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

## DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 03.12.2021

**SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 03.12.2021 BASED ON 0000 UTC OF 03.12.2021.**

THE **DEPRESSION** OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWESTWARDS WITH A SPEED OF 32 KMPH DURING PAST 06 HOURS, INTENSIFIED INTO A **DEEP DEPRESSION** AND LAY CENTERED AT 0000 UTC OF TODAY, THE 3RD DECEMBER 2021, OVER THE WESTCENTRAL AND ADJOINING SOUTH BAY OF BENGAL NEAR LAT. 13.4°N AND LONG. 86.4°E, ABOUT 580 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM (ANDHRA PRADESH), 670 KM SOUTH-SOUTHEAST OF GOPALPUR (ODISHA) AND 760 KM SOUTH-SOUTHWEST OF PARADIP (ODISHA).

IT IS LIKELY TO CONTINUE TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A **CYCLONIC STORM** DURING NEXT 12 HOURS. IT IS LIKELY TO REACH WEST-CENTRAL BAY OF BENGAL OFF NORTH ANDHRA PRADESH – SOUTH ODISHA COASTS BY TOMORROW, THE 4TH DECEMBER MORNING. THEREAFTER IT IS LIKELY TO RECURVE NORTH-NORTHEASTWARDS AND MOVE ALONG NORTH COASTAL ANDHRA PRADESH AND ODISHA COASTS DURING THE SUBSEQUENT 24 HOURS WITH A MAXIMUM SUSTAINED WIND SPEED OF 80-90 KMPH GUSTING TO 100 KMPH.

FORECAST TRACK AND INTENSITY OF THE SYSTEM IS GIVEN IN TABLE:

| DATE/TIME(UTC) | POSITION (LAT.$^0$N/ LONG.$^0$E) | MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH) | CATEGORY OF CYCLONIC DISTURBANCE |
|---|---|---|---|
| 03.12.21/0000 | 13.4/86.4 | 50-60 GUSTING TO 70 | DEEP DEPRESSION |
| 03.12.21/0600 | 14.2/85.6 | 60-70 GUSTING TO 80 | CYCLONIC STORM |
| 03.12.21/1200 | 15.0/85.0 | 70-80 GUSTING TO 90 | CYCLONIC STORM |
| 03.12.21/1800 | 15.7/84.6 | 75-85 GUSTING TO 95 | CYCLONIC STORM |
| 04.12.21/0000 | 16.4/84.3 | 80-90 GUSTING TO 100 | CYCLONIC STORM |
| 04.12.21/1200 | 17.6/84.2 | 90-100 GUSTING TO 110 | SEVERE CYCLONIC STORM |
| 05.12.21/0000 | 18.8/85.0 | 75-85 GUSTING TO 95 | CYCLONIC STORM |
| 05.12.21/1200 | 19.6/85.9 | 60-70 GUSTING TO 80 | CYCLONIC STORM |

THE INTENSITY OF THE SYSTEM IS CHARACTERIZED AS T 2.0. THE CLOUD MASS IS ORGANIZED IN SHEAR PATTERN. THE CONVECTIVE CLOUD CLUSTERS ARE SHEARED TO NORTHWEST SECTOR. ASSOCIATED SCATTERED TO BROKEN LOW & MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL & ADJOINING NORTHWEST BOB BETWEEN LATITUDE 13.0$^0$N & 20.0$^0$N AND LONGITUDE 81.0$^0$E & 92.0$^0$E, NORTH COASTAL ANDHRA PRADESH AND EAST ODISHA.
THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1002 HPA. SEA CONDITION IS ROUGH TO VERY ROUGH OVER WESTCENTRAL & ADJOINING SOUTHEAST BAY OF BENGAL.
A SHIP NEAR 19.0N/86.2E REPORTED MEAN SEA LEVEL PRESSURE OF 1012 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 20$^0$/21 KTS.

**REMARKS**:

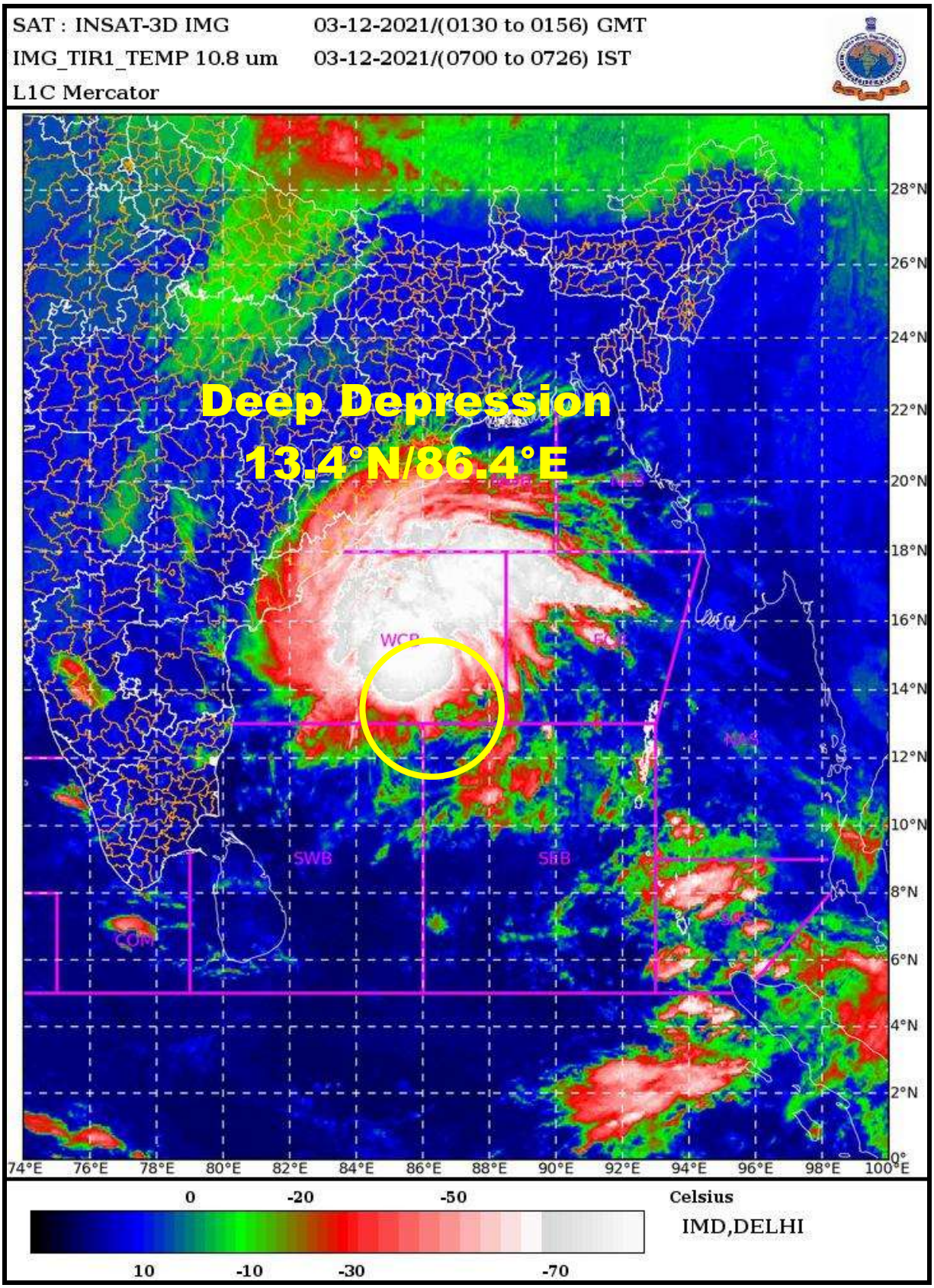
THE SEA SURFACE TEMPERATURE IS 29-31$^{\circ}$C OVER ENTIRE BOB. TROPICAL CYCLONE HEAT POTENTIAL IS 100-120 KJ/CM$^2$ OVER SOUTHEAST BAY OF BENGAL (BOB) AND ADJOINING ANDAMAN SEA. IT IS GRADUALLY DECREASING TOWARDS NORTHWEST BECOMING 60-80 OVER WESTCENTRAL & NORTHWEST BOB. DEPTH OF 26$^0$C ISOTHERM IS 100-120 M OVER WESTCENTRAL & ADJOINING NORTHWEST BOB. THE MADDEN JULIAN OSCILLATION INDEX IS CURRENTLY IN PHASE 6 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE DURING NEXT 6 DAYS. WIND SHEAR IS MODERTE 20-25 KNOTS OVER THE SYSTEM AREA OVER SOUTHEAST AND WESTCENTRAL BOB. IT IS BECOMING SLIGHTLY HIGHER TOWARDS WESTCENTRAL & NORTHWEST BOB. POSITIVE LOW LEVEL VORTICITY IS 150x10$^{-6}$S$^{-1}$ AROUND THE SYSTEM CENTER. LOW LEVEL CONVERGENCE IS 50x10$^{-6}$S$^{-1}$ TO THE NORTHWEST OF THE SYSTEM CENTRE. UPPER LEVEL DIVERGENCE IS 50x10$^{-5}$S$^{-1}$ TO THE NORTHWEST OF SYSTEM CENTRE. THUS, ENVIRONMENTAL FEATURES ARE FAVOURABLE FOR FURTHER INTENSIFICATION OF SYSTEM. UPPER TROPOSPHERIC RIDGE RUNS ALONG 16$^0$N. A TROUGH IN MID & UPPER TROPOSPHERIC WESTERLIES RUNS ALONG LONG. 70$^0$E TO THE NORTH OF LAT. 15$^0$N. AS THE SYSTEM COMES CLOSER TO THE RIDGE, IT WILL MOVE NORTHWESTWARDS DURING NEXT 24 HOURS. THEREAFTER, THE SYSTEM WILL CROSS THE RIDGE AND WILL BE STEERED NORTH-NORTHEASTWARDS FROM 4$^{TH}$ DECEMBER ONWARDS, UNDER THE INFLUENCE OF SOUTH-SOUTHWESTERLIES PREVAILING IN THE NORTHERN PERIPHERY OF RIDGE AND THE APPROACHING TROUGH IN WESTERLIES AT MIDDLE AND UPPER TROPOSPHERIC LEVELS.

MOST OF THE MODELS ARE INDICATING THAT THE CURRENT DEPRESSION OVER SOUTHEAST BOB WOULD INTENSIFY INTO A CYCLONIC STORM DURING NEXT 12 HOURS. HOWEVER, THERE IS SOME DIVERGENCE AMONG VARIOUS MODELS W.R.T. TRACK OF THIS SYSTEM. MODELS INCLUDING IMD GFS, IMD MME, NCEP GFS, NCUM AND NEPS ARE INDICATING THE SYSTEM TO MOVE WEST-NORTHWESTWARDS INITIALLY, WITH GRADUAL CHANGE IN MOVEMENT TO NORTHWEST/NORTH-NORTHWEST TILL 4TH EVENING (1200 UTC). THEREAFTER, THE SYSTEM WILL RE-CURVE NORTH-NORTHEASTWARDS. HOWEVER, ECMWF DETERMINISTIC & ENSEMBLE MODELS AND GEFS ARE INDICATING THAT THE SYSTEM WOULD CROSS NORTH ANDHRA PRADESH-SOUTH ODISHA COASTS IN THE LATE NIGHT OF 4TH DECEMBER. THE GENESIS POTENTIAL PARAMETER (GPP) OF IMD IS ALSO INDICATING POTENTIAL ZONE OF CYCLOGENESIS DURING 3RD EVENING TO 5TH MORNING OVER WESTCENTRAL AND NORTHWEST BOB. THOUGH ALL THESE MODELS ARE IN AGREEMENT WITH THE POTENTIAL GENESIS AND INTENSIFICATION OVER THE BOB, STILL, THERE IS LARGE UN-CERTAINTY WITH RESPECT TO LIKELY MOVEMENT POINT AND TIME OF RECURVATURE AND HENCE THE LANDFALL POINT & TIME.

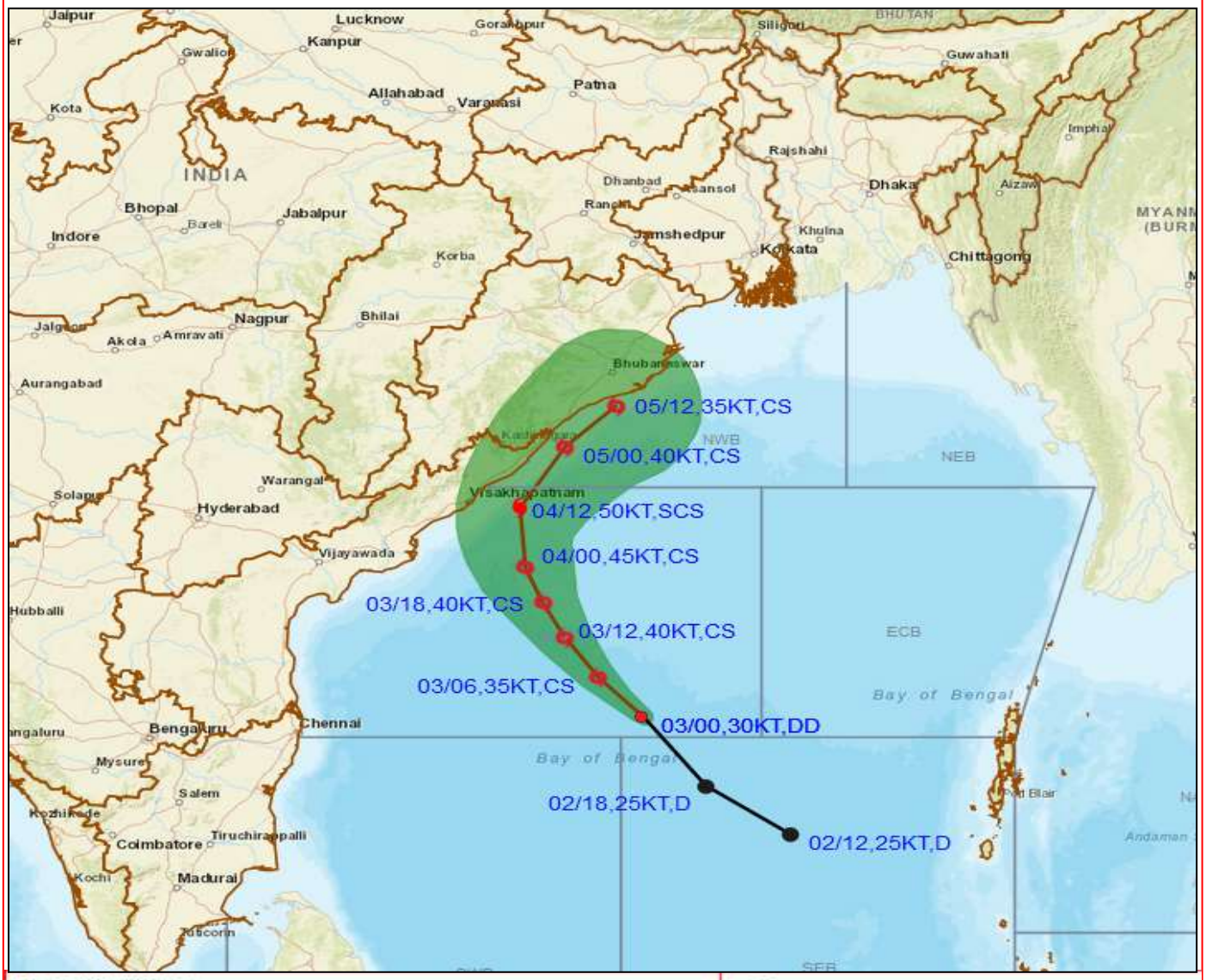
UNDER, THESE CONDITIONS, THE SYSTEM IS LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM DURING NEXT 12 HOURS. . IT IS LIKELY TO REACH WEST-CENTRAL BAY OF BENGAL OFF NORTH ANDHRA PRADESH – SOUTH ODISHA COASTS AROUND 0000 UTC OF 4$^{TH}$ DECEMBER. THEREAFTER IT IS LIKELY TO RECURVE NORTH-NORTHEASTWARDS AND MOVE ALONG NORTH COASTAL ANDHRA PRADESH AND ODISHA COASTS DURING THE SUBSEQUENT 24 HOURS WITH A MAXIMUM SUSTAINED WIND SPEED OF 80-90 KMPH GUSTING TO 100 KMPH.

NEXT BULLETIN WILL BE ISSUED AT 0600 UTC OF 3$^{RD}$ DECEMBER 2021.

**(SHOBHIT KATIYAR)**
**Scientist-C, RSMC, New Delhi**



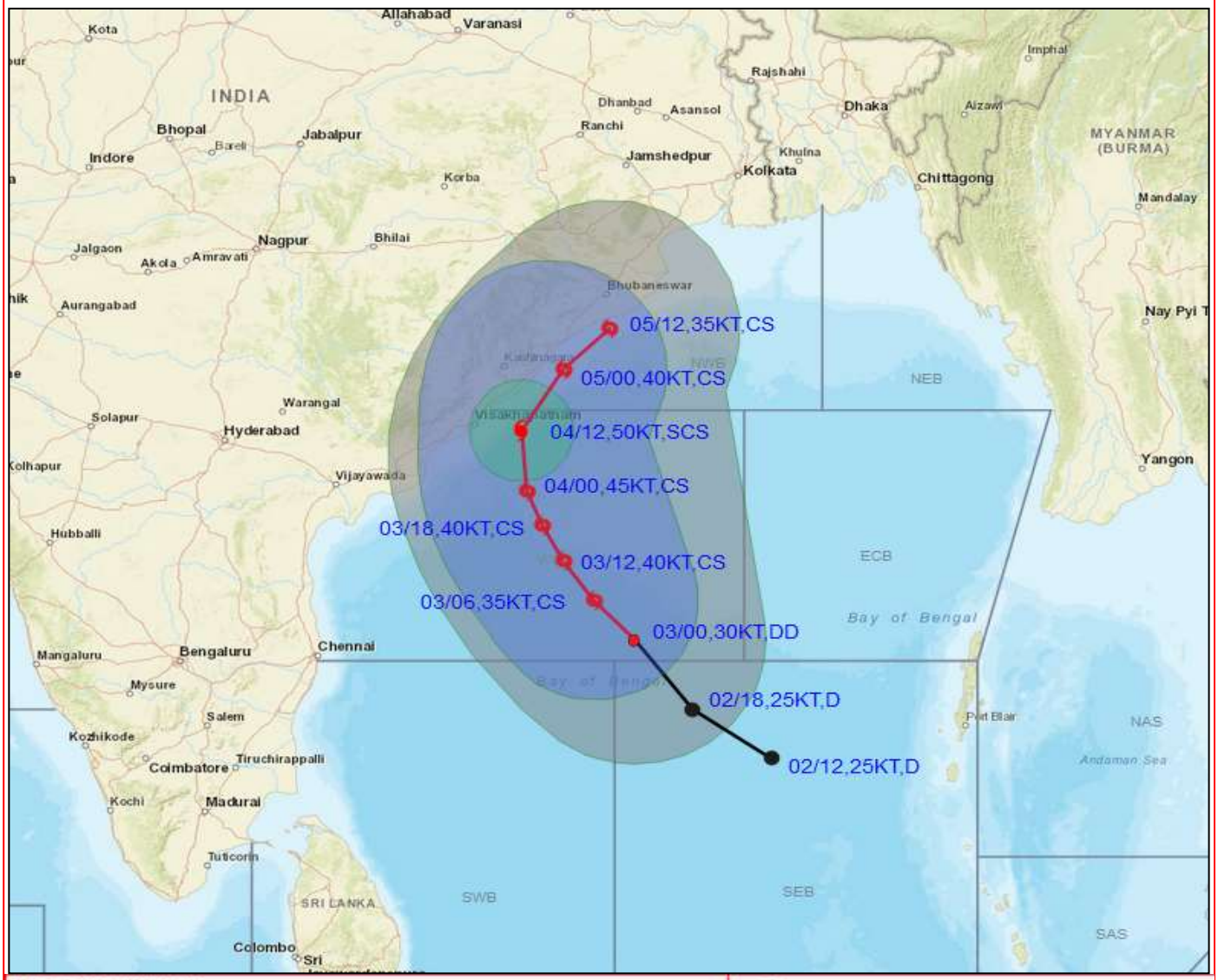
# OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY OF DEEP DEPRESSION OVER WESTCENTRAL AND ADJOINING SOUTH BAY OF BENGAL BASED ON 0000 UTC OF 3rd DECEMBER, 2021




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

# OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER WESTCENTRAL AND ADJOINING SOUTH BAY OF BENGAL BASED ON 0000 UTC OF 3rd DECEMBER, 2021.




DATE/TIME IN UTC
IST=UTC + 0530
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