Our beloved King

The Amateur Radio

ITU/ESCAP Disaster Communications Workshop
12 – 15 December 2006, Bangkok, Thailand
Enjoying one of his favorite pastimes, ham radio.

http://www.kinghussein.gov.jo/photobank.html
Amateur Radio = HAM ?!?!
CALLSIGN!...What is it?

- ITU recommended International Callsign Prefixes, follow Article 19 “Identification of Stations” in short:
  - All transmission shall be capable of being identified either by identification signals or by other means.
  - All transmissions with false or misleading identification are prohibited.
  - For transmissions carrying identification signals, in order that stations may be readily identified, each station shall transmit its identification as frequently as practicable during the course of transmissions, including those made for tests, adjustments or experiments.

Phat / HS1WFK Feb 12, 2005
The only One in the World!

• Receive a Callsign once pass the exam and approved for the license:
• E2 / HS = THAILAND
  HS = Thailand
  1 = Zone, Bangkok
  WFK = Series that assigned
  HS1WFK = Phat Kulphaichitra, Mr.
  A licensed Thai Amateur Radio Operator in
  Bangkok, Thailand

W,K,N and A = USA, JA= Japan, 9M=Malaysia, IA=Italy, FA=France, GA=UK etc…

Phat / HS1WFK Feb 12, 2005
Are they Crazy?
The Antenna Systems
Space contact

Fig 1.14 — Astronaut Susan Helms, KC7NHZ, made several dozen Field Day contacts operating from the ISS as NA1SS. (NASA Photo)

Amateur Satellite
Earth Moon Earth
Space Station (ISS)

Phat / HS1WFK Feb 12, 2005
Digital too... Not just the voice...

Text / PSK

RTTY

ISS Packet

UI view

SatSignal at Work
Sample work on SHF Band

Commercial vs. Homebrew

2.4 GHz beam antennas

HAM

homebrew (home made)

antennas

Commercial product
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Radio Over Internet Protocol
(RoIP)

Echolink

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RolP Network in Thailand
What do they want from the contacts...

Antenna to Antenna

5 Watts, direct contact between Italy and Thailand

CONIRMING QSO N. 03-10-64 1414 21 53 SS8

IN3 AFT
Hermann Obrantacher
Jauferstraße 2/B
39010 St. Martin/Pass.
Bozen - Italy

REMEX: Thank you for the nice QSO - the best 53 from the moutain

Phat / HS1WFK Feb 12, 2005
What do they want from the contacts...
Social and Recreation

Eyeballs Party and Meetings
Announcements on the third day continued all day and late into the evening, until almost midnight, when HS1WFK’s WPX was finally able to operate again, according to Phat.

The team returned at around 9 a.m., he recalls, when the Internet connection began to display problems that persisted all that morning, with Echolink traffic being frequently interrupted. Consequently, he announced that email would be used as the main point of contact and for handling the coordination from Thailand.

Meanwhile, announcements and updates were presented to the Echolink network throughout the day, until almost midnight, according to Phat.

That day, Thursday, December 29, the airplane flown by HS1M8B took off from Bangkok International Airport at about 10 a.m. and established VHF communication with HS1WFK, reaching 10 minutes after take-off.

There were representatives of the Tourism Authority of Thailand, HS1TS and Phat Suwantham, the owner of the aircraft on board, said Phat. The airplane was single engine, four seat ‘Commander’ and took about 2 hours to reach the first survey point, the tsunami zone.
The World Listened to us!

Echolink System

Phat / HS1WFK Feb 12, 2005
Our extra help in the Disastered Area...

Phat / HS1WFK Feb 12, 2005
The result after that...
Thailand Amateur Radio Emergency Services

เครือข่ายฉุกเฉินนักวิทยุสมัครเล่นแห่งประเทศไทย

TARES
Thailand Amateur Radio Emergency Services

HS1WFK / January 11 2005
Roles of Organizations

General Amateur Radio Activities
• Domestic / International
• Public Education / Communication Technology

Amateur Radio Services for Emergency
• Domestic / International
Emergency Parallel Networks
Amateur Radio / CB networks with WX Band
For Warning and Relief

RAST Amateur Radio Network
International Amateur Radio Union
International Telecommunications Union

E-CARES System
Office of Prime Minister
Military
Relief Task Force
Tourism Authority of Thailand

Volunteer Radio CB-245MHz

Thailand Targeted Public

Radio Amateur Society of Thailand (RAST)
www.rast.or.th

* E-CARES works as a middleware among different information systems. Operate on internet network for Global relief network.
Dissemination Targets
How this be real?

• Need funding support to set up the organization.
• Need recognitions from Int’l Organizations
• Need to start now!
How much do we need?

- Set up cost is about 15 Million Baht (US$400K) for:
  - Office and Station (about 10 mil Bht)
  - Network Equipments (about 2.7 mil Bht)
  - Office stationary (2.3 mil Bht)
Functions of TARES Office

Garden / Antennas Field

Power Gen. | Tower 1 | Tower 2 | Parking
---|---|---|---
WX Radio | Operator / IT | Pantry

Bed Room 1 | Net Mgr | Director | Meeting
# The numbers in detail

## Monthly Expenses

<table>
<thead>
<tr>
<th>Staffs</th>
<th>Salary</th>
<th>Office Block</th>
<th>PCs</th>
<th>Equipments</th>
<th>Radio System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director</td>
<td>90,000</td>
<td>80,000</td>
<td>50,000</td>
<td>Aircond</td>
<td>245,000</td>
</tr>
<tr>
<td>Secretary</td>
<td>55,000</td>
<td>30,000</td>
<td>45,000</td>
<td>Internet Link setup</td>
<td>10,000</td>
</tr>
<tr>
<td>IT Manager</td>
<td>30,000</td>
<td>30,000</td>
<td>45,000</td>
<td>Network system</td>
<td>10,000</td>
</tr>
<tr>
<td>Funding Manager</td>
<td>60,000</td>
<td>20,000</td>
<td>45,000</td>
<td>Central Printer</td>
<td>20,000</td>
</tr>
<tr>
<td>Station Manager</td>
<td>60,000</td>
<td>20,000</td>
<td>45,000</td>
<td>Copy Machine</td>
<td>150,000</td>
</tr>
<tr>
<td>Operator x 3</td>
<td>75,000</td>
<td>80,000</td>
<td>150,000</td>
<td>PABX+5 Phone Lines</td>
<td>35,000</td>
</tr>
<tr>
<td>Supporting Operators x 5</td>
<td>125,000.00</td>
<td>10,000</td>
<td>10,000</td>
<td>Cellphone x 5</td>
<td>100,000</td>
</tr>
<tr>
<td>Maid House Keeper</td>
<td>10,000</td>
<td>10,000</td>
<td>20,000</td>
<td>Refurbished</td>
<td>20,000</td>
</tr>
</tbody>
</table>

**Total** 505,000

## Monthly Office Expenses

<table>
<thead>
<tr>
<th>Expense</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Link</td>
<td>10,000</td>
</tr>
<tr>
<td>Central Printer</td>
<td>5,000</td>
</tr>
<tr>
<td>FAX</td>
<td>5,000</td>
</tr>
<tr>
<td>Copy Machine</td>
<td>5,000</td>
</tr>
<tr>
<td>PABX</td>
<td>10,000</td>
</tr>
<tr>
<td>Cellphone x 5</td>
<td>10,000</td>
</tr>
<tr>
<td>Travelling</td>
<td>50,000</td>
</tr>
<tr>
<td>Main Electrical System</td>
<td>35,000</td>
</tr>
<tr>
<td>Gas/Parking/Toll</td>
<td>25,000</td>
</tr>
<tr>
<td>Insurance</td>
<td>5,000</td>
</tr>
<tr>
<td>Misc</td>
<td>20,000</td>
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</tbody>
</table>

**Total** 180,000

## Start up Expenses

<table>
<thead>
<tr>
<th>Equipments</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aircond</td>
<td>245,000</td>
</tr>
<tr>
<td>Internet Link setup</td>
<td>10,000</td>
</tr>
<tr>
<td>Network system</td>
<td>10,000</td>
</tr>
<tr>
<td>Central Printer</td>
<td>20,000</td>
</tr>
<tr>
<td>Copy Machine</td>
<td>150,000</td>
</tr>
<tr>
<td>PABX+5 Phone Lines</td>
<td>35,000</td>
</tr>
<tr>
<td>Cellphone x 5</td>
<td>100,000</td>
</tr>
<tr>
<td>Refurbished</td>
<td>20,000</td>
</tr>
<tr>
<td>Meeting Room/Projector</td>
<td>200,000</td>
</tr>
<tr>
<td>Main Electrical System</td>
<td>150,000</td>
</tr>
<tr>
<td>Vehicle</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Total</td>
<td>2,050,000</td>
</tr>
</tbody>
</table>

**Communicator Setup Cost** 2,715,000

**Office furniture and accessory** 2,730,000

**Land and Building** 10,000,000  < Need to set up all facilities such Antenna Towers

**Total setup cost** 15,445,000

**Maintenance** 1,544,500 per year

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**Total Monthly Expenses** 685,000.00

**Per Year** 8,220,000.00

**US$** 546,315.79

**Total setup cost** US$ 406,447.37

**US$ 38**
## Dissemination Target

1,200,000 people within 15 minutes

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Licensed HAM in Thailand</td>
<td>250,000   People</td>
</tr>
<tr>
<td>Expected active</td>
<td>10,000    People</td>
</tr>
<tr>
<td>First Level Link expectation the dissemination within 5 minutes</td>
<td>3 Household</td>
</tr>
<tr>
<td>Numer of people in a household</td>
<td>4 People</td>
</tr>
<tr>
<td>Total First Level Link</td>
<td>120,000   People</td>
</tr>
<tr>
<td>Second Level Link expectation for dissemination relay within 10 minutes</td>
<td>5 People</td>
</tr>
<tr>
<td>Dissemination chain</td>
<td>4 People</td>
</tr>
<tr>
<td>Second Level Link</td>
<td>2,400,000 People</td>
</tr>
</tbody>
</table>

Fudge Factor (Error rate 50% for the worst case) 0.5

Expect number of people received warning message within 15 minutes 1,200,000 People
Your support will help save life!

Amateur Radio Network

Network of People

Phat/HS1WFK Nov 1st, 2006