

# **RANET**

(Radio and Internet)

Dissemination and Communication  
of  
Environmental Information  
for  
Rural and Remote Community Development

# Presentation Outline

---

- **Who and what is RANET?**
- **What does RANET do?**
- **Core RANET principles and philosophies.**
- **Overview of Technologies**
  - **Satellite**
  - **Community FM**
- **Where does RANET work?**



# Who are we?

---

“Just tell me where it has rained,  
and I will know what to do.”

- A nomad from Niger



# Who are we?

---

The RANET program began in Africa in 1998/9, following the experience of Seasonal Outlook Forums. It was recognized that benefits from advances in science and applications could only be realized if populations outside central cities could be reached.

- Africa: 1998/99/00 -> present
- Pacific: 2003 -> present
- Asia: 2005



## Who are we?

---

**RANET is a cooperative effort of various national, regional, and international partners, who seek to:**

- Make weather and related environmental information more accessible and useful to rural and resource poor populations in order to aid day-to-day resource decisions and prepare against natural hazards.
- Improve the dissemination capacities of national hydro-meteorological and related national services, NGOs, and other information producers, thereby increasing the profile of and active value of these organizations to local populations.

# What we do?

---

- Awareness Building
- Partnership Development and Resource Mobilization
- **Training and Capacity Development**
  - Web and Internet
  - Community FM Radio
  - HF Radio
  - SMS (Cellular Text) Messaging
  - Other Equipment Use and Maintenance
  - RANET Community Building: Newsletters, etc
  - Web Hosting
- **Network Development and Management**
  - Maintain Satellite and Associated Server Systems
  - Pilot and Training Activities
  - Test and Identify Communication Solutions

## Core philosophies?

---

All activities are done in **collaboration** with, and with the **approval** of, the communities and national meteorological and associated services.



## Core philosophies?

---

Ensuring sustainability and maintenance of systems is a priority of all RANET activities, therefore we encourage **local ownership** and use of communication **systems for multiple purposes** such as education, health campaigns, community discussions, etc.





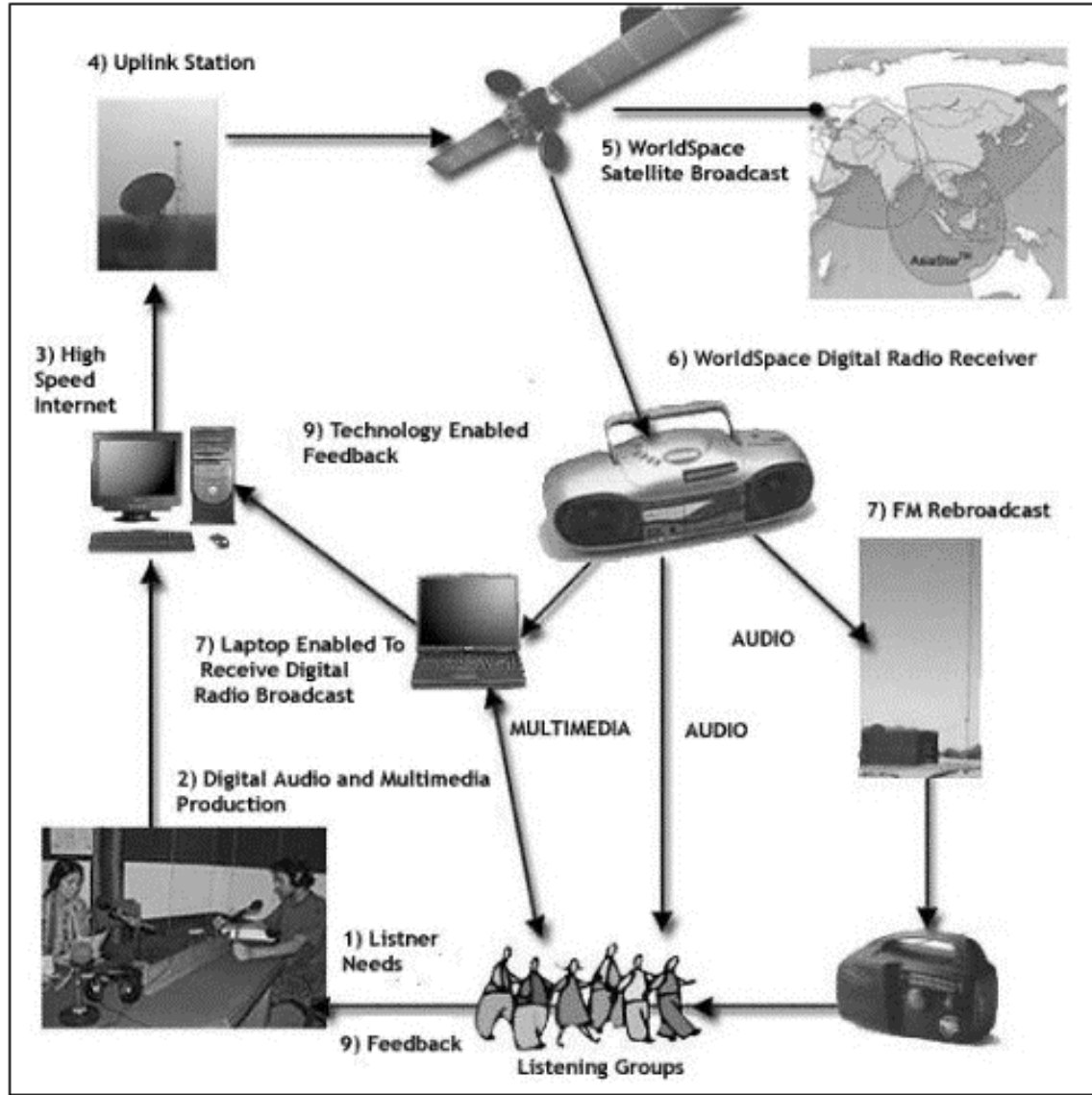
## Core philosophies?

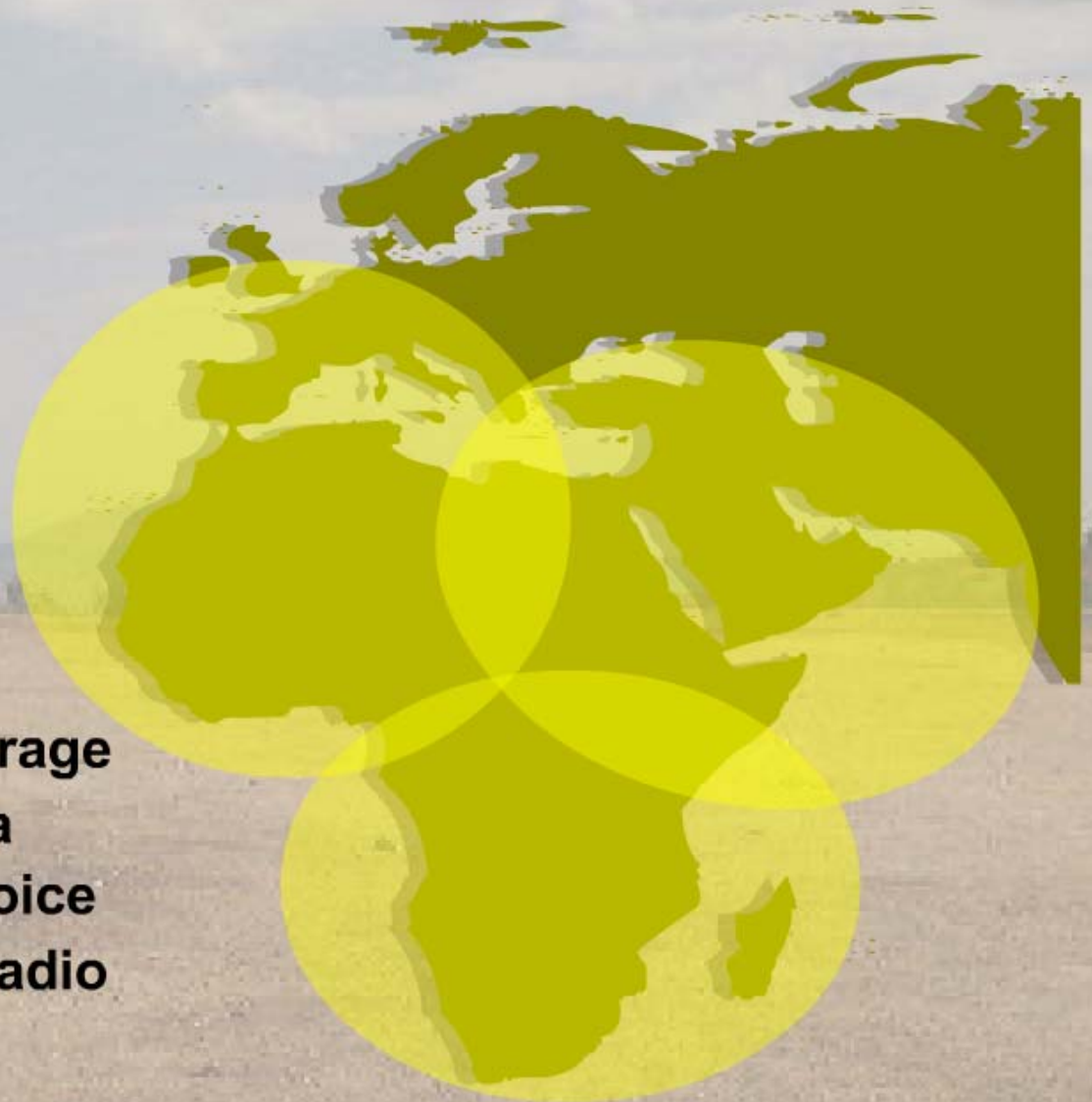
---

**RANET also works to build upon and augment existing networks and means of communication.**

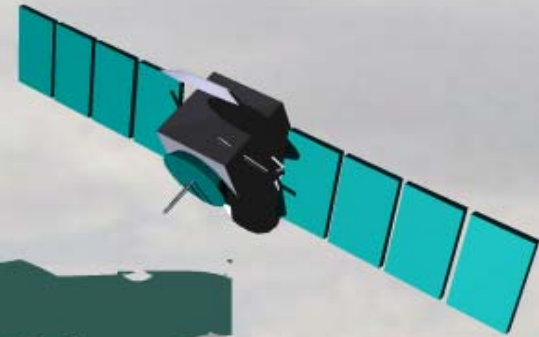


# Technology?





**Current RANET coverage  
over Africa region via  
WorldSpace / First Voice  
International digital radio  
satellite broadcast.**

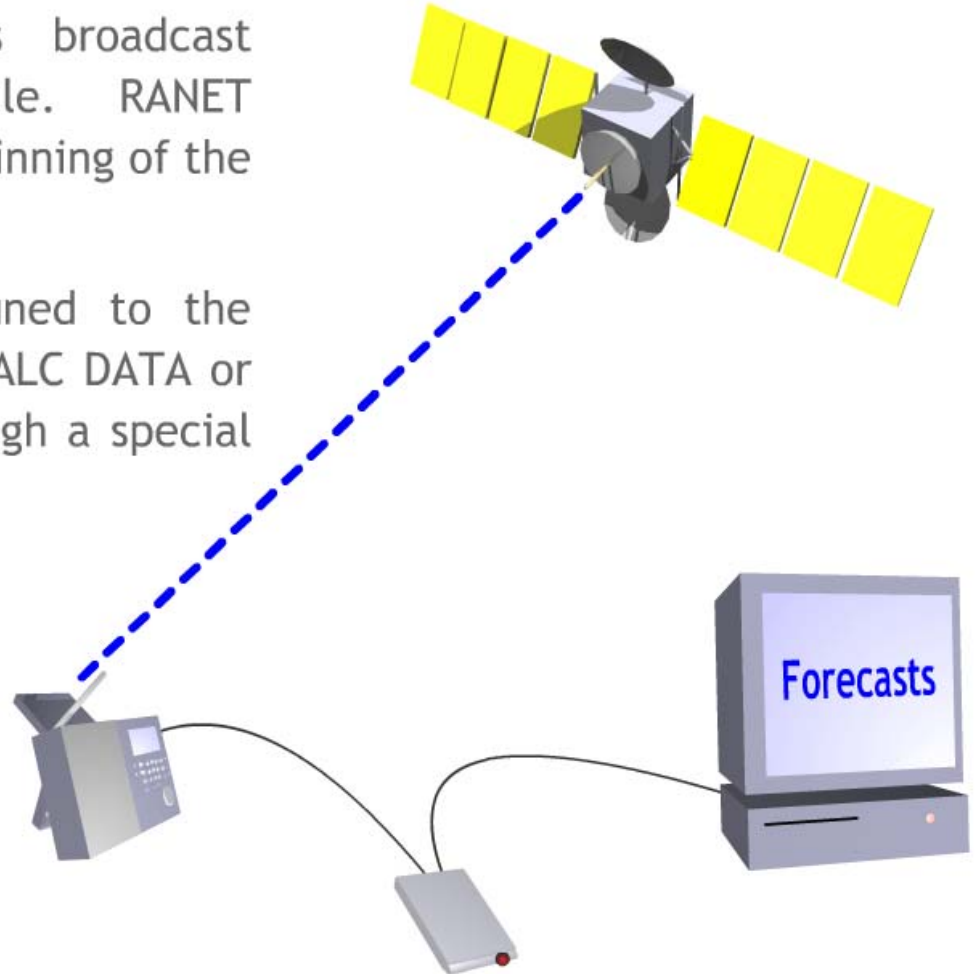


**Current RANET coverage  
over Asia region via  
WorldSpace / First Voice  
International digital radio  
satellite broadcast.**

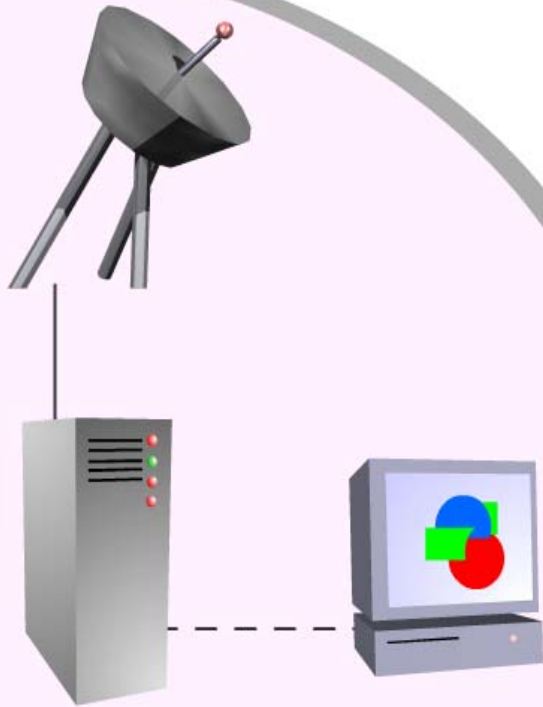
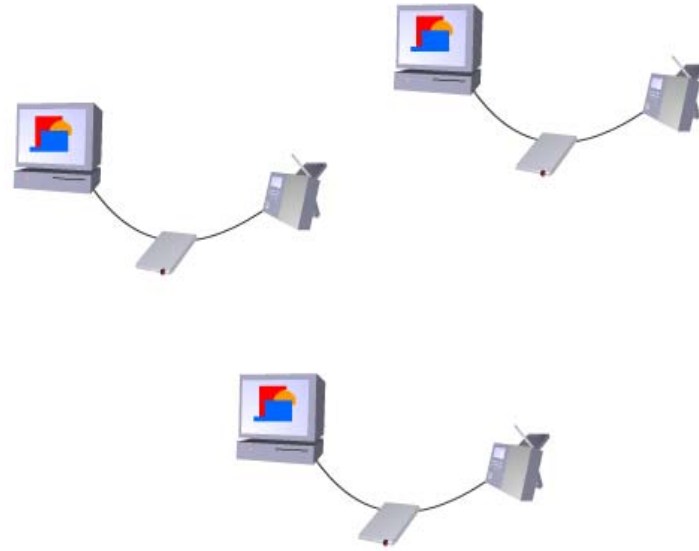
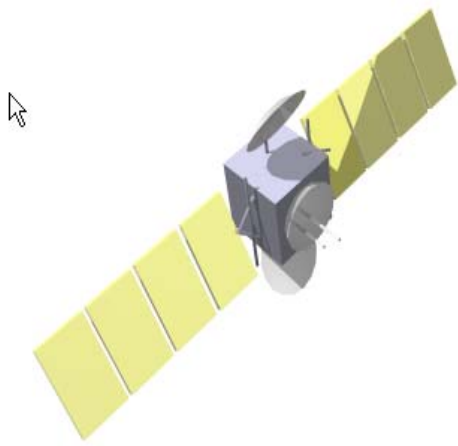


## Basic Media Download Using WorldSpace Receiver

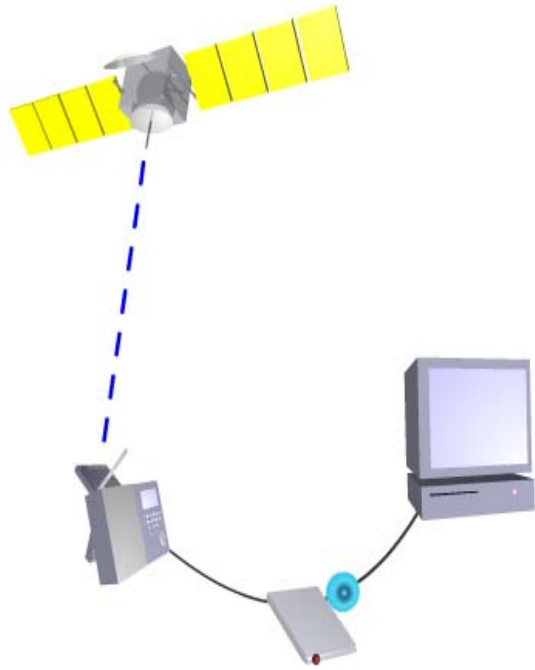
- The satellite broadcasts a continual stream of information. Content is broadcast according to a specific schedule. RANET broadcasts every hour at the beginning of the hour.
- The WorldSpace receiver, tuned to the appropriate broadcast channel (ALC DATA or WSF DATA) passes content through a special computer adapter.
- Downloaded content is then stored on the hard drive of the computer, where it can be viewed at any time or until the information is updated.



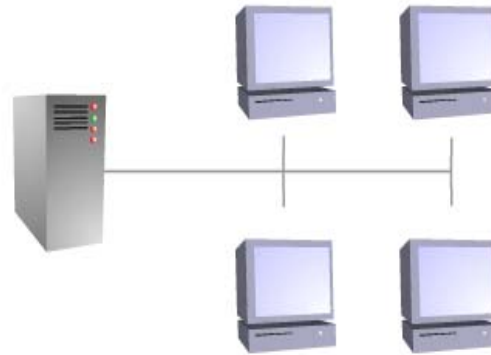
# Distributing Information Across a Country or a Continent



**With the WorldSpace system, RANET participants are able to upload their own content to the broadcast via FTP, web forms, and other Internet methods. Even with a very slow connection, critical content can be uploaded to the uplink server. Every hour content is merged into a single presentation that can be viewed by anyone anywhere under the continental-scale broadcast who possesses a WorldSpace receiver attached to an existing computer.**



Using the digital satellite receiver, information can be sent from urban areas to remote offices where it can be further passed to remote communities by traditional radio, LAN services (Intranet), paper print outs, community centers or traditional extension.



Bulletins  
Forecasts  
Observations  
Etc.



# Build Upon Existing Strengths and Systems

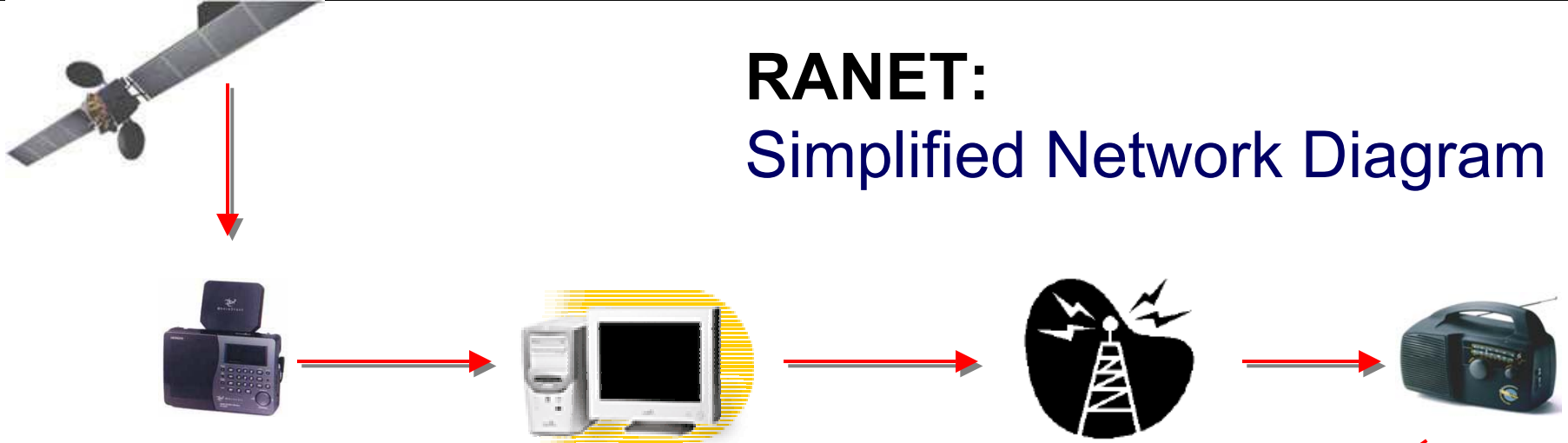
## Emergency Manager's Weather Information Network

The screenshot displays the EMWIN LOCAL DISPLAY software interface. The window title is "EMWIN LOCAL DISPLAY" and it includes a menu bar with "FILE", "SETUP", and "ABOUT". The main interface has a green border and contains the following elements:

- Header:** "Active Country" (Cook Islands), date "19/09/03", "EMWIN LOCAL DISPLAY", time "13:23:28", version "V2.00b", and a small "13" indicator.
- Left Panel:** A list of image files including "gms005us.jpg", "G10FDIUS.JPG", "GMS005US.JPG", and "IMGSWPUS.JPG". Below this are "Update ON" and "ALARM ON" buttons.
- Main Display:** A large satellite image of the Earth, showing the Cook Islands region. Above the image, the text "9 18 2003 2325Z" is displayed.
- Bottom Panel:** A grid of buttons for various data sources and services, including "GMS", "GOES W", "Country Fcast", "N Cooks Area", "Marine Fcast", "Trop Wx Outlook", "Cyclones SWP", "Aviation Data", "CI Files", "Trop Wx Narrative", "Int'natnl Wx", "Pacific Synops", "Equake Data", "Tsunami Data", "SW Pac Image", "SW Pac Cyclones", "S Cooks Area", "All Files", "Wave Heights", "AVN Charts", "Cyclone Tracks", "World Image", "Emwin Sys Msg", "SatOps Msg", "Space weather", "Equake Map", and "EMAIL".



# RANET: Simplified Network Diagram



# FM Community Radio Stations

## Wantok FM Radio Station

- A Professional Quality FM Radio Station
- A complete broadcast station in a suitcase
- Ideal for a Community FM Radio Station
- Readily accepts any audio source
- Can be solar/wind powered for remote communities

***The Wantok  
Suitcase FM  
Radio  
Broadcast  
System***



## Applications for the Wantok SBS-1

- Low cost, low power community radio station
- Education and training
- A tool for Socio-Economic Development
- Ideal for Disaster response



## HF Email

- Email sent via a HF Radio Transceiver
- Requires a special radio modem
- Modem interfaces to PC or laptop
- Software can interface with Outlook Express

*Garry's HF voice  
and email station*



- **What is HF Email**

- Cost effective remote communications system
- With training can be easy to install and operate
- Many countries already have suitable HF systems and equipment

**Typical HF  
Email system  
set-up**



## Other Technologies

---

- Web Hosting  
(e.g.- <http://www.meteo-uganda.net>)
- SMS  
(Cellular Based Text Messaging)
- Customized Internet Push-Pull Software  
(Warnings and Time Sensitive Information)

## **Current RANET budget - \$\$ support**

---

- RANET relies on significant – in-kind and local resources
- USAID and AUSAID - and other donors provide some base support and on an activity-by-activity basis
- - \$700,000- \$1,000,000 / year

• **RANET**

**info@ranetproject.net**

**http://www.ranetproject.net**

**THANK YOU AND RANET  
WELCOMES YOUR  
PARTNERSHIP!**



## RANET in the Pacific

---

- July 2003 -- held workshop in Honolulu, Hawaii with broad representation from national and regional partners to assess current capacities and ways forward.
- August 2003 at 9RMSD meeting -- presented recommendations from Honolulu workshop and proposed formation of steering committee for RANET.

## RANET in the Pacific

---

- March 2004 -- steering committee met and identified next steps. (SC membership: SPREP, NHMSs, SIDS.Net, PEACESAT, EMWIN, PI-GCOS, and others.)
- December 2004 – Australian Bureau of Meteorology began operational management of Asia-Pacific satellite broadcast on RANET.

## RANET in the Pacific

---

- Demonstration activities have been established in Micronesia, Vanuatu, and Niue.
- In Niue, FM community radio stations and no-battery receivers, with HF e-mail equipment, proved valuable for inter- and intra- island communications following Tropical Cyclone Heta.



## RANET in Africa

---

- July 2004: Established RALT – RANET Africa Leadership Team in 2004
- Some 15 countries with various RANET activities – many active for 2 or more years.
- Began intra-regional exchange and program development between countries in early 2004.