



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 14.10.2024

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 1500 UTC OF 14.10.2024 BASED ON 1200 UTC OF 14.10.2024.

BAY OF BENGAL:

SUB: LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL

THE LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL PERSISTED OVER THE SAME REGION AT 1200 UTC OF TODAY, THE 14TH OCTOBER 2024.

IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND BECOME WELL MARKED LOW PRESSURE AREA OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL BY 15TH OCTOBER. THEREAFTER, IT IS LIKELY TO CONTINUE TO MOVE WEST-NORTHWESTWARDS TOWARDS NORTH TAMIL NADU, PUDUCHERRY AND ADJOINING SOUTH ANDHRA PRADESH COASTS DURING SUBSEQUENT 2 DAYS.

AT 1200 UTC, ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL BAY OF BENGAL & ADJOINING EQUATORIAL INDIAN OCEAN AND TENASSERIM COAST (MINIMUM CLOUD TOP TEMPERATURE IS MINUS 75-93 DEG CEL). SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER EAST CENTRAL BAY OF BENGAL, ARAKAN COAST & ANDAMAN SEA.

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

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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ANDHRA PRADESH COASTS TILL 0300 UTC OF 17TH OCTOBER AND IMPROVE GRADUALLY THEREAFTER.

(III) FISHERMEN WARNING:

FISHERMEN ARE ADVISED NOT TO VENTURE INTO

- SOUTHEAST AND ADJOINING CENTRAL BAY OF BENGAL DURING 14TH TO 15TH OCTOBER.
- SOUTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL FROM 15TH TO 17TH OCTOBER.
- FISHERMEN OUT AT SEA ARE ADVISED TO RETURN TO COASTS BY TODAY, THE 14TH OCTOBER.

***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 CENTRAL ARABIAN SEA MOVED NEARLY WEST-NORTHWESTWARDS WITH A SPEED OF 27 KMPH DURING PAST 6 HOURS, AND LAY CENTRED AT 1200 UTC OF TODAY, THE 14TH OCTOBER, 2024 OVER THE WEST CENTRAL ARABIAN SEA OFF OMAN COAST NEAR LATITUDE 16.1°N AND LONGITUDE 62.0°E, ABOUT 600 KM SOUTH-SOUTHEAST OF MASIRAH (41288, OMAN), 850 KM EAST OF SALALAH (41316, OMAN) AND 1060 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 12 HOURS.

LATEST SATELLITE IMAGERY AT 1200 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 11.0N TO 23.0N AND LONGITUDE 58.0E TO 68.0E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 75-93 DEG CELSIUS.

THE ASSOCIATED ESTIMATED CENTRAL PRESSURE IS 1006 HPA WITH MAXIMUM SUSTAINED WIND SPEED ASSOCIATED WITH THE SYSTEM IS 25 KTS GUSTING TO 35 KTS.

WARNINGS:

(I) WIND WARNING:

- SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL OVER CENTRAL PARTS OF ARABIAN SEA TILL 1200 UTC OF 14TH OCTOBER AND DECREASE GRADUALLY THEREAFTER.
- SQUALLY WIND SPEED REACHING 35-45 KMPH GUSTING TO 55 KMPH IS LIKELY TO PREVAIL OVER ADJOINING CENTRAL PARTS OF NORTH ARABIAN SEA TILL 1200 UTC OF 14TH OCTOBER AND DECREASE GRADUALLY THEREAFTER.

- SQUALLY WIND SPEED REACHING 35-45 KMPH GUSTING TO 55 KMPH IS LIKELY TO PREVAIL OVER WESTCENTRAL ARABIAN SEA FROM 1800 UTC OF 14TH TILL 0000 UTC OF 16TH AND DECREASE GRADUALLY THEREAFTER.

(II) SEA CONDITION:

- ROUGH SEA CONDITIONS IS LIKELY TO PREVAIL OVER CENTRAL PARTS OF ARABIAN SEA TILL 1200 UTC OF 14TH AND IMPROVE THEREAFTER.
- ROUGH SEA CONDITION IS LIKELY OVER CENTRAL PARTS OF NORTH ARABIAN SEA TILL 1200 UTC OF 14TH.
- ROUGH SEA CONDITION IS LIKELY TO PREVAIL ONLY OVER WESTCENTRAL ARABIAN SEA FROM 1800 UTC OF 14TH TO 0000 UTC OF 16TH OCTOBER.

(III) FISHERMEN WARNING:

FISHERMEN ARE ADVISED NOT VENTURE INTO

- CENTRAL AND ADJOINING NORTH ARABIAN SEA TILL 1200 UTC OF 14TH OCTOBER.
- WESTCENTRAL ARABIAN SEA TILL 0000 UTC 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 10-15X10⁻⁵ S-1 IS SEEN OVER SOUTHWEST BOB AND ANOTHER 15-20X10⁻⁵ S-1 OVER SOUTHEAST BOB. POSITIVE UPPER-LEVEL DIVERGENCE IS AROUND 10-20X10⁻⁵ S-1 OVER SOUTH BOB & ADJOINING EQUATORIAL INDIAN OCEAN AND ANOTHER ZONE OF 30X10⁻⁵ S-1 IS SEEN OVER NORTH TAMILNADU & ADJOINING SOUTH ANDHRA PRADESH COAST, VERTICAL WIND SHEAR (VWS) IS LOW (10-15 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 CYCLONIC CIRCULATION OVER SOUTHEAST BOB AT 14/00. 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. AS A DD AND FURTHER INTENSIFICATION INTO A VERY SEVERE CYCLONIC STORM. IT IS INDICATING THE SYSTEM TO MOVE WEST-NORTHWESTWARDS AND CROSS OMAN COAST AS A VSCS ON 23RD OCT.

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 AN LPA ON 14/06 OVER SOUTHEAST BOB NEAR 10/89.1. IT IS INDICATING WEST-NORTHWESTWARDS MOVEMENT OF SYSTEM AND ITS INTENSIFICATION INTO DEPRESSION ON 16/00 NEAR 12.1/83.8. HOWEVER, IT IS INDICATING THE SYSTEM TO CROSS SOUTH ANDHRA PRADESH COAST NEAR 14.3/80.4 ON 17/12 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 LOW PRESSURE AREA OVER SOUTHEAST BOB (9.0/89.2) AT 14/06 UTC. IT IS INDICATING DEPRESSION AT 15/12 UTC OVER SOUTHWEST BOB (11.6/86.8). THE SYSTEM IS INDICATED TO REACH NEAR TAMIL NADU COAST ON 17TH OCT AND MOVE ALONG COAST TILL 19/18 UTC. IT IS INDICATING THE SYSTEM TO CROSS COAST NEAR 14.7/80.4 AS A LOW PRESSURE AREA.

MULTI MODEL CONSENSUS INDICATE, THE EXISTING LOW PRESSURE AREA OVER SOUTHEAST BOB TO BECOME A WELL MARKED LOW PRESSURE AREA AROUND 15/03 UTC AND A DEPRESSION AROUND 15/12 UTC NEAR 10.9/86.3 OVER CENTRAL PARTS OF SOUTH BOB. CROSSING NEAR 13.6/80.3 CLOSE TO CHENNAI AROUND 17/12-18/00 UTC AS A WML/D.

CONSIDERING ALL ENVIRONMENTAL FEATURES AND MODEL GUIDANCE, THE SYSTEM IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND BECOME WELL MARKED LOW PRESSURE AREA OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL BY 15TH OCTOBER. THEREAFTER, IT IS LIKELY TO CONTINUE TO MOVE WEST-NORTHWESTWARDS TOWARDS NORTH TAMIL NADU, PUDUCHERRY AND ADJOINING SOUTH ANDHRA PRADESH COASTS DURING SUBSEQUENT 2 DAYS.

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.

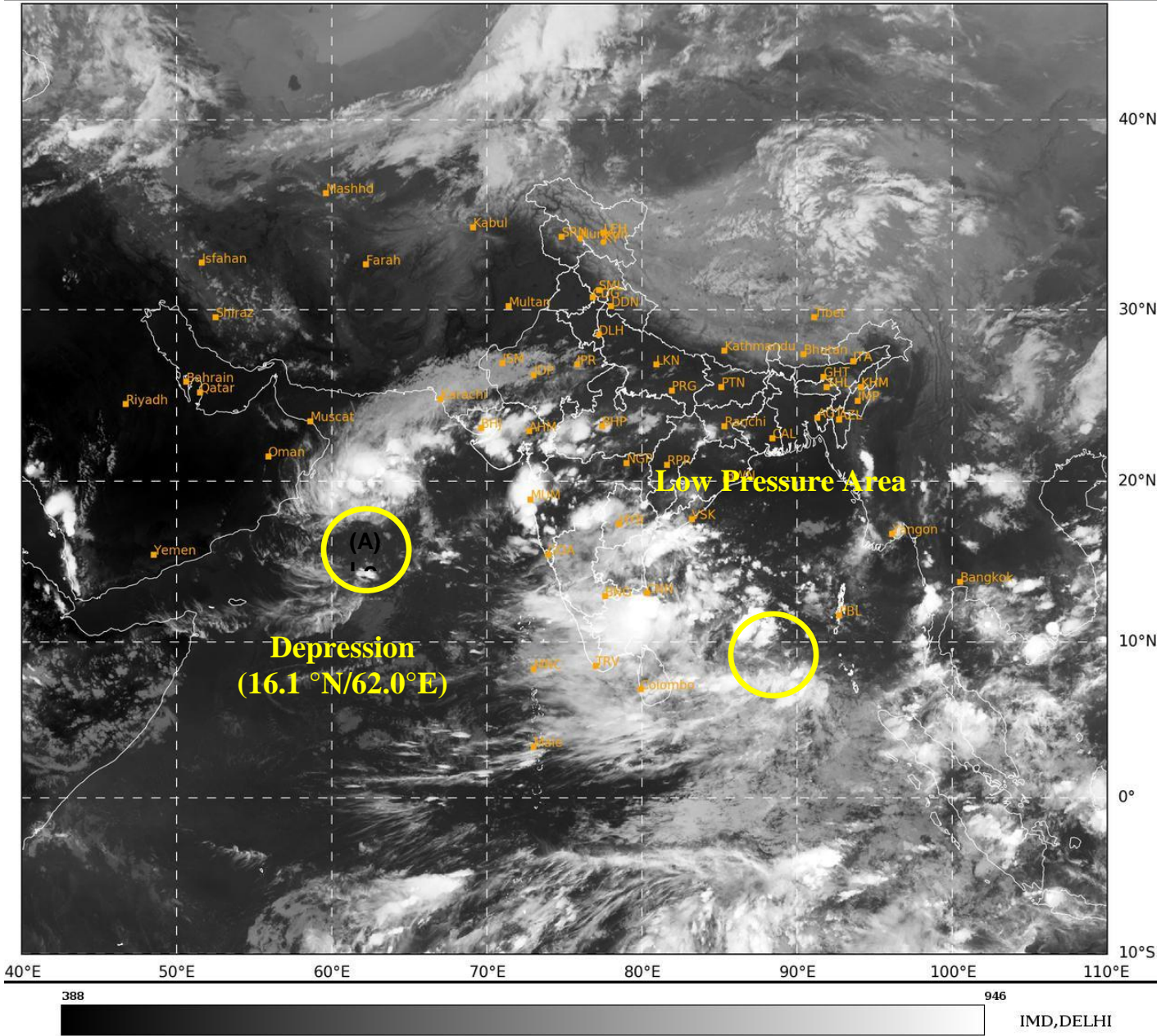
LOW-LEVEL VORTICITY IS AROUND 50×10^{-5} OVER THE SYSTEM AREA WITH VERTICAL EXTENSION UPTO 500 HPA LEVEL. LOW-LEVEL CONVERGENCE IS AROUND $10 \times 10^{-5} \text{ S}^{-1}$ OVER SYSTEM AREA. POSITIVE UPPER-LEVEL DIVERGENCE IS AROUND $20 \times 10^{-5} \text{ S}^{-1}$ TO THE NORTHWEST OF SYSTEM AREA. 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 PRESSRE AREA DURING NEXT 24 HOURS.

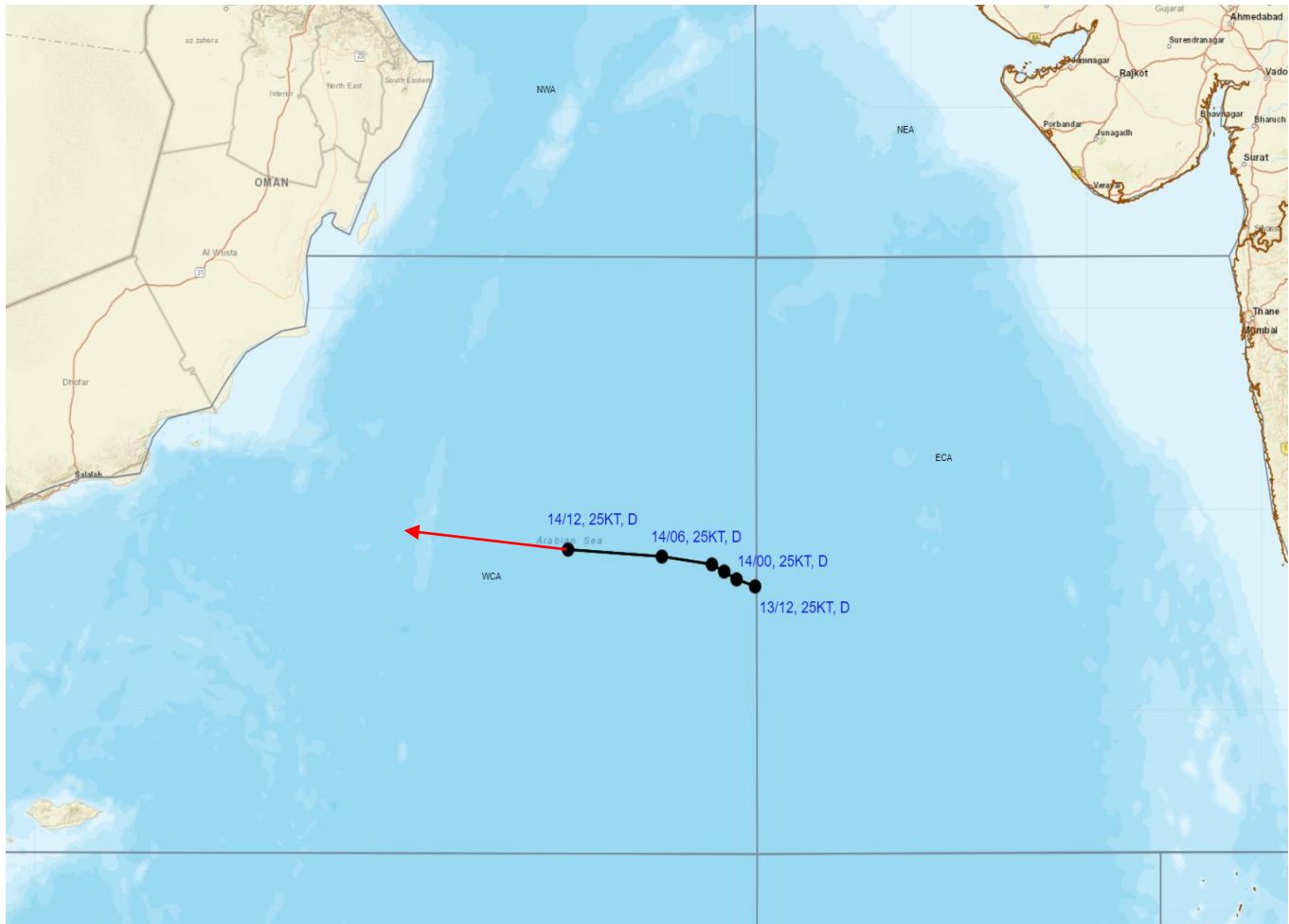
CONSIDERING ALL ENVIRONMENTAL FEATURES AND MODEL GUIDANCE, THE SYSTEM IS LIKELY TO MOVE NEARLY WESTWARDS TOWARDS OMAN COAST AND WEAKEN GRADUALLY INTO A WELL-MARKED LOW PRESSURE AREA DURING NEXT 12 HOURS.

THE NEXT BULLETIN WILL BE ISSUED AT 2100 UTC BASED ON 1800 UTC OF 14TH OCTOBER, 2024.







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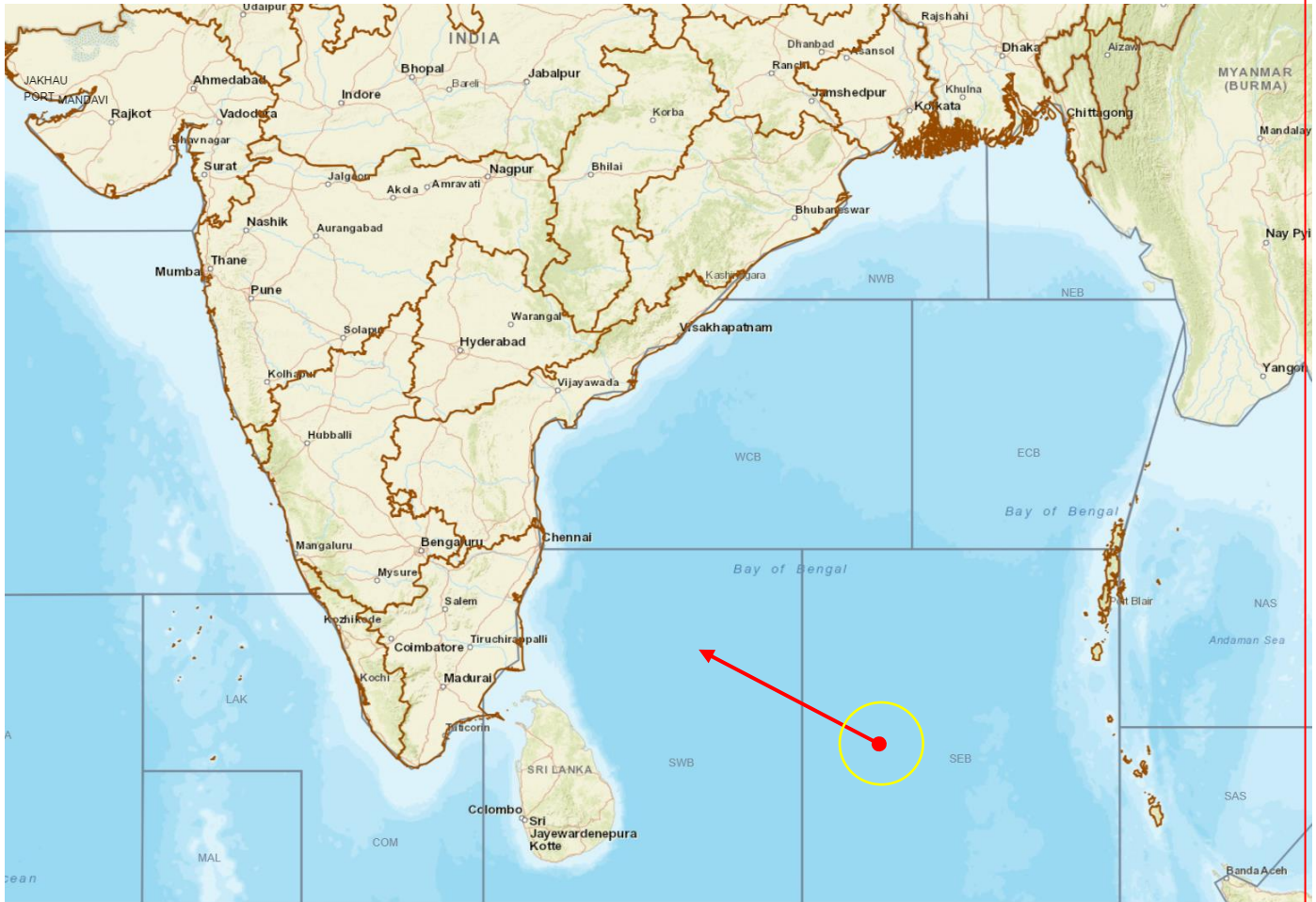
DATE/TIME IN UTC
IST=UTC + 0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119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

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

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LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL BASED ON 1200 UTC (1730 Hrs IST) OF 14th 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 (≥20 KT)

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

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Fishermen Warning Graphics

