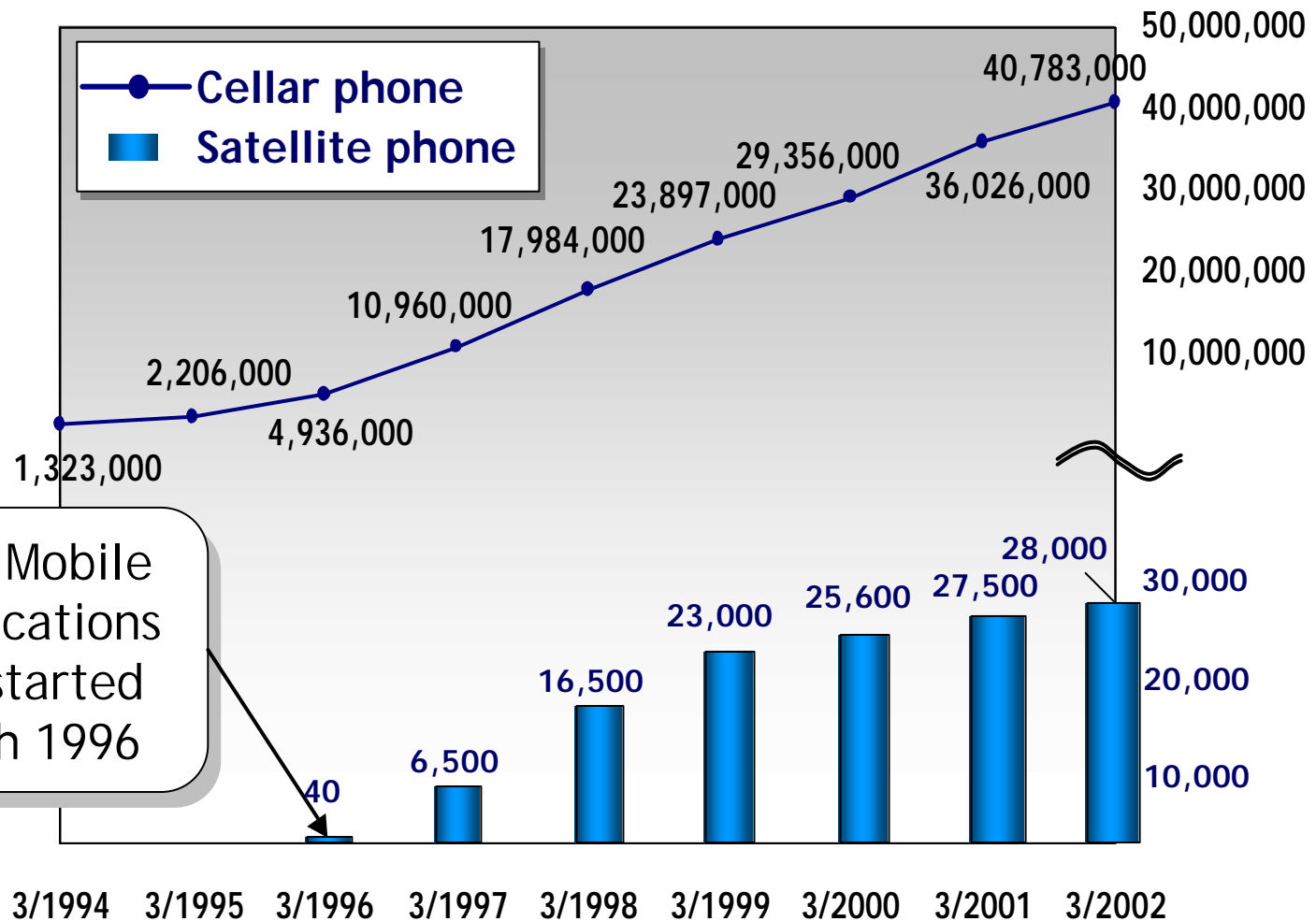
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NTT DoCoMo Mobile Communications Services Subscribers



Satellite Mobile Communications Service started in March 1996



Satellite Mobile Communications Service

Satellite Land Mobile Telephone Service
? Single Mode?
? Dual Mode?

?WideStar
PortablePhone
[Portable Type]

?WideStar
CarPhone
[Car Mounted


Satellite Marine Telephone Service
? Single Mode?

?WideStar Portable
MarinePhone
[Portable Type]

?WideStar
MarinePhone
[Ship Mounted]

In Flight Telephone Service

?WideStar WingPhone
(Introduced in 2001
)


Public Aviation Telephone Service
(Analog Type)

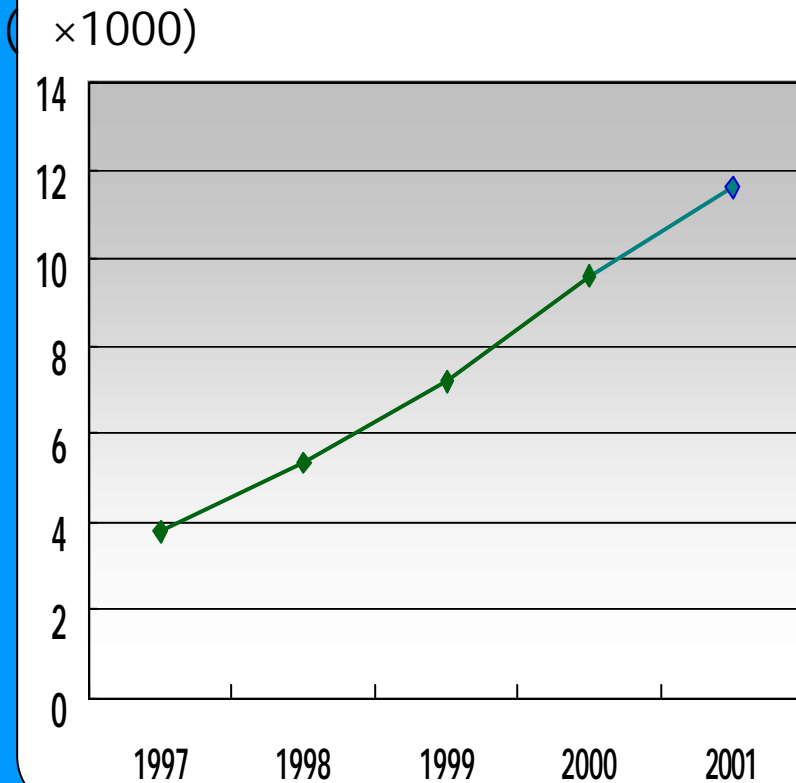
Voice/Non-Voice Telecommunications Services

Satellite Packet Communications Service
(Uplink 4.8kbps/ Downlink 64kbps)

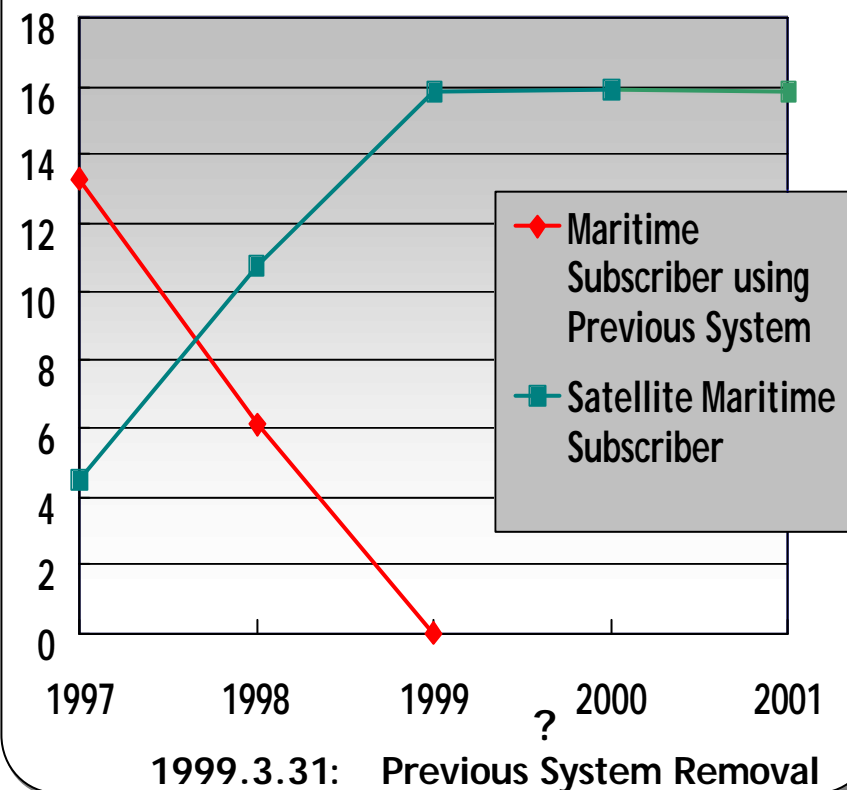


WideStar PortablePhone, CarPhone, MarinePhone Subscribers

Number of subscribers for PortablePhone, CarPhone

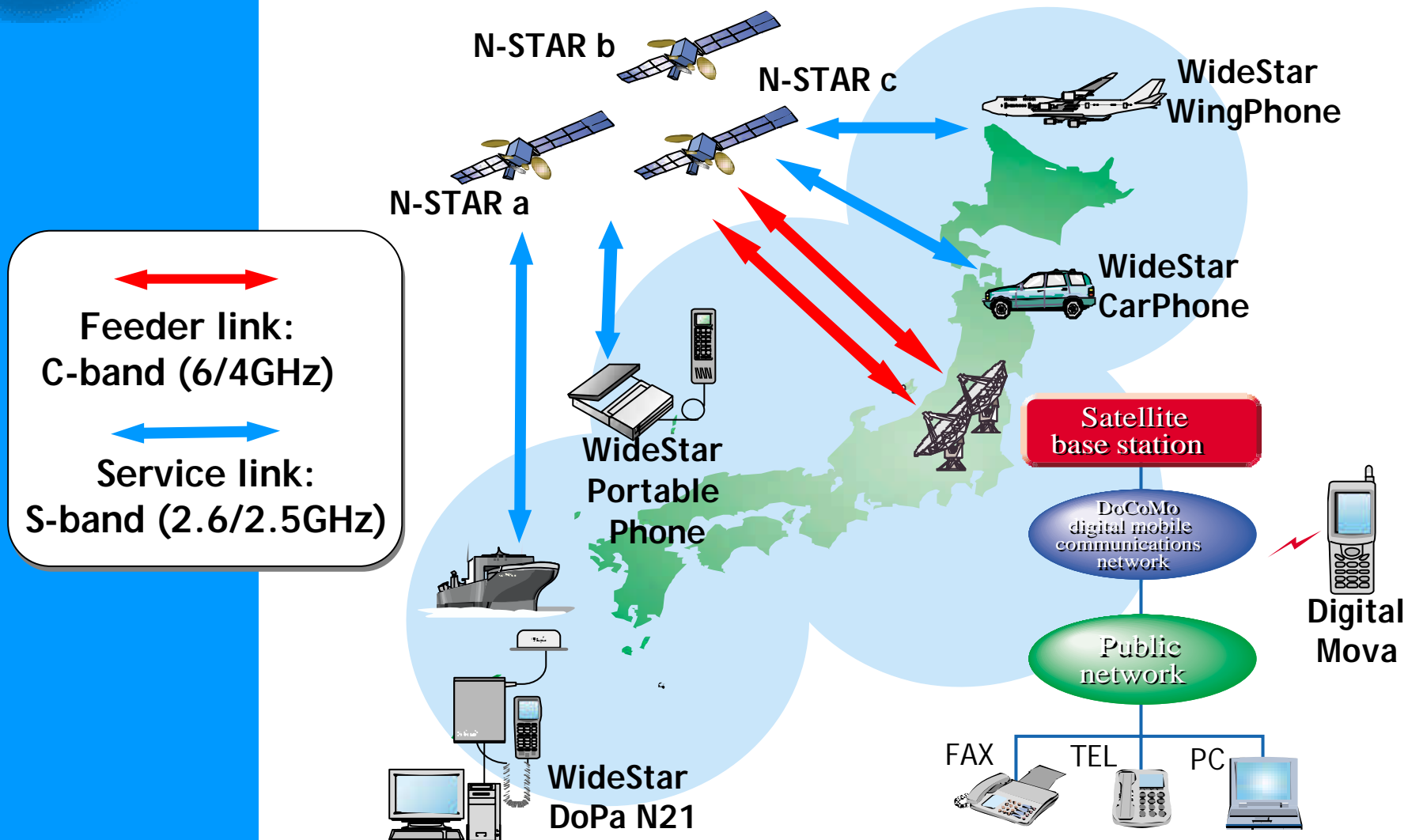


Number of subscribers for maritime use





WideStar Service Configuration



? High reliable satellite network using 2 satellites with 2 base-stations



WideStar Service Configuration

A satellite mobile communications Service covering all of Japan Including offshore areas.

- This satellite system provides maritime telephone service up to 200 nautical miles offshore.
- Stable communications with digital service.
(Voice: 5.6kbps. Fax and data:4.8kbps.)
- Satellite packet service is also offered.
(64kbps, 4.8kbps)



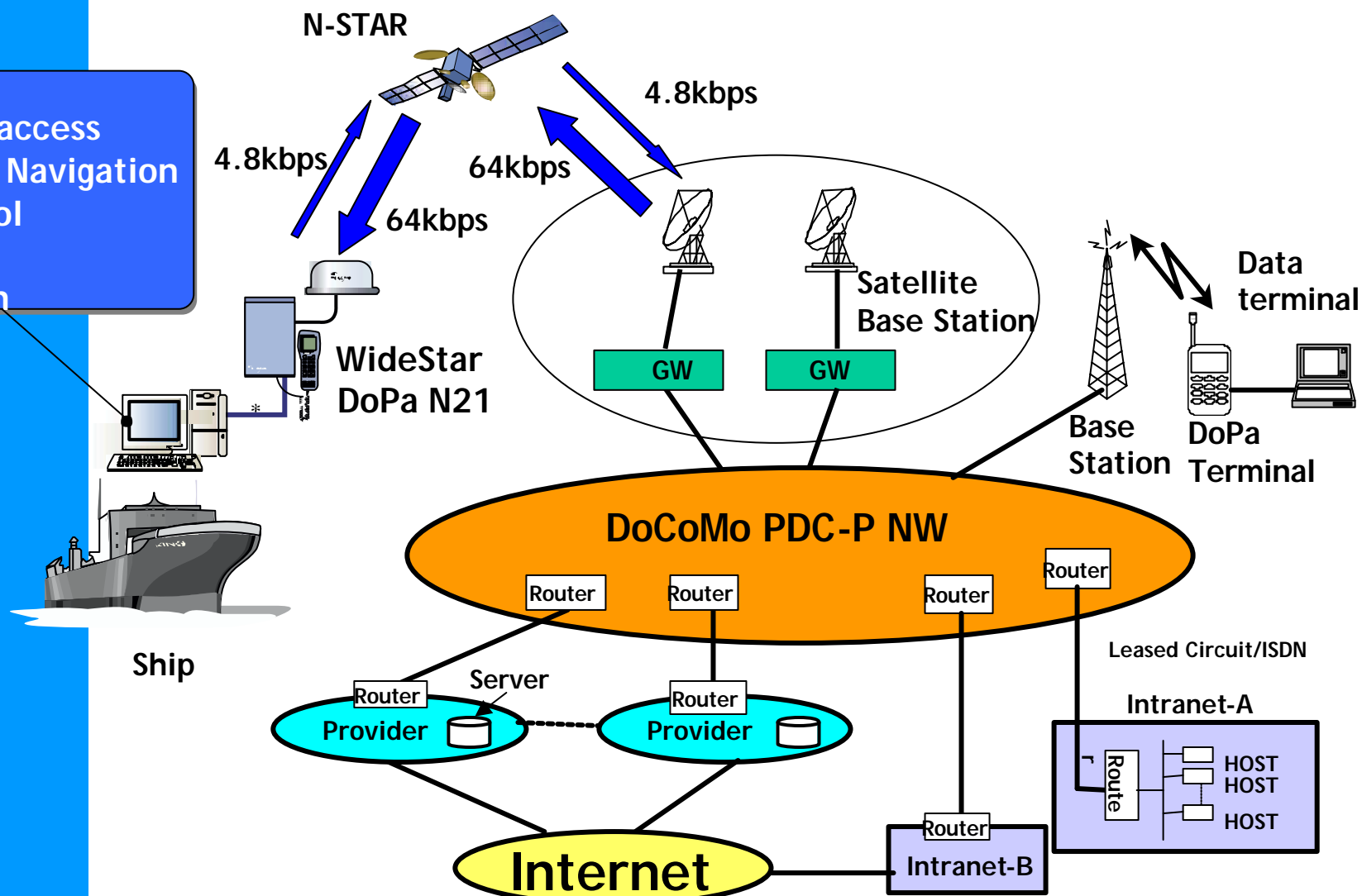
WideStar System Parameters

Items	Circuit Switch	Packet Switch
Frequency Band	Mobile Terminal to Satellite: S Band (2.6/2.5GHz) Satellite to Base Station : C Band(6/4GHz)	
Channel Separation	12.5kHz	Return Link : 12.5kHz Forward Link: 150kHz
Modulation	p/4 Shift-QPSK, Coherent demodulation	
Access Technique	FDMA(SCPC)	Return Link : FDMA(SCPC) Forward Link: TDM
Channel Capacity	4.8kbps	Return Link : 4.8kbps Forward Link : 64kbps
Coding	5.6kbps PSI-CELP	-----
Services	Voice/FAX/Data Communication? LAN· Internet Connect	



Satellite Packet Communications Service

- E-Mail
- Internet access
- Maritime Navigation and control
- Weather Information





Example for WideStar MarinePhone Service

Features:

- **Satellite maritime telephone service with coverage up to 200 nautical miles offshore.**
- **Fax Information Service is offered.**
 - A service that provides you with useful information such as current weather conditions and forecast.





Voice and Fax Transmission System

This service is suitable for business use in mountainous areas, for outdoor leisure and as backup communications in the event of disaster.

- Business contact in mountainous areas communications system from construction facilities.
- Outdoor leisure activities.
- Standard interface with telephone call (Credit Card Phone, Private PHS terminals)





Data Transmission System

Achieves reliable data transmission from remote mountainous regions and on the ships.

- Internet/LAN applications from maritime users
- Transmission of patient electrocardiograms from ambulances to hospitals
- Mountain road information system
- Positioning Management system (Ships, Vehicle)

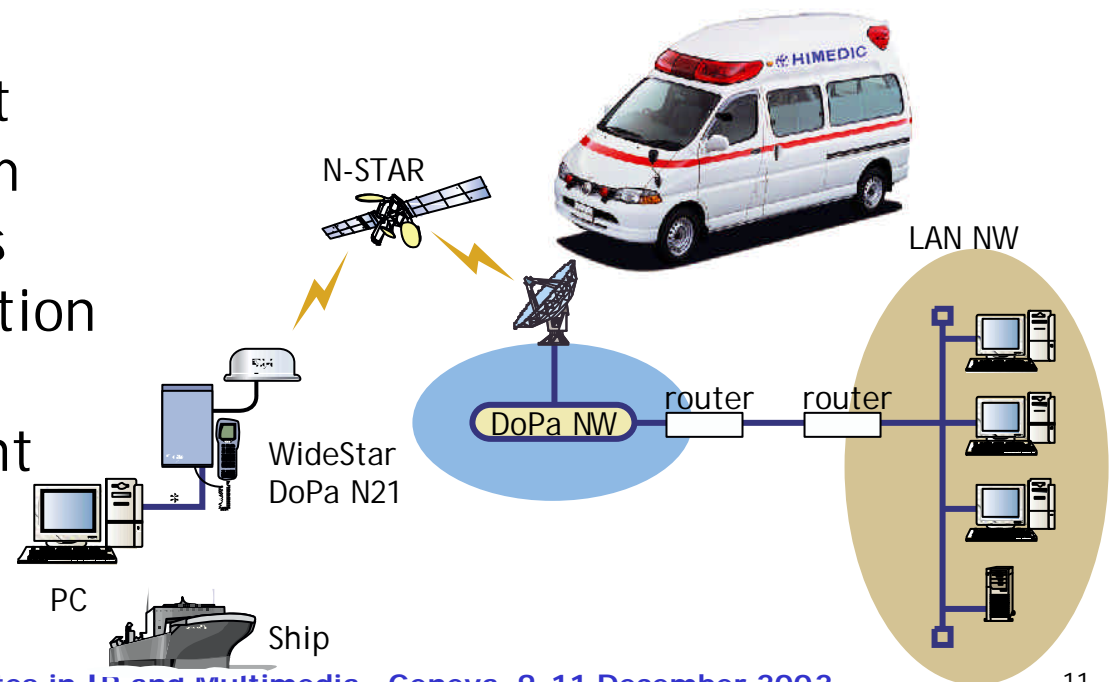
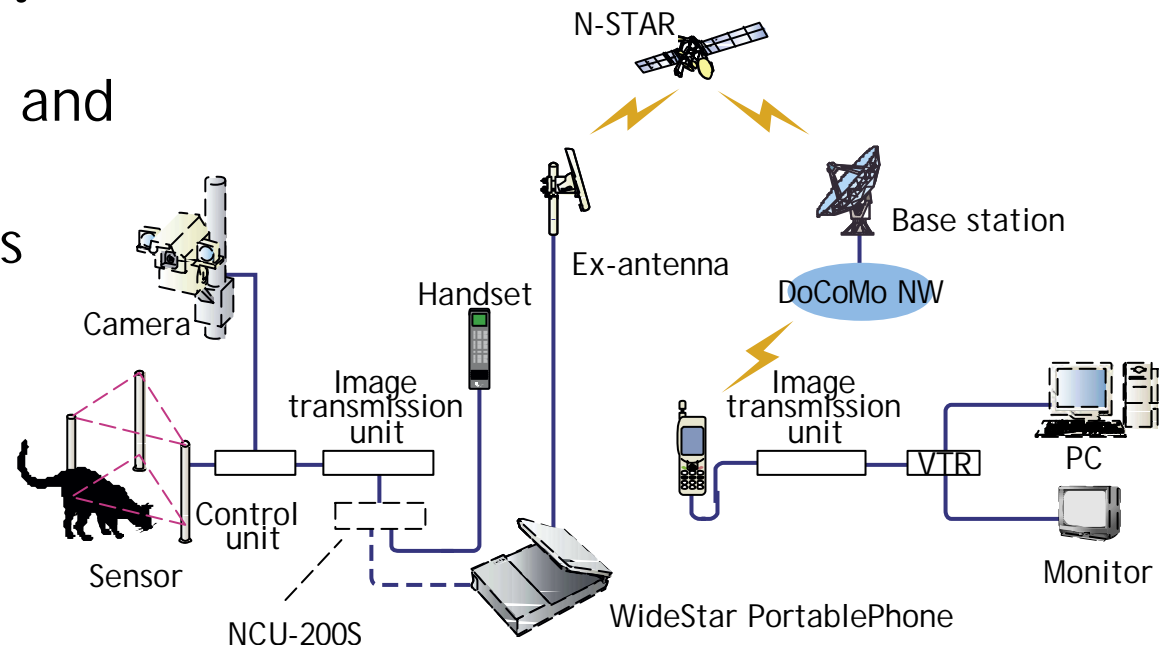




Image Transmission System

This service can be used for a variety of purpose, including remote observation of inaccessible areas and transmission of photographs for news coverage.

- Observation of plant and animal ecosystems
- Transmission of press photographs
- Volcano observation data transmission system

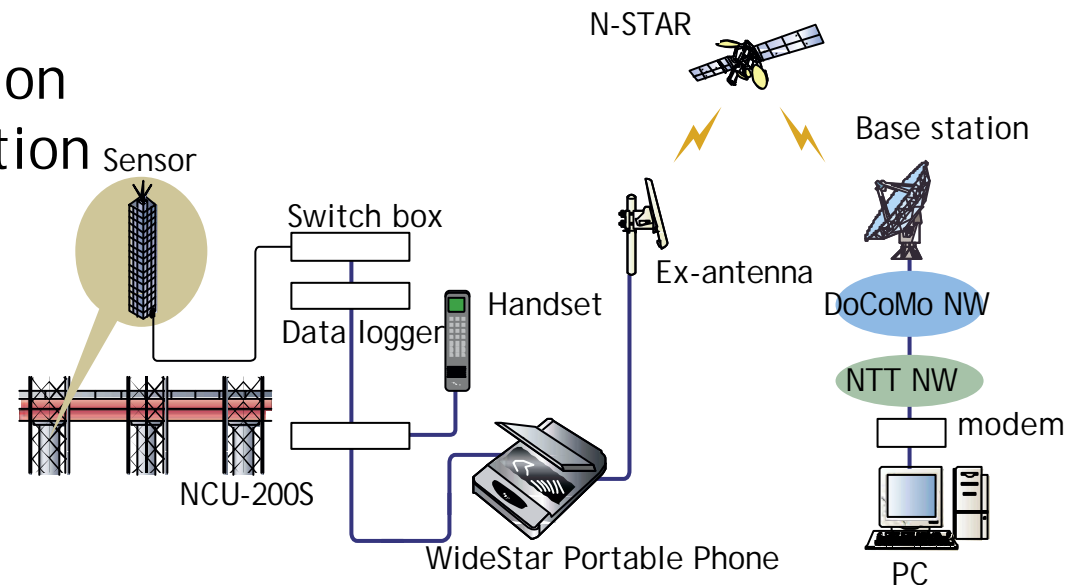




Remote Measuring System

These systems enable to gather telemetric data from remote locations. Measuring equipment and solar panels can be linked with satellite service to provide significant surveillance and observation systems.

- Meteorological observation
- Seismic activity observation
- Water level observation of rivers and dams
- Diastrophic observation





Future Plans for the Satellite Mobile Communications Services

1. Maritime Satellite Communications Services

- Maintain the satellite communications services for the maritime customers who have no other methods to communicate.
- Improve the satellite communications services such as connecting Internet or data transmissions.

2. High reliable communications network using 2 Satellites

- Keep the good satellite communications network performance with high reliability even in the disaster.
- Data transmission usage in the area where the terrestrial mobile services don't cover.



Future Plans for the Satellite Mobile Communications Services

3. Integrated services for the next stage after launch of higher performance satellites.

- High speed satellite communications services using S-Band and provide new services in the broadband satellite network connecting to IP Network.
- Small size satellite terminals for easily portable use.



Satellite Mobile Communications Service Image

