

# Early Warning System, Telecommunication and ongoing activities in Bangladesh Meteorological Department

Presented by  
Bangladesh Meteorological Department  
(BMD)

Agargaon, Dhaka-1207  
email: [swcbmd@yahoo.com](mailto:swcbmd@yahoo.com)

# The Service Objectives of BMD

- ❑ To observe different meteorological parameters both for surface and upper air all over Bangladesh round the clock.
- ❑ To prepare and analyze all weather charts and to make interpretation on the basis of analyses.
- ❑ To provide weather forecasts for public, farmers, mariners and aviators on routine basis and also to issue warnings for severe weather phenomena such as tropical cyclones, tornadoes, nor'westers, heavy rainfall, etc.
- ❑ To maintain surveillance of weather radars for probing impending tropical cyclones, nor'westers and tornadoes.
- ❑ To exchange meteorological data, forecasts and warnings to meet national and international requirements.

- **To receive round the clock satellite imageries for timely use in operational meteorology.**
- **To extract, maintain quality control, process, archive and publish climatic data for use of various interested agencies at home and abroad.**
- **To provide meteorological data, radar echoes and Satellite imageries and weather forecast for flood forecasting and warning centre.**
- **To monitor micro seismic events and earth quake round the clock.**
- **To conduct special studies required for the policy makers and for the development of Hydro-meteorology and Meteorological sciences in the region**

# BMD's overall activities

**Bangladesh  
Meteorological  
Department (BMD)**

**Information collection,  
Dissemination by  
Maintaining 24 hrs  
operational capabilities**

**Information  
Dissemination for  
Disaster preparedness  
And mitigation  
promotion of research  
activities for sustainable  
development of the country**

**Participation in the  
peoples Awareness  
raising programme  
for reduction of  
disaster losses in cost  
effective way**

# Observational Facilities of BMD

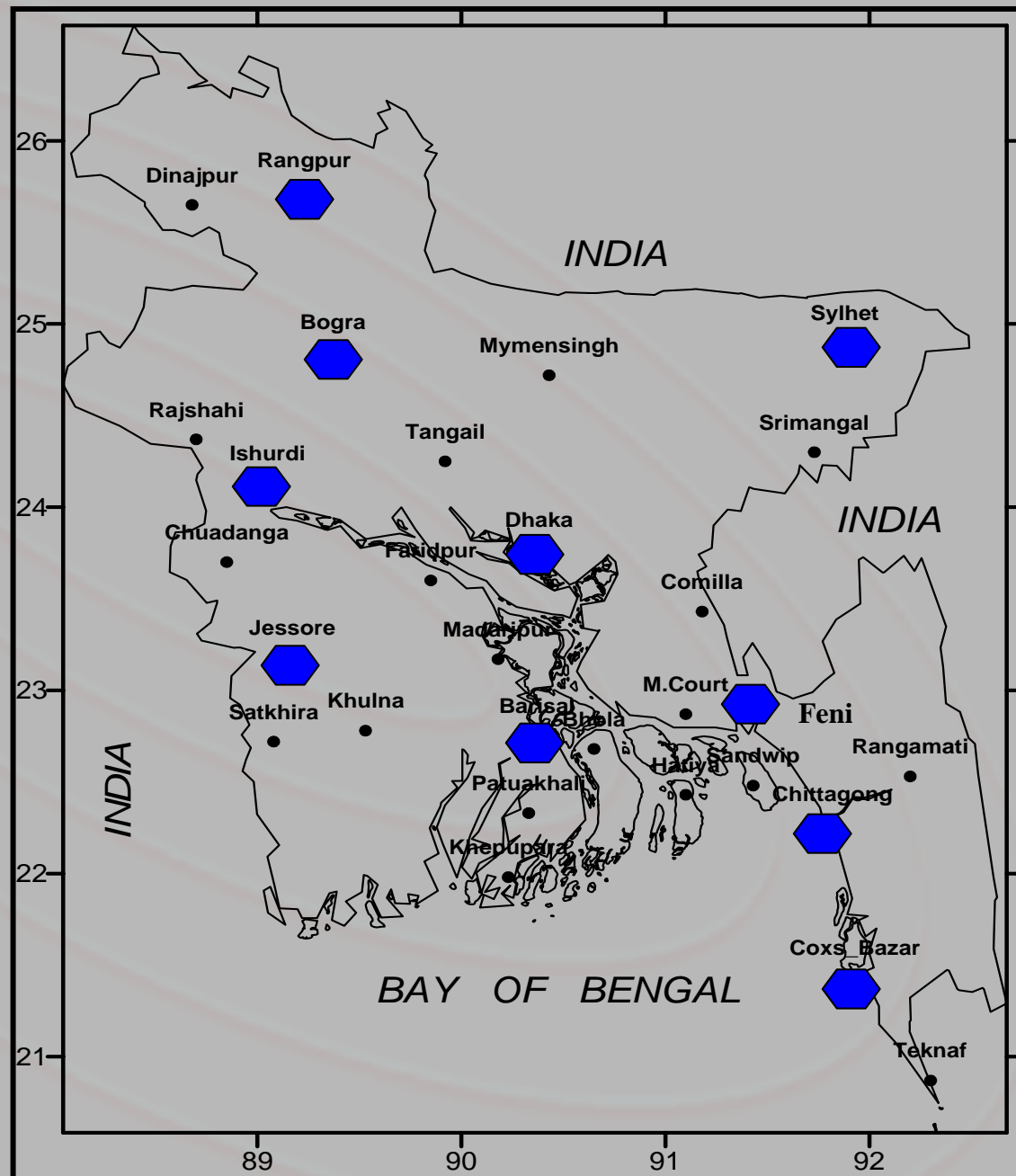
- ◆ **35 First Class Surface Observatories**
- ◆ **10 Pilot Balloon Observatories**
- ◆ **3 Rawinsonde Observatories ( One is in functional)**
- ◆ **12 Agromet Observatories**
- ◆ **4 Radar Stations at Dhaka, Rangpur, Cox's Bazar and Khepupara**
- ◆ **Satellite Ground Receiving Station of GMS, NOAA and INSAT**
- ◆ **World Area Forecasts Charts( WAFS) from the World Area Forecasting Center, Braknell London.**
- ◆ **Receiving System of Satellite Distribution (SADIS)**
- ◆ **Two high-gust anemometers in operation over the country.**

## OBSERVATORIES OF BMD

● LOCATION OF FIRST CLASS OBSY.



⬡ LOCATION OF FIRST CLASS OBSY + PBO

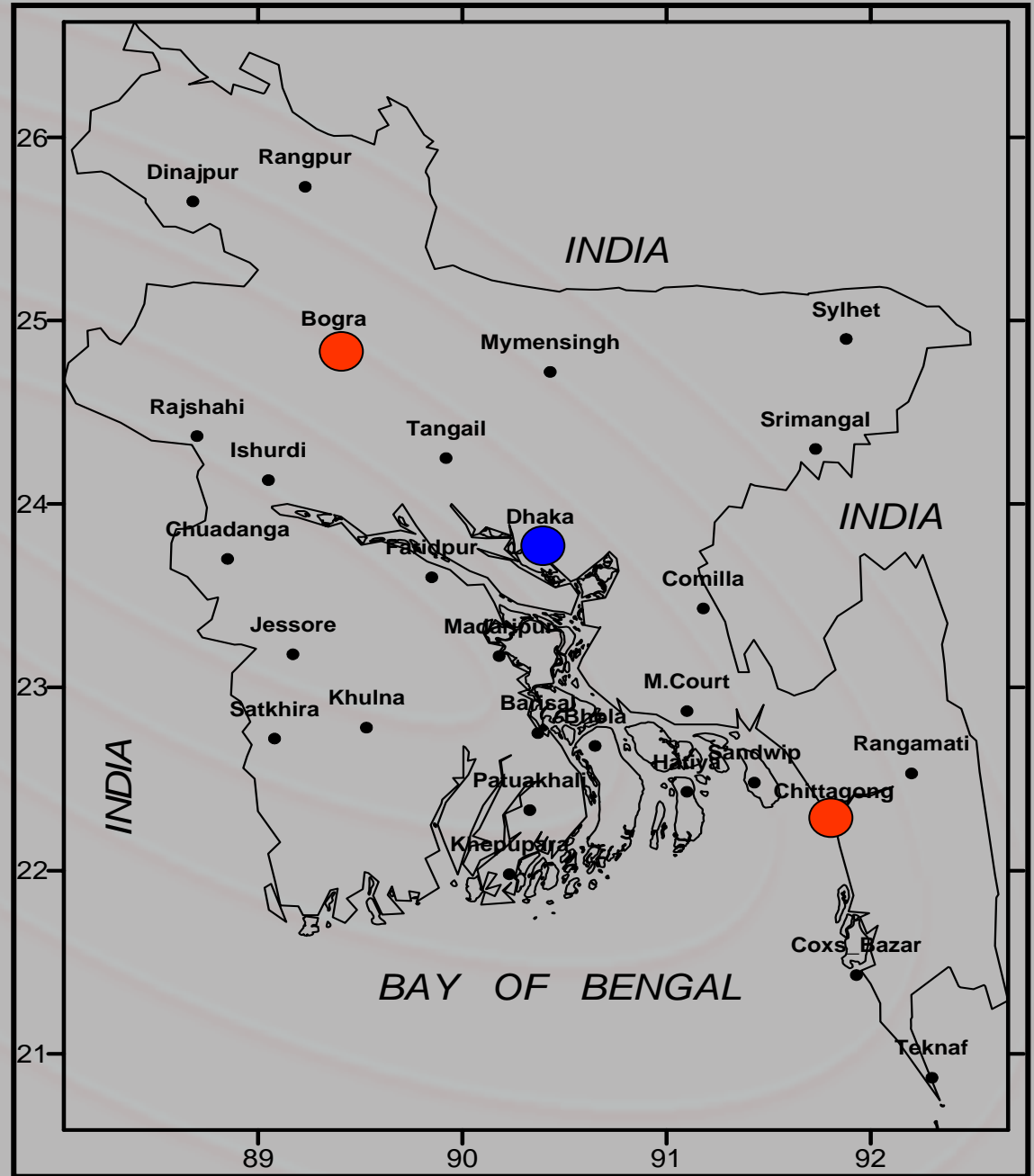
The meteorological data transmitted globally through Global Telecommunication System (GTS)



# LOCATION OF RAWINSONDE OBSERVATORIES OF BMD

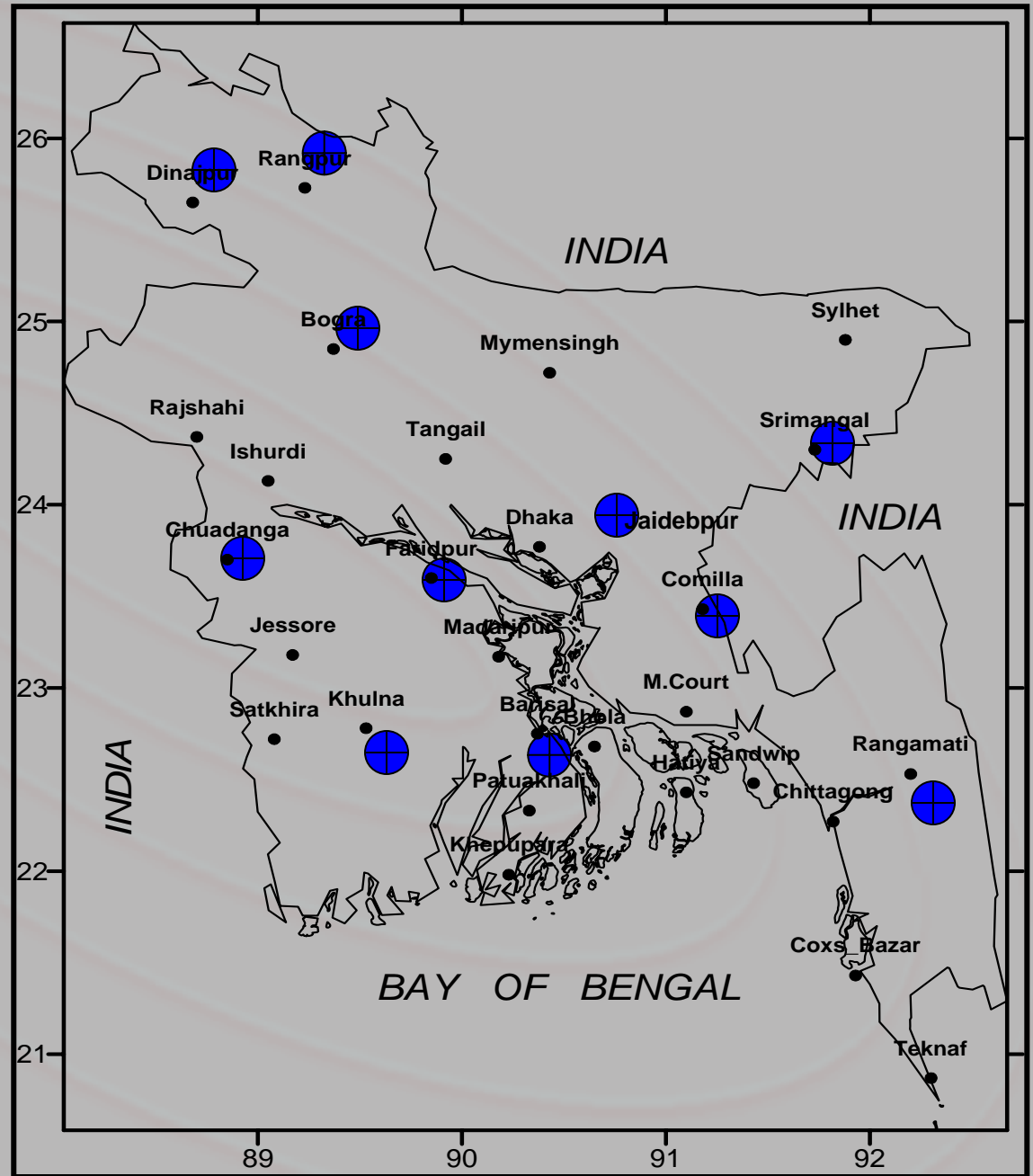
## LEGEND

-  OPERATIONAL STATION
-  Declared as obsolete & Replace is on process



# LOCATION OF AGROMETEOROLOGICAL OBSERVATORIES OF BMD

 **11 OPERATIONAL  
AGROMETEOROLOGICAL  
STATION**





# LOCATION OF SEISMIC OBSERVATORY IN BANGLADESH

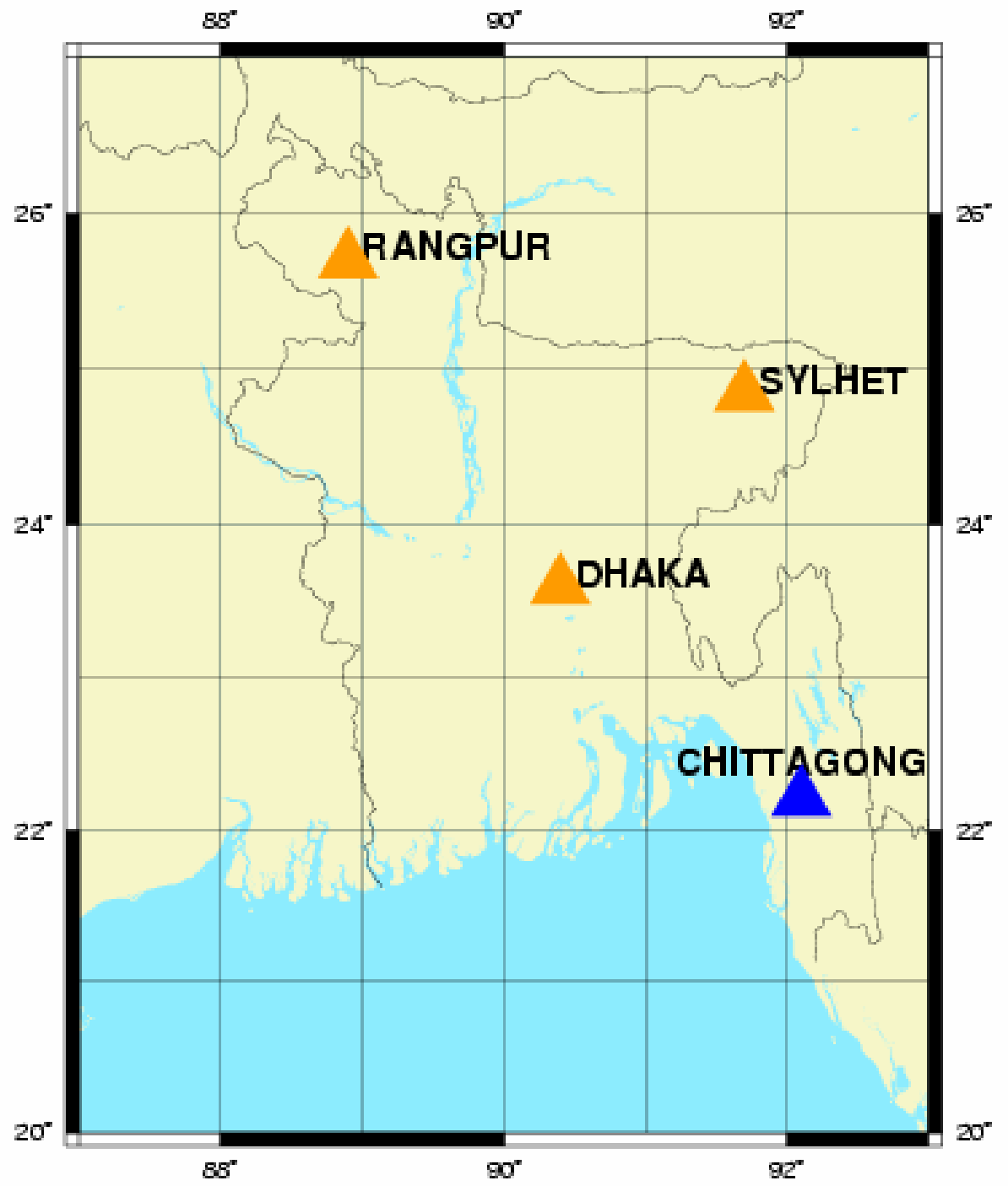
## LEGEND



**OPERATIONAL STATION**



**PROPOSED STATIONS**



# SEISMIC ZONING MAP BANGLADESH



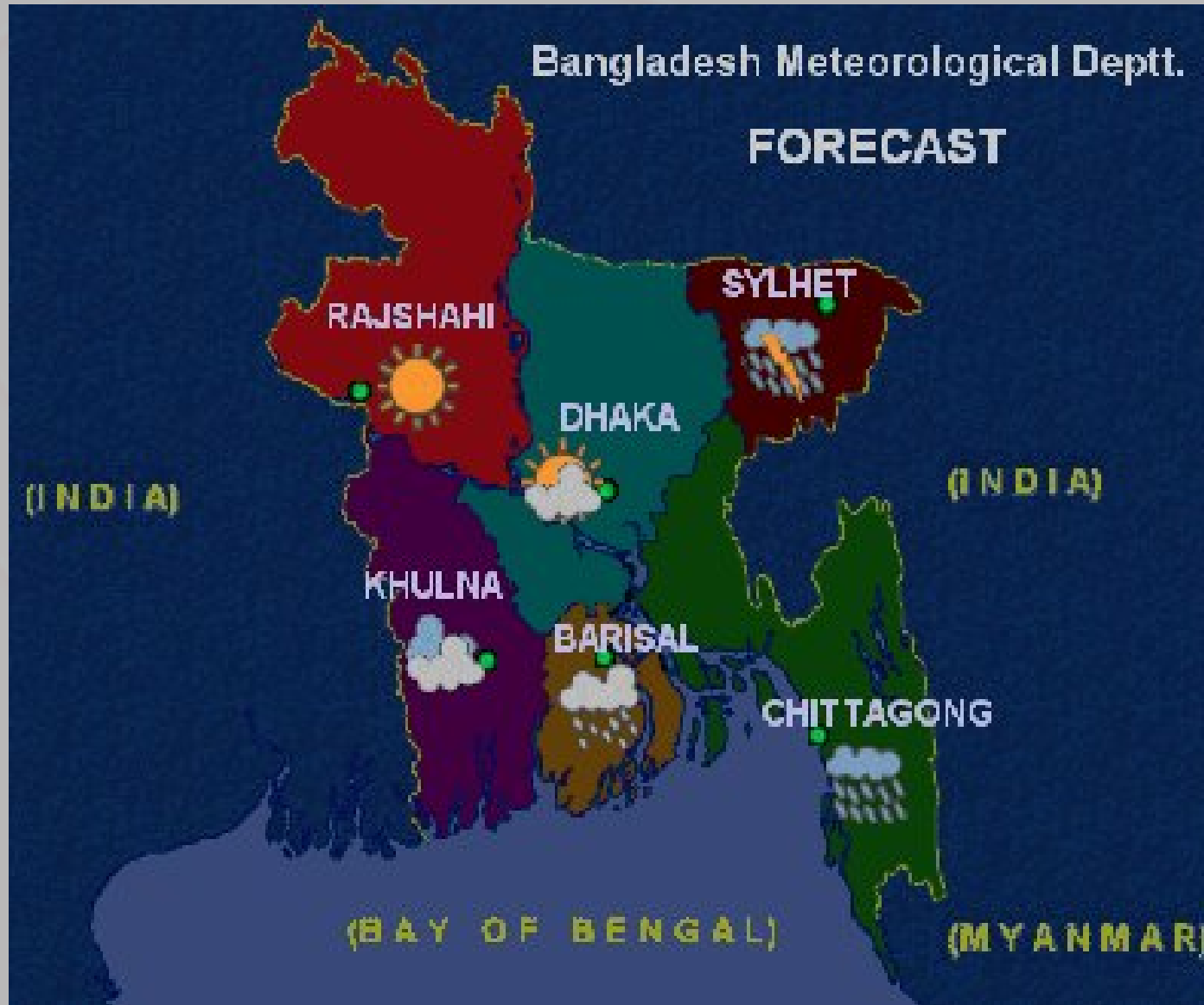
## Forecasts issued by BMD

- ◆ Inland river port warnings are issued four times a day for better river navigation which helps to minimize loss and damage from inclement weather
- ◆ Sea bulletins are issued twice a day for safer voyage of incoming and outgoing vessels in the Bay of Bengal.
- ◆ Weather forecast for 24 hours including rainfall and temperature for general mass to enable them for scheduling everyday affairs.
- ◆ Weather forecast for 5 days including rainfall and temperature for farmers for better planning of agricultural activities.
- ◆ Forecasts of Dhaka and neighborhood is given twice daily.

## Forecasts issued by BMD

- ◆ Mid-Range Decadal (10 days) Agro-meteorological forecasts to stakeholders
- ◆ Long Range Weather forecast for a month
- ◆ Long range forecast of Three-month for Ministry of Agriculture, BARC, DAE and other related Departments.
- ◆ Heavy rainfall warning
- ◆ Kalbaishakhi and Squall Warning
- ◆ Cold and Heat wave warning

# A model of Forecast issued for Public (TV)



# *Seismological Service in BMD*

# Seismological Services in BMD

- **One earthquake station was established in Chittagong, coastal city of Bangladesh in 1954, till now the seismic instrument was upgraded twice with the available system.**
- **GOB is implementing a project for the establishment 3 (Three) new earthquake monitoring stations along with up-gradation of the existing one for monitoring of earthquake in and around Bangladesh.**

# Seismic Network proposed now

## SEISMIC STATIONS IN BANGLADESH





## The need for Tsunami Early Warning System in Bangladesh

The massive devastations due to **26 December, 2004** Tsunami in the Indian Ocean Region, the Government is dealing with the early warning system, dissemination network of warnings to the end users, preparedness and mitigation for the reduction of loss of life and property.

## Advisory/Early warning of Tsunami Dissemination in BMD

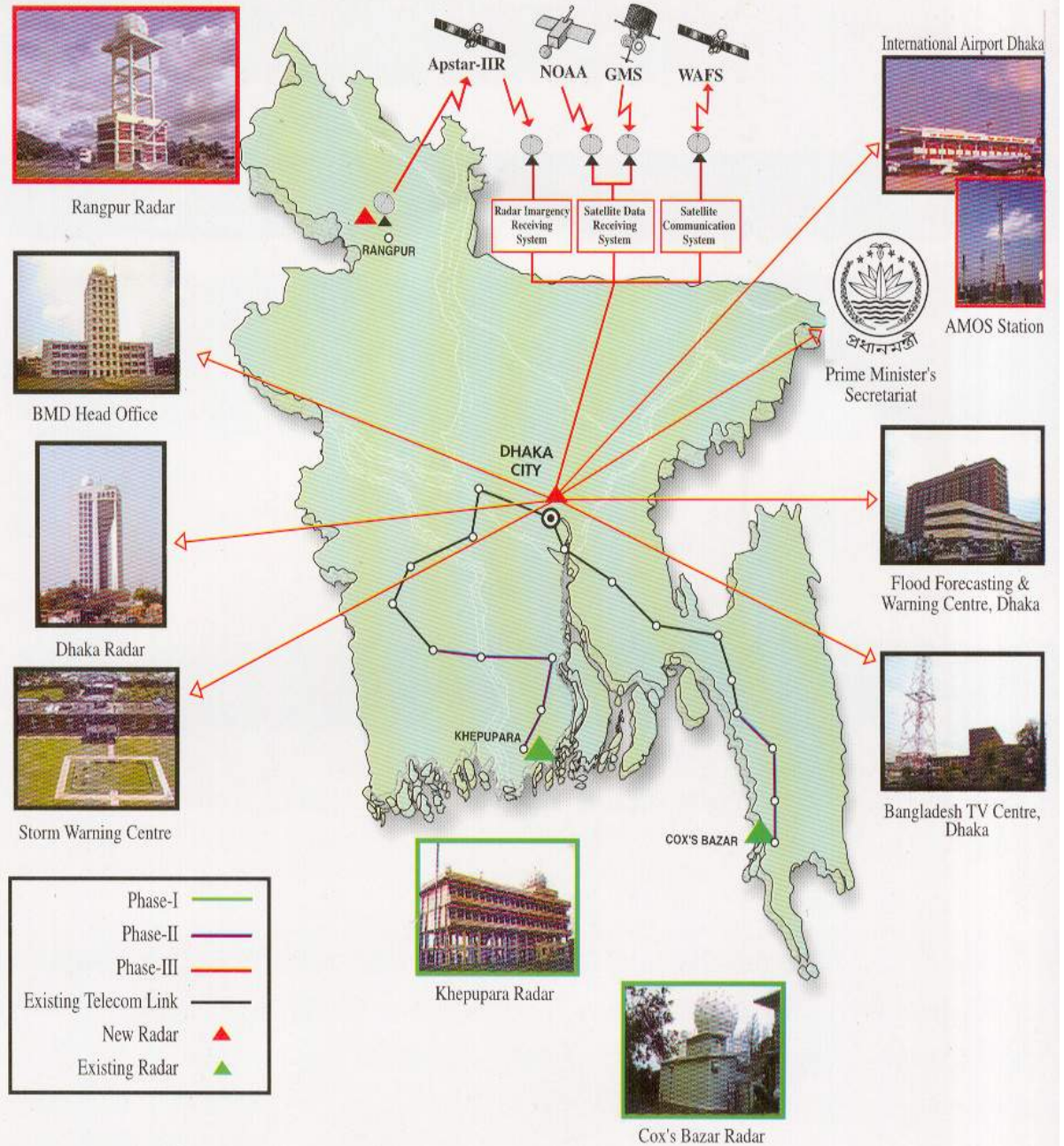
After last year Tsunami, Bangladesh is now **associated with PTWC and JMA** through BMD's GTS link, Fax, Telephone and Internet to get Tsunami advisory/ warning and Tsunami watch information, and BMD's cyclone dissemination network is being utilized for dissemination .

## WMO's Expert Mission in BMD

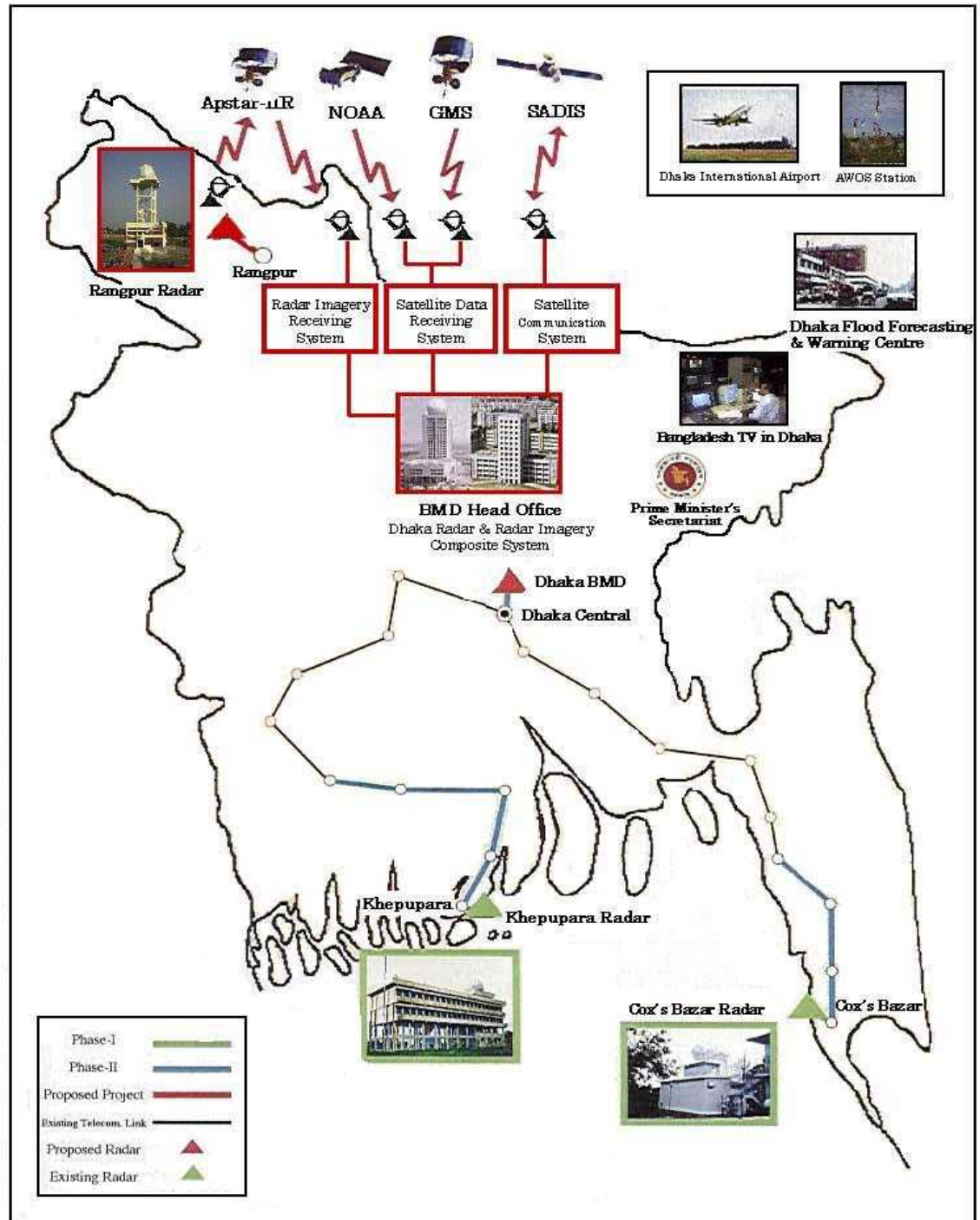
- WMO's Expert mission has visited BMD for upgradation of GTS link and the dissemination system of BMD to the end users.
- The main objective of WMO mission is to upgrade BMD's communication capability so that in future BMD can be able to handle multi-hazard disasters including Tsunami nationally, regionally and internationally.

***Telecommunication System in  
BMD***

# BMD Network



# LOCATION OF RADAR STATION, MICROWAVE & VSAT LINK



# Microwave Link for BMD

**New Antennas at BTTB Sreepur**

**New RMD at SWC Dhaka**

**BMD Dhaka Headquarters**

**New Radio Equipment at BTTB Khulna**

**New Radio Equipment at BTTB Patuakhali**

**BTTB Khepupara**

**Khepupara Radar Site**

**BTTB Central**

**New Antennas at BTTB Chiringa**

**New Radio Equipment**

**New Radio Shed and Existing Radar Building at Cox's Bazar Radar Site**

Map labels: Dhaka, Khulna, Barisal, Patuakhali, Khepupara, Chittagong, Sankania, Chiringa, Cox's Bazar Radar, Radar, BTTB Central, BMD Dhaka Headquarters.

# **BMD Domestic Network**

**( LAN / MAN )**

**BMD Headquarter**  
**Agargaon, Dhaka**





# *Telecommunication*

- **Dhaka-New Delhi GTS Link**
- **Tele printer (Domestic)**
- **SSB (Domestic)**
- **Facsimile Chart Receiver**

## *International Circuit*

- **Dhaka - Delhi GTS link: Two Way Analogue leased line**
- **Speed : 2400 bps Only for data**
- **SADIS for only Aviation purposes (Data/Image reception)**

# *Local Circuit*

## **Teleprinter Circuit :**

- **Dhaka-Kurmitola (Two-way)**
- **Chittagong-Coxs's Bazar**
- **Dhaka-Chittagong (Two-way)**
- **Chittagong-Chilimpur**
- **Dhaka-Bogra**
- **BMD-Radio Office (Dhaka)**
- **Dhaka-Ishurdi**
- **BMD-Flood Forecasting Centre**
- **Dhaka-Sylhet**
- **BMD-Navy**
- **BMD-BAF (Met.)**

## *Local Circuit*

### **Weather Chart Facsimile Receiver**

➤ **Dhaka, Kurmitola, Chittagong, Cox's Bazar, Sylhet.**

### **SSB Set**

➤ **35 stations Standby**

## Ongoing Projects in BMD

- To establishment of Numerical Weather Prediction (NWP) system.
- Establishment of three Seismic Observatories at Dhaka, Rangpur and Sylhet and renovation of existing seismic observatory at Chittagong.
- Establishment of Meteorological and Hydrological Doppler RADAR at Moulavi Bazar.
- Establishment of new observatories in the riverine area reducing river capsizes during nor'wester period.
- Upgradation of Cox's Bazar (process is going on) and Khepupara RADARs.

# WARNING MESSAGE DISSEMINATION PLAN

WORLD WEATHER WATCH (WWW)

U.N ENVIRONMENT PROGRAMME (UNEP)



CLIMATE CHANGE MONITORING SYSTEM

GLOBAL TELECOMMUNICATION SYSTEM (GTS)

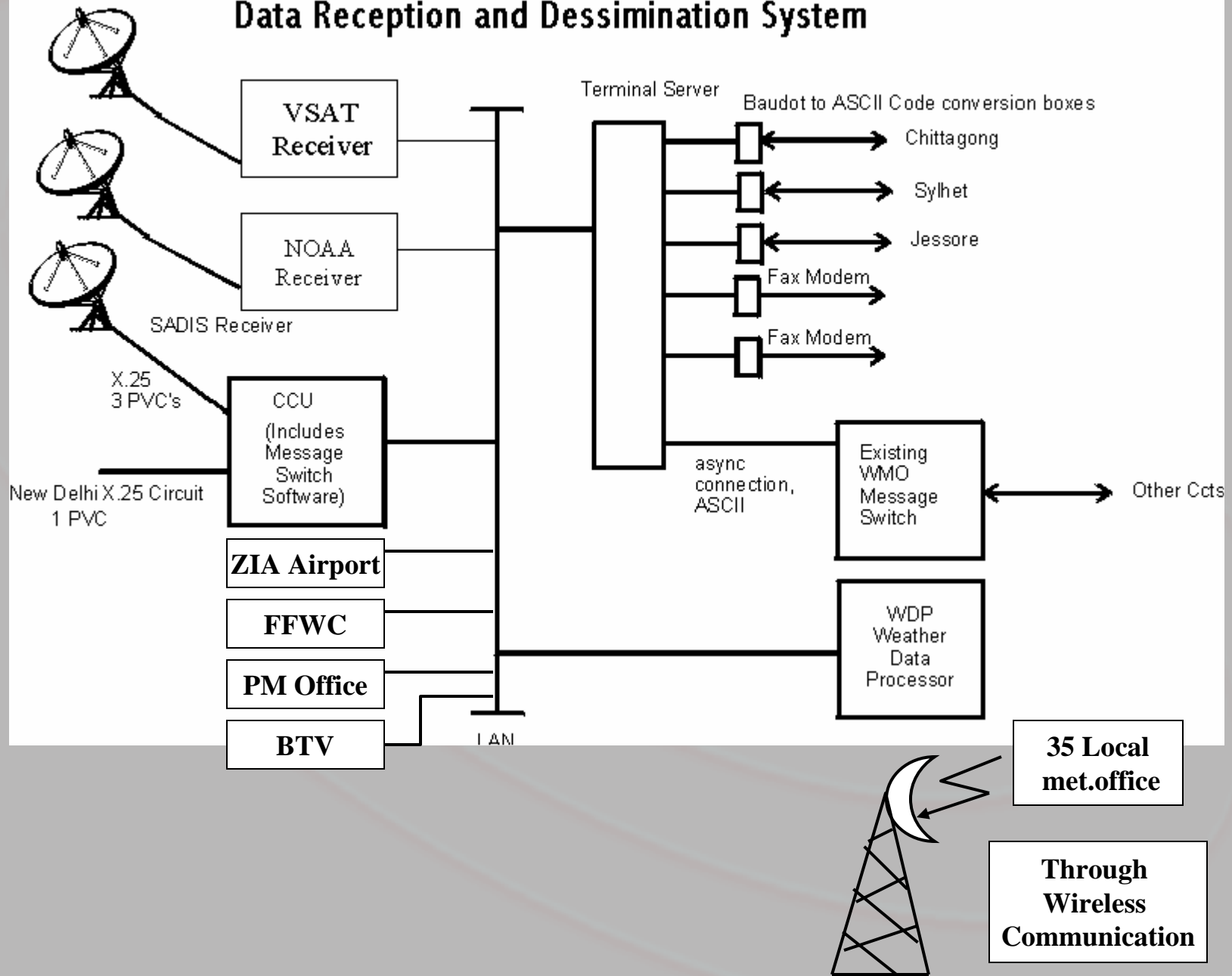


NATIONAL METEOROLOGICAL COMMUNICATION CENTRE (NMCC)



- STORM WARNING CENTRE (SWC)
- BANGLADESH BETAR (RADIO)
- BANGLADESH TELEVISION (BTV)
- MINISTRY OF DISASTER MANAGEMENT & RELIEF
- CYCLONE PREPAREDNESS PROGRAMME (CPP)
- COASTAL VOLUNTEERS
- NEWS PAPERS
- GENERAL MASS
- BANGLADESH ARMY
- BANGLADESH NAVY
- BANGLADESH AIR FORCE
- MARITIME AND RIVERINE PORTS
- FLOOD CONTROL AND FORECASTING CENTRE

## Data Reception and Dessimination System



**Thanks**