



**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 2000 UTC OF 20.10.2023 BASED ON 1800 UTC OF 20.10.2023.

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

(A) DEEP DEPRESSION OVER SOUTHWEST ARABIAN SEA

THE DEPRESSION OVER SOUTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 11 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 1800 UTC OF 20TH OCTOBER OVER THE SAME REGION, NEAR LATITUDE 9.5°N AND LONGITUDE 60.7°E ABOUT 820 KM EAST-SOUTHEAST OF SOCOTRA (YEMEN, 41494), 1150 KM SOUTH-SOUTHEAST OF SALALAH AIRPORT (OMAN, 41316) AND 1180 KM EAST-SOUTHEAST OF AL GHAI DAH (YEMEN, 41398).

IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM OVER SOUTHWEST ARABIAN SEA DURING NEXT 06 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 0000 UTC OF 24TH MORNING TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS AND CROSS OMAN-YEMEN COASTS BETWEEN SALALAH (OMAN) AND AL GHAI DAH (YEMEN).

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
20.10.23/1800	9.5/60.7	55-65 GUSTING TO 75	DEEP DEPRESSION
21.10.23/0000	9.9/60.2	60-70 GUSTING TO 80	CYCLONIC STORM
21.10.23/0600	10.4/59.6	70-80 GUSTING TO 90	CYCLONIC STORM
21.10.23/1200	10.8/58.9	75-85 GUSTING TO 95	CYCLONIC STORM
21.10.23/1800	11.3/58.2	80-90 GUSTING TO 100	CYCLONIC STORM
22.10.23/0600	12.5/56.8	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
22.10.23/1800	13.5/55.6	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
23.10.23/0600	14.3/54.8	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
23.10.23/1800	15.0/54.3	105-115 GUSTING TO 125	SEVERE CYCLONIC STORM
24.10.23/0600	15.7/54.0	95-100 GUSTING TO 110	SEVERE CYCLONIC STORM
24.10.23/1800	16.6/53.7	80-90 GUSTING TO 100	CYCLONIC STORM
25.10.23/0600	17.3/53.9	65-75 GUSTING TO 85	CYCLONIC STORM
25.10.23/1800	17.9/54.7	55-65 GUSTING TO 75	DEEP DEPRESSION

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 NO. 2.0. SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHWEST ARABIAN SEA BETWEEN LATTITUDE 6.0 & 13.0N AND LONGITUDE 57.5E & 65.0E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 92⁰C.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1002 HPA. SEA CONDITION IS VERY ROUGH TO HIGH 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 OVER THE SAME REGION AT 1800 UTC OF 20TH OCTOBER, 2023. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL AROUND 22ND OCTOBER. THEREAFTER, IT IS LIKELY TO MOVE NORTH-NORTHEASTWARDS TOWARDS BANGLADESH AND ADJOINING WEST BENGAL COASTS DURING SUBSEQUENT 3 DAYS.

BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL BETWEEN LATTITUDE 10.0N & 18.0N AND LONGITUDE 83.0E & 90.0E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 82⁰C.

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	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 TODAY ONWARDS. SEA SURFACE TEMPERATURE IS 29-30⁰C OVER SOUTH & WEST ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS 60-80KJ/CM² OVER SOUTHEAST & ADJOINING SOUTHWEST ARABIAN SEA. IT WOULD DECREASE BECOMING 20-30 KJ/CM² OVER SOUTHWEST & WESTCENTRAL ARABIAN SEA.

THE LOW LEVEL POSITIVE HAS FURTHER INCREASED AND IS AROUND 150 X10⁻⁶S⁻¹ AROUND THE SYSTEM CENTER WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE IS ABOUT 20X10⁻⁵S⁻¹ TO THE EAST-SOUTHEASTT OF SYSTEM AREA. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 20

10^{-5} s^{-1} TO THE WEST OF THE SYSTEM AREA. WIND SHEAR IS MODERATE (10--20) OVER SYSTEM AREA AND ALONG THE EXPECTED TRACK AND IT IS MODERATE TO HIGH OVER WESTERN PARTS OF WESTCENTRAL ARABIAN SEA. UPPER TROPOSPHERIC RIDGE RUNS NEAR 15°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.

THE DEEP DEPRESSION OVER SOUTHWEST ARABIAN SEA IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM OVER SOUTHWEST ARABIAN SEA DURING NEXT 06 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 0000 UTC OF 24TH MORNING TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS AND CROSS OMAN-YEMEN COASTS BETWEEN SALALAH (OMAN) AND AL GHAI DAH (YEMEN).

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 LOW PRESSURE AREA OVER BOB INTO A DEPRESSION.

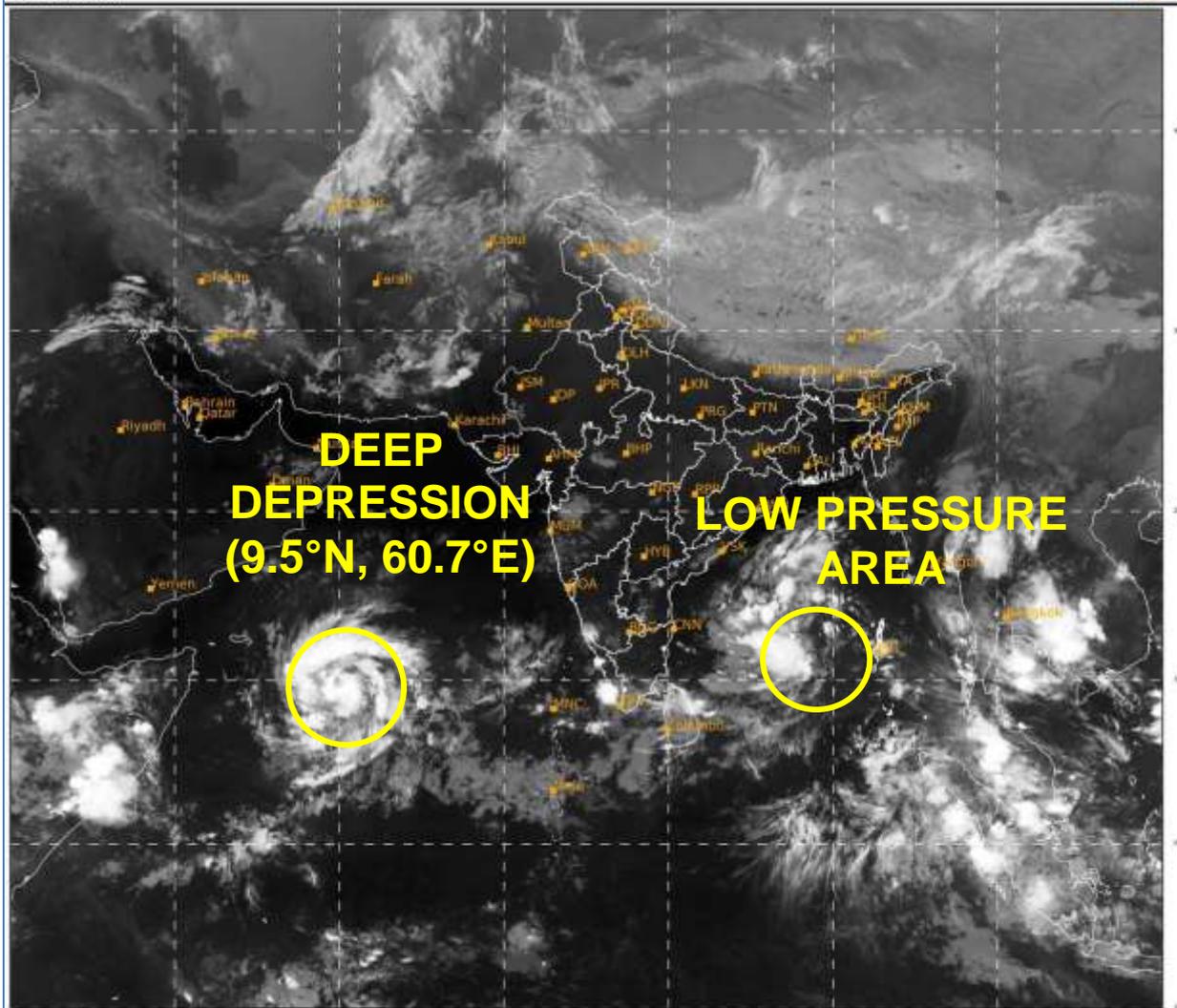
THE GLOBAL MODELS ARE IN AGREEMENT THAT THE LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL IS LIKELY TO INTENSIFY FURTHER INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL AROUND 22ND. HENCE MODERATE TO HIGH PROBABILITY OF FORMATION OF DEPRESSION IS ASSIGNED TO FORMATION OF DEPRESSION OVER BOB DURING 22ND – 23RD OCTOBER. SOME OF THE MODELS ARE SHOWING MOVEMENT TOWARDS BANGLADESH-MYANMAR COASTS. WHILE ECMWF AND GEFS ARE INDICATING MOVEMENT TOWARDS BANGLADESH & ADJOINING WEST BENGAL COASTS. MOST OF THE MODELS ARE INDICATING INTENSIFICATION UPTO DEPRESSION/DEEP DEPRESSION STAGE, HOWEVER ECMWF IS INDICATING HIGHER INTENSITY.

CONSIDERING ALL THESE, THE LOW PRESSURE AREA OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL IS LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL AROUND 22ND OCTOBER. THEREAFTER, IT IS LIKELY TO MOVE NORTH-NORTHEASTWARDS TOWARDS BANGLADESH AND ADJOINING WEST BENGAL COASTS DURING SUBSEQUENT 3 DAYS.

(SHOBHIT KATIYAR)
SCIENTIST-D
RSMC, NEW DELHI

SAT : INSAT-3DR IMG
IMG_TIR1 10.8 um
LIC Mercator

20-10-2023/(1645 to 1712) GMT
20-10-2023/(2215 to 2242) IST



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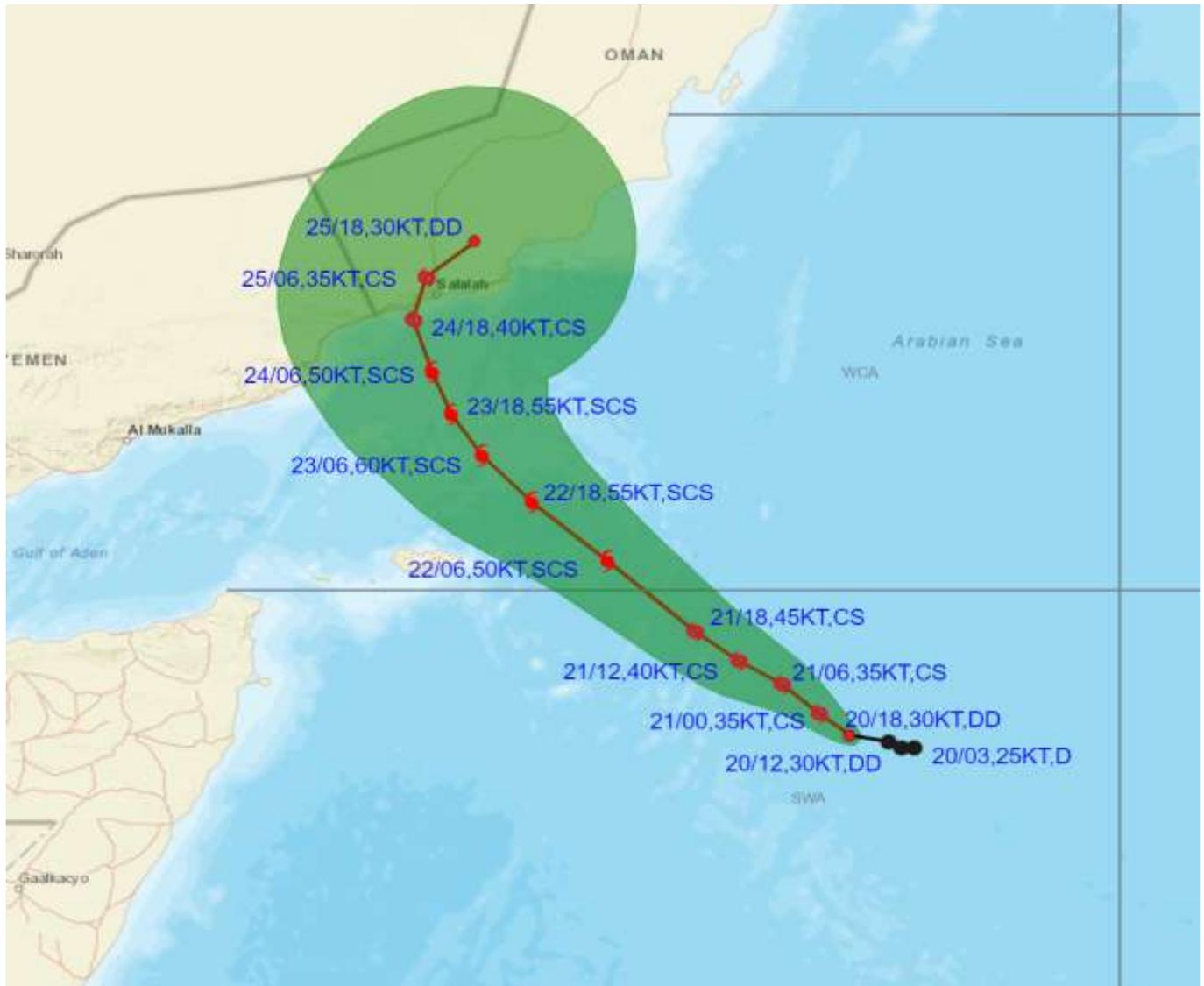
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IMD, DELHI

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
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 CONE OF UNCERTAINTY OF DEEP DEPRESSION OVER SOUTHWEST ARABIAN SEA BASED ON 1800 UTC (2330 IST) OF 20TH OCTOBER 2023.

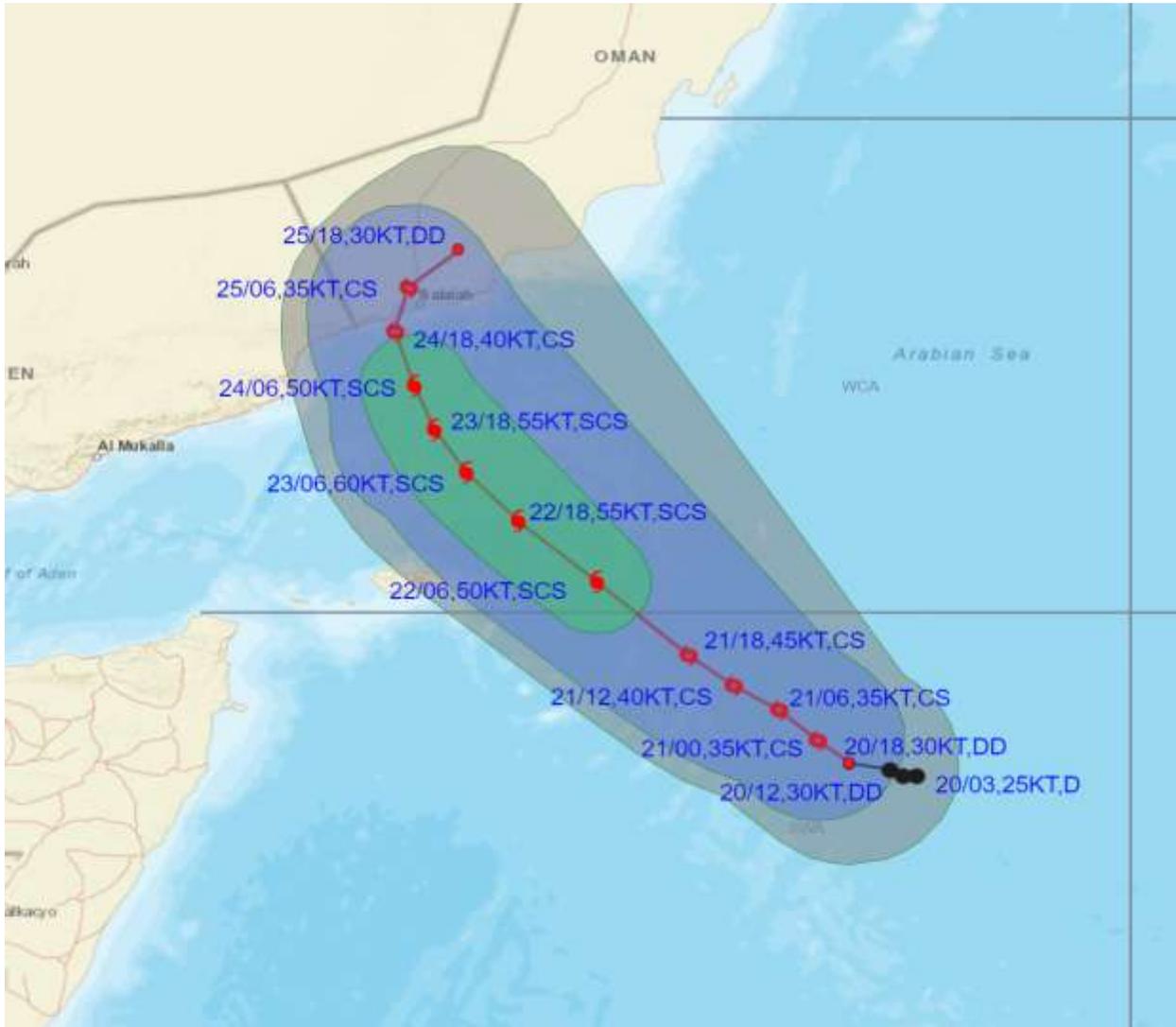


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM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

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



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER SOUTHWEST ARABIAN SEA BASED ON 1800 UTC (2330 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)
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 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
 SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

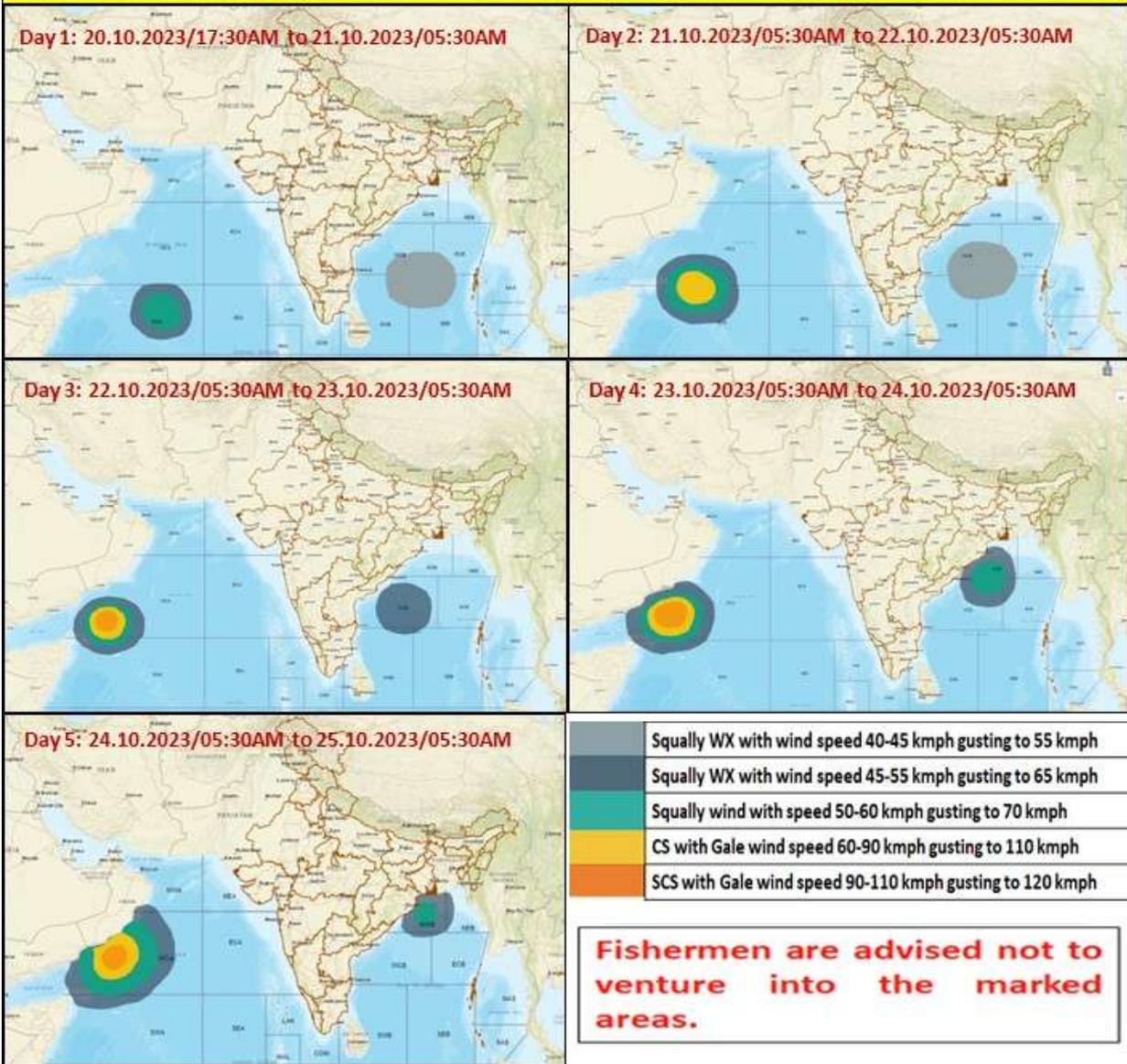
● LESS THAN 34 KT
 ○ 34.47 KT
 ● ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 — CONE OF UNCERTAINTY
 AREA OF MAXIMUM SUSTAINED WIND SPEED:
 ■ 28-33 KT (52-61 KMPH)
 ■ 34-49 KT (62-91 KMPH)
 ■ 50-63 KT (92-117 KMPH)
 ■ ≥ 64 KT (≥118 KMPH)

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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