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RSMC / TROPICAL CYCLONE CENTER / LA REUNION
TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 18/4/20222023
1.A TROPICAL CYCLONE 4 (DARIAN)

2.A POSITION 2022/12/25 AT 1200 UTC:
WITHIN 10 NM RADIUS OF POINT 15.7 S / 85.3 E
(FIFTEEN DECIMAL SEVEN DEGREES SOUTH AND
EIGHTY FIVE DECIMAL THREE DEGREES EAST)
MOVEMENT: SOUTH-SOUTH-EAST 7 KT

3.A DVORAK ANALYSIS: 4.5/5.0/W 0.5/24 H

4.A CENTRAL PRESSURE: 968 HPA
5.A MAX AVERAGE WIND SPEED (10 MN): 75 KT
RADIUS OF MAXIMUM WINDS (RMW): 19 NM

6.A EXTENSION OF WIND BY QUADRANTS (KM):
28 KT NE: 335 SE: 435 SW: 345 NW: 260
34 KT NE: 185 SE: 270 SW: 230 NW: 150
48 KT NE: 75 SE: 120 SW: 110 NW: 75
64 KT NE: 45 SE: 65 SW: 65 NW: 45

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1006 HPA / 800 KM
8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):
12H: 2022/12/26 00 UTC: 16.5 S / 85.2 E, VENT MAX= 070 KT, TROPICAL CYCLONE
28 KT NE: 280 SE: 435 SW: 390 NW: 250
34 KT NE: 165 SE: 240 SW: 230 NW: 150
48 KT NE: 85 SE: 95 SW: 100 NW: 75
64 KT NE: 65 SE: 65 SW: 65 NW: 65

24H: 2022/12/26 12 UTC: 16.9 S / 84.7 E, VENT MAX= 070 KT, TROPICAL CYCLONE
28 KT NE: 280 SE: 455 SW: 405 NW: 230
34 KT NE: 155 SE: 250 SW: 240 NW: 140
48 KT NE: 85 SE: 100 SW: 100 NW: 75
64 KT NE: 55 SE: 65 SW: 65 NW: 55

36H: 2022/12/27 00 UTC: 17.5 S / 83.5 E, VENT MAX= 065 KT, TROPICAL CYCLONE
28 KT NE: 270 SE: 530 SW: 445 NW: 230
34 KT NE: 155 SE: 295 SW: 260 NW: 140
48 KT NE: 85 SE: 110 SW: 120 NW: 75
64 KT NE: 55 SE: 75 SW: 65 NW: 55

48H: 2022/12/27 12 UTC: 18.4 S / 81.7 E, VENT MAX= 060 KT, SEVERE TROPICAL STORM
28 KT NE: 260 SE: 520 SW: 405 NW: 215
34 KT NE: 150 SE: 295 SW: 270 NW: 130
48 KT NE: 75 SE: 110 SW: 120 NW: 75

60H: 2022/12/28 00 UTC: 19.7 S / 79.3 E, VENT MAX= 055 KT, SEVERE TROPICAL STORM
28 KT NE: 270 SE: 520 SW: 390 NW: 205
34 KT NE: 150 SE: 295 SW: 250 NW: 130
48 KT NE: 95 SE: 110 SW: 120 NW: 45

72H: 2022/12/28 12 UTC: 21.5 S / 76.5 E, VENT MAX= 050 KT, SEVERE TROPICAL STORM
28 KT NE: 270 SE: 455 SW: 360 NW: 205
34 KT NE: 140 SE: 270 SW: 230 NW: 120
48 KT NE: 65 SE: 100 SW: 120 NW: 45

2.B LONGER-RANGE OUTLOOK:
96H: 2022/12/29 12 UTC: 24.6 S / 71.9 E, VENT MAX= 050 KT, SEVERE TROPICAL STORM
28 KT NE: 285 SE: 390 SW: 315 NW: 165
34 KT NE: 150 SE: 250 SW: 185 NW: 75
48 KT NE: 55 SE: 75 SW: 110 NW: 45

120H: 2022/12/30 12 UTC: 28.1 S / 69.3 E, VENT MAX= 045 KT, MODERATE TROPICAL STORM
28 KT NE: 345 SE: 435 SW: 305 NW: 215
34 KT NE: 165 SE: 285 SW: 215 NW: 120

2.C ADDITIONAL INFORMATION:
T=4.5
CI=5.0-

AFTER HAVING LOST ITS EYE CONFIGURATION LAST NIGHT, DURING THE LAST 6 HOURS, THE CONVECTION HAS RESUMED IN THE SOUTH-WESTERN SEMICIRCLE AND THEN AN EYE HAS BEEN PROGRESSIVELY REBUILT. THIS IS CONFIRMED BY THE GCOM MICROWAVE DATA OF 07H37UTC WHERE THE EYE WALL APPEARS AGAIN ALMOST COMPLETE, WITH A TILD TOWARDS THE SOUTH-WEST BETWEEN 37 AND 85GHZ. AS A CONSEQUENCE, THE FADING HAS BEEN STOPPED, AND THE INTENSITY MAINTAINED AT 75KT.
MOREOVER, THE VERY LAST MICROWAVE DATA OF 10H37UTC REVEALS THE PRESENCE OF A SECOND OUTER WALL, WITH A WALL REPLACEMENT CYCLE OF THE EYE IN PROGRESS, ANNOUNCING A NEW WEAKENING OF THE SYSTEM.

DARIAN CONTINUES ITS SOUTH-SOUTHEASTWARD TRAJECTORY DRIVEN BY THE NEAR EQUATORIAL RIDGE TO THE NORTH. EARLY NEXT WEEK, DARIAN IS EXPECTED TO BEGIN A SOUTHWESTERLY TURN, IN CONJUNCTION WITH THE SWELLING OF THE SUBTROPICAL RIDGE TO THE SOUTH. THE CMRS FORECAST IS BASED ON A COMPROMISE BETWEEN THE BEST AVAILABLE GUIDANCE. THE DISPERSION IS RELATIVELY LOW UNTIL THE END OF THE TIME SCALE, SUGGESTING A GOOD CONFIDENCE IN THE SCENARIO.

THE ENVIRONMENTAL CONDITIONS SEEM TO IMPROVE SLIGHTLY ON MONDAY WITH THE DECREASE OF THE SHEAR AND THE RETURN IN MORE HUMID AIR AROUND THE SYSTEM.

BUT ON TUESDAY DRY AIR SETTLES AGAIN TO THE IMMEDIATE NORTH OF THE CIRCULATION, MOREOVER DURIAN EVOLVES ON WATERS WITH LESS POTENTIAL, WEAKENING RESUMES.
AT THE END OF THE DAY, THE NORTH-WESTERN SHEAR FACILITATES THE INTRUSIONS OF DRY AIR, AND ESPECIALLY THE DECREASE OF THE OCEANIC POTENTIAL WITH WATERS LOWER THAN 26C SOUTH OF 20S, LEAD TO A REGULAR WEAKENING OF THE SYSTEM.