



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 27.11.2023

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 0800 UTC OF 27.11.2023 BASED ON 0300 UTC OF 27.11.2023.

BAY OF BENGAL:

UNDER THE INFLUENCE OF YESTERDAY'S CYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA AND ADJOINING SOUTH THAILAND, A LOW PRESSURE AREA FORMED OVER SOUTH ANDAMAN SEA & ADJOINING MALACCA STRAIT AT 0300 UTC OF TODAY, THE 27TH NOVEMBER.

IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A DEPRESSION OVER SOUTHEAST BAY OF BENGAL AROUND 29TH NOVEMBER, 2023. THEREAFTER, IT IS LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY FURTHER INTO A CYCLONIC STORM OVER SOUTHEAST BAY OF BENGAL DURING SUBSEQUENT 48 HOURS.

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH ANDAMAN SEA. SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER SOUTH BAY OF BENGAL & REST OF ANDAMAN SEA AND WEAK TO MODERATE CONVECTION LAY OVER CENTRAL BAY OF BENGAL.

LATEST ASCAT PASS AT 0330 UTC INDICATED, SYSTEM CENTRED NEAR 5.8N/99.0E WITH MAXIMUM SUSTAINED WIND SPEED (MSW) OF 15-20 KNOTS IN THE NORTHERN SECTOR. INSAT -3D IMAGERY AT 0300 UTC, INDICATED LOW LEVEL CYCLONIC CENTERED NEAR 7.1N/96.1E. THE SYNOPTIC ANALYSIS ALSO INDICATE LOW PRESSURE AREA OVER SOUTH ANDAMAN SEA AND ADJOINING MALACCA STRAIT.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 10 KNOTS GUSTING TO 20 KNOTS. ESTIMATED CENTRAL PRESSURE IS 1010 HPA. SEA CONDITION IS LIKELY TO BE MODERATE TO ROUGH OVER THE SOUTH ABNDAMAN SEA AND ANDAMAN AND NICOBAR ISLANDS.

PRE-GENESIS TRACK & INTENSITY FORECASTS:

DATE/TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
27.11.23/0300	07.0/97.0	15-25 kmph gusting to 35 kmph	Low Pressure Area
27.11.23/1200	07.4/95.8	20-25 kmph gusting to 35 kmph	Low Pressure Area
28.11.23/0000	07.8/94.6	25-30 kmph gusting to 40 kmph	Well Marked Low Pressure Area
28.11.23/1200	08.2/93.3	30-40 kmph gusting to 50 kmph	Well Marked Low Pressure Area
29.11.23/0000	08.6/91.3	40-50 kmph gusting to 60 kmph	Depression
29.11.23/1200	10.2/89.4	45-55 kmph gusting to 65 kmph	Depression
30.11.23/0000	11.0/88.5	50-60 kmph gusting to 70 kmph	Deep Depression
30.11.23/1200	11.9/87.7	55-65 kmph gusting to 75 kmph	Deep Depression
01.12.23/0000	12.7/86.9	60-70 kmph gusting to 80 kmph	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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ARABIAN SEA:

A CYCLONIC CIRCULATION LAY OVER SOUTHWEST ARABIAN SEA EXTENDING UPTO 3.1 KM ABOVE MEAN SEA LEVEL .

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH ARABIAN SEA. SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER EASTCENTRAL ARABIAN SEA.

***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	NIL	NIL	NIL	NIL	NIL	NIL

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

Remarks:

MADDEN JULIAN OSCILLATION (MJO) IS CURRENTLY IN PHASE 3 WITH AMPLITUDE GREATER THAN 1. IT WOULD MOVE ACROSS PHASES 3 AND 4 WITH AMPLITUDE GREATER THAN 1 DURING 27TH NOVEMBER TO 6TH DECEMBER. THUS, MJO WOULD SUPPORT CYCLOGENESIS OVER THE BAY OF BENGAL (BOB) REGION TILL 6TH DECEMBER. SEA SURFACE TEMPERATURE IS 28-30⁰C OVER MAJOR PARTS OF BOB. TROPICAL CYCLONE HEAT POTENTIAL IS 80-100 KJ/CM² OVER SOUTH ANDAMAN SEA, 100-120 KJ/CM² OVER PARTS OF EASTCENTRAL AND ADJOINING SOUTHEAST BOB. THE NCICS BASED FORECASTS FOR EQUATORIAL WAVES INDICATE STRENGTHENING OF WESTERLY WINDS ALONGWITH PRESENCE OF EQUATORIAL ROSSBY WAVES & MJO OVER SOUTH BOB AND. EASTERLY WINDS (3-5 MPS) OVER CENTRAL BOB DURING 28TH-30TH NOVEMBER. ALL THESE LARGE SCALE FEATURES IS FAVOURABLE FOR CYCLOGENESIS (FORMATION OF DEPRESSION) OVER SOUTHEAST BOB AND ADJOINING ANDAMAN SEA.

CURRENT ENVIRONMENTAL FEATURES INDICATE, POSITIVE LOW LEVEL VORTICITY OF 50-60X10⁻⁶S⁻¹ OVER SOUTH ANDAMNA SEA AND ADJOINING MALACCA STRAIT WITH VERTICAL EXTENSION UPTO 500 HPA LEVEL. POSITIVE LOW LEVEL CONVERGENCE IS ABOUT 10-20 X 10⁻⁵ S⁻¹ OVER SOUTH ANDAMNA SEA. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 10-20 X 10⁻⁵ S⁻¹ OVER SOUTH ANDAMAN SEA. WIND SHEAR IS 10-20 KNOTS OVER SOUTH ANDAMAN SEA AND SOUTH BOB.

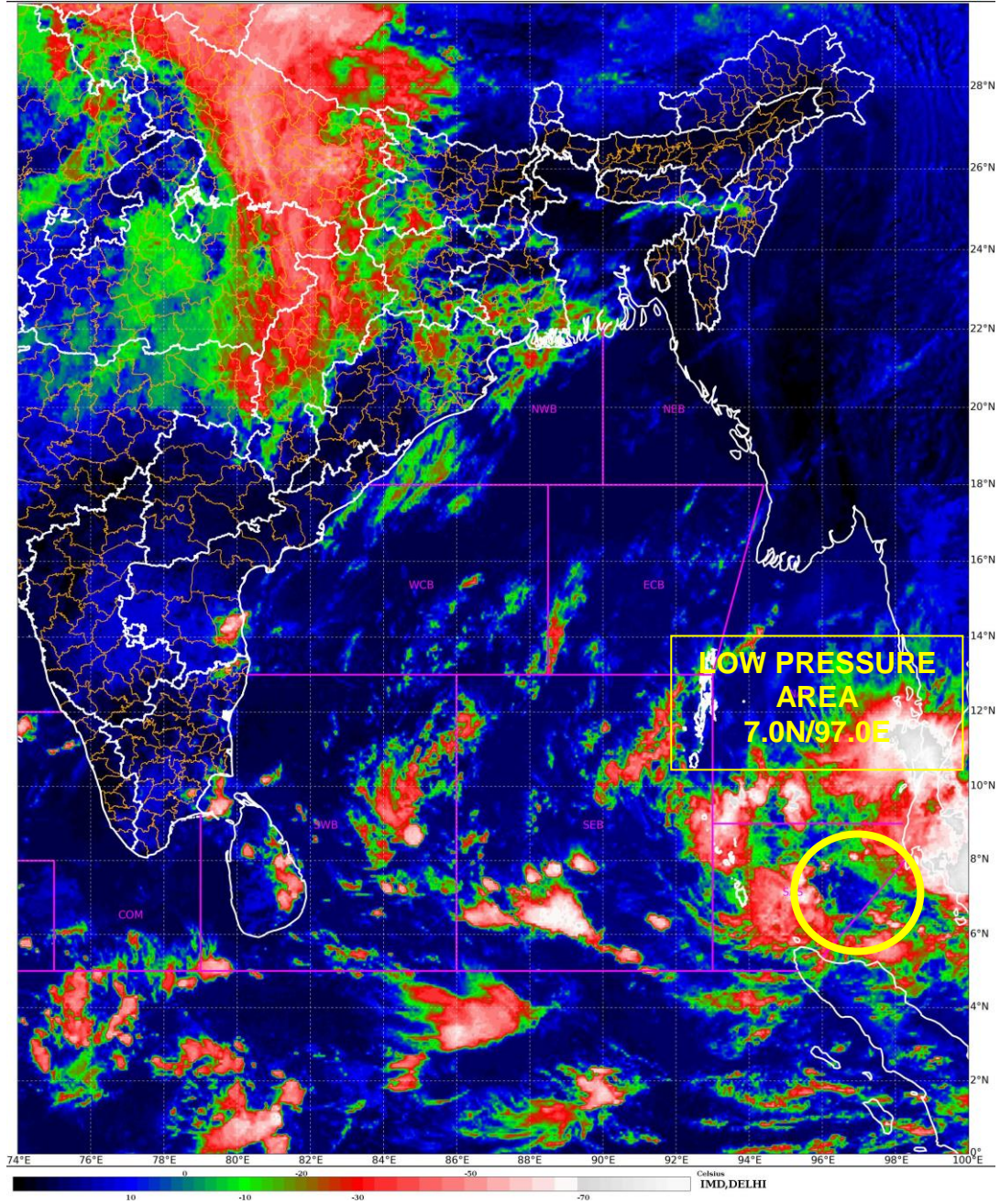
MOST OF THE MODELS ARE INDICATING FORMATION OF DEPRESSION OVER SOUTH BAY OF BENGAL DURING 29TH -30TH NOVEMBER, IT'S INTENSIFICATION INTO A CYCLONIC STORM AND IT'S NORTHEASTWARDS RECURVATURE. HOWEVER, THERE IS VARIATION AMONG VARIOUS MODELS WRT AREA OF FORMATION OF DEPRESSION, TIME OF FORMATION AND POINT OF RECURVATURE.

IMD GFS IS INDICATING EXTENDED LOW PRESSURE AREA OVER SOUTHWEST BAY OF BENGAL ON 27TH, DEPRESSION ON 30TH/1200 UTC OVER SOUTHWEST BOB AND CYCLONIC STORM ON 1ST DECEMBER OVER SOUTHWEST BOB. IT IS INDICATING FURTHER INTENSIFICATION. IT IS INDICATING NORTH-NORTHWESTWARDS MOVEMENT OF SYSTEM TILL 4TH DECEMBER AND THEN NORTH-NORTHEASTWARDS RECURVATURE. THE SYSTEM IS INDICATED TO CROSS NORTH ANDHRA PRADESH-SOUTH ODISHA COAST ON 5TH DECEMBER AS A VERY SEVERE CYCLONIC STORM. THEREAFTER, IT IS INDICATED TO MOVE ALONG COAST WITH RAPID WEAKENING. ECMWF IS INDICATING FORMATION OF DEPRESSION ON 29TH/1500 UTC OVER SOUTHEAST BOB. IT IS ALSO INDICATING INTENSIFICATION INTO CYCLONIC STORM ON 2ND DECEMBER OVER SOUTHWEST BOB. FURTHER INTENSIFICATION IS ALSO SUGGESTED. IT IS ALSO INDICATING CROSSING OVER NORTH ANDHRA PRADESH-SOUTH ODISHA COASTS, BUT ON 6TH DECEMBER. SIMILARLY,

NCUM IS INDICATING FORMATION OF LOW PRESSURE AREA ON 30TH OVER SOUTHEAST BOB WITH WEST-NORTHWESTWARDS MOVEMENT TILL 3RD DEC. AS A LOW PRESSURE AREA AND DEPRESSION OVER SOUTHWEST BOB ON 4TH (DELAYED DEVELOPMENT AS COMPARED TO OTHER MODELS). IT IS ALSO SUGGESTING FURTHER INTENSIFICATION INTO A SEVERE CYCLONIC STORM. IMD MULTI MODEL ENSEMBLE (MME) IS INDICATING FORMATION OF DEPRESSION AROUND 29TH WITH INITIAL WEST-NORTHWESTWARDS MOVEMENT TILL 30TH NOVEMBER. THEREAFTER SYSTEM IS INDICATED TO RECURVE GRADUALLY NORTH-NORTHEASTWARDS. PEAK INTENSIFICATION UPTO SEVERE CYCLONIC STORM STAGE IS INDICATED.

CONSIDERING ALL THE ABOVE, THE LOW-PRESSURE AREA OVER SOUTH ANDAMAN SEA & ADJOINING MALACCA STRAIT IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A DEPRESSION OVER SOUTHEAST BAY OF BENGAL AROUND 29TH NOVEMBER, 2023. THEREAFTER, IT IS LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY FURTHER INTO A CYCLONIC STORM OVER SOUTHEAST BAY OF BENGAL DURING SUBSEQUENT 48 HOURS.

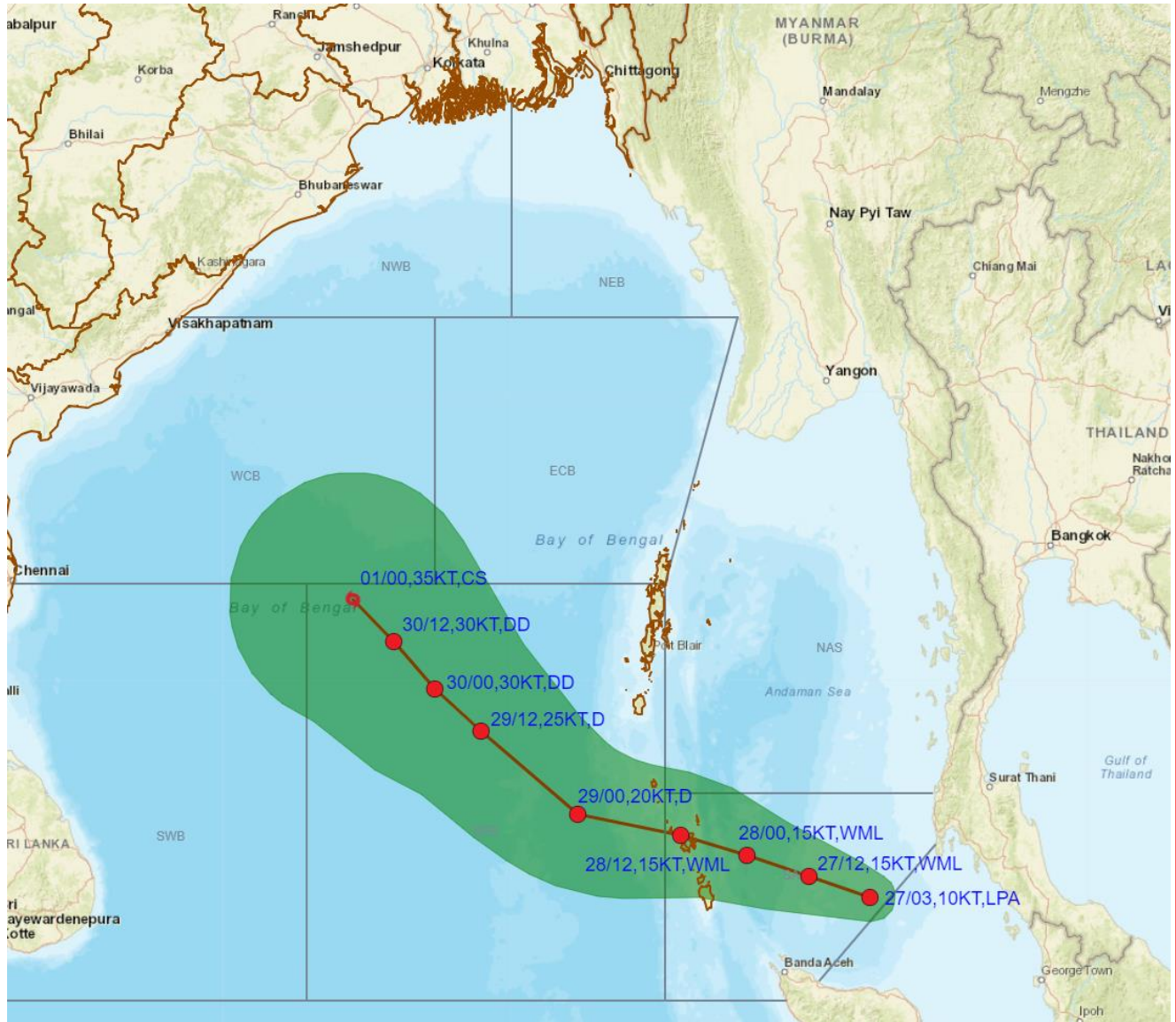
(M. SHARMA)
SCIENTIST-D
RSMC NEW DELHI



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PREGENESIS TRACK FORECAST ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH LOW PRESSURE AREA OVER SOUTH ANDAMAN SEA AND ADJOINING MALACCA STRAIT BASED ON 0300 UTC (0830 IST) OF 27TH NOVEMBER 2023.

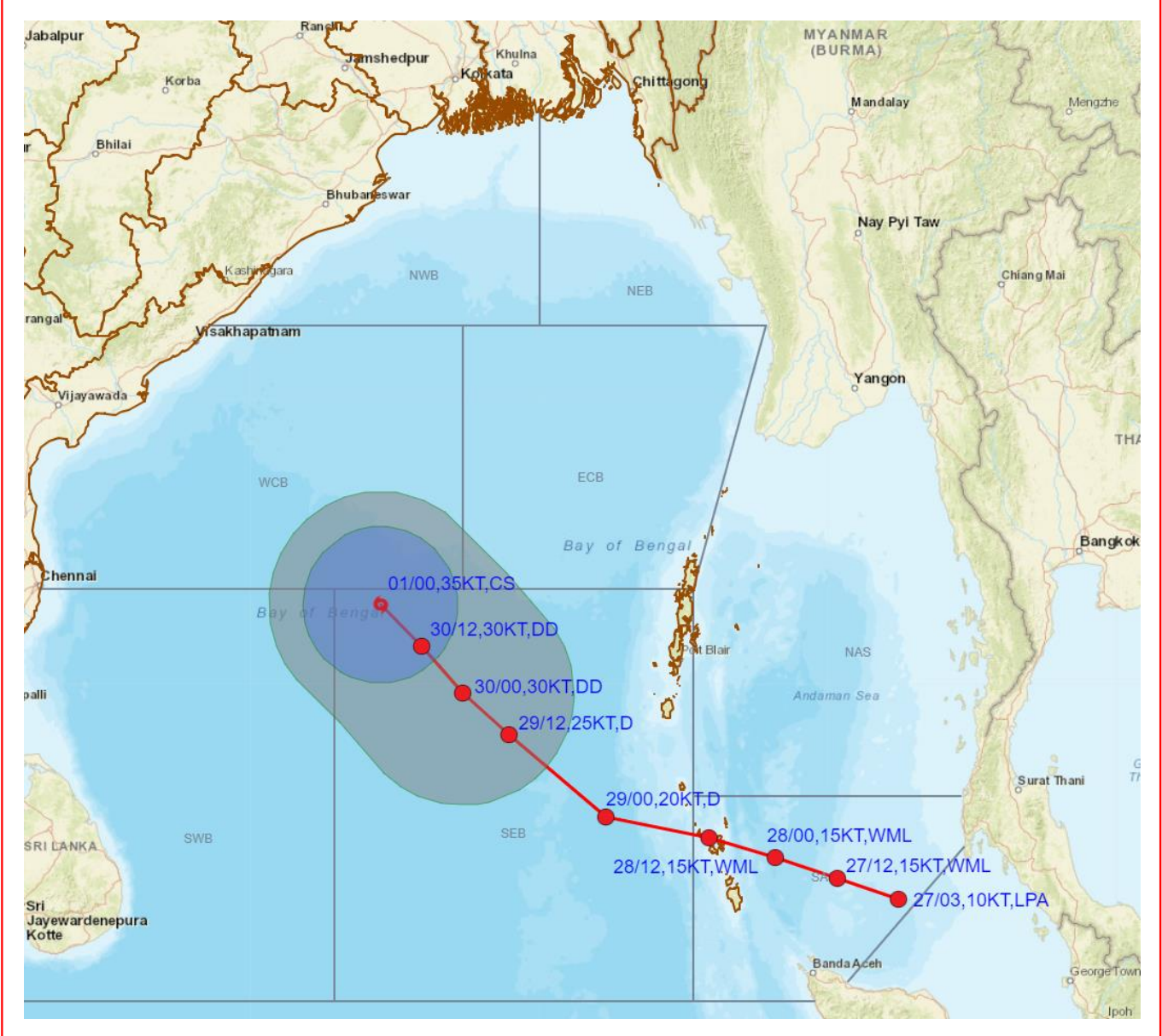


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM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



PREGENESIS TRACK FORECAST ALONG WITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH LOW PRESSURE AREA OVER SOUTH ANDAMAN SEA AND ADJOINING MALACCA STRAIT BASED ON 0300 UTC (0830 IST) OF 27TH NOVEMBER 2023.



DATE/TIME IN UTC

IST=UTC + 0530

L: LOW PRESSURE AREA

WML: WELL MARKED LOW PRESSURE AREA

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● 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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