Disaster warning to Indian Fishermen through IRNSS

ICG-2

2007

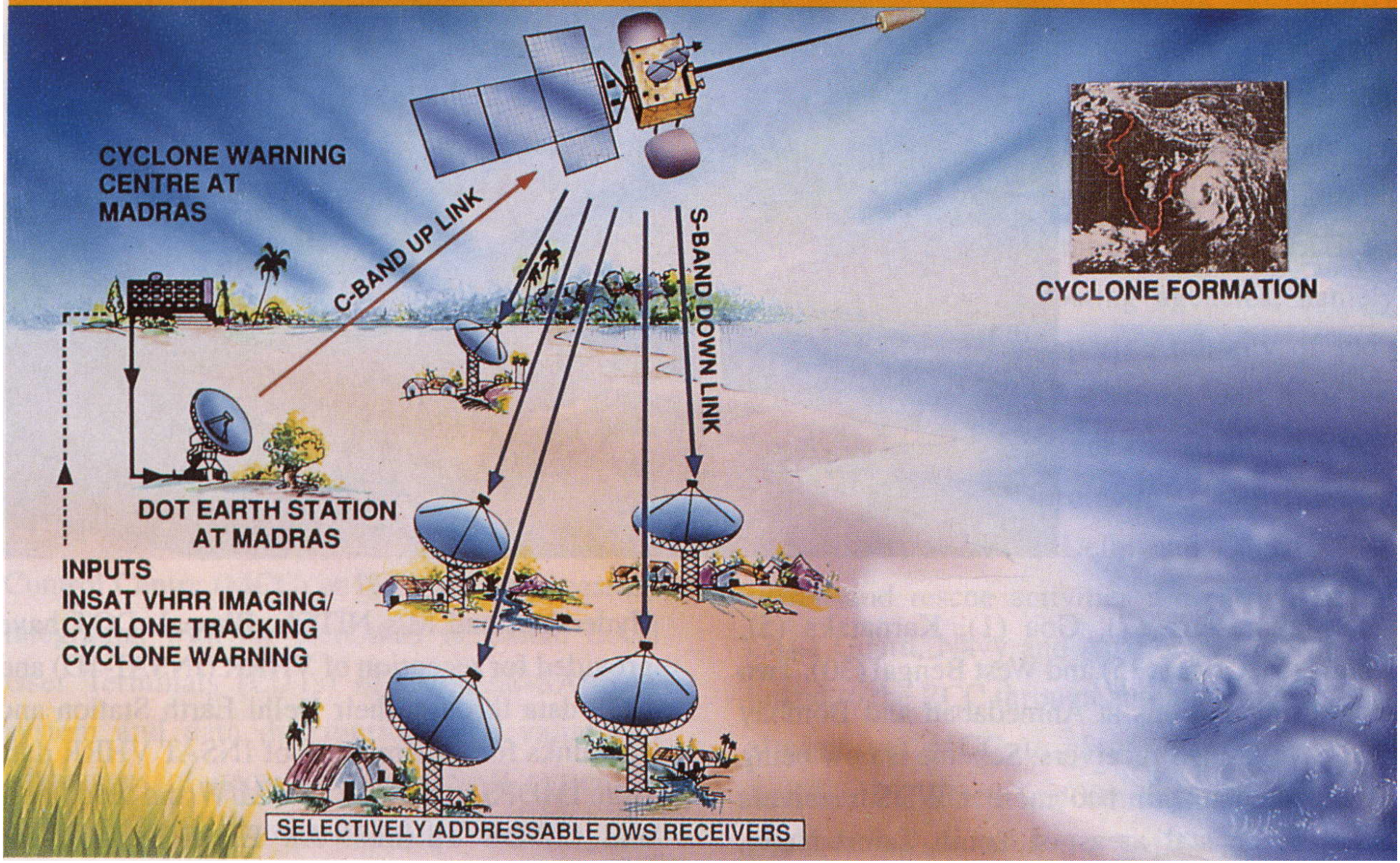
Need

- India has more than 7000 km coastline
- Indian EEZ is 225 Km
- There are more than 200,000 small motorized boats of 20 feet length
- Fishermen are out in the sea sometimes more than a week
- Fishermen carry HF radio sets
- All India Radio beams from the coastal stations are generally pointed towards landmass and small coverage in the sea due to back lobe

Need

- India has a unique satellite voice paging system of Cyclone warning messages for remote Fishing villages
- This is a selective broadcast transmission in the local language of the villagers

CYCLONE WARNING AND DISSEMINATION SYSTEM




Digital Cyclone
Warning Receiver

- But during each cyclone many life and boat is lost due to lack of information reaching the fishermen out in the sea
- There is a need to provide a cheap solution to reach cyclone warning message to the fishermen out in the sea

Need

- Following should be the minimum feature of the required system
  - Location based Alert
  - Satellite broadcast based solution
  - Low cost
  - Battery operated system
  - Operation in marine environment
  - Alert in local language

Existing Port warning signals number wise

1. DISTANT CAUTIONARY***(There is a region of squally weather in which a storm may be forming.)***
2. DISTANT WARNING***(A storm has formed.)***
3. LOCAL CAUTIONARY(***The port is threatened by squally weather.)***
4. LOCAL WARNING (***The port is threatened by a storm but it does not appear that the danger is as yet sufficiently great to justify extreme measures of precaution.)***

Existing Port warning signals number wise

5. DANGER (***The port will experience severe weather from a cyclone expected to move keeping the port to the left of its track.)***
6. DANGER (***The port will experience severe weather from a cyclone expected to move keeping the port to the right of its track.)***
7. DANGER (***The port will experience severe weather from a cyclone expected to move over or close to the port.)***
8. GREAT DANGER (***The port will experience severe weather from a severe cyclone expected to move keeping the port to the left of its track.)***

Existing Port warning signals number wise

9. GREAT DANGER (***The port will experience severe weather from a severe cyclone expected to move keeping the port to the right of its track.)***
10. GREAT DANGER (***The port will experience severe weather from a severe cyclone expected to move over or close to the port.)***
11. FAILURE OF COMMUNICATIONS

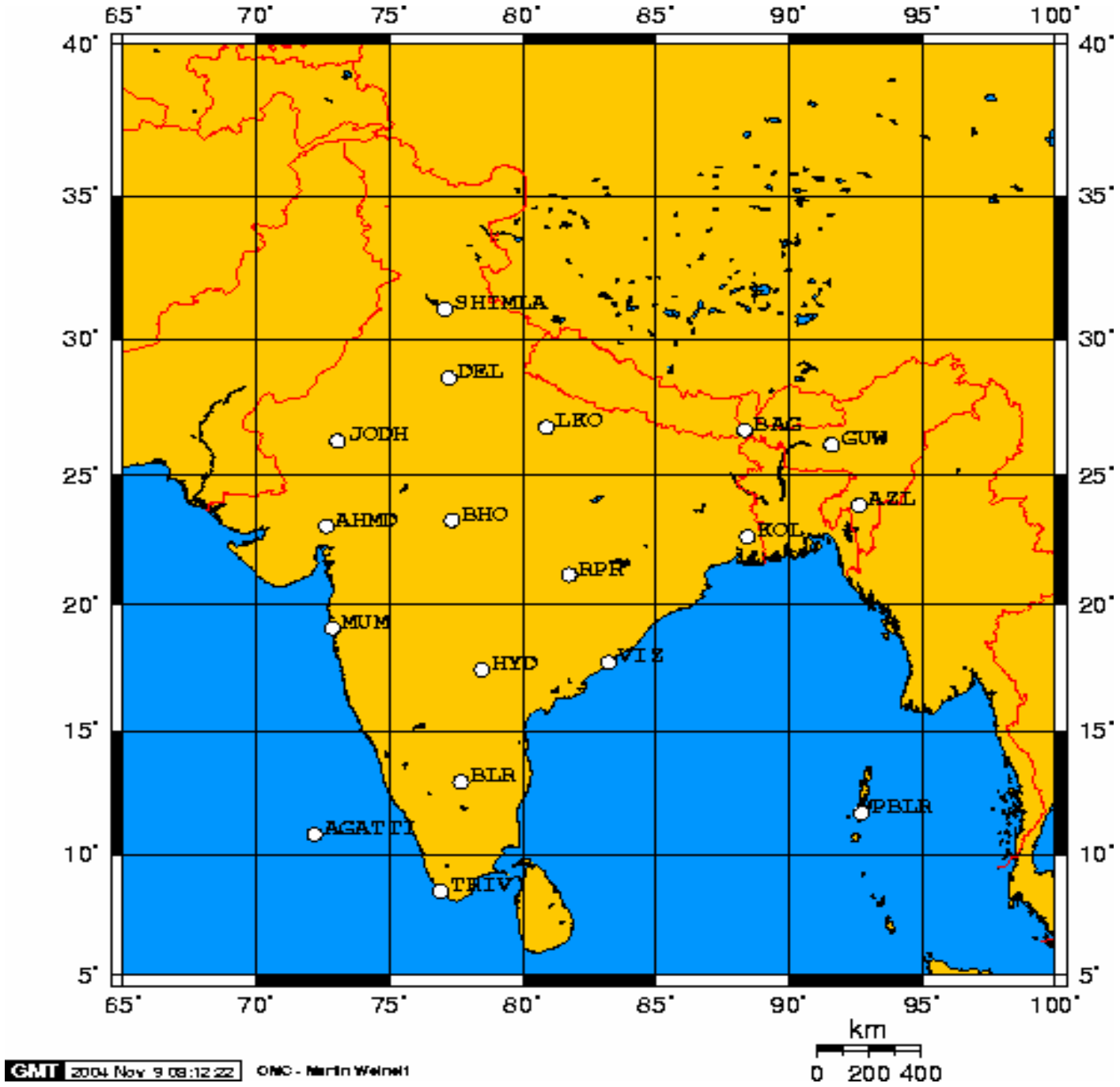
(Communications with the Meteorological Warning center have broken down and the local officer considers that there is danger of bad weather.)

Concept of Fishermen location based Alert

- The Indian Coastal area and adjoining sea can be mapped on virtual 5 x 5 deg Grid as is done for GAGAN
- Each Grid having unique number
- Number code Alert associated with each grid number could be broadcast
- IRNSS broadcast channel will be used for this

Concept of Fishermen location based Alert

- The IRNSS receiver calculates its position
- It identifies the grid where it is located now
- It decodes the alert signal for the grid and the neighboring grids
- It presents the Alert signal in the local language either through built in LCD display or through built in audio amplifier.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