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

## DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 23.05.2021

**SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2130 UTC OF 23.05.2021 BASED ON 1800 UTC OF 23.05.2021.**

**SUB: DEPRESSION OVER EASTCENTRAL BAY OF BENGAL INTENSIFIED INTO A DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL**

THE **DEPRESSION** OVER EASTCENTRAL BAY OF BENGAL MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 4 KMPH DURING PAST 6 HOURS, INTENSIFIED INTO A DEEP DEPRESSION AND LAY CENTRED AT 1800 UTC OF TODAY, THE 23$^{RD}$ MAY, 2021 NEAR LATITUDE 16.3°N AND LONGITUDE 89.7°E, ABOUT 600 KM NORTH-NORTHWEST OF PORT BLAIR (43333), 540 KM SOUTH-SOUTHEAST OF PARADIP (42976), 650 KM SOUTH-SOUTHEAST OF BALASORE (42895), 630 KM SOUTH-SOUTHEAST OF DIGHA (42901) AND 620 KM SOUTH OF KHEPUPARA(41984).

IT IS VERY LIKELY TO MOVE SLOWLY NORTH-NORTHWESTWARDS AND INTENSIFY INTO A **CYCLONIC STORM** BY 24$^{TH}$ MAY MORNING (AROUND 0000 UTC) AND FURTHER INTO A VERY SEVERE CYCLONIC STORM DURING THE SUBSEQUENT 24 HOURS**.** IT WOULD CONTINUE TO MOVE NORTH-NORTHWESTWARDS, INTENSIFY FURTHER AND REACH NORTHWEST BAY OF BENGAL NEAR NORTH ODISHA AND WEST BENGAL COASTS BY 26$^{TH}$ MAY MORNING (AROUND 0000 UTC). IT IS VERY LIKELY TO CROSS NORTH ODISHA - WEST BENGAL COASTS BETWEEN PARADIP(42976) AND SAGAR ISLANDS(42903) BY EVENING (0900-1200 UTC) OF 26$^{TH}$ MAY AS A VERY SEVERE CYCLONIC STORM.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

| Date/Time(UTC) | Position (Lat. $^0$N/ long. $^0$E | Maximum sustained surface wind speed (Kmph) | Category of cyclonic disturbance |
|---|---|---|---|
| 23.05.21/1800 | 16.3/89.7 | 50-60 gusting to 70 | Deep Depression |
| 24.05.21/0000 | 16.7/89.6 | 60-70 gusting to 80 | Cyclonic Storm |
| 24.05.21/0600 | 17.0/89.5 | 70-80 gusting to 90 | Cyclonic Storm |
| 24.05.21/1200 | 17.3/89.4 | 80-90 gusting to 100 | Cyclonic Storm |
| 24.05.21/1800 | 17.6/89.1 | 100-110 gusting to 120 | Severe Cyclonic Storm |
| 25.05.21/0600 | 18.5/88.5 | 120-130 gusting to 145 | Very Severe Cyclonic Storm |
| 25.05.21/1800 | 20.0/87.9 | 150-160 gusting to 180 | Very Severe Cyclonic Storm |
| 26.05.21/0600 | 21.3/87.3 | 160-170 gusting to 190 | Very Severe Cyclonic Storm |
| 26.05.21/1800 | 22.2/86.7 | 90-100 gusting to 110 | Severe Cyclonic Storm |
| 27.05.21/0600 | 23.0/86.1 | 30-40 gusting to 50 | Depression |

THE MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS AROUND SYSTEM CENTRE. SEA CONDITION IS ROUGH TO VERY ROUGH. THE ESTIMATED CENTRAL PRESSURE IS 996 HPA. A BUOY (23092) NEAR 17.5N/89.0E REPORTED MAXIMUM SUSTAINED WIND OF 40°/17.5 KTS. ANOTHER BUOY (23459) NEAR 13.8N/87.1E REPORTED MAXIMUM SUSTAINED WIND OF 290°/21 KTS AND MEAN SEA LEVEL PRESSURE OF 1000.5 HPA.

**PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%**

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AS PER SATELLITE IMAGERY BASED ON 1800 UTC OF TODAY, THE 23$^{RD}$ MAY, THE CLOUD MASS IS ORGANISED IN SHEAR PATTERN. INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 2.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER THE AREA BETWEEN LATITUDE 7.0°N & 20.0°N AND 82.0°E & 93.0°E AND ANDAMAN ISLANDS. MINIMUM CLOUD TOP TEMPERATURE IS 93°CELCIUS.

**REMARKS:**

THE MADDEN JULIAN OSCILLATION (MJO) INDEX CURRENTLY LIES IN PHASE 5 WITH AMPLITUDE MORE THAN 1 AND WILL CONTINUE IN SAME PHASE TILL 24$^{TH}$ MAY. THUS, MJO IS CONDUCIVE FOR ENHANCED CONVECTION OVER THE BAY OF BENGAL (BOB) DURING NEXT 2 DAYS. THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS MORE THAN 100 KJ/CM$^2$ OVER MAJOR PARTS OF BOB. IT IS SLIGHTLY DECREASING OVER EXTREME NORTH BOB AND ALONG & OFF ANDHRA, ODISHA, WEST BENGAL COASTS. SEA SURFACE TEMPERATURE (SST) IS AROUND 30-31$^0$C OVER MAJOR PARTS OF BOB.

EASTERLY WINDS ARE PREVAILING IN THE UPPER LEVEL. UPPER TROPOSPHERIC RIDGE RUNS ALONG 22.5$^0$N. A NORTHEAST-SOUTHWEST ORIENTED LOWER LEVEL POSITIVE VORTICITY ZONE 150X10$^{-5}$ S$^{-1}$ IS PREVAILING AROUND SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. A NORTHWEST-SOUTHEAST ORIENTED LOWER LEVEL POSITIVE CONVERGENCE ZONE (40-50 X 10$^{-5}$ S$^{-1)}$ LAY TO THE SOUTHWEST OF SYSTEM CENTRE AND EAST-WEST ORIENTED ZONE OF POSITIVE UPPER LEVEL DIVERGENCE (30-40 X 10$^{-5}$ S$^{-1}$) LAY OVER ENTIRE CENTRAL BOB. MODERATE VERTICAL WIND SHEAR (VWS) (10-20 KTS) IS PREVAILING OVER CENTRAL & NORTH BOB TO THE NORTH OF 15°N AND IS DECREASING BECOMING LOW (5-10 KTS) OVER NORTH BAY OF BENGAL OFF NORTH ODISHA & WEST BENGAL COASTS. THE SEA CONDITIONS AND EXISTING ENVIR0ONMENTAL FEATURES LIKE ENHANCED LOW LEVEL VORTICITY, LOWER LEVEL CONVERGENCE, EQUATORWARD & POLEWARD OUTFLOW, MODERATE VERTICAL WIND SHEAR ARE CONDUCIVE FOR FURTHER INTENSIFICATION OF THE SYSTEM INTO A CYCLONIC STORM DURING NEXT 12 HOURS.

MOST OF THE NUMERICAL MODELS INCLUDING IMD GFS, NCEP GFS, ECMWF AND NCUM ARE UNANIMOUSLY INDICATING NORTH-NORTHWESTWARD MOVEMENT TOWARDS NORTH ODISHA AND WEST BENGAL COASTS. MODELS ARE UNANIMOUSLY INDICATING RAPID INTENSIFICATION OF SYSTEM UPTO VERY SEVERE CYCLONIC STORM CATEGORY. CONSIDERING THE MEAN MODEL GUIDANCE, THE SYSTEM IS EXPECTED TO REACH NORTH BAY OF BENGAL NEAR NORTH ODISHA AND WEST BENGAL COASTS AROUND 26TH MAY MORNING (AROUND 0000 UTC). IT IS VERY LIKELY TO CROSS NORTH ODISHA AND WEST BENGAL COASTS BETWEEN PARADIP(42976) AND SAGAR ISLANDS(42903) AROUND EVENING (0900- 1200 UTC) OF 26TH MAY.

IN VIEW OF ABOVE, IT IS INFERRED THAT THE SYSTEM IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND INTENSIFY INTO A **CYCLONIC STORM** BY 24$^{TH}$ MAY MORNING (AROUND 0000 UTC) AND FURTHER INTO A VERY SEVERE CYCLONIC STORM DURING THE SUBSEQUENT 24 HOURS**.** IT WOULD CONTINUE TO MOVE NORTH-NORTHWESTWARDS, INTENSIFY FURTHER AND REACH NORTHWEST BAY OF BENGAL NEAR NORTH ODISHA AND WEST BENGAL COASTS BY 26$^{TH}$ MAY MORNING (0000-0300 UTC). IT IS VERY LIKELY TO CROSS NORTH ODISHA AND WEST BENGAL COASTS. BETWEEN PARADIP(42976) AND SAGAR ISLANDS(42903) BY EVENING (0900- 1200 UTC) OF 26$^{TH}$ MAY AS A VERY SEVERE CYCLONIC STORM.

(KRISHNA MISHRA)
SCIENTIST-C, RSMC NEW DELHI

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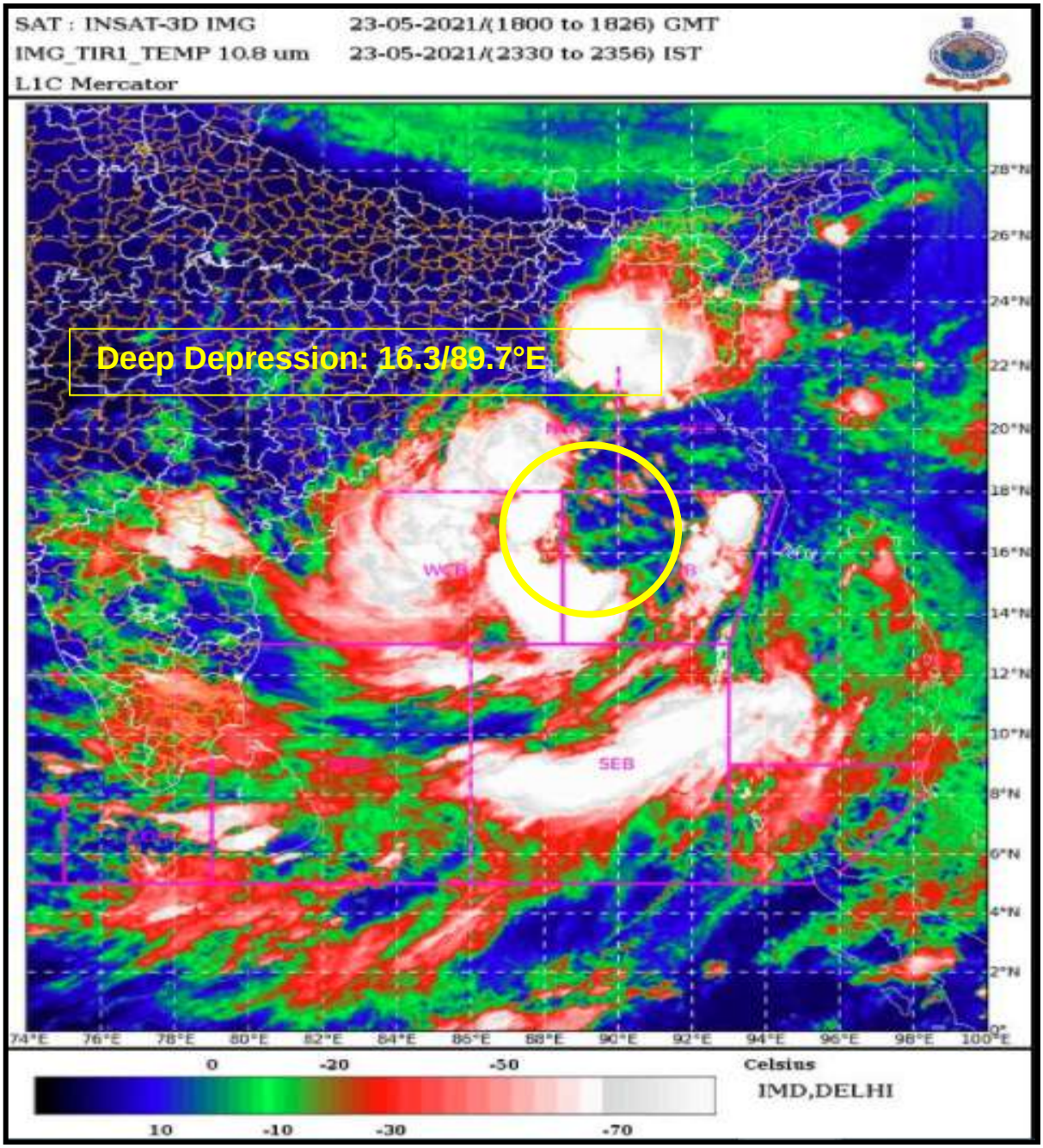


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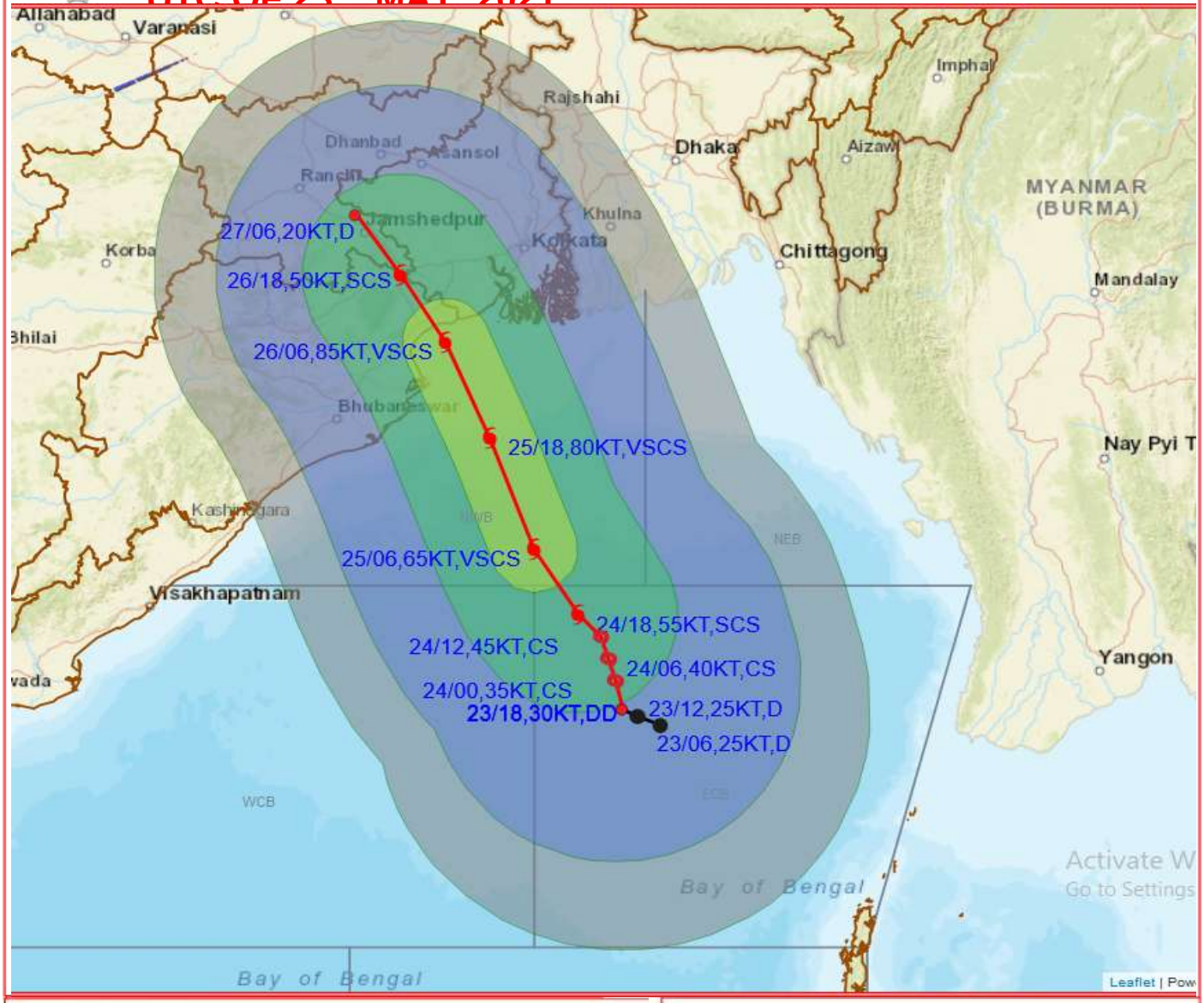
# OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL BASED ON 1800 UTC OF 23RD MAY, 2021




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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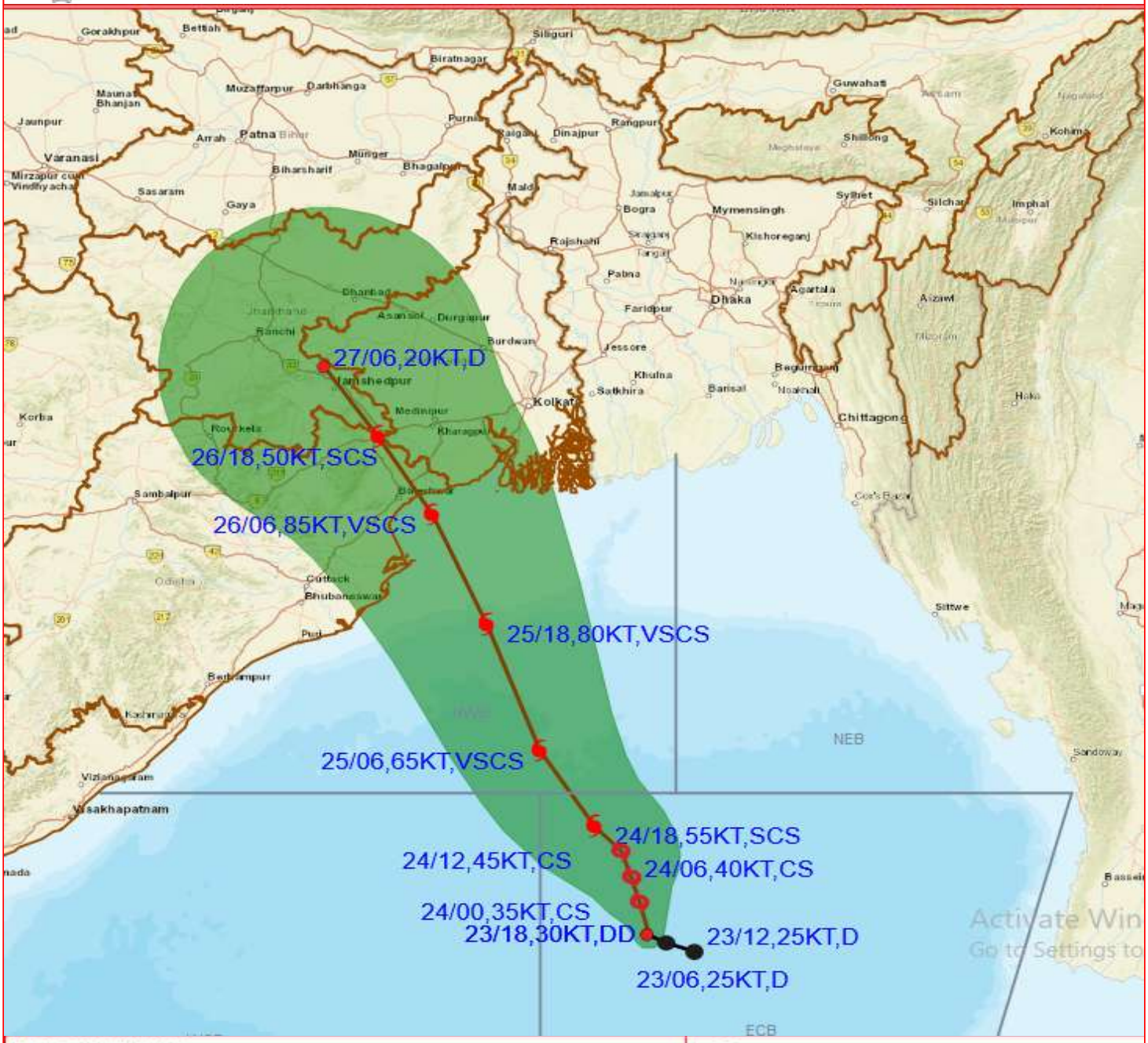


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LESS THAN 34 KT
34-47 KT
≥ 48 KT
OBSERVED TRACK
FORECAST TRACK
CONE OF UNCERTAINTY

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