



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI SPECIAL TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 15.10.2024

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 0300 UTC OF 15.10.2024 BASED ON 0000 UTC OF 15.10.2024.

BAY OF BENGAL:

SUB: WELL MARKED LOW PRESSURE AREA OVER CENTRAL PART OF SOUTH BAY OF BENGAL

THE LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL MOVED WEST-NORTHWEST WARDS AND LAY AS **A WELL MARKED LOW PRESSURE AREA OVER CENTRAL PART OF SOUTH BAY OF BENGAL** AT 0000 UTC OF THE 15TH OCTOBER 2024.

IT IS LIKELY TO INTENSIFY INTO DEPRESSION AND CONTINUE TO MOVE WEST-NORTHWESTWARDS TOWARDS NORTH TAMIL NADU, PUDUCHERRY AND ADJOINING SOUTH ANDHRA PRADESH COASTS DURING NEXT 2 DAYS.

AT 0000 UTC, ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION OVER SOUTH BAY OF BENGAL & ADJOINING EQUATORIAL INDIAN OCEAN (MINIMUM CLOUD TOP TEMPERATURE IS MINUS 80-93 DEG CEL).

WARNINGS:

(I) WIND WARNING:

SQUALLY WEATHER WITH WIND SPEED REACHING 35-45 KMPH GUSTING 55 KMPH IS LIKELY TO PREVAIL OVER SOUTHEAST AND ADJOINING SOUTHWEST & CENTRAL BAY OF BENGAL TILL 1200 UTC OF 15TH. THEREAFTER, IT IS LIKELY TO INCREASE BECOMING SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH OVER SOUTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL AND ALONG & OFF TAMIL NADU, PUDUCHERRY AND SOUTH ANDHRA PRADESH COASTS TILL 0300 UTC OF 17TH OCTOBER AND DECREASE GRADUALLY THEREAFTER.

(II) SEA CONDITION:

MODERATE TO ROUGH SEA CONDITION IS LIKELY TO PREVAIL OVER SOUTHEAST AND ADJOINING SOUTHWEST & CENTRAL BAY OF BENGAL TILL 1200 UTC OF 15TH. IT IS LIKELY TO BECOME ROUGH SEA CONDITION THEREAFTER OVER SOUTHWEST & ADJOINING WESTCENTRAL BAY OF BENGAL AND ALONG & OFF TAMIL NADU, PUDUCHERRY AND SOUTH ANDHRA PRADESH COASTS TILL 0300 UTC OF 17TH OCTOBER AND IMPROVE GRADUALLY THEREAFTER.

Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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(III) FISHERMEN WARNING:

FISHERMEN ARE ADVISED NOT TO VENTURE INTO

- SOUTHEAST AND ADJOINING CENTRAL BAY OF BENGAL DURING 15TH OCTOBER.
- SOUTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL FROM 15TH TO 17TH OCTOBER.
- FISHERMEN OUT AT SEA ARE ADVISED TO RETURN TO COASTS.

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

| 24 HOURS | 24-48 HOURS | 48-72 HOURS | 72-96 HOURS | 96-120 HOURS | 120-144 HOURS | 144-168 HOURS |
|----------|-------------|-------------|-------------|--------------|---------------|---------------|
| NIL | LOW | MOD | - | - | NIL | NIL |

***NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY**

ARABIAN SEA:

SUB: DEPRESSION OVER WEST CENTRAL ARABIAN SEA OFF OMAN COAST

THE DEPRESSION OVER WEST CENTRAL ARABIAN SEA OFF OMAN COAST MOVED WESTWARDS WITH A SPEED OF 8 KMPH DURING PAST 6 HOURS, AND LAY CENTRED AT 0000 UTC OF 15TH OCTOBER, 2024 OVER THE SAME REGION NEAR LATITUDE 16.1°N AND LONGITUDE 61.0°E, ABOUT 550 KM SOUTH-SOUTHEAST OF MASIRAH (41288, OMAN), 750 KM EAST OF SALALAH (41316, OMAN) AND 950 KM EAST OF AL GHAI DAH (41398, YEMEN).

IT IS LIKELY TO MOVE NEARLY WESTWARDS TOWARDS OMAN COAST AND WEAKEN GRADUALLY INTO A WELL-MARKED LOW PRESSURE AREA DURING NEXT 6 HOURS.

LATEST SATELLITE IMAGERY AT 0000 UTC INDICATED THAT THE INTENSITY OF THE SYSTEM IS CHARACTERISED AS T1.5. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER ARABIAN SEA BETWEEN LATITUDE 12.0N TO 23.0N AND LONGITUDE 58.0E TO 68.0E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 75-90 DEG CELSIUS.

THE ASSOCIATED ESTIMATED CENTRAL PRESSURE IS 1006 HPA WITH MAXIMUM SUSTAINED WIND SPEED ASSOCIATED WITH THE SYSTEM IS 20 KTS GUSTING TO 30 KTS.

WARNINGS:

(I) WIND WARNING:

- SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL OVER WESTCENTRAL ARABIAN SEA TILL 1200 UTC 15TH AND DECREASE GRADUALLY THEREAFTER.

(II) SEA CONDITION:

- ROUGH SEA CONDITION IS LIKELY TO PREVAIL ONLY OVER WESTCENTRAL ARABIAN SEA TILL 1200 UTC 15TH OCTOBER AND IMPROVE GRADUALLY THEREAFTER.

(III) FISHERMEN WARNING:

FISHERMEN ARE ADVISED NOT VENTURE INTO

- WESTCENTRAL ARABIAN SEA TILL MORNING OF 16TH OCTOBER.

REMARKS:

THE MADDEN-JULIAN OSCILLATION (MJO) IS CURRENTLY IN PHASE 4, WITH AMPLITUDE MORE THAN 1, AND IS EXPECTED TO MOVE ACROSS PHASE 4 DURING NEXT 4 DAYS WITH FURTHER INCREASING AMPLITUDE. THUS, MJO WOULD SUPPORT ENHANCEMENT

OF CONVECTIVE ACTIVITY OVER BAY OF BENGAL DURING NEXT 5 DAYS. THE GUIDANCE FROM CICS MODEL INDICATE PRESENCE OF STRONG WESTERLY WINDS (7-9 MPS) OVER SOUTH ARABIAN SEA AND STRONG EASTERLY WINDS (7-9 MPS) OVER CENTRAL ARABIAN SEA ALONGWITH EASTWARD MOVING KELWIN WAVES & MJO AND WESTWARDS MOVING LARGE EQUATORIAL ROSSBY WAVE EXTENDING FROM SOUTH BAY OF BENGAL TO SOUTH ARABIAN SEA DURING NEXT 2 DAYS. THESE FEATURES ARE SUPPORTIVE FOR SUPPORTING CONVECTIVE ACTIVITY OVER THE CENTRAL AS.

SIMILARLY, OVER THE BAY OF BENGAL, CICS BASED FORECAST INDICATES STRONG WESTERLY WINDS (5-7 MPS) OVER SOUTH BOB AND ADJOINING EQUATORIAL INDIAN OCEAN AND STRONG EASTERLY WINDS (5-7 MPS) OVER WESTCENTRAL BAY OF BENGAL. MJO& KELWIN WAVES ALONGWITH ROSSBY WAVES ARE ALSO LIKELY OVER THE BAY OF BENGAL DURING NEXT 8-10 DAYS. THESE FEATURES INDICATE FAVOURABLE ENVIRONMENT FOR CYCLOGENESIS (FORMATION OF DEPRESSION) OVER THE BAY OF BENGAL.

BAY OF BENGAL (BOB)

THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER ENTIRE BOB. THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) OVER >100 KJ/CM² OVER WESTCENTRAL & ADJOINING SOUTHWEST BOB AND SOUTH ANDAMAN SEA, 80-100 KJ/CM² OVER SOUTHEAST BOB. A ZONE OF POSITIVE CYCLONIC VORTICITY OF 60-80 X 10⁻⁵ IS SEEN OVER SOUTH BOB. TWO ZONES OF POSITIVE LOW-LEVEL CONVERGENCE AROUND 10-40X10⁻⁵ S-1 IS SEEN OVER SOUTHWEST BOB AND ANOTHER -5 TO -10X10⁻⁵ S-1 OVER SOUTHEAST BOB. POSITIVE UPPER-LEVEL DIVERGENCE IS AROUND 20-30X10⁻⁵ S-1 OVER SOUTH BOB & ADJOINING EQUATORIAL INDIAN OCEAN, VERTICAL WIND SHEAR (VWS) IS LOW (5-10 KNOTS) OVER CENTRAL AND ADJOINING AREAS OF SOUTH BAY OF BENGAL (OVER THE SSYSTEM AREA). UPPER TROPOSPHERIC RIDGE RUNS ALONG 20°N. THE EAST-SOUTHEASTERLY WINDS PREVAILING OVER SOUTH BAY OF BENGAL ARE INDICATING WEST-NORTHWESTWARDS MOVEMENT OF SYSTEM. MULTI-SATELLITE WINDS INDICATE STRONGER WINDS IN THE SOUTHWEST SECTOR. CURRENT ENVIRONMENTAL FEATURES ARE SUPPORTIVE FOR CYCLOGENESIS (FORMATION OF DEPRESSION) OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL. IMD GFS INDICATES A WELL MARKED LOW PRESSURE OVER SOUTH BOB AT 15/00. IT IS INDICATING RAPID INTENSIFICATION OF SYSTEM INTO A SEVERE CATEGORY CYCLONIC STORM ON 16TH OCTOBER OVER SOUTHWEST BOB AND CROSSING COAST TO THE SOUTH OF CHENNAI NEAR 12/80.2 AS A SEVERE CATEGORY STORM ON 17TH OCTOBER. IT IS FURTHER INDICATING EMERGENCE OF SYSTEM INTO EASTCENTRAL AS ON 18TH OCT AND INDICATING THE SYSTEM TO MOVE WEST-NORTHWESTWARDS. NCUM GROUP OF MODELS ARE NOT INDICATING ANY SIGNIFICANT INTENSIFICATION OF SYSTEM. HOWEVER, THIS GROUP IS ALSO INDICATING MOVEMENT TOWARDS NORTH TAMIL NADU COAST AND EMERGENCE OF THE CYCLONIC CIRCULATION/LOW PRESSURE AREA INTO EASTCENTRAL AS WITH WEST-NORTHWESTWARDS MOVEMENT.

ECMWF IS INDICATING A WELL MARKED LOW PRESSURE AREA ON 15TH 0000 UTC AND NOT INDICATING FURTHER INTENSIFICATION IN A DEPRESSION. THE MODEL IS INDICATING THE WELL MARKED LOW PRESSURE TO MOVE WEST-NORTHWESTWARDS AND TO CROSS SOUTH ANDHRA PRADESH COAST NEAR 14.0/80.4 ON 17/00 UTC AS A LOW PRESSURE AREA. IT IS ALSO INDICATING EMERGENCE INTO EASTCENTRAL ARABIAN SEA AS A CYCLONIC CIRCULATION/LOW PRESSURE AREA AND THEN WEST-NORTHWESTWARDS MOVEMENT TOWARDS OMAN COAST. NCEP GFS IS INDICATING

WELL MARKED LOW PRESSURE AREA OVER CENTRAL PART OF SOUTH BAY OF BENGAL AT 15/00 UTC. IT IS INDICATING DEPRESSION AT 15/18 UTC OVER SOUTHWEST BOB. IT IS INDICATING THE SYSTEM TO CROSS COAST NEAR NORTH TAMILNADU AND COASTAL ANDHRA PRADESH ON 19TH AS A LOW PRESSURE AREA. MULTI MODEL CONSENSUS INDICATING A DEPRESSION AT 15/00 UTC. THE SYSTEM IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS NORTH TAMILNADU COAST NEAR 13.6/80.3 CLOSE TO CHENNAI AROUND 17/00-03 UTC AS A DEPRESSION. CONSIDERING ALL ENVIRONMENTAL FEATURES AND MODEL GUIDANCE, THE SYSTEM IS LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS NORTH TAMIL NADU, PUDUCHERRY AND ADJOINING SOUTH ANDHRA PRADESH COASTS DURING NEXT 2 DAYS AND CROSS THE NORTH TAMILNADU COAST ON 17TH.

ARABIAN SEA (AS)

THE SEA SURFACE TEMPERATURE (SST) IS 28-30°C OVER EASTCENTRAL AS. AROUND 27°C OVER THE WESTCENTRAL AND SOUTHWEST PARTS OF AS. THE TROPICAL CYCLONE HEAT POTENTIAL IS 60-70KJ/CM² OVER EASTCENTRAL AS AND IT IS LESS THAN 50 KJ/CM² OVER WESTCENTRAL AS & OFF OMAN COAST. TOTAL PRECIPITABLE WATER IMAGERY INDICATE CONTINUOUS WARM MOIST AIR INTRUSION INTO THE CORE. HOWEVER, AS THE SYSTEM ENTERS, WESTCENTRAL AS, COLD DRY AIR INTRUSION WOULD COMMENCE AND TROPICAL CYCLONE HEAT POTENTIAL WOULD ALSO BECOME LESS THAN 50 KJ/CM².

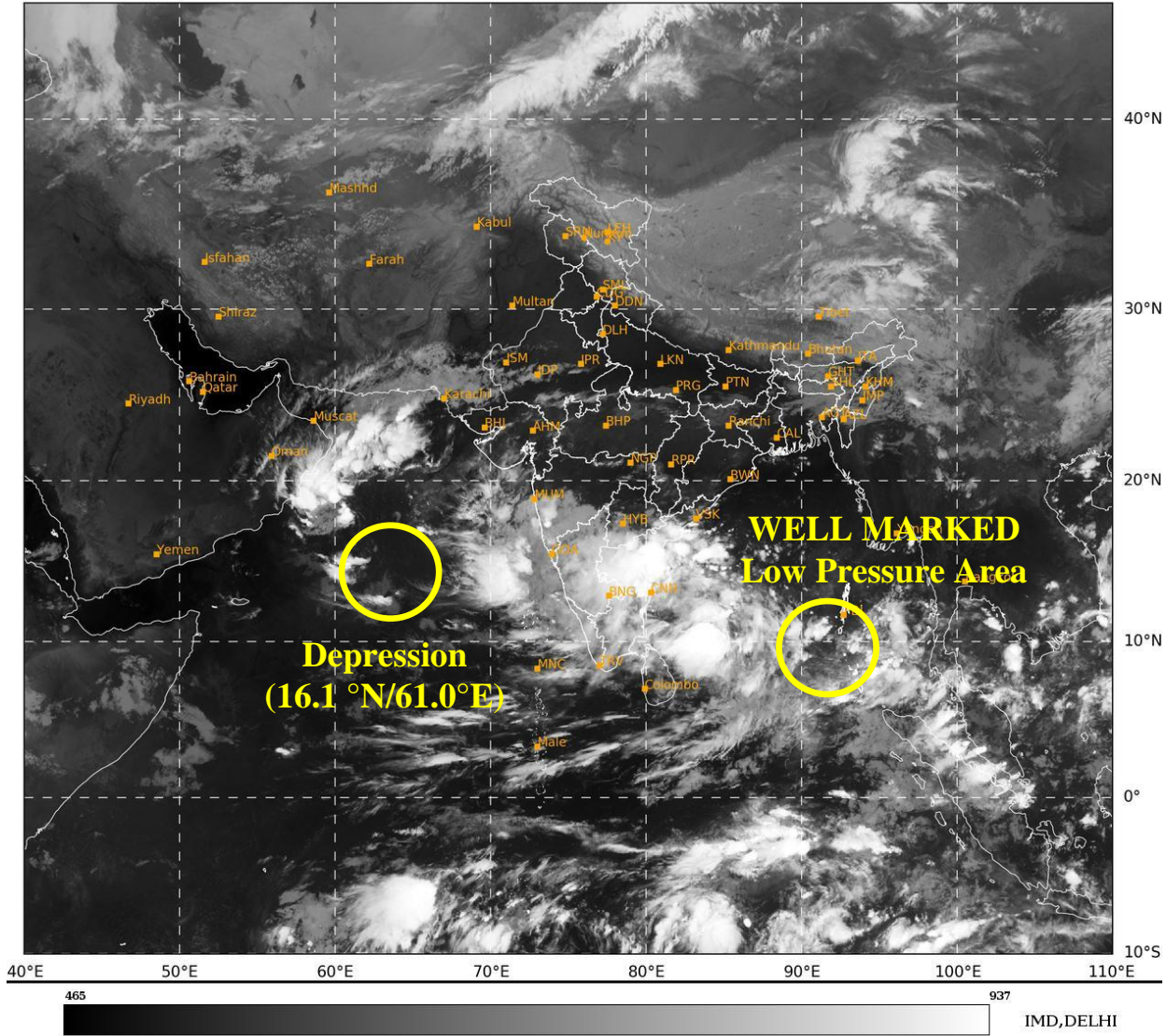
LOW-LEVEL VORTICITY IS AROUND 50×10^{-5} OVER THE SYSTEM AREA WITH VERTICAL EXTENSION UPTO 500 HPA LEVEL. LOW-LEVEL CONVERGENCE IS AROUND $5 \times 10^{-5} \text{S}^{-1}$ OVER SYSTEM AREA. POSITIVE UPPER-LEVEL DIVERGENCE IS AROUND $10 \times 10^{-5} \text{S}^{-1}$ TO THE NORTHWEST OF SYSTEM AREA. DEEP LAYER WIND SHEAR (VWS) IS MODERATE (15 KNOTS) OVER SYSTEM AREA AND ALONG THE EXPECTED PATH. LOW LEVEL WINDS INDICATE WELL DEFINED CIRCULATION OVER WESTCENTRAL ARABIAN SEA. MULTI-SATELLITE WINDS INDICATE STRONGER WINDS IN THE NORTHEAST SECTOR. UPPER TROPOSPHERIC RIDGE RUNS ALONG 20°N. THE SYSTEM IS LIKELY TO MOVE NEARLY WESTWARD. VARIOUS ENVIRONMENTAL FEATURES ARE NOT FAVOURABLE FOR FURTHER MAINTENANCE OF INTENSITY OF SYSTEM AND WILL WEAKEN GRADUALLY AS IT WILL ENCOUNTER COOLER SST NEAR OMAN COAST.

MOST OF THE MODELS ARE INDICATING WEST-NORTHWESTWARDS MOVEMENT TOWARDS OMAN COAST AND WEAKENING INTO A WELL MARKED LOW PRESSURE AREA DURING NEXT 24 HOURS.

CONSIDERING ALL ENVIRONMENTAL FEATURES AND MODEL GUIDANCE, THE SYSTEM IS LIKELY TO MOVE NEARLY WESTWARDS TOWARDS OMAN COAST AND WEAKEN GRADUALLY INTO A WELL-MARKED LOW PRESSURE AREA DURING NEXT 12 HOURS.

THE NEXT BULLETIN WILL BE ISSUED AT 0700 UTC BASED ON 0300 UTC OF 15TH OCTOBER, 2024.

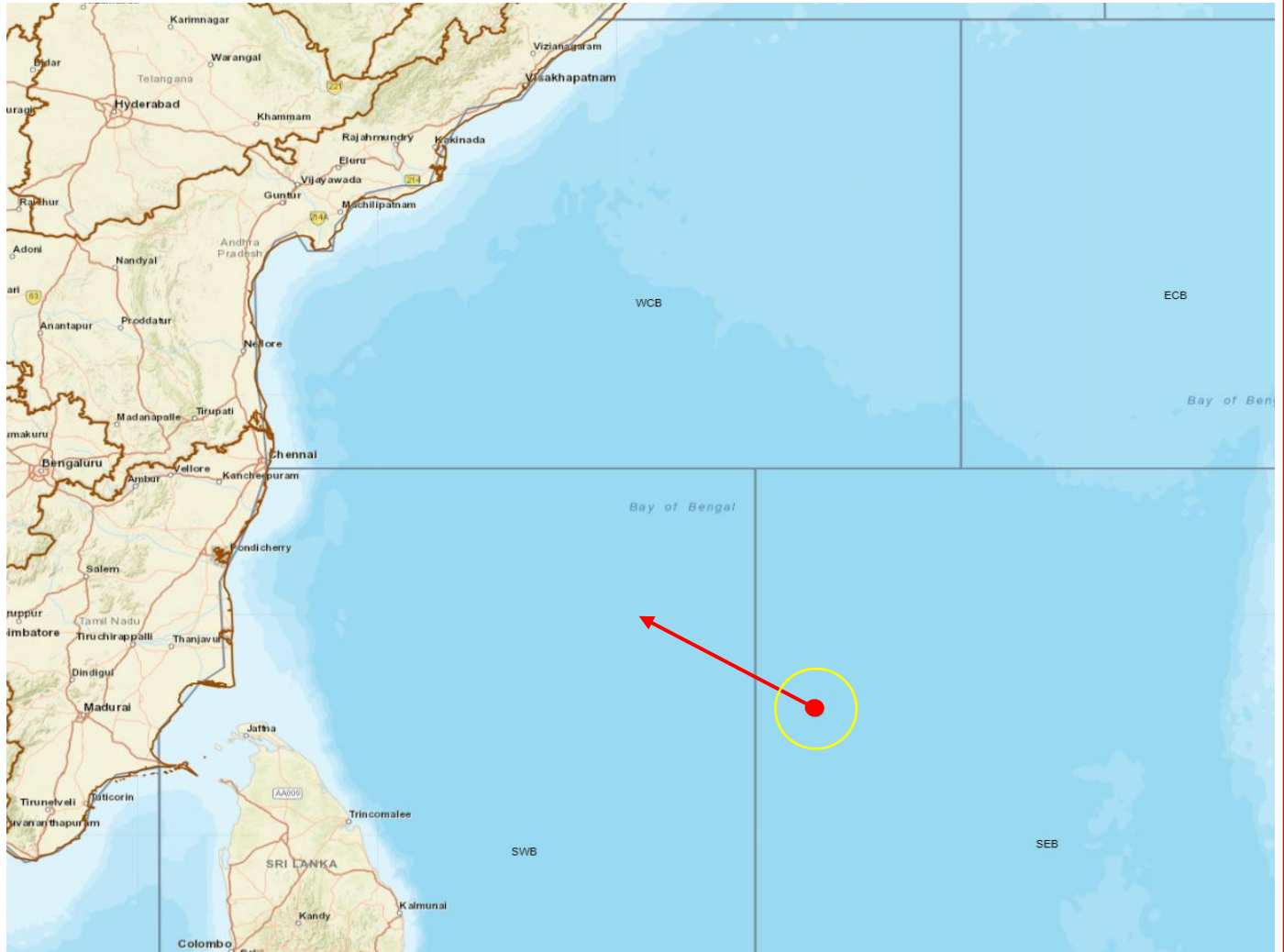
(DR. JOHNY C J)
SC. D, RSMC, NEW DELHI



Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
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WELL MARKED LOW PRESSURE AREA OVER CENTRAL PART OF SOUTH BAY OF BENGAL BASED ON 0000 UTC (0530 Hrs. IST) OF 15th OCTOBER, 2024

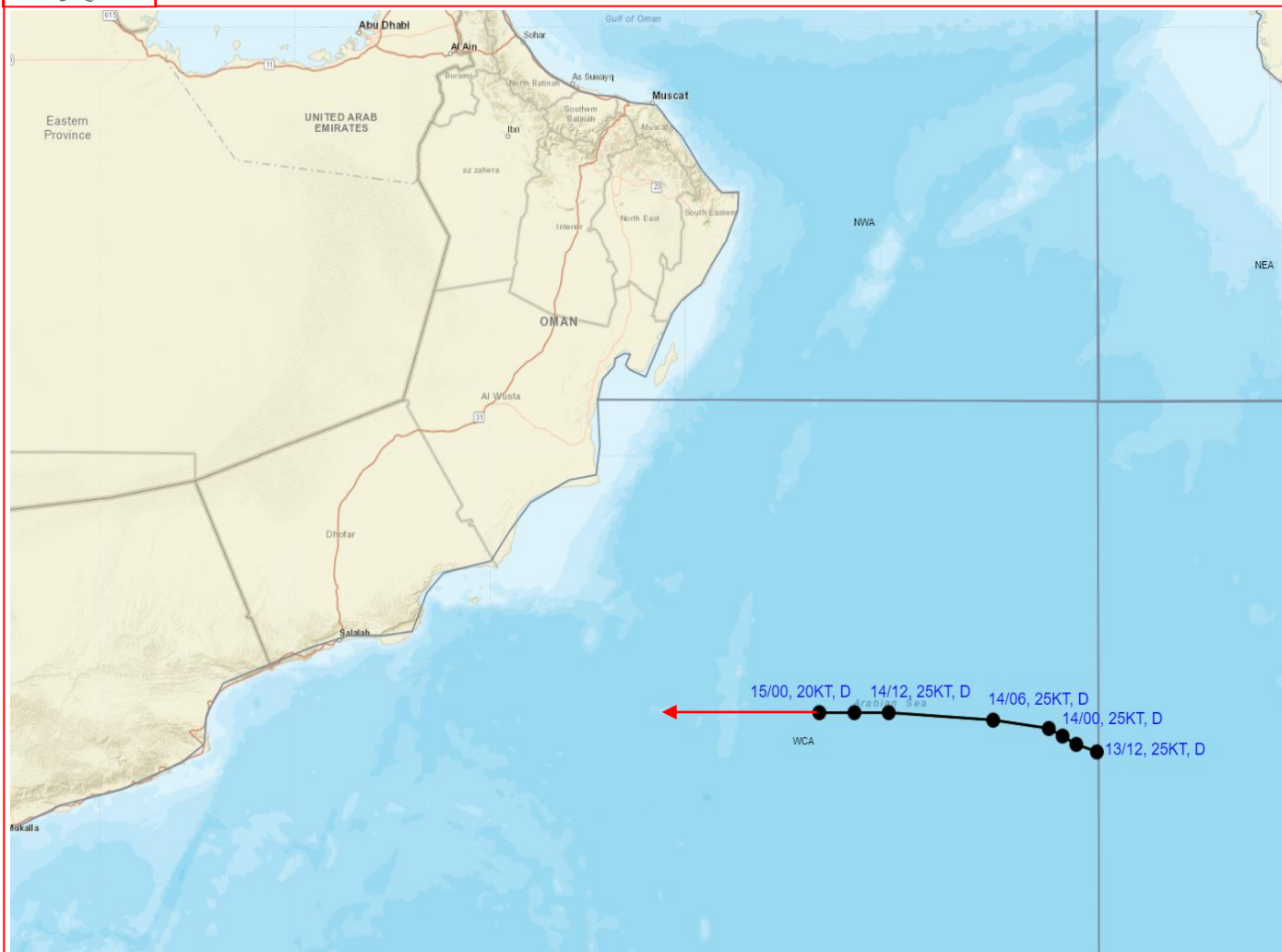


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
 SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

- LESS THAN 34 KT
- 34-47 KT
- ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY



OBSERVED AND FORECAST TRACK OF DEPRESSION OVER WESTCENTRAL ARABIAN SEA OFF OMAN COAST BASED ON 0000 UTC (0530 Hrs. IST) OF 15th OCTOBER, 2024



DATE/TIME IN UTC
IST=UTC + 0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
SuCS: SUPER CYCLONIC STORM (\geq 120 KT)

- LESS THAN 34 KT
- 34-47 KT
- \geq 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

Fishermen Warning Graphics

