



Foreign, Commonwealth
& Development Office

SOUTH ASIA HYDROMET FORUM III

**OBSERVATIONAL SYSTEMS AND REGIONAL DATA EXCHANGE FOR MONITORING AND
PREDICTION OF EXTREMES**

Meteorological Sensors from Astra Microwave

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**November 15-18, 2021
Annual Event- Virtual**

INTRODUCTION

- AMPL is engaged in the design and development of modules, sub-systems and systems in the fields of Meteorology, Radar, Electronic warfare, Space and Missile Electronics.
- This presentation highlights some of the products developed by AMPL for the Meteorology applications.

WEATHER MONITORING STATION

- Satellite based System
- Integrated with high accuracy sensors
 - Atmospheric Temperature Sensor
 - Relative Humidity Sensor
 - Barometric Pressure Sensor
 - Wind Speed Sensor
 - Wind Direction Sensor
 - Global Radiation Sensor
 - Rainfall Sensor
- Consumes low power
- No additional signal conditioning required
- High sensitivity GPS receiver
- Auto data transmission
- Menu Driven Settings and Monitoring



AGRO-METEOROLOGY AT CRIDA HYDERABAD

- Satellite based System
- Integrated with high accuracy sensors
 - AT/RH Sensors at 2, 4 & 8mtr heights
 - Barometric Pressure Sensor
 - Wind Speed / Direction Sensor at 3, 6 & 10mtrs heights
 - Global Radiation Sensor
 - Rainfall Sensor
 - Net Radiation Sensor
 - Diffuse Radiation Sensor
 - Soil Temperature Sensor at 5, 20 & 40cm depths.
 - Soil Moisture Sensor at 5, 20 & 40 cm depths.

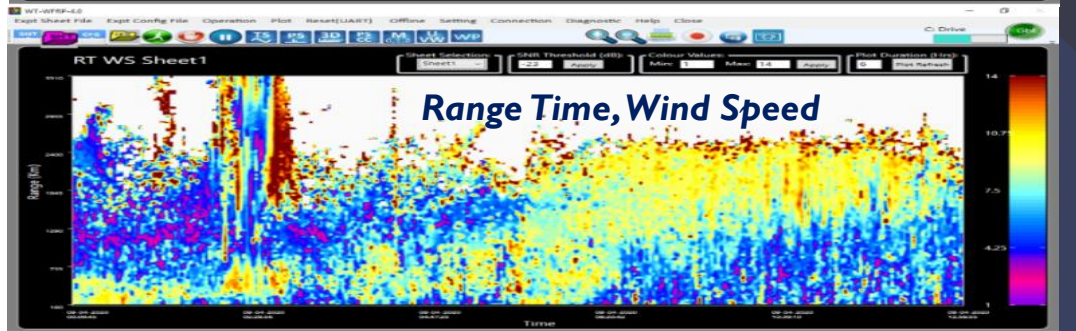
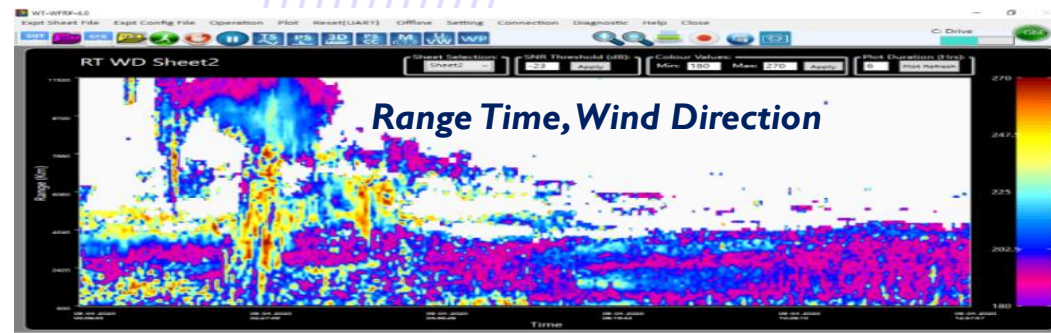
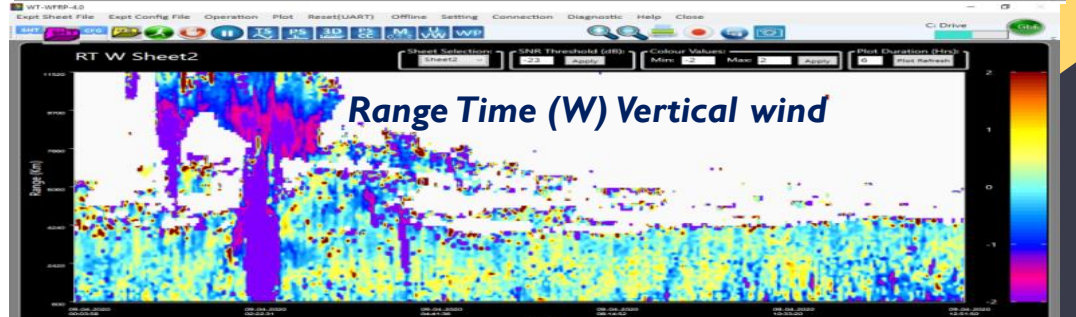
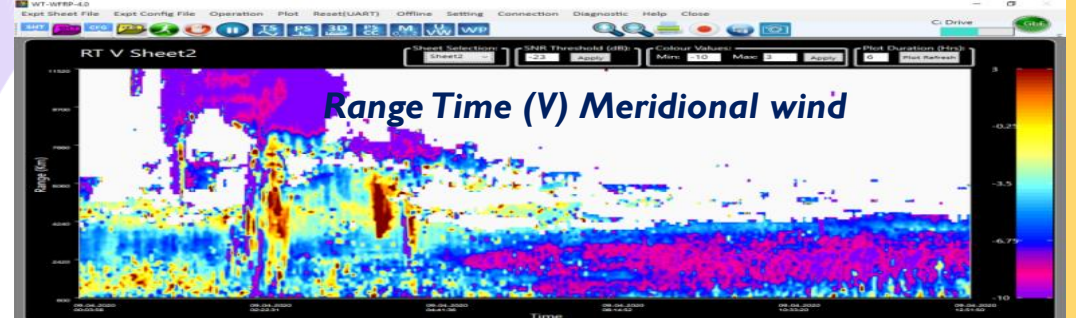
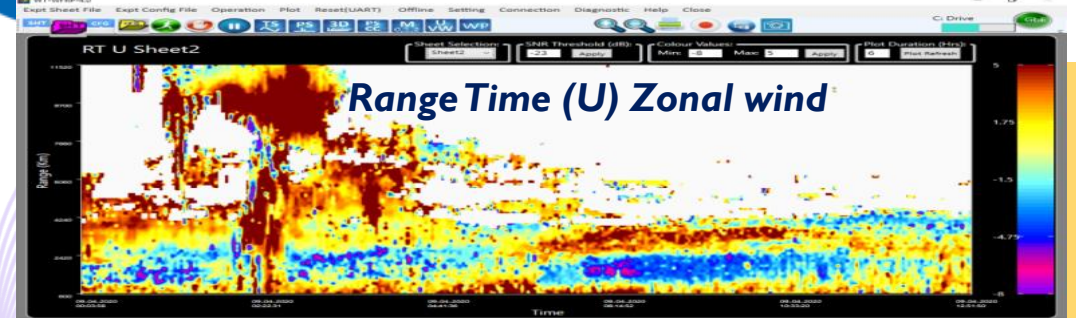


Data Buoy

- Drifter Buoy system is Ocean Observation system which measures the ocean parameters and send it to an Earth station through Satellite Communication.
- SST sensor
- Thermistor String
- Barometric Pressure sensor
- Salinity or conductivity sensor
- Submergence sensor
- Drogue presence sensor
- Magnetic Reed Switch
- Depth sensor
- Battery Pack

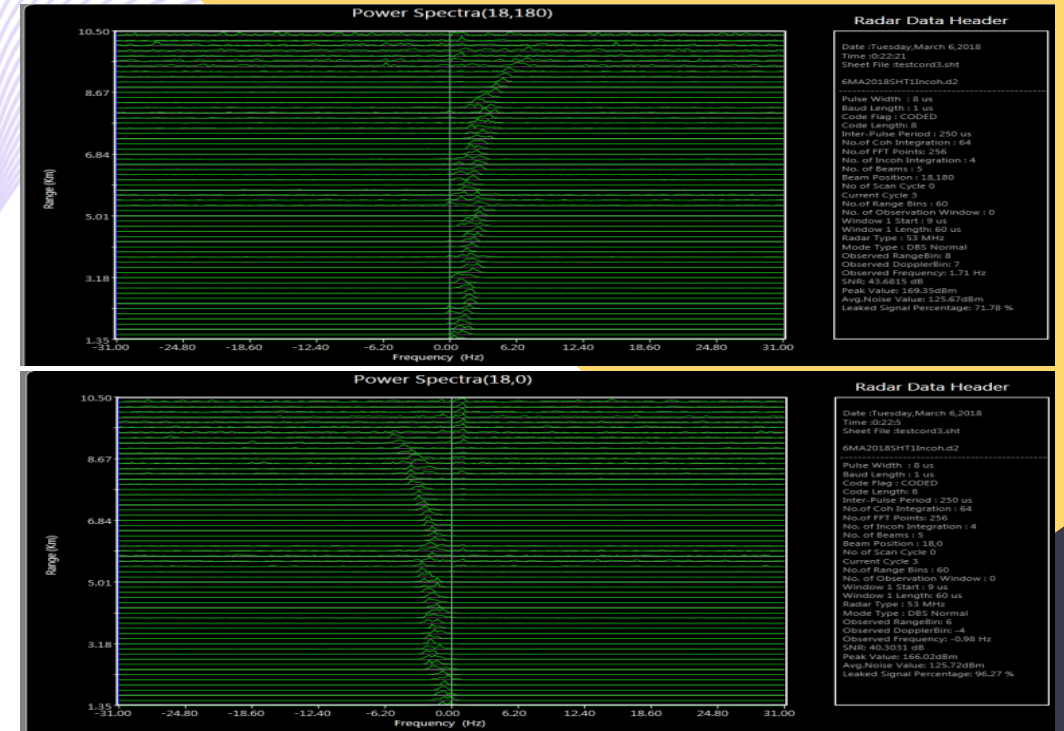


Installed two Transportable Wind Profilers for IITM





Pilot ST Radar installed at University of Calcutta



Top: East Beam
Bottom: West Beam

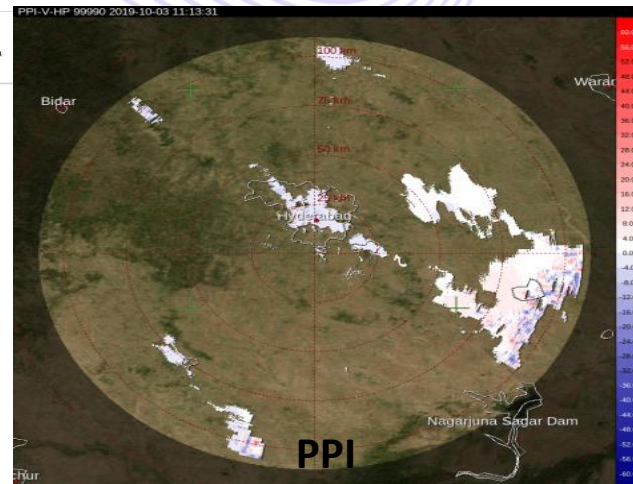
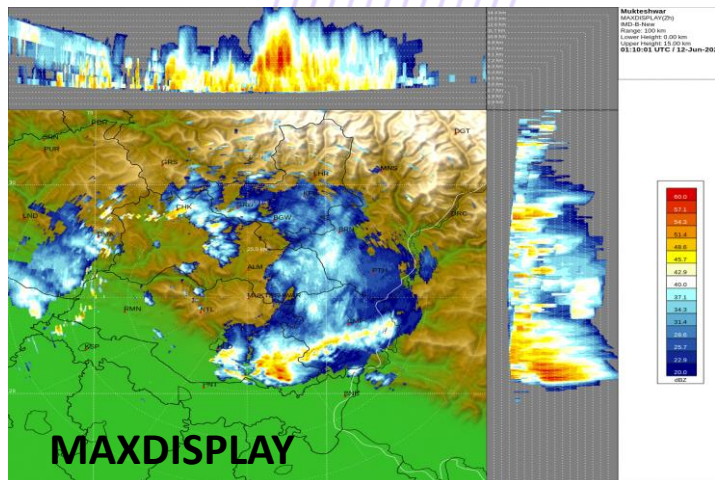
Doppler Weather Radars

- ▶ Operating in X-Band
- ▶ Polarimetric Feature
- ▶ 2.4-m Antenna with 1-deg Beam
- ▶ Solid-state Transmitter (2 x 500W)
- ▶ 100-km Range with 75-m resolution
- ▶ Composite waveform scheme
- ▶ Pulse compression scheme
- ▶ Tower-Mounted
- ▶ Severe weather operation

Tower Based



Transportable



Satellite-based Multi-mission Meteorological Data Reception and Processing System

Multi Mission Meteorological Data Receiving and Processing System (MMDRPS) is an end-to-end solution envisaged to receive, process, archive and disseminate meteorological data transmitted by the sensors of INSAT-3D, INSAT-3DR (Sounder/Imager), INSAT 3A (VHRR, CCD) and Kalpana-I (VHRR) satellites. The system is designed to acquire raw data from the serial streams, process it and generate various quantitative products from the processed data for operational utilization. The generated products will be used for dissemination via PQLD (Processor Quick Look Display) and SIDS (Satellite Information Dissemination System) and future reference and accessing via suitable storage (Raw Archival and Two Tier Storage System). MMDRPS incorporates redundancy to ensure full availability of real-time data.



Future Developments

- ▶ Upgradation of Existing Klystron based radars in India to Solid State Power Amplifiers.
- ▶ E-Scan Doppler Weather Radar for Electronic Elevation scanning and mechanical Azimuth scanning.
- ▶ Avalanche Detection Radar for Snow Avalanche detection and Alarming.

The logo for the South Asia Hydromet Forum III 2021 features a stylized, flowing ribbon that transitions from blue at the top to orange at the bottom, forming a shape reminiscent of a water drop or a stylized 'S'.

SOUTH ASIA
HYDROMET FORUM III

2021

Thank you

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SAHF Website: <https://sahf3event.rimes.int/>

YouTube Broadcast:

<https://youtu.be/QAAf326wP00>