



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

**DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 20.10.2023**

**TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 0900 UTC OF 20.10.2023 BASED ON 0600 UTC OF 20.10.2023.**

**SUB: (A) DEPRESSION OVER SOUTHWEST ARABIAN SEA AND (B) LOW PRESSURE AREA OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL**

**(A) DEPRESSION OVER SOUTHWEST ARABIAN SEA**

THE DEPRESSION OVER SOUTHWEST ARABIAN SEA MOVED WESTWARDS WITH A SPEED OF 7 KMPH DURING PAST 3 HOURS AND LAY CENTERED AT 0600 UTC OF TODAY, THE 20<sup>TH</sup> OCTOBER OVER THE SAME REGION, NEAR LATITUDE 9.3°N AND LONGITUDE 61.5°E ABOUT 900 KM EAST-SOUTHEAST OF SOCOTRA (YEMEN, 41494), 1170 KM SOUTHEAST OF SALALAH AIRPORT (OMAN, 41316) AND 1260 KM EAST-SOUTHEAST OF AL GHADAH (YEMEN, 41398).

IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM OVER SOUTHWEST ARABIAN SEA DURING NEXT 24 HOURS. CONTINUING TO MOVE WEST-NORTHWESTWARDS, IT IS LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM AROUND 1200 UTC OF 22<sup>ND</sup> OCTOBER. THEREAFTER, IT WOULD MOVE NORTH-NORTHWESTWARDS FROM 0000 UTC OF 24<sup>TH</sup> OCTOBER TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS.

FORECAST TRACK AND INTENSITY OF THE SYSTEM IS GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
20.10.23/0600	9.3/61.5	45-55 gusting to 65	Depression
20.10.23/1200	9.4/61.2	50-60 gusting to 70	Deep Depression
20.10.23/1800	9.7/60.8	55-65 gusting to 75	Deep Depression
21.10.23/0000	10.0/60.3	60-70 gusting to 80	Cyclonic Storm
21.10.23/0600	10.4/59.6	70-80 gusting to 90	Cyclonic Storm
21.10.23/1800	11.4/58.1	75-85 gusting to 95	Cyclonic Storm
22.10.23/0600	12.5/56.7	80-90 gusting to 100	Cyclonic Storm
22.10.23/1800	13.6/55.4	90-100 gusting to 110	Severe Cyclonic Storm
23.10.23/0600	14.3/54.7	95-105 gusting to 115	Severe Cyclonic Storm
23.10.23/1800	15.0/54.2	105-115 gusting to 125	Severe Cyclonic Storm
24.10.23/0600	15.7/53.9	95-105 gusting to 115	Severe Cyclonic Storm
24.10.23/1800	16.5/53.8	85-95 gusting to 105	Severe Cyclonic Storm
25.10.23/0600	17.3/53.8	70-80 gusting to 90	Cyclonic Storm

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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AS PER INSAT 3D IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 1.5. SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHWEST ARABIAN SEA BETWEEN LATTITUDE 7.0N & 12.0N AND LONGITUDE 59.0E & 63.5E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 81<sup>0</sup>C.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 30 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1004 HPA. SEA CONDITION IS ROUGH TO VERY ROUGH OVER SOUTHWEST ARABIAN SEA AND ADJOINING WESTCENTRAL ARABIAN SEA. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN NORTHWEST SECTOR. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE SYSTEM CORE.

**(B) LOW PRESSURE AREA OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL**

THE LOW PRESSURE AREA OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL PERSISTS AND LAY CENTERED AT 0600 UTC OF TODAY, THE 20TH OCTOBER, 2023 OVER THE SAME REGION. IT IS LIKELY TO INTENSIFY INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL AROUND 22ND OCTOBER.

BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL BETWEEN LATTITUDE 10.0N & 14.0N AND LONGITUDE 84.0E & 90.0E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 66<sup>0</sup>C.

**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	HIGH	-	-	-

“-“ INDICATE THAT CYCLOGENESIS HAS ALREADY OCCURRED. THE ABOVE TABLE INDICATES PROBABILITY OF CYCLOGENESIS ONLY (FORMATION OF DEPRESSION).

**Remarks:**

**ARABIAN SEA:**

MADDEN JULIAN OSCILLATION INDEX IS IN PHASE 1 WITH AMPLITUDE LESS THAN 1. IT WOULD MOVE TO PHASE 8 FROM TOMORROW ONWARDS. SEA SURFACE TEMPERATURE IS 29-30<sup>0</sup>C OVER SOUTH & WEST ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS 60-80KJ/CM<sup>2</sup> OVER SOUTHEAST & ADJOINING SOUTHWEST ARABIAN SEA. IT WOULD DECREASE BECOMING 20-30 KJ/CM<sup>2</sup> OVER SOUTHWEST & WESTCENTRAL ARABIAN SEA.

THE LOW LEVEL POSITIVE IS SAME 100 X10<sup>-6</sup>S<sup>-1</sup> DURING PAST 03 HOURS AND IT LAY TO THE SOUTHEAST OF SYSTEM AREA WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE IS SAME AND ABOUT 10X10<sup>-5</sup>S<sup>-1</sup> TO THE SOUTHWEST OF SYSTEM AREA AND ANOTHER TO THE SOUTHEAST OF SYSTEM CENTRE. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 20 X10<sup>-5</sup> S<sup>-1</sup> TO

THE SOUTH OF SYSTEM AREA. STRONG EQUATORWARD OUTFLOW IS INDICATED WHICH WOULD SUPPORT FURTHER INTENSIFICATION OF SYSTEM. WIND SHEAR IS MODERATE (10--20) OVER SYSTEM AREA AND ALONG THE EXPECTED TRACK. UPPER TROPOSPHERIC RIDGE RUNS NEAR 14<sup>0</sup>N. EAST-SOUTHEASTERLY IN THE UPPER TROPOSPHERIC LEVELS ARE STEERING THE SYSTEM WEST-NORTHWESTWARDS.

THE MULTI MODEL GUIDANCE IS INDICATING THE SYSTEM TO MOVE WEST-NORTHWESTWARDS TOWARDS OMAN-YEMEN COASTS AND GRADUAL NORTH-NORTHEASTWARDS RECURVATURE THEREAFTER. MOST OF THE MODELS ARE INDICATING THE SYSTEM TO CROSS OMAN COAST (EXCEPT ECMWF WHICH IS INDICATING CROSSING OVER YEMEN). MODELS ARE ALSO SUGGESTING SLIGHT WEAKENING PRIOR TO LANDFALL. THIS IS SUPPORTED BY DECREASING OCEAN THERMAL ENERGY AND INCREASING WIND SHEAR OVER WESTCENTRAL ARABIAN SEA ALONG & OFF OMAN-YEMEN COASTS.

CONSIDERING ALL THESE, THE DEPRESSION OVER SOUTHWEST ARABIAN SEA IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM OVER THE SAME REGION DURING NEXT 24 HOURS. CONTINUING TO MOVE WEST-NORTHWESTWARDS, IT IS LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM AROUND 1200 UTC OF 22ND OCTOBER. THEREAFTER, IT WOULD MOVE NORTH-NORTHWESTWARDS FROM 24TH MORNING (0000 UTC) TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS.

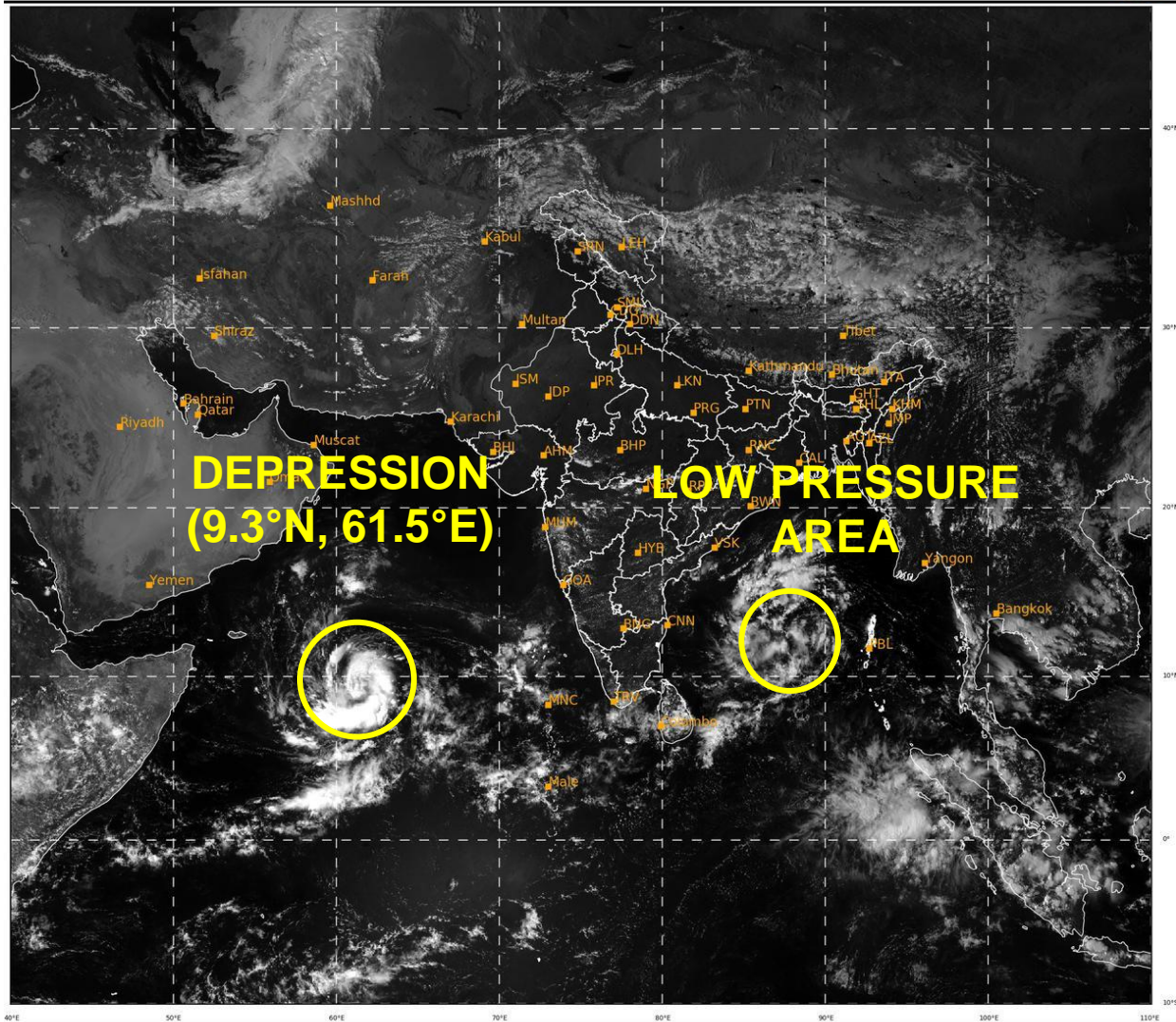
#### **BAY OF BENGAL:**

MJO IS NOT SUPPORTIVE FOR CYCLOGENESIS OVER BOB. HOWEVER, WARM SST AND LOW TO MODERATE VERTICAL WIND SHEAR OVER SOUTH & CENTRAL BOB ARE LIKELY TO SUPPORT THE DEVELOPMENT OF CYCLONIC CIRCULATION OVER SOUTHEAST BOB INTO A DEPRESSION.

THE GLOBAL MODELS ARE IN AGREEMENT THAT THE CYCLONIC CIRCULATION OVER SOUTHEAST BAY OF BENGAL IS LIKELY TO INTENSIFY FURTHER INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL AROUND 23<sup>RD</sup>. HENCE MODERATE TO HIGH PROBABILITY OF FORMATION OF DEPRESSION IS ASSIGNED TO FORMATION OF DEPRESSION OVER BOB DURING 22<sup>ND</sup> – 23<sup>RD</sup> OCTOBER. THERE IS CONSENSUS AMONG VARIOUS MODELS ABOUT THE MOVEMENT TOWARDS BANGLADESH COAST. PEAK INTENSIFICATION IS LIKELY UPTO DEEP DEPRESSION STAGE ONLY.

CONSIDERING ALL THESE, THE LOW PRESSURE AREA OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL IS LIKELY TO INTENSIFY FURTHER INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL AROUND 23RD OCTOBER.

(M SHARMA)  
SCIENTIST-D  
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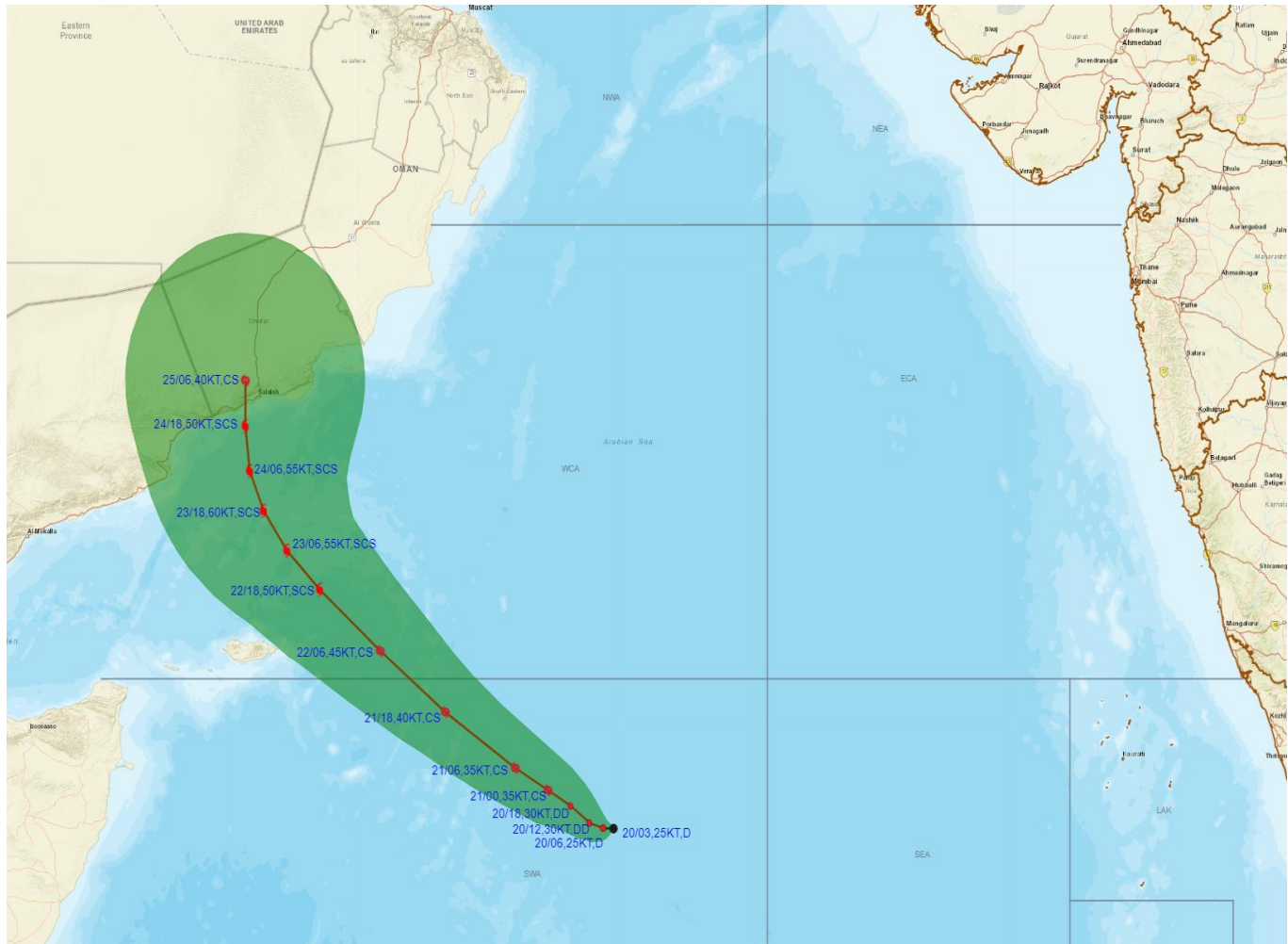
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IMD, DELHI



**OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF DEPRESSION OVER SOUTHWEST ARABIAN SEA BASED ON 0600 UTC (1130 IST) OF 20<sup>TH</sup> OCTOBER 2023.**



**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

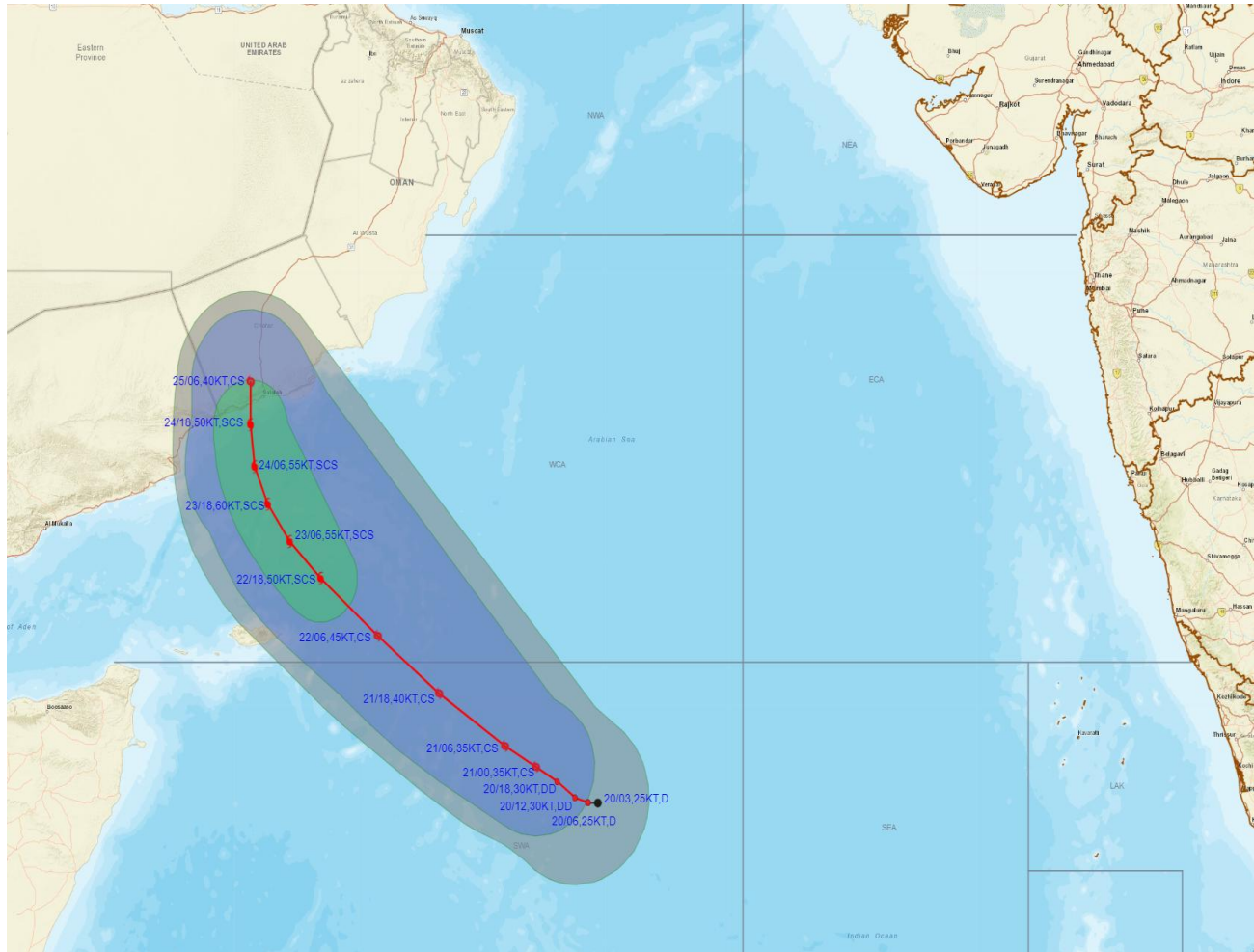
FORECAST TRACK

CONE OF UNCERTAINTY

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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# OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEPRESSION OVER SOUTHWEST ARABIAN SEA BASED ON 0600 UTC (1130 IST) OF 20TH OCTOBER 2023.



**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)**

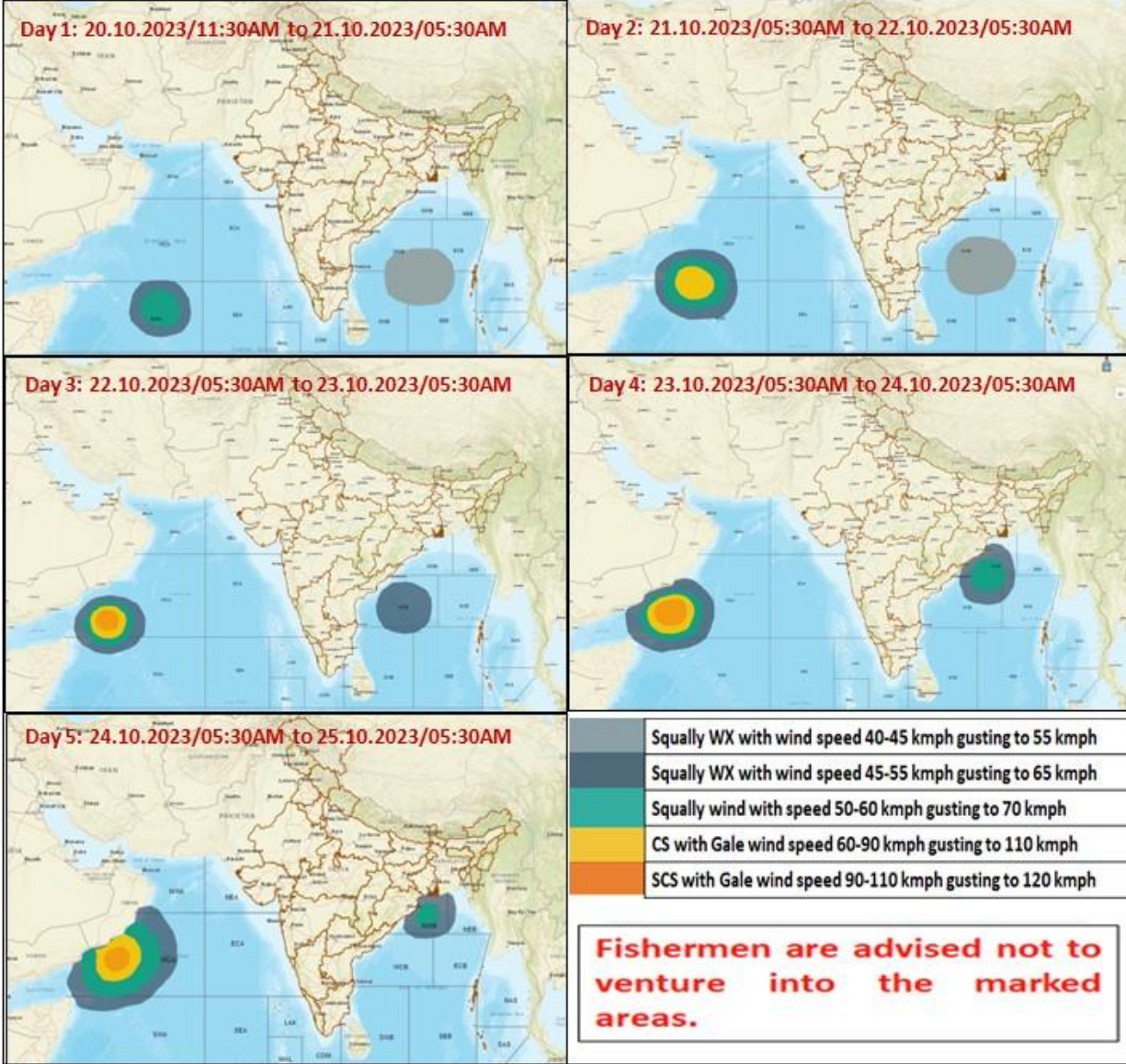
● LESS THAN 34 KT  
 ○ 34-47 KT  
 ⊙ ≥ 48 KT  
 — OBSERVED TRACK  
 — FORECAST TRACK  
 ▲ CONE OF UNCERTAINTY  
**AREA OF MAXIMUM SUSTAINED WIND SPEED:**  
 ■ 28-33 KT (52-61 KMPH)  
 ■ 34-49 KT (62-91 KMPH)  
 ■ 50-63 KT (92-117 KMPH)  
 ■ ≥ 64 KT (≥118 KMPH)

### IMPACT OVER THE SEA

MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

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## Fishermen warning graphics



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