ITALY-JAPAN BUSINESS GROUP

Solutions for Disaster Prevention and Recovery

7th May, 2008

Dr. Botaro Hirosaki
Senior Executive Vice President
NEC Corporation

Disaster Prevention & Recovery Technology

Technologies enabling actions to minimize the damage

Seismic & Tsunami Sensing

Satellite Disaster Monitoring

Communication Technology securing information-carrying

- Owned-operated Microwave Radio System
- Satellite Communication
- Owned-operated mobile system
- CATV
- Submarine Cable Communication
- Software Defined Radio
- Mobile Router
- Ad-hoc Wireless Communication

Undersea Sensing Equipt.

Submarine Cable Communication

Satellite Observation

High Resolution Image

Satellite Communication

Uncooled Infrared Detector

Sensing Technology providing real time information

- Satellite Disaster Monitoring
- Infrared Camera
- Hyperspectral Sensor
- River Telemeter System
- Seismic Intensity Information System

Broadband Mobile Communication

Infrared Camera

Hyperspectral Sensor

Ad-hoc Communication

Information Technology providing comprehensive information

- Seamless Command System
- Disaster Prevention Information System

Mobile Inverse Mux

Disaster Monitoring by Satellite

<< Example: DAICHI (ALOS) >>

Major Missions;

-Cartography
-Regional Observation
-Disaster Monitoring
-Resource surveying

Orbit:

Altitude :691.65km (Above the equator)
Sun Synchronous, Sub recurrent
(Repeat Cycle: 46 days)

Satellite Mass: Approx. 4 tons (Launch)

Generated Power (Solar paddle)

Approx. 7kw (at End Of Life)

Life: 3 years (Designed)
/ 5 years (Target)

Launch:

Date : January 24, 2006
Vehicle : H - IIA
Site : Tanegashima Space Center, Japan

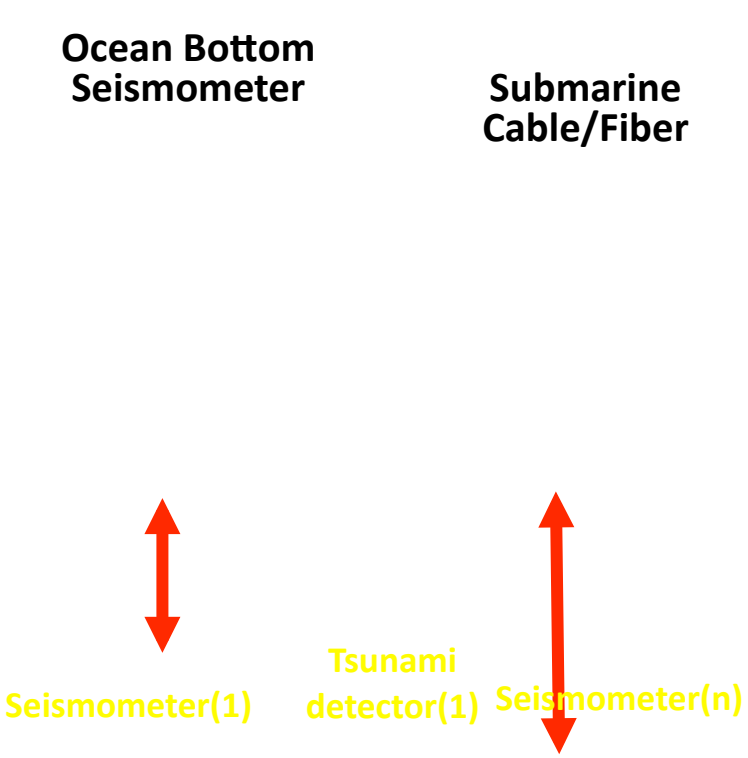
Observation of tidal wave damage on the east seacoast of Toyama

Synthetic image (pansharpen image) of PRISM and AVNIR-2, which was observed Feb 25th 2008, Right after the disaster.

By deciphering the image, the circled spots are considered to be destroyed houses (and others).

Submarine Cable Seismic and Tsunami Sensing Systems

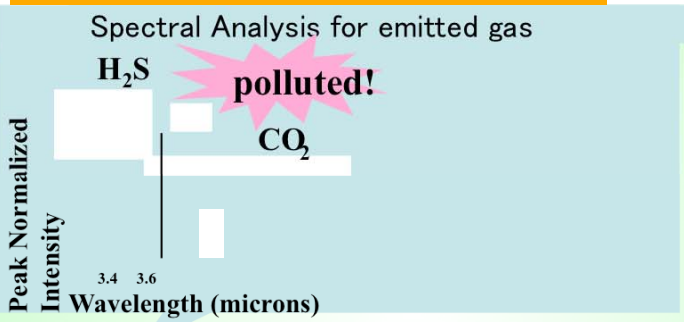
- Undersea sensing systems to detect tremors with precision and to provide early seismic and tsunami warnings for disaster prevention purposes
- NEC installed the first system in 1979. Over the past 25 years, all the installed systems have sent real-time data without a single failure.



Uncooled Infrared Detectors (Close Range Sensing)

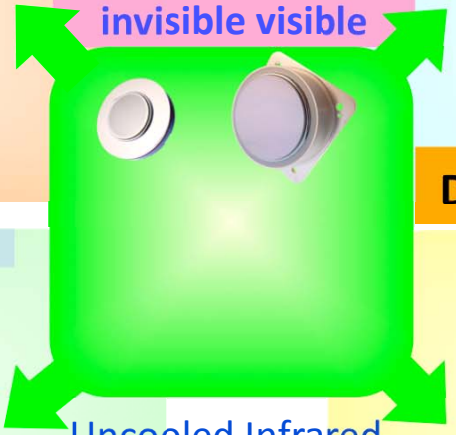
Security and Surveillance

Spectral Analysis for emitted gas



Gas Detection with Hyperspectral Sensors

Infrared makes invisible visible



Uncooled Infrared Detector Module

Visible Image

Infrared Image

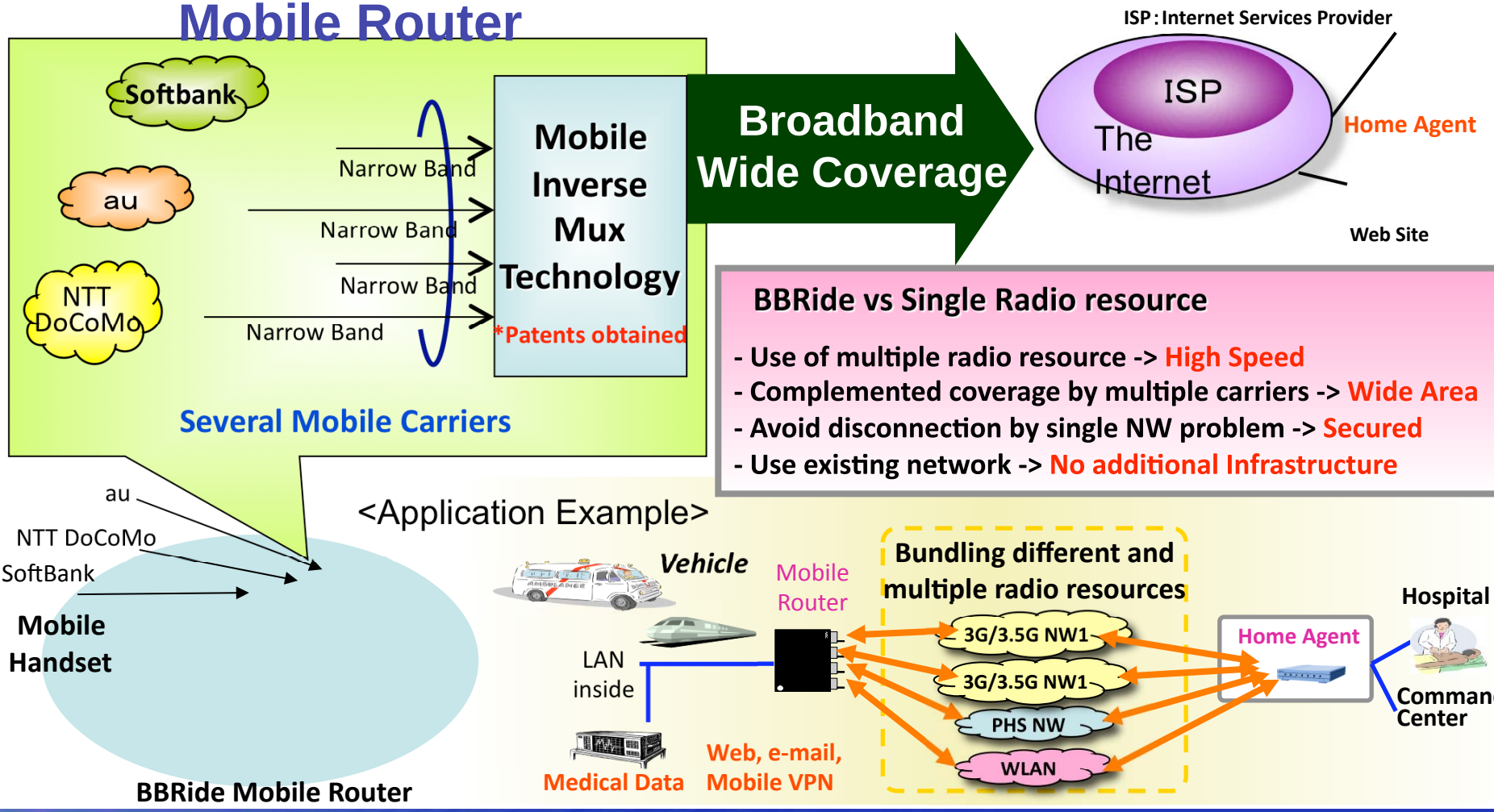
DVE (Drivers Vision Enhancement)

IR Cameras

Firefighting

Image & Video Communication (BBRide® Mobile Router)

Mobile broadband communication with wide coverage realized by logical multiplexing of multiple carriers



Empowered by Innovation