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

0.A WARNING NUMBER: 16/4/20222023
1.A TROPICAL CYCLONE 4 (DARIAN)

2.A POSITION 2022/12/25 AT 0000 UTC:
WITHIN 30 NM RADIUS OF POINT 14.2 S / 84.5 E
(FOURTEEN DECIMAL TWO DEGREES SOUTH AND
EIGHTY FOUR DECIMAL FIVE DEGREES EAST)
MOVEMENT: SOUTH-SOUTH-EAST 8 KT

3.A DVORAK ANALYSIS: 5.0/5.0/S 0.0/12 H

4.A CENTRAL PRESSURE: 950 HPA
5.A MAX AVERAGE WIND SPEED (10 MN): 85 KT
RADIUS OF MAXIMUM WINDS (RMW): 14 NM

6.A EXTENSION OF WIND BY QUADRANTS (KM):
28 KT NE: 315 SE: 400 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): 1008 HPA / 1400 KM
8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):
12H: 2022/12/25 12 UTC: 15.7 S / 84.8 E, VENT MAX= 080 KT, TROPICAL CYCLONE
28 KT NE: 270 SE: 405 SW: 360 NW: 260
34 KT NE: 165 SE: 220 SW: 220 NW: 165
48 KT NE: 95 SE: 95 SW: 100 NW: 85
64 KT NE: 65 SE: 65 SW: 65 NW: 65

24H: 2022/12/26 00 UTC: 16.7 S / 84.8 E, VENT MAX= 075 KT, TROPICAL CYCLONE
28 KT NE: 285 SE: 445 SW: 405 NW: 260
34 KT NE: 175 SE: 250 SW: 240 NW: 155
48 KT NE: 85 SE: 100 SW: 110 NW: 75
64 KT NE: 55 SE: 65 SW: 65 NW: 65

36H: 2022/12/26 12 UTC: 17.2 S / 84.4 E, VENT MAX= 070 KT, TROPICAL CYCLONE
28 KT NE: 295 SE: 465 SW: 445 NW: 260
34 KT NE: 175 SE: 270 SW: 260 NW: 155
48 KT NE: 95 SE: 110 SW: 110 NW: 75
64 KT NE: 65 SE: 75 SW: 75 NW: 65

48H: 2022/12/27 00 UTC: 17.7 S / 83.6 E, VENT MAX= 065 KT, TROPICAL CYCLONE
28 KT NE: 305 SE: 530 SW: 465 NW: 230
34 KT NE: 185 SE: 305 SW: 260 NW: 140
48 KT NE: 95 SE: 110 SW: 120 NW: 75
64 KT NE: 65 SE: 75 SW: 75 NW: 65

60H: 2022/12/27 12 UTC: 18.7 S / 81.8 E, VENT MAX= 060 KT, SEVERE TROPICAL STORM
28 KT NE: 295 SE: 520 SW: 415 NW: 230
34 KT NE: 175 SE: 295 SW: 270 NW: 140
48 KT NE: 85 SE: 120 SW: 130 NW: 75

72H: 2022/12/28 00 UTC: 19.9 S / 79.4 E, VENT MAX= 055 KT, SEVERE TROPICAL STORM
28 KT NE: 295 SE: 520 SW: 400 NW: 220
34 KT NE: 165 SE: 305 SW: 250 NW: 130
48 KT NE: 65 SE: 110 SW: 130 NW: 45

2.B LONGER-RANGE OUTLOOK:
96H: 2022/12/29 00 UTC: 22.9 S / 74.1 E, VENT MAX= 040 KT, MODERATE TROPICAL STORM
28 KT NE: 285 SE: 415 SW: 345 NW: 185
34 KT NE: 155 SE: 260 SW: 215 NW: 85

120H: 2022/12/30 00 UTC: 26.8 S / 70.1 E, VENT MAX= 040 KT, MODERATE TROPICAL STORM
28 KT NE: 325 SE: 405 SW: 305 NW: 195
34 KT NE: 165 SE: 270 SW: 215 NW: 100

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

DURING THE LAST 6 HOURS, DARIAN HAS LOST ITS EYE PATTERN TO BECOME A DROWNED CENTER UNDER THE MASS. HOWEVER CONVECTION HAS RESTARDED IN THE WESTERN SEMICIRCLE WITH COOLER CLOUD TOP TEMPERATURES. THE DVORAK ANALYSIS IN CDO IS 5.0. ON THE 2204Z SSMIS MICROWAVE IMAGE THE EYEWALL IS NOW OPEN IN THE NORTHEAST, POSSIBLY DUE TO A SMALL INTRUSION OF DRY AIR IN THE MIDDLE TROPOSPHERE. DARIAN HAS BEEN DOWNGRADED TO A TROPICAL CYCLONE BY THE RSMC WITH WINDS OF 85KT.

DARIAN CONTINUES ITS SOUTH-SOUTHEASTWARD TRACK DRIVEN BY THE NEAR EQUATORIAL RIDGE TO THE NORTHEAST. EARLY NEXT WEEK, DARIAN IS EXPECTED TO BEGIN A SOUTHWESTERLY TURN, IN RELATION WITH THE BUILDING OF THE SUBTROPICAL RIDGE TO THE SOUTH. THE RSMC FORECAST IS BASED ON A COMBINATION OF THE BEST AVAILABLE GUIDANCE. THE DISPERSION IS RELATIVELY LOW UP TO THE LONGER RANGE, SUGGESTING A GOOD CONFIDENCE IN THE SCENARIO.

DURING THE NEXT 24 HOURS, A NORTH-WESTERN CONSTRAINT SHOULD BUILD UP. ASSOCIATED WITH THE PRESENCE OF DRY AIR IN THE MID-LEVEL TROPOSPHERE, THIS COULD LEAD TO A SLIGHT WEAKENING. THE ENVIRONMENTAL CONDITIONS SEEM TO BE MORE FAVORABLE TEMPORARILY ON MONDAY WITH THE DECREASE OF THE SHEAR AND THE RETURN IN MORE HUMID AIR AROUND THE SYSTEM. AT LONGER RANGER, THE INCREASING NORTHWESTERLY SHEAR AND ESPECIALLY THE

DECREASE OF THE OCEANIC POTENTIAL WITH WATERS BELOW 26C SOUTH OF 20S, SHOULD LEAD TO A STEADY WEAKENING OF THE SYSTEM.