



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 03.10.2018

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0600 UTC OF 03.10.2018 BASED ON 0300 UTC OF 03.10.2018.

BAY OF BENGAL:

A LOW PRESSURE AREA IS LIKELY TO DEVELOP OVER SOUTHWEST BAY OF BENGAL AROUND 8TH OCTOBER 2018.

SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER SOUTH BAY OF BENGAL.

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
NIL	NIL	NIL	NIL	NIL

ARABIAN SEA:

A LOW PRESSURE AREA (LPA) IS LIKELY TO DEVELOP OVER SOUTHEAST ARABIAN SEA ON 5TH OCTOBER 2018. IT IS VERY LIKELY TO CONCENTRATE INTO A DEPRESSION AND MOVE NORTHWESTWARDS DURING SUBSEQUENT 48 HOURS. IT IS ALSO VERY LIKELY TO INTENSIFY INTO CYCLONIC STORM SUBSEQUENTLY WHILE MOVING NORTHWESTWARDS.

SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH ARABIAN SEA, COMORIN & GULF OF MANNAR.

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
NIL	NIL	LOW	MODERATE	HIGH

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE WITH AMPLITUDE GREATER THAN 1 AND WILL MOVE TO PHASE 2 FROM 11 OCTOBER ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA DURING 6-12TH OCTOBER. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCUM ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GFS SUGGEST FORMATION OF LPA OVER SOUTHEAST ARABIAN SEA ON 5TH OCTOBER. THESE MODELS ALSO SUGGEST GRADUAL INTENSIFICATION INTO CYCLONIC STORM & NORTHWESTWARD MOVEMENT INITIALLY DURING SUBSEQUENT FIVE DAYS. GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR CYCLOGENESIS OVER SOUTHEAST & EASTCENTRAL ARABIAN SEA DURING 6-8TH OCTOBER.

MOST OF THE MODELS ARE ALSO SUGGESTING FORMATION OF ANOTHER LPA OVER SOUTHWEST BAY OF BENGAL AND NEIGHBOURHOOD AROUND 8TH OCTOBER.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

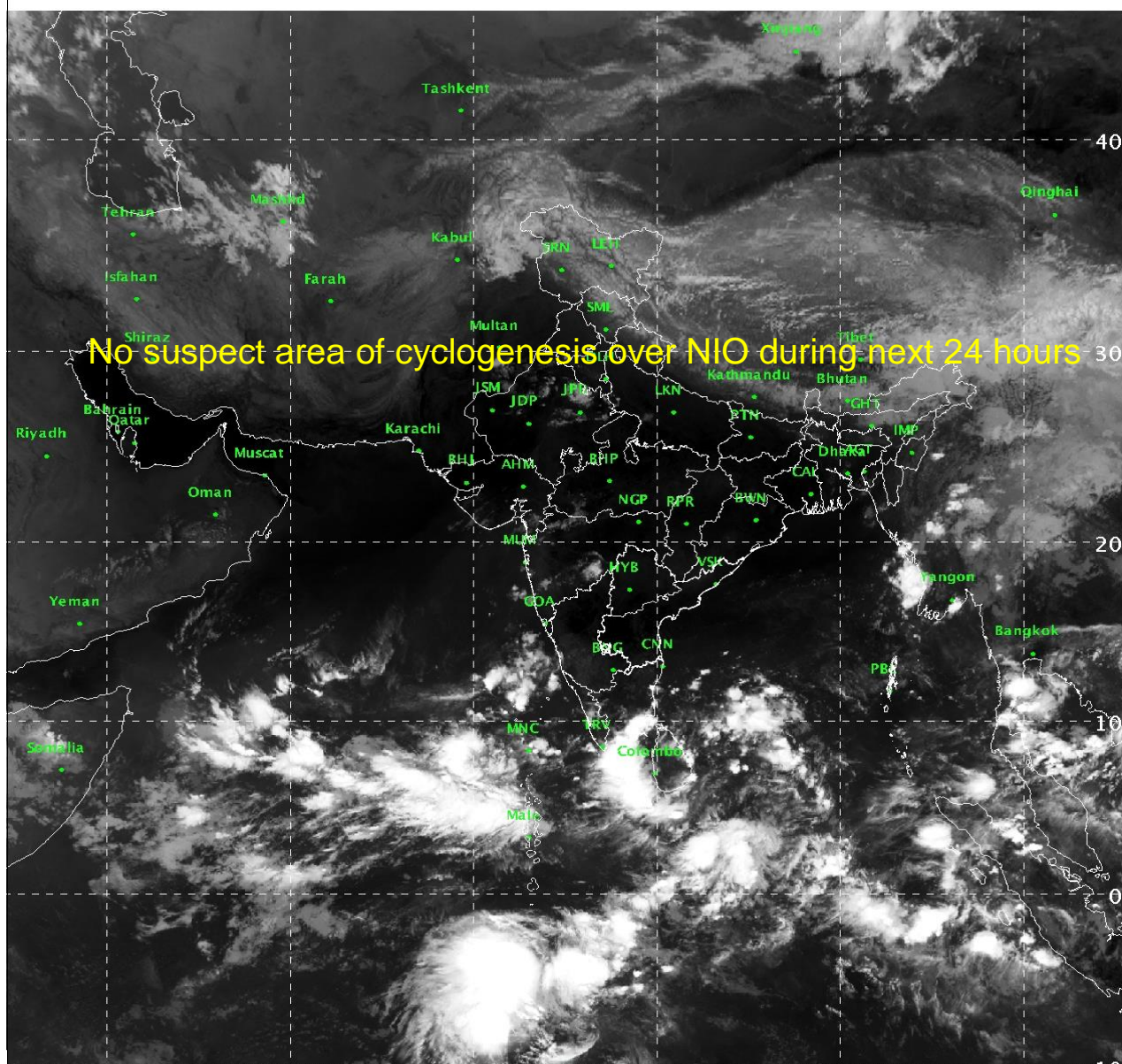
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IMG_TIR1 10.8 um

L1C Mercator (LINEAR STRETCH: 1.0%)

03-10-2018/03:00 GMT

03-10-2018/08:30 IST



508

894

IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 04.10.2018

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0600 UTC OF 04.10.2018 BASED ON 0300 UTC OF 04.10.2018.

BAY OF BENGAL:

A LOW PRESSURE AREA (LPA) IS LIKELY TO DEVELOP OVER SOUTHWEST BAY OF BENGAL AROUND 8TH OCTOBER 2018.

AS PER SATELLITE IMAGERY BASED ON 0300 UTC OF TODAY, THE 4TH October, 2018, A LOW LEVEL CYCLONIC CIRCULATION (LLCC) LAY OVER SOUTHWEST BAY OF BENGAL (BOB) OFF TAMILNADU COAST. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER EXTREME SOUTHWEST BOB & GULF OF MANNAR OFF TAMILNADU COAST IN ASSOCIATION WITH THE LLCC. ALSO SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER SOUTHWEST BOB, CENTRAL ANDAMAN SEA & GULF OF MARTABAN.

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
NIL	NIL	NIL	NIL	NIL

ARABIAN SEA:

AN UPPER AIR CYCLONIC CIRCULATION LAY OVER SOUTHEAST ARABIAN SEA (AS) AND ADJOINING LAKSHADWEEP & MALDIVES AREA EXTENDING UPTO MID-TROPOSPHERIC LEVELS AT 0300 UTC OF TODAY, THE 4TH OCTOBER 2018. UNDER IT'S INFLUENCE, AN LPA IS LIKELY TO DEVELOP OVER SOUTHEAST AS BY TOMORROW, THE 5TH OCTOBER 2018. IT IS VERY LIKELY TO CONCENTRATE INTO A DEPRESSION AND MOVE NORTHWESTWARDS DURING SUBSEQUENT 48 HOURS. IT IS ALSO VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM SUBSEQUENTLY AND MOVE NORTHWESTWARDS TOWARDS OMAN COAST.

BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER SOUTHEAST AS & ADJOINING LAKSHADWEEP IN ASSOCIATION WITH THE CYCLONIC CIRCULATION OVER THE REGION. ALSO, SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER EASTCENTRAL AS, SOUTH OF LAT 14.5⁰N, COMORIN, GULF OF MANNAR & ARAKAN COAST.

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
NIL	NIL	MODERATE	HIGH	HIGH

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

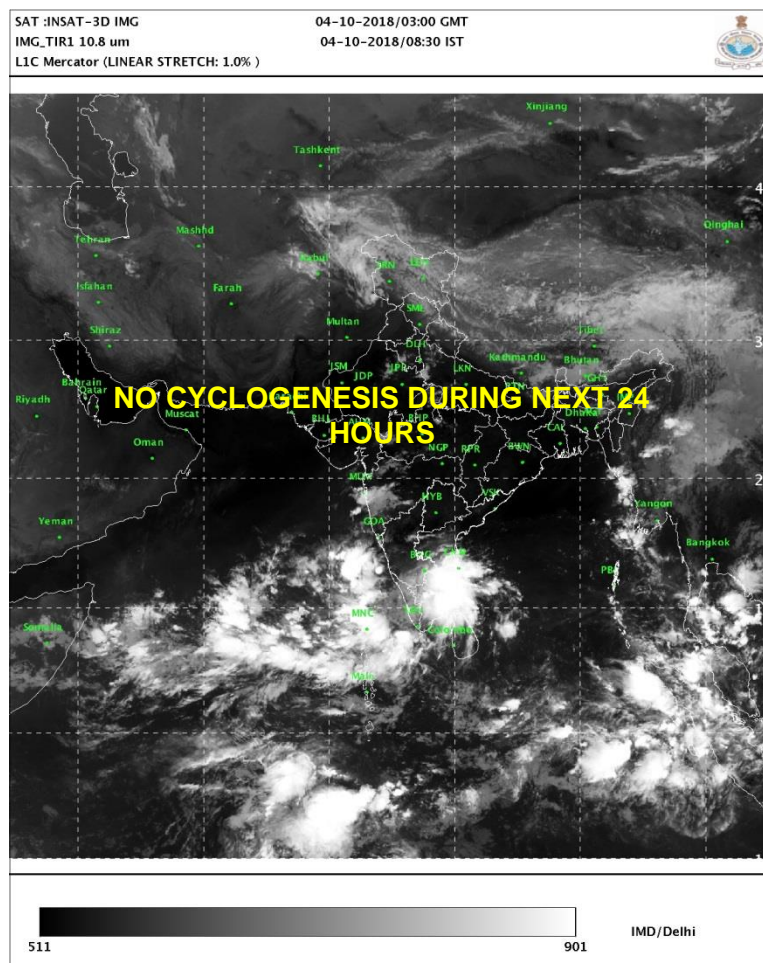
THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE WITH AMPLITUDE GREATER THAN 1 AND WILL MOVE TO PHASE 2 FROM 11th OCTOBER ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA DURING 6-12TH OCTOBER.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS OFF OMAN COAST. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND WEST OF 60.0⁰E.

THE LOW LEVEL RELATIVE VORTICITY IS EAST-WEST ORIENTED AND IS AROUND 50-70 X10⁻⁵SEC⁻¹ OVER SOUTH AS THE LOWER LEVEL CONVERGENCE AND UPPER LEVEL DIVERGENCE ARE ABOUT 20 X10⁻⁵SEC⁻¹ OVER SOUTHEAST AS AND EAST-WEST ORIENTED. ANOTHER ZONE WITH CONVERGENCE OF ABOUT 5 X10⁻⁵ SEC⁻¹ AND DIVERGENCE OF ABOUT 20 X10⁻⁵SEC⁻¹ IS SEEN OVER SOUTHWEST BOB OFF TAMILNADU COAST. THE VERTICAL WIND SHEAR IS LOW (5-10 KT) OVER CENTRAL & SOUTH ARABIAN SEA AND LAKSHADWEEP. IT IS INCREASING BECOMING MORE THAN 20 KT TO THE NORTH OF 20⁰N OVER NORTH AS & NEAR OMAN COAST. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15⁰ N.

MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) SUGGEST FORMATION OF LPA OVER SOUTHEAST ARABIAN SEA BY TOMORROW, THE 5TH OCTOBER 2018. THESE MODELS ALSO SUGGEST THAT THE SYSTEM WOULD CONCENTRATE INTO A DEPRESSION AND MOVE NORTHWESTWARDS DURING SUBSEQUENT 48 HOURS. IT IS ALSO VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM SUBSEQUENTLY AND MOVE NORTHWESTWARDS TOWARDS OMAN COAST. THE GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR CYCLOGENESIS OVER SOUTHEAST & EASTCENTRAL ARABIAN SEA DURING 3-10TH OCTOBER.

SOME OF THE MODELS ARE ALSO SUGGESTING FORMATION OF ANOTHER LPA OVER SOUTHWEST BAY OF BENGAL AND NEIGHBOURHOOD AROUND 8TH OCTOBER.



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



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 05.10.2018

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0600 UTC OF 05.10.2018 BASED ON 0300 UTC OF 05.10.2018.

BAY OF BENGAL:

A LOW PRESSURE AREA (LPA) IS LIKELY TO DEVELOP OVER SOUTH BAY OF BENGAL AROUND 8TH OCTOBER 2018. IT IS LIKELY TO BECOME MORE MARKED AND MOVE TOWARDS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS DURING SUBSEQUENT 72 HOURS.

SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER SOUTHWEST & ADJOINING WESTCENTRAL BOB AND ANDAMAN SEA.

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
NIL	NIL	NIL	NIL	LOW

ARABIAN SEA:

UNDER THE INFLUENCE OF YESTERDAY'S CYCLONIC CIRCULATION OVER SOUTHEAST ARABIAN SEA (AS) AND ADJOINING LAKSHADWEEP & MALDIVES AREA, A LOW PRESSURE AREA (LPA) HAS FORMED OVER SOUTHEAST AS AND NEIGHBOURHOOD AT 0300 UTC OF TODAY, THE 5TH OCTOBER 2018. IT IS VERY LIKELY TO BECOME WELL MARKED LOW PRESSURE AREA OVER THE SAME REGION DURING NEXT 12 HOURS. FURTHER, IT IS VERY LIKELY TO CONCENTRATE INTO A DEPRESSION AND MOVE NORTHWESTWARDS DURING SUBSEQUENT 24 HOURS. IT IS ALSO VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM SUBSEQUENTLY AND MOVE NORTHWESTWARDS TOWARDS OMAN COAST.

BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHEAST AS & ADJOINING LAKSHADWEEP IN ASSOCIATION WITH THE LOW LEVEL CYCLONIC CIRCULATION OVER THE REGION. ALSO, SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER EASTCENTRAL & SOUTH AS, COMORIN AND GULF OF MANNAR.

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
NIL	MODERATE	HIGH	HIGH	HIGH

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE WITH AMPLITUDE

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

GREATER THAN 1 AND WILL MOVE TO PHASE 2 FROM 12th OCTOBER ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA DURING 6-12th OCTOBER.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS OFF OMAN COAST. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND WEST OF 60.0⁰E.

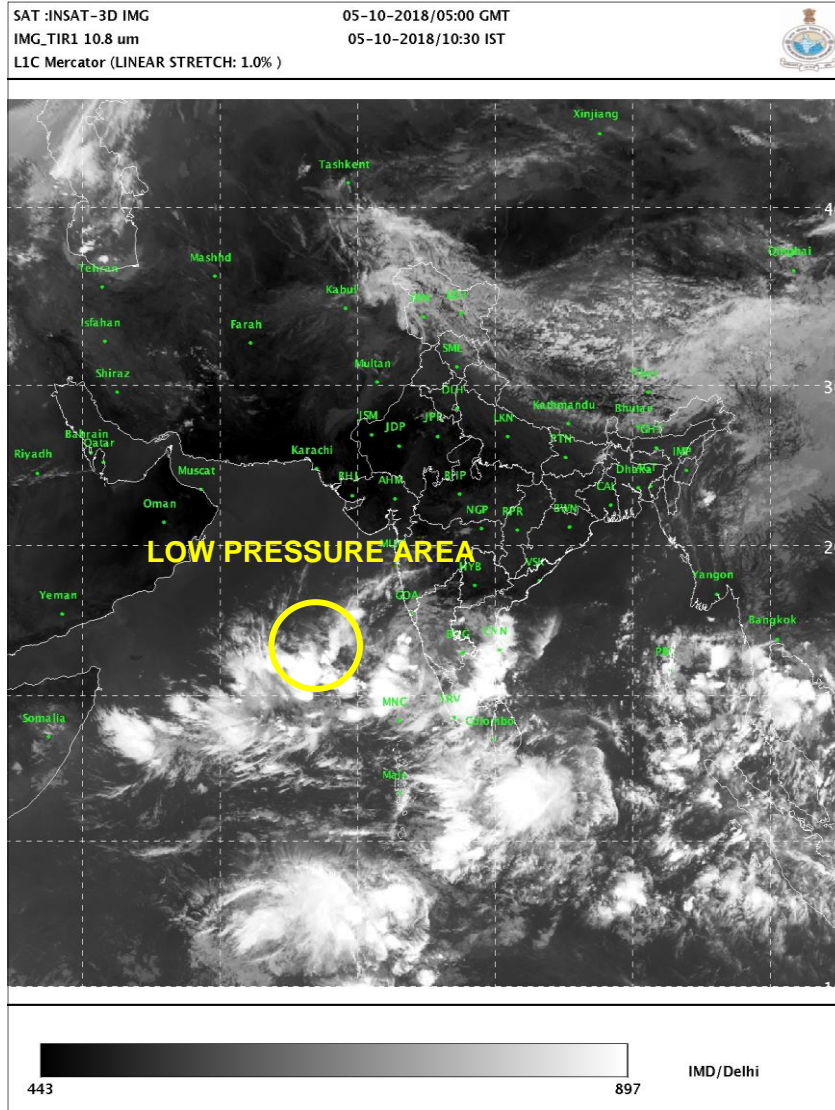
THE LOW LEVEL RELATIVE VORTICITY IS EAST-WEST ORIENTED AND IS AROUND 50-70 X10⁻⁵SEC⁻¹ OVER SOUTH AS IN ASSOCIATION WITH THE INTER TROPICAL CONVERGENCE ZONE (ITCZ). THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ OVER SOUTHWEST & ADJOINING SOUTHEAST AS. THE UPPER LEVEL DIVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ OVER SOUTHWEST AS AND EAST-WEST ORIENTED. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KT) OVER SOUTHEAST AS AND LAKSHADWEEP. IT IS INCREASING BECOMING MORE THAN 20 KT TO THE NORTH OF 17⁰N OVER NORTH AS & NEAR OMAN COAST. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N.

MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) SUGGEST FORMATION OF DEPRESSION AND NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 36 HOURS. IT IS ALSO VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM SUBSEQUENTLY AND MOVE NORTHWESTWARDS TOWARDS OMAN COAST. THE GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR CYCLOGENESIS OVER SOUTHEAST & EASTCENTRAL ARABIAN SEA DURING 7th-12th OCTOBER.

SOME OF THE MODELS ARE ALSO SUGGESTING FORMATION OF ANOTHER LPA OVER SOUTH AND ADJOINING CENTRAL BAY OF BENGAL AND NEIGHBOURHOOD AROUND 8th OCTOBER. IT IS LIKELY TO BECOME MORE MARKED AND MOVE TOWARDS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS DURING SUBSEQUENT 72 HOURS.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 06.10.2018

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1200 UTC OF 06.10.2018 BASED ON 0900 UTC OF 06.10.2018.

LATEST OBSERVATIONS AND SATELLITE IMAGERIES INDICATE THAT THE WELL MARKED LOW PRESSURE AREA OVER SOUTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA (AS) CONCENTRATED INTO A DEPRESSION OVER THE SAME REGION AND LAY CENTERED AT 0900 UTC OF TODAY, THE 6TH OCTOBER 2018 NEAR LATITUDE 11.2°N AND LONGITUDE 67.0°E, ABOUT 1500 KM SOUTHEAST OF SALALAH (41316), 1400 KM EAST-SOUTHEAST OF SOCOTRA ISLANDS (41494) AND 730 KM WEST-NORTHWEST OF MINICOY (43369). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS SOUTH OMAN & ADJOINING YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0900 UTC OF TODAY, THE 6TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T1.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHEAST AS AND ADJOINING EASTCENTRAL AS BETWEEN LATITUDE 7.5°N & 16.5°N AND EAST OF LONGITUDE 61.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1002 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. STATE OF SEA IS ROUGH TO VERY ROUGH AROUND THE SYSTEM AREA. SHIP NEAR LAT. 12 DEG. NORTH AND LONG. 62.3 DEG. EAST REPORTED MEAN SEA LEVEL PRESSURE (MSLP) OF 1010.5 HPA AND SURFACE WIND OF 360 DEGREE 20 KNOTS. BUOY LOCATED NEAR LAT. 08 DEG. NORTH AND LONG. 73 DEG. EAST REPORTED MEAN SEA LEVEL PRESSURE (MSLP) OF 1007 HPA

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 10TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 12TH OCTOBER. IT WILL BECOME LESS THAN 1 DURING 13TH-15TH. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING THIS PERIOD.

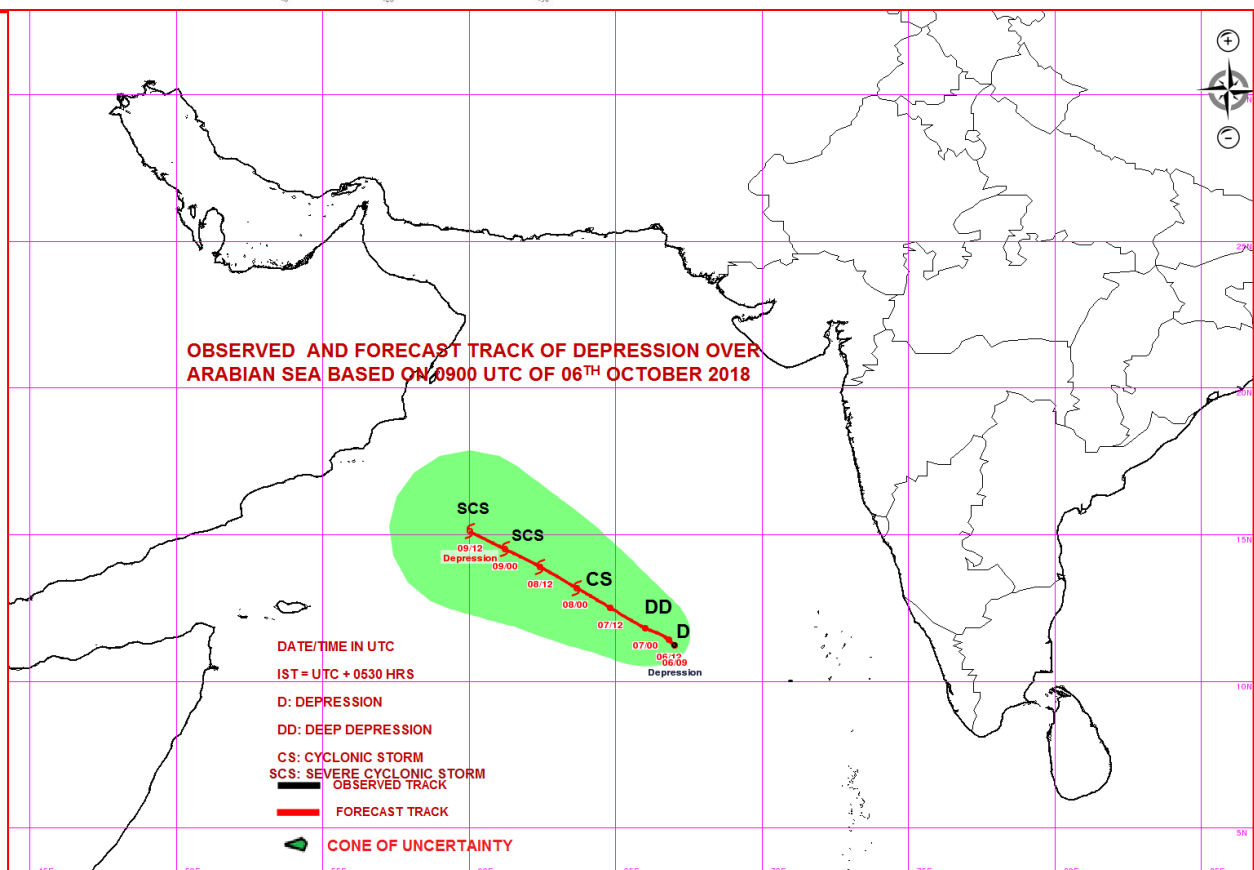
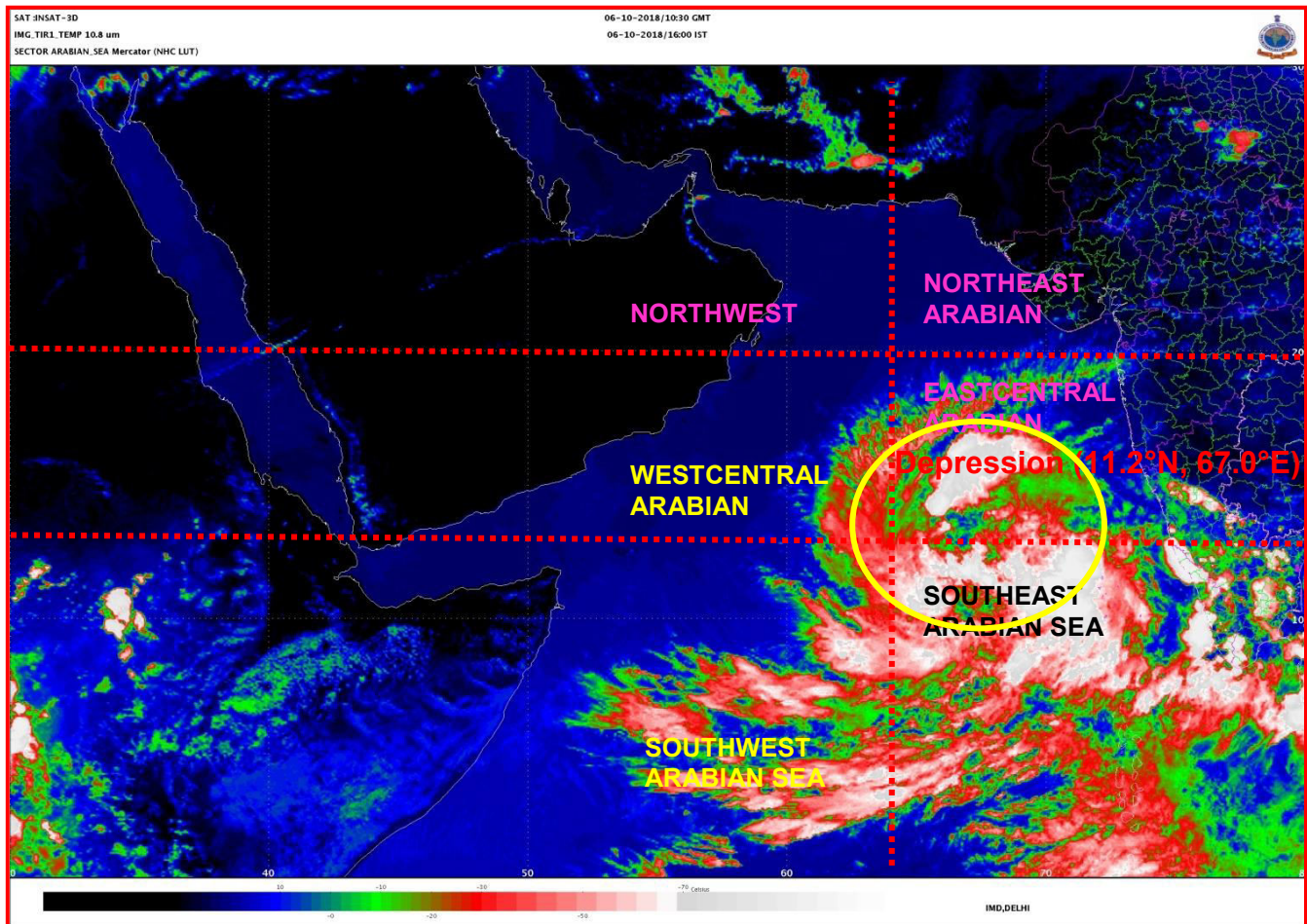
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0°N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY HAS ORGANISED DURING PAST 12 HOURS. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 50 X10⁻⁵SEC⁻¹ TO THE SOUTH OF SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10 X10⁻⁵SEC⁻¹ OVER SOUTHEAST AS TO THE SOUTHWEST OF SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS THE SAME ABOUT 20 X10⁻⁵SEC⁻¹ TO THE NORTHWEST OF SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (5-15 KT) AROUND THE SYSTEM CENTRE AND (10-20 KT) OVER CENTRAL PARTS OF AS. IT IS INCREASING BECOMING MORE THAN 25 KT TO THE NORTH OF 15°N OVER AS & NEAR OMAN COAST. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16°N.

GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR INTENSIFICATION INTO CYCLONIC STORM DURING NEXT 24 HRS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS. IT IS ALSO VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM DURING NEXT 24 HRS.

(SUNITHA DEVI)
Scientist-E, RSMC, New Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 06.10.2018

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1400 UTC OF 06.10.2018 BASED ON 1200 UTC OF 06.10.2018.

THE DEPRESSION OVER SOUTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA SLIGHTLY MOVED NORTHWESTWARD AND LAY CENTRED AT 1200 UTC OF TODAY, THE 6TH OCTOBER 2018 NEAR LATITUDE 11.3°N AND LONGITUDE 66.9°E, ABOUT 1500 KM SOUTHEAST OF SALALAH (41316), 1400 KM EAST-SOUTHEAST OF SOCOTRA ISLANDS (41494) AND 750 KM WEST-NORTHWEST OF MINICOY (43369). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS SOUTH OMAN & ADJOINING YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1200 UTC OF TODAY, THE 6TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T1.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHEAST AS AND ADJOINING EASTCENTRAL AS BETWEEN LATITUDE 7.5°N & 17.0°N AND EAST OF LONGITUDE 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1002 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. STATE OF SEA IS ROUGH TO VERY ROUGH AROUND THE SYSTEM AREA. BUOY LOCATED LAT. 11.8 DEG. NORTH AND LONG. 68.6 DEG. EAST REPORTED MEAN SEA LEVEL PRESSURE (MSLP) OF 1005.0 HPA AND SURFACE WIND OF 110 DEGREE 21.4 KNOTS.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 10TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 12TH OCTOBER. IT WILL BECOME LESS THAN 1 DURING 13TH-15TH. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING THIS PERIOD.

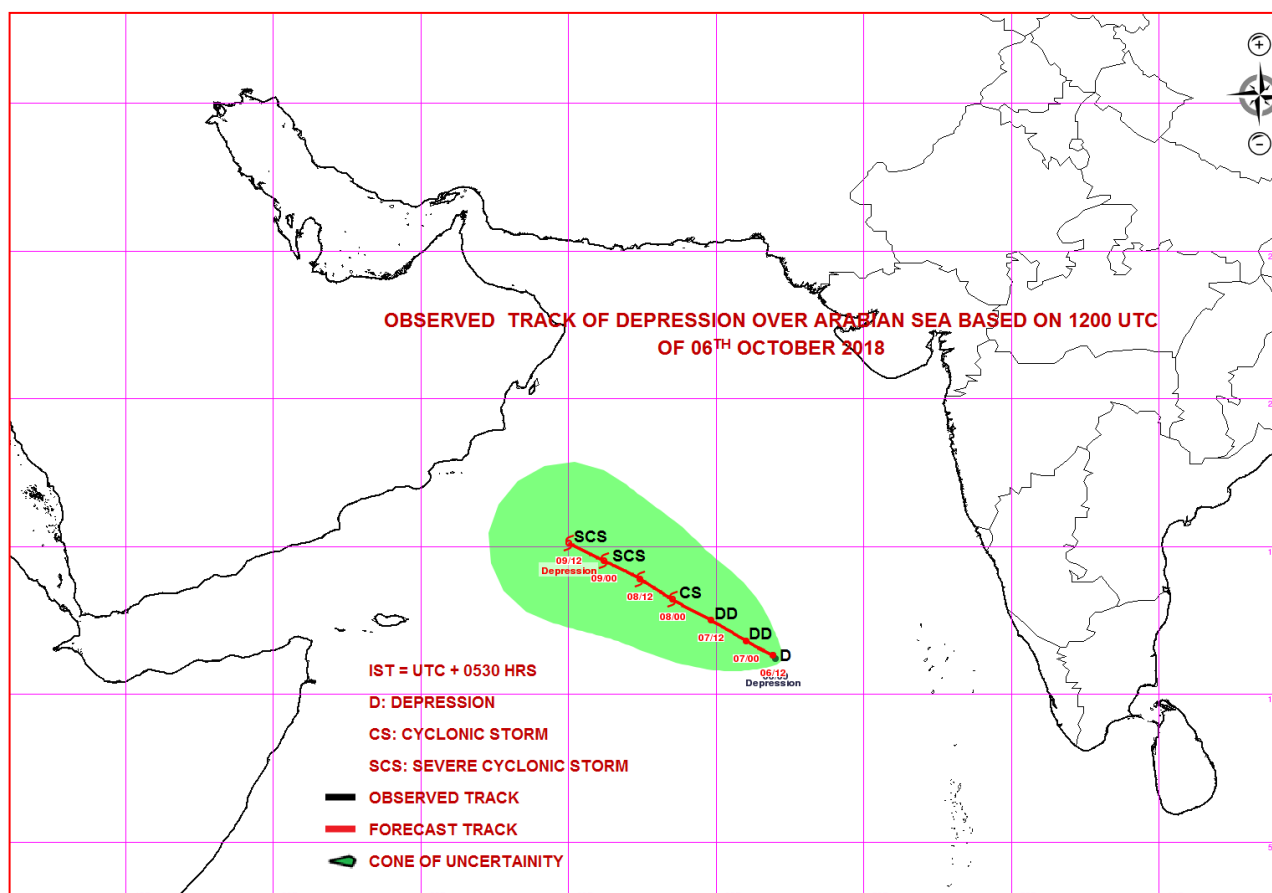
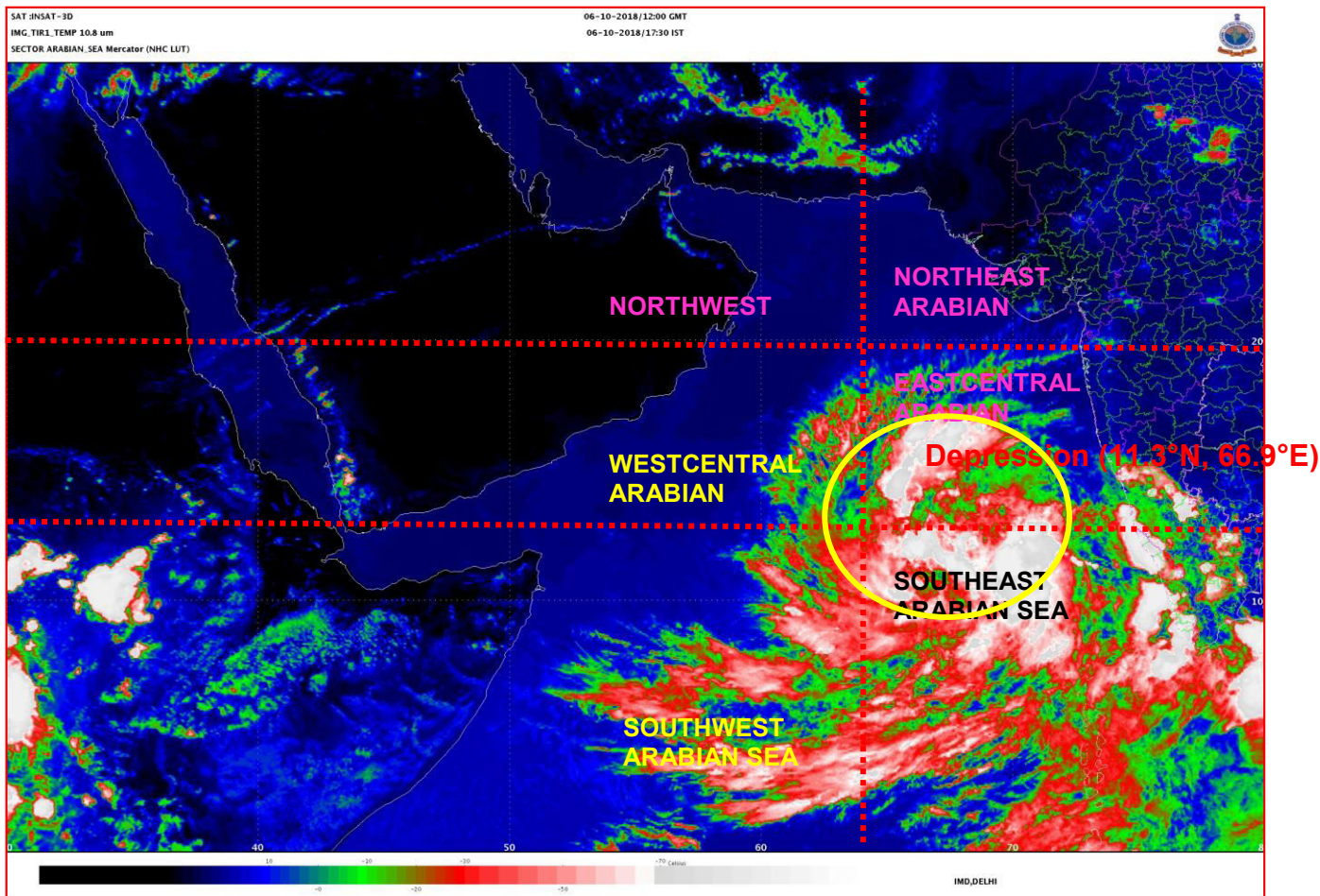
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0°N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY HAS ORGANISED DURING PAST 12 HOURS. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT 50 X10⁻⁵SEC⁻¹ AROUND SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UP TO 500 HPAL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10 X10⁻⁵SEC⁻¹ OVER SOUTHEAST AS TO THE SOUTHWEST OF SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵SEC⁻¹ ABOUT THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE AND (10-20 KT) OVER CENTRAL PARTS OF AS. IT IS INCREASING BECOMING MORE THAN 25 KT TO THE NORTH OF 15°N OVER AS & NEAR OMAN COAST. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16°N.

GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR INTENSIFICATION INTO CYCLONIC STORM DURING NEXT 24 HRS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS. IT IS ALSO VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM DURING NEXT 24 HRS.

(NARESH KUMAR)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 07.10.2018

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0600 UTC OF 07.10.2018 BASED ON 0300 UTC OF 07.10.2018.

A. ARABIAN SEA:

THE DEPRESSION OVER SOUTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA MOVED WEST-NORTHWESTWARDS AND LAY CENTRED AT 0300 UTC OF TODAY, THE 7TH OCTOBER 2018 NEAR LATITUDE 12.0°N AND LONGITUDE 65.6°E, ABOUT ABOUT 1360 KM EAST-SOUTHEAST OF SALALAH (41316), 1270 KM EAST OF SOCOTRA ISLANDS (41494) AND 920 KM WEST-NORTHWEST OF MINICOY (43369). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A DEEP DEPRESSION DURING NEXT 12 HOURS AND INTO A CYCLONIC STORM DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & ADJOINING YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0300 UTC OF TODAY, THE 7TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T1.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 8.0°N & 16.5°N AND EAST OF LONGITUDE 59.0°E AND LAKSHADWEEP. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1002 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. STATE OF SEA IS ROUGH TO VERY ROUGH AROUND THE SYSTEM CENTRE.

B. BAY OF BENGAL:

UNDER THE INFLUENCE OF A CYCLONIC CIRCULATION OVER NORTH ANDAMAN SEA AND ADJOINING SOUTHEAST BAY OF BENGAL (BOB), A LOW PRESSURE AREA (LPA) HAS FORMED OVER SOUTHEAST BOB AND ADJOINING NORTH ANDAMAN SEA AT 0300 UTC OF TODAY, THE 7TH OCTOBER 2018. IT IS VERY LIKELY TO BECOME WELL MARKED DURING NEXT 12 HOURS AND CONCENTRATE INTO A DEPRESSION DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA COAST DURING NEXT 72 HOURS.

AS PER LATEST SATELLITE IMAGERY BASED ON 0300 UTC OF TODAY, THE 7TH OCTOBER, INTENSITY OF THE SYSTEM IS T 1.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 9.0°N & 16.0°N AND LONGITUDE 88.0°E & 97.0°E. MAXIMUM SUSTAINED WIND SPEED IS 10-15 KNOTS, GUSTING TO 25 KNOTS.

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
LOW	MODERATE	HIGH	---	---

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

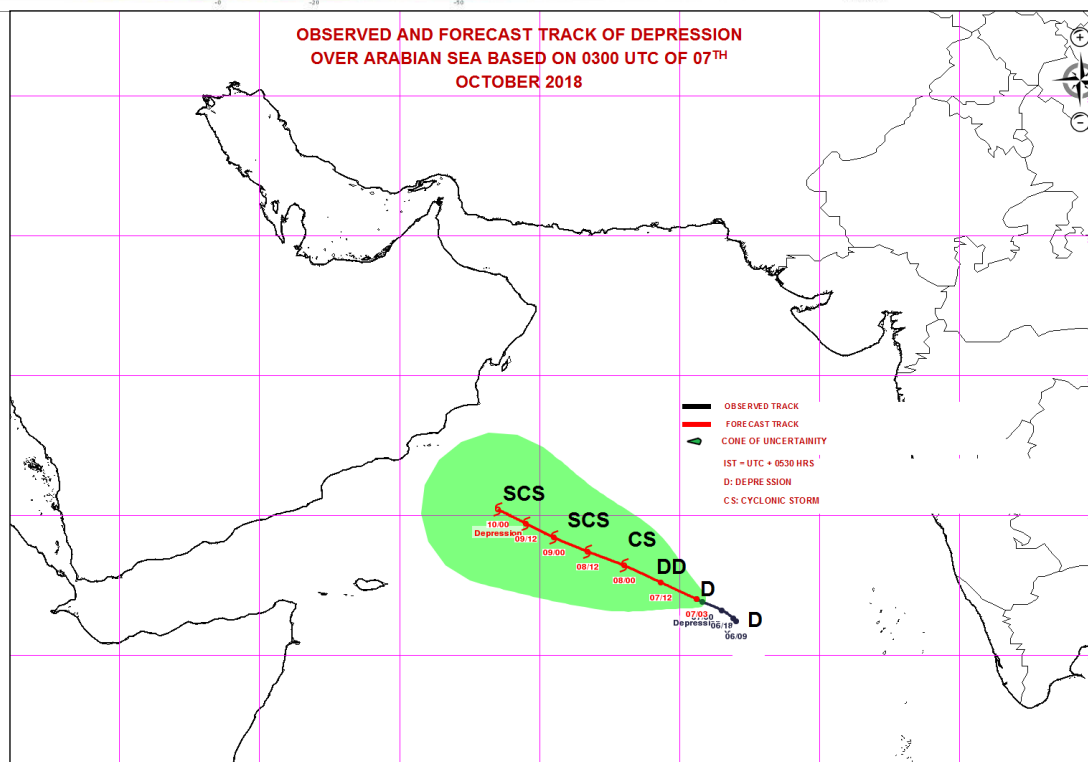
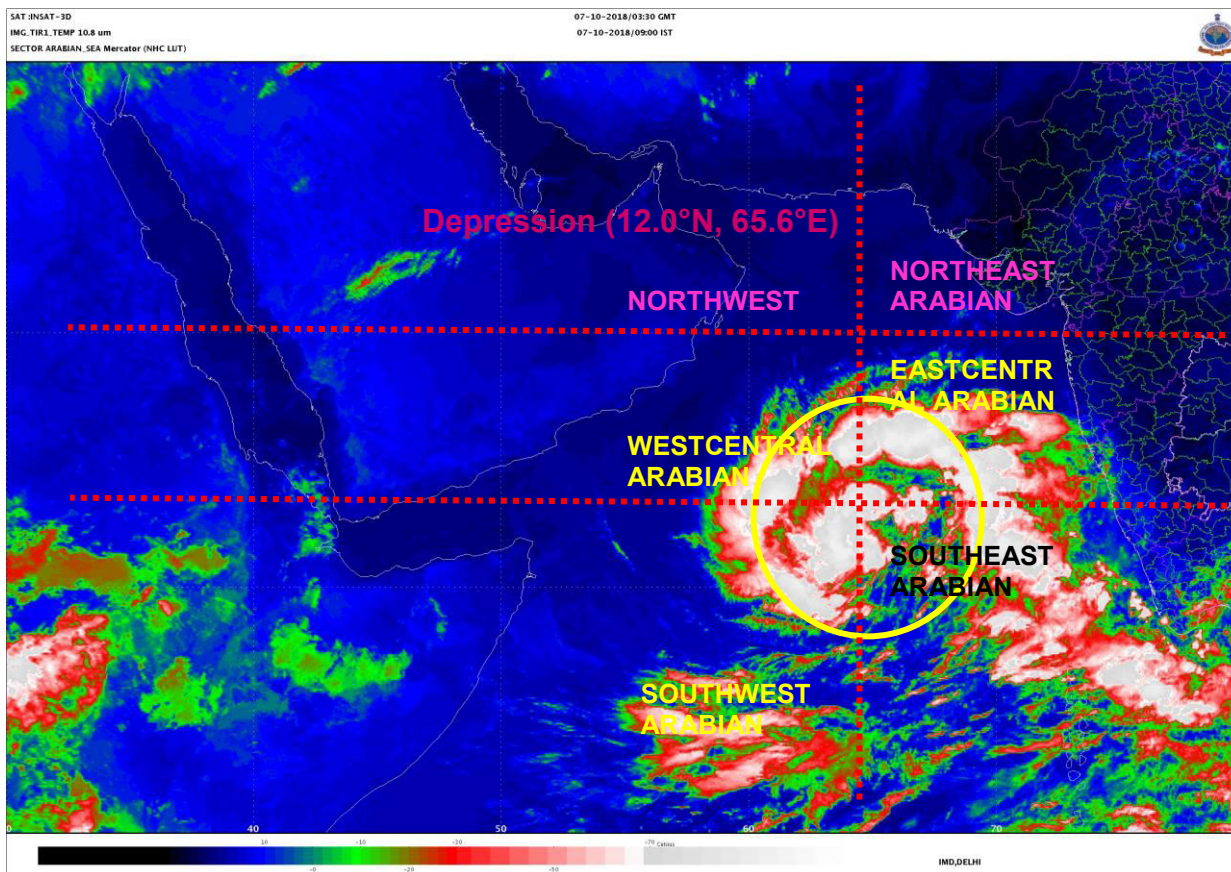
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. THE GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR INTENSIFICATION INTO CYCLONIC STORM. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND WEST OF 60.0⁰E. THE LOW LEVEL RELATIVE VORTICITY HAS INCREASED DURING PAST 12 HOURS AND IS 100 X10⁻⁵SEC⁻¹ AROUND SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS THE SAME AND IS ABOUT 10 X10⁻⁵SEC⁻¹ OVER SOUTHEAST AS AROUND SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS OF THE ORDER 30 X 10⁻⁵ SEC⁻¹ TO THE NORTHWEST OF SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (5-15 KT) AROUND THE SYSTEM CENTRE. IT IS INCREASING BECOMING MORE THAN 20 KT TO THE NORTH OF 15⁰N OVER AS. IT IS LOW TO MODERATE (5-15 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A CYCLONIC STORM DURING NEXT 24 HRS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPING OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30⁰C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31⁰C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 70 X10⁻⁵SEC⁻¹ OVER ANDAMAN SEA. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10 X10⁻⁵SEC⁻¹ OVER NORTH ANDAMAN SEA. THE UPPER LEVEL DIVERGENCE IS ABOUT 10 X 10⁻⁵ SEC⁻¹ OVER NORTH ANDAMAN SEA. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (5-15 KT) OVER SOUTH & CENTRAL BOB AND ADJOINING ANDAMAN SEA. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS ODISHA COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(SUNITHA DEVI)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

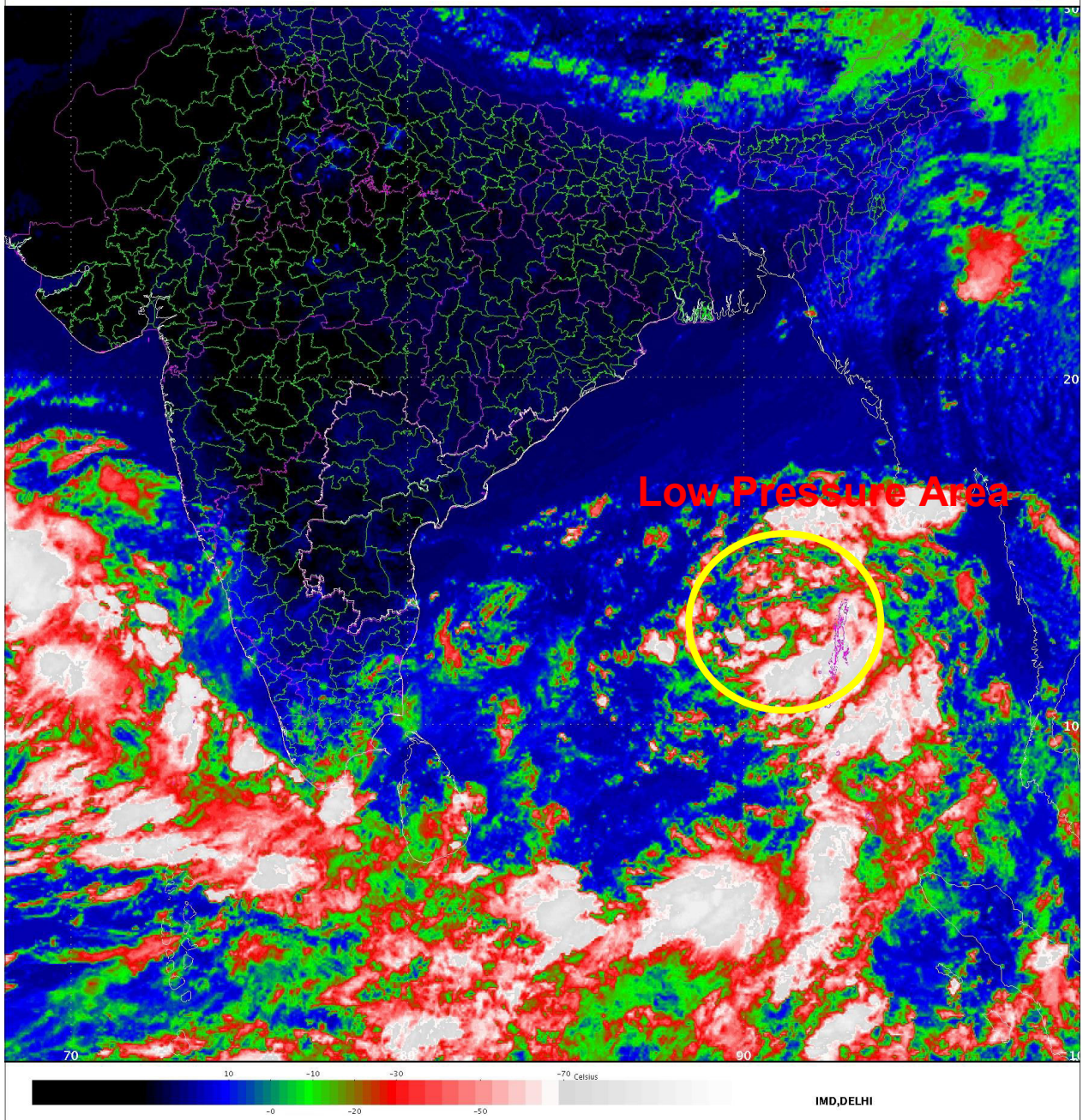


PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT :INSAT-3D
IMG_TIR1_TEMP 10.8 um
SECTOR BAYOFBENGAL Mercator (NHC LUT)

07-10-2018/05:30 GMT
07-10-2018/11:00 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 07.10.2018

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1200 UTC OF 07.10.2018 BASED ON 0900 UTC OF 07.10.2018.

A. ARABIAN SEA:

THE DEPRESSION OVER SOUTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA MOVED WESTWARDS WITH A SPEED OF 14 KMPH IN PAST SIX HOURS AND LAY CENTRED AT 0900 UTC OF TODAY, THE 7TH OCTOBER 2018 NEAR LATITUDE 12.0°N AND LONGITUDE 64.8°E, ABOUT 1280 KM EAST-SOUTHEAST OF SALALAH (41316), 1180 KM EAST-SOUTHEAST OF SOCOTRA ISLANDS (41494) AND 980 KM WEST-NORTHWEST OF MINICOY (43369). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A CYCLONIC STORM DURING NEXT 24 HOURS AND INTO A SEVERE CYCLONIC STORM DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & ADJOINING YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0900 UTC OF TODAY, THE 7TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.0. THE CONVECTION HAS ORGANISED DURING PAST SIX HOURS WITH WELL DEFINED CURVED BANDS. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 8.0°N & 18.0°N AND EAST OF LONGITUDE 57.5°E AND LAKSHADWEEP. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93° C.

THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1000 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. STATE OF SEA IS VERY ROUGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
07.10.18/0900	12.0/64.8	50-60 GUSTING TO 70	DEEP DEPRESSION
07.10.18/1200	12.0/64.4	50-60 GUSTING TO 70	DEEP DEPRESSION
07.10.18/1800	12.1/63.7	55-65 GUSTING TO 75	DEEP DEPRESSION
08.10.18/0000	12.2/63.0	65-75 GUSTING TO 85	CYCLONIC STORM
08.10.18/0600	12.3/62.4	70-80 GUSTING TO 90	CYCLONIC STORM
08.10.18/1200	12.5/61.8	80-90 GUSTING TO 100	CYCLONIC STORM
09.10.18/0000	13.1/60.7	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
09.10.18/1200	13.7/59.7	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
10.10.18/0000	14.3/58.7	105-115 GUSTING TO 130	SEVERE CYCLONIC STORM
10.10.18/1200	14.8/58.0	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
11.10.18/0000	15.3/57.2	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM

B. BAY OF BENGAL:

THE LOW PRESSURE AREA (LPA) OVER SOUTHEAST BOB AND ADJOINING NORTH ANDAMAN SEA LAY AS A WELL MARKED LOW PRESSURE AREA OVER THE SAME REGION AT 0900 UTC OF TODAY, THE 7TH OCTOBER 2018. IT IS VERY LIKELY TO CONCENTRATE INTO A DEPRESSION DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA COAST DURING NEXT 72 HOURS.

AS PER LATEST SATELLITE IMAGERY BASED ON 0900 UTC OF TODAY, THE 7TH OCTOBER, INTENSITY OF THE SYSTEM IS T 1.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 9.0°N & 17.0°N AND LONGITUDE 88.0°E & 96.0°E. MAXIMUM SUSTAINED WIND SPEED IS 10-15 KNOTS, GUSTING TO 25 KNOTS.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
MODERATE	HIGH	HIGH	---	---

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. THE GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR INTENSIFICATION INTO CYCLONIC STORM. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 100 X10⁻⁵SEC⁻¹ TO THE SOUTH OF SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS THE SAME AND IS ABOUT 10 X10⁻⁵SEC⁻¹ TO THE SOUTH AND 20 X10⁻⁵SEC⁻¹ TO THE WEST OF SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS OF THE ORDER 30 X 10⁻⁵ SEC⁻¹ TO THE NORTHWEST OF SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE. IT IS INCREASING BECOMING MORE THAN 20 KT TO THE NORTH OF 13°N OVER AS. IT IS INCREASING OVER WESTCENTRAL ARABIAN SEA ALONG THE EXPECTED TRACK OF SYSTEM. HOWEVER, IT IS MODERATE (15-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A CYCLONIC STORM DURING NEXT 24 HRS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPING OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 70 X10⁻⁵SEC⁻¹ OVER ANDAMAN SEA. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ OVER NORTH ANDAMAN SEA. THE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ OVER NORTH ANDAMAN SEA. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (5-15 KT) OVER SOUTH & CENTRAL BOB AND ADJOINING ANDAMAN SEA. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS ODISHA COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

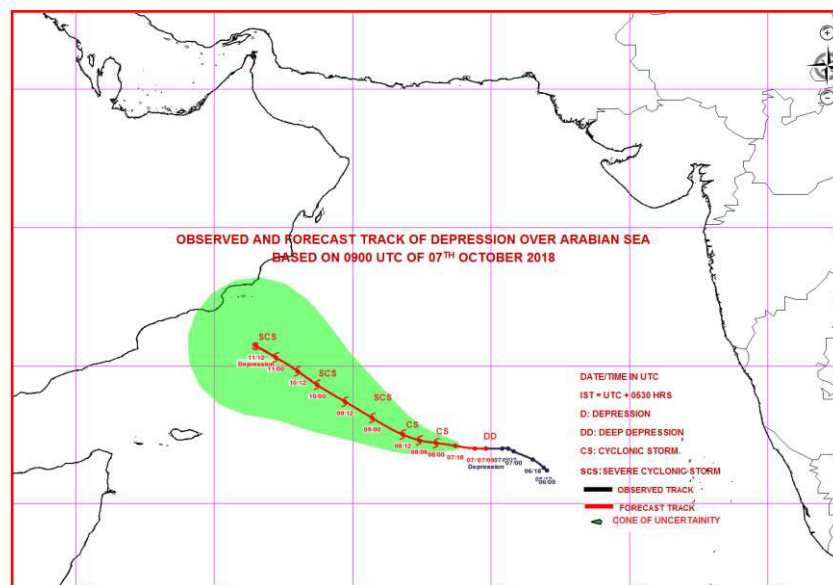
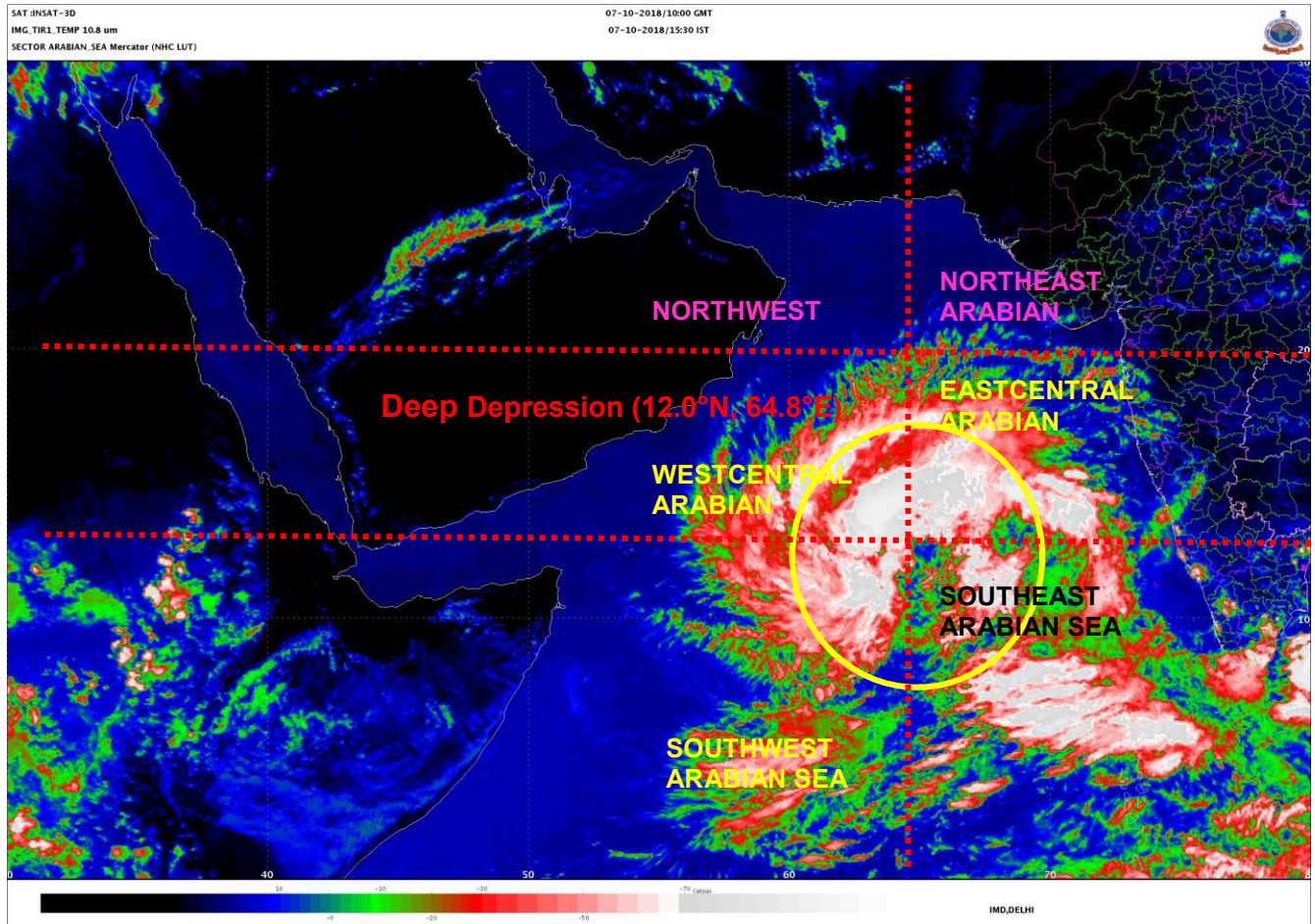
(SUNITHA DEVI)

SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

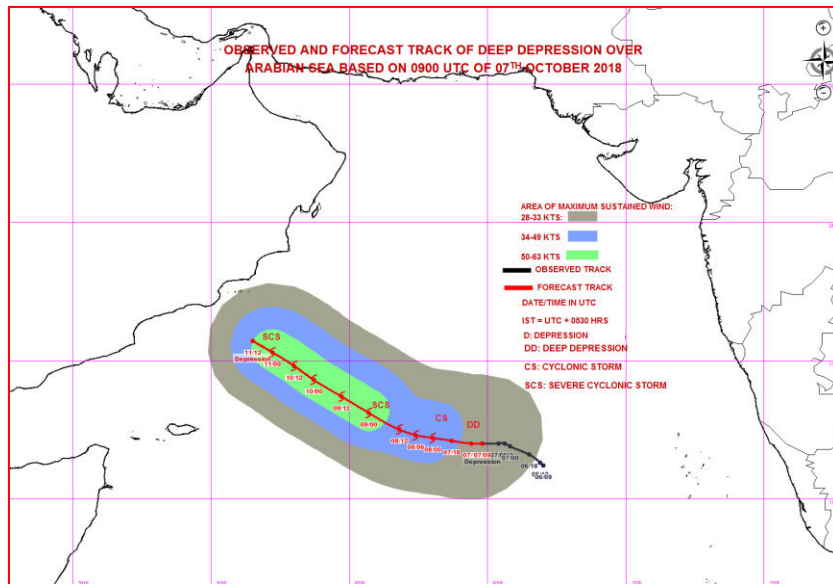
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

GRAPHICS FOR SYSTEM OVER ARABIAN SEA

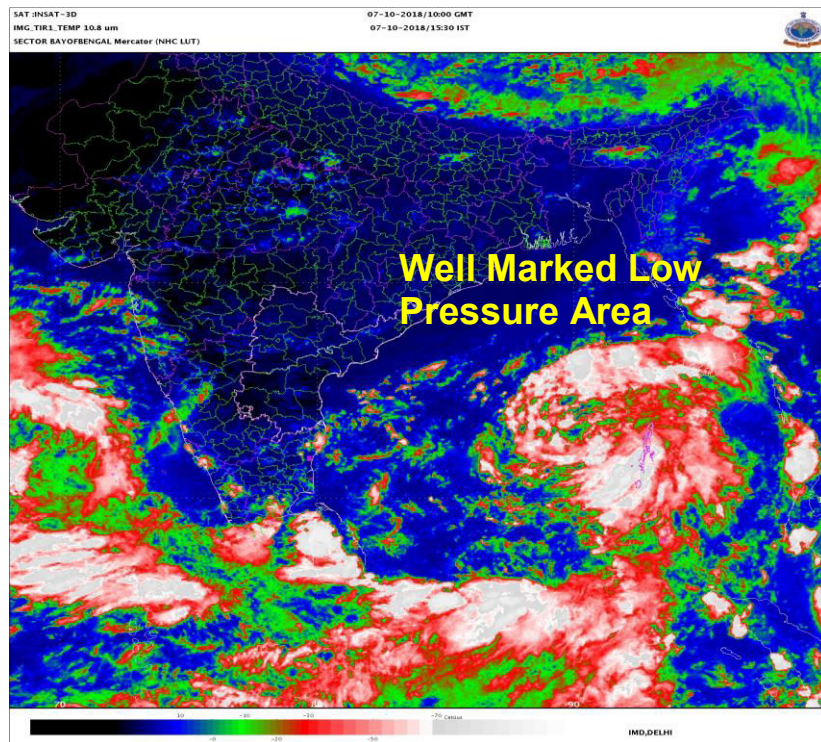


PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



GRAPHICS FOR SYSTEM OVER BAY OF BENGAL



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 07.10.2018

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1400 UTC OF 07.10.2018 BASED ON 1200 UTC OF 07.10.2018.

A. ARABIAN SEA:

THE DEEP DEPRESSION OVER SOUTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 20 KMPH IN LAST 06 HOURS AND LAY CENTRED AT 1200 UTC OF TODAY, THE 7TH OCTOBER 2018 OVER EASTCENTRAL & ADJOINING SOUTHEAST ARABIAN SEA, NEAR LATITUDE 12.1°N AND LONGITUDE 64.3°E, ABOUT 1230 KM EAST-SOUTHEAST OF SALALAH (41316), 1130 KM EAST-SOUTHEAST OF SOCOTRA ISLANDS (41494) AND 1050 KM WEST-NORTHWEST OF MINICOY (43369). IT IS VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM DURING NEXT 24 HOURS AND INTO A SEVERE CYCLONIC STORM DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & ADJOINING YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1200 UTC OF TODAY, THE 7TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.0. THE CONVECTION HAS ORGANISED DURING PAST SIX HOURS WITH WELL DEFINED CURVED BANDS. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 8.0°N & 18.0°N AND EAST OF LONGITUDE 57.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1000 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. STATE OF SEA IS VERY ROUGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
07.10.18/1200	12.1/64.3	50-60 GUSTING TO 70	DEEP DEPRESSION
07.10.18/1800	12.2/63.7	55-65 GUSTING TO 75	DEEP DEPRESSION
08.10.18/0000	12.3/63.0	65-75 GUSTING TO 85	CYCLONIC STORM
08.10.18/0600	12.4/62.4	70-80 GUSTING TO 90	CYCLONIC STORM
08.10.18/1200	12.6/61.8	80-90 GUSTING TO 100	CYCLONIC STORM
09.10.18/0000	13.1/60.7	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
09.10.18/1200	13.7/59.7	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
10.10.18/0000	14.3/58.7	105-115 GUSTING TO 130	SEVERE CYCLONIC STORM
10.10.18/1200	14.8/58.0	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
11.10.18/0000	15.3/57.2	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
11.10.18/1200	15.7/56.5	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM

B. BAY OF BENGAL:

THE WELL MARKED LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL & ADJOINING NORTH ANDAMAN SEA PERSISTED OVER THE SAME REGION. IT IS VERY LIKELY TO CONCENTRATE INTO A DEPRESSION DURING NEXT 24 HOURS AND VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA COAST DURING NEXT 72 HOURS.

AS PER LATEST SATELLITE IMAGERY BASED ON 1200 UTC OF TODAY, THE 7TH OCTOBER, INTENSITY OF THE SYSTEM IS T 1.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 9.0°N & 17.0°N AND LONGITUDE 87.0°E & 95.0°E. MAXIMUM SUSTAINED WIND SPEED IS 10-15 KNOTS, GUSTING TO 25 KNOTS.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
MODERATE	HIGH	HIGH	---	---

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. THE GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR INTENSIFICATION INTO CYCLONIC STORM. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND WEST OF 60.0⁰E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 100 X10⁻⁵SEC⁻¹ TO THE SOUTH OF SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED IN PAST 06 HOURS AND IS ABOUT 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF ORDER 30 X10⁻⁵SEC⁻¹ TO THE NORTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE. IT IS INCREASING BECOMING MORE THAN 20 KT TO THE NORTH OF 13⁰N OVER AS. IT IS INCREASING OVER WESTCENTRAL ARABIAN SEA ALONG THE EXPECTED TRACK OF SYSTEM. HOWEVER, IT IS MODERATE (15-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A CYCLONIC STORM DURING NEXT 24 HRS.

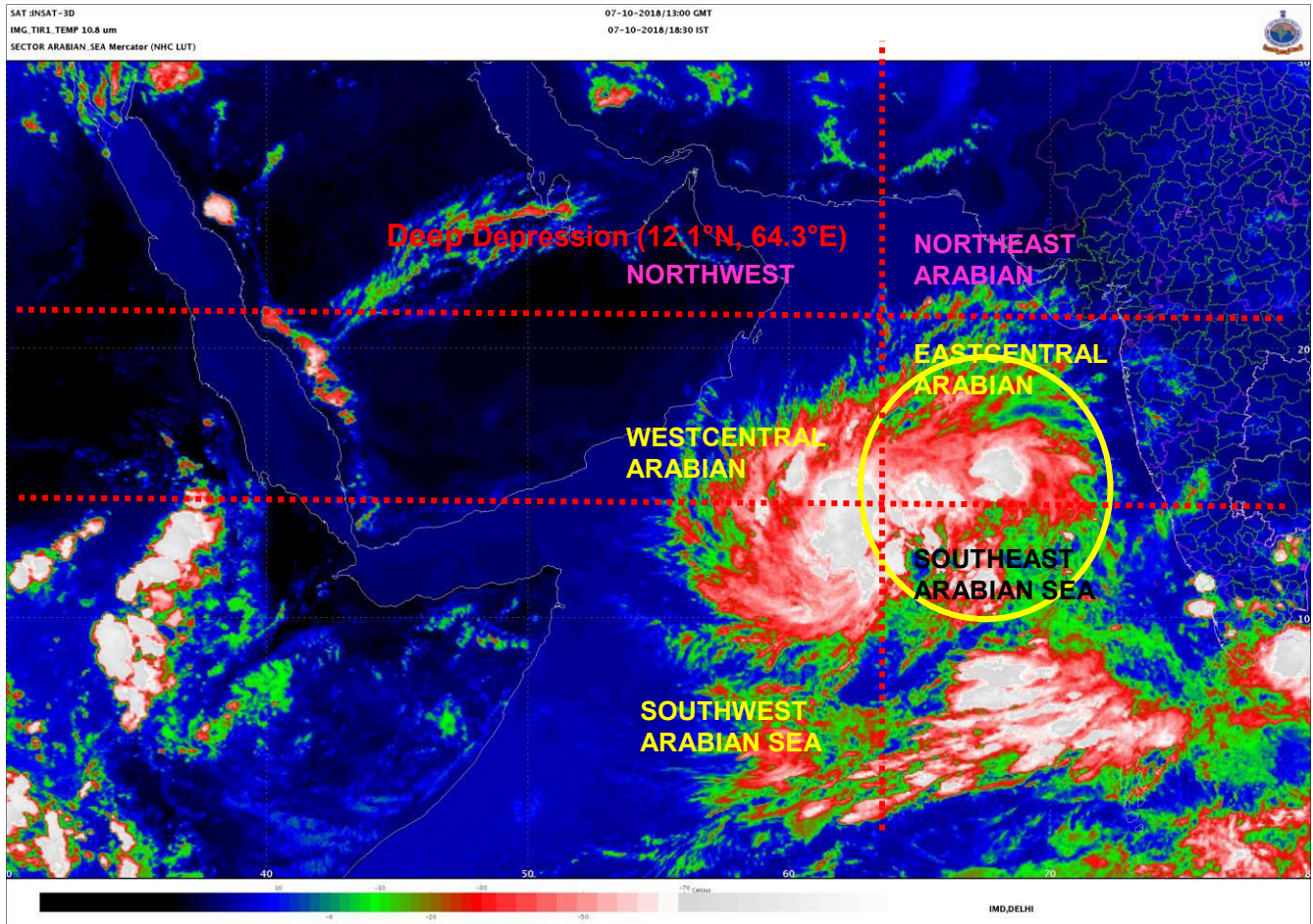
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPING OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30⁰C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31⁰C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 70 X10⁻⁵SEC⁻¹ OVER ANDAMAN SEA. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ OVER NORTH ANDAMAN SEA. THE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ OVER NORTH ANDAMAN SEA. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (5-15 KT) OVER SOUTH & CENTRAL BOB AND ADJOINING ANDAMAN SEA. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS ODISHA COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(NARESH KUMAR)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

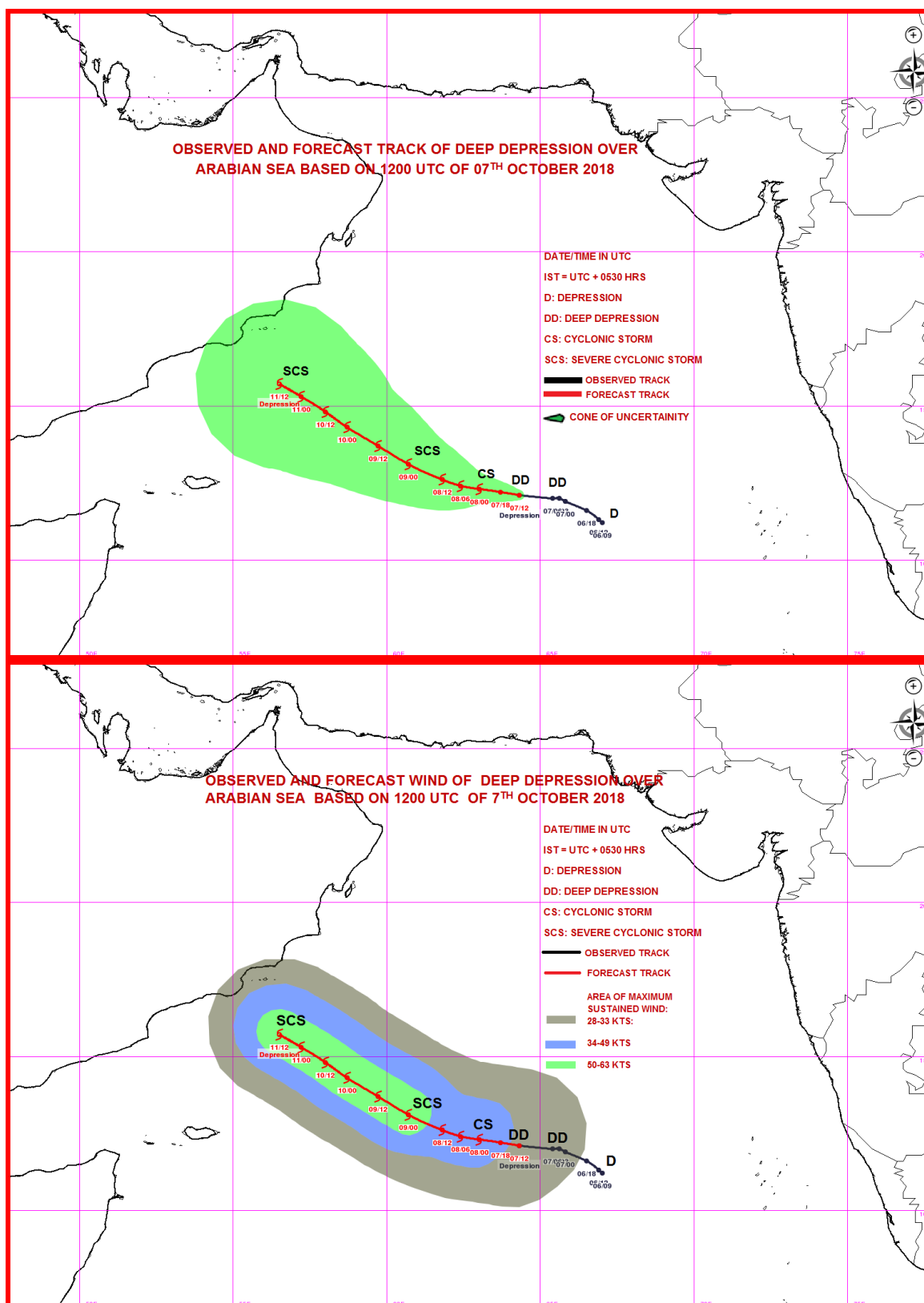
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

GRAPHICS FOR SYSTEM OVER ARABIAN SEA



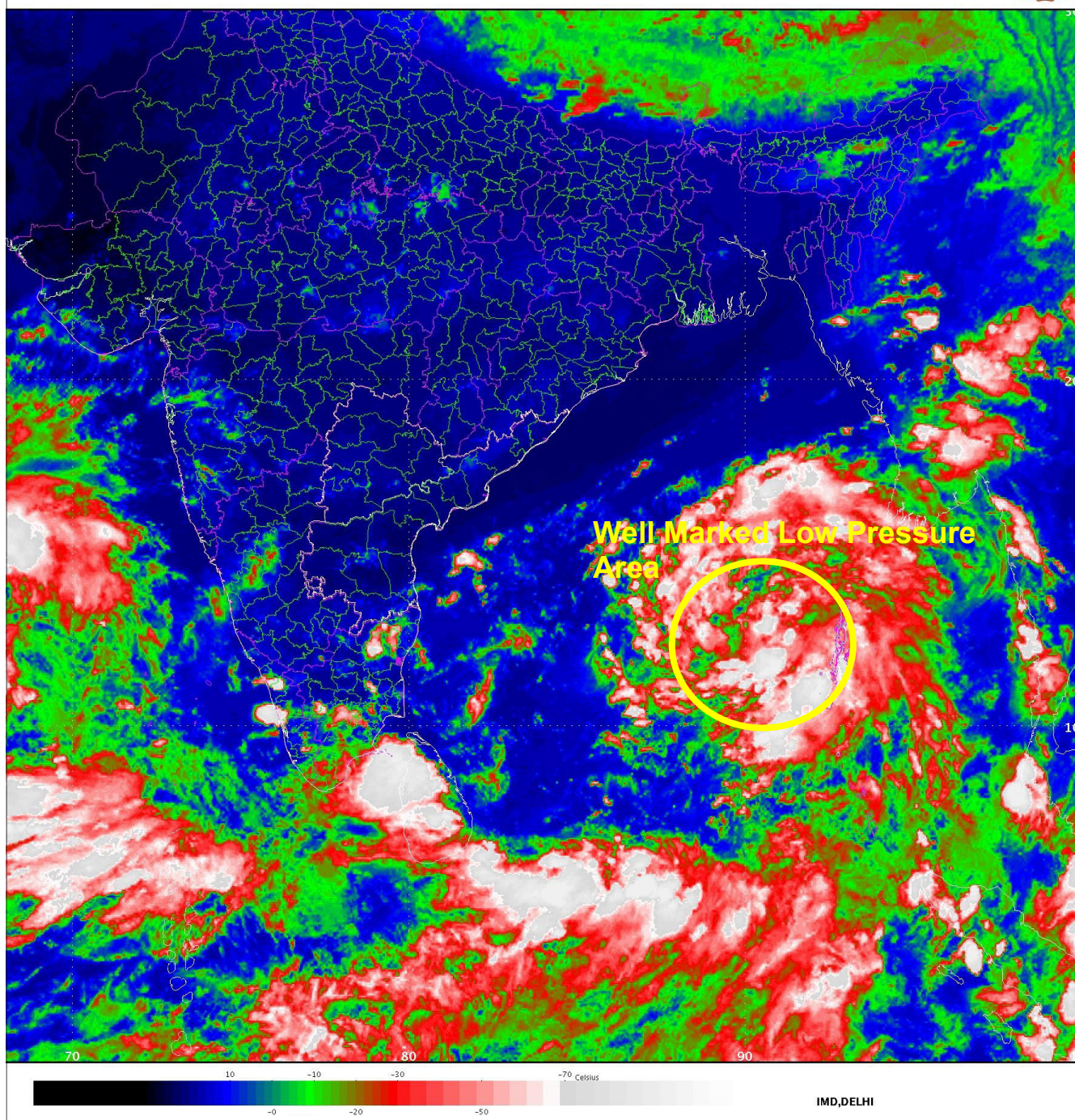
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 08.10.2018

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0500 UTC OF 08.10.2018 BASED ON 0300 UTC OF 08.10.2018.

A. ARABIAN SEA:

THE DEEP DEPRESSION OVER SOUTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 20 KMPH IN LAST 06 HOURS AND LAY CENTRED AT 1200 UTC OF TODAY, THE 7TH OCTOBER 2018 OVER EASTCENTRAL & ADJOINING SOUTHEAST ARABIAN SEA, NEAR LATITUDE 12.1°N AND LONGITUDE 64.3°E, ABOUT 1230 KM EAST-SOUTHEAST OF SALALAH (41316), 1130 KM EAST-SOUTHEAST OF SOCOTRA ISLANDS (41494) AND 1050 KM WEST-NORTHWEST OF MINICOY (43369). IT IS VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM DURING NEXT 24 HOURS AND INTO A SEVERE CYCLONIC STORM DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & ADJOINING YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1200 UTC OF TODAY, THE 7TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.0. THE CONVECTION HAS ORGANISED DURING PAST SIX HOURS WITH WELL DEFINED CURVED BANDS. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 8.0°N & 18.0°N AND EAST OF LONGITUDE 57.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1000 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. STATE OF SEA IS VERY ROUGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
08.10.18/0300	12.4/62.0	65-75 GUSTING TO 85	CYCLONIC STORM
08.10.18/1200	12.5/61.8	70-80 GUSTING TO 90	CYCLONIC STORM
08.10.18/1730	12.8/61.2	80-90 GUSTING TO 100	CYCLONIC STORM
08.10.18/2330	13.1/60.6	80-90 GUSTING TO 100	CYCLONIC STORM
09.10.18/0530	13.4/60.0	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
09.10.18/1730	13.7/59.3	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
10.10.18/0530	14.0/58.6	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
10.10.18/1730	14.4/57.9	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
11.10.18/0530	14.8/57.8	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
11.10.18/1730	15.1/56.3	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
12.10.18/0530	15.3/55.4	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
12.10.18/1730	15.5/54.0	80-90 GUSTING TO 100	CYCLONIC STORM

B. BAY OF BENGAL:

THE WELL MARKED LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL & ADJOINING NORTH ANDAMAN SEA PERSISTED OVER THE SAME REGION. IT IS VERY LIKELY TO CONCENTRATE INTO A DEPRESSION DURING NEXT 24 HOURS AND VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA COAST DURING NEXT 72 HOURS.

AS PER LATEST SATELLITE IMAGERY BASED ON 1200 UTC OF TODAY, THE 7TH OCTOBER, INTENSITY OF THE SYSTEM IS T 1.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 9.0°N & 17.0°N AND LONGITUDE 87.0°E & 95.0°E. MAXIMUM SUSTAINED WIND SPEED IS 10-15 KNOTS, GUSTING TO 25 KNOTS.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
08.10.18/0300	14.0/88.8	40-50 GUSTING TO 60	DEPRESSION
08.10.18/1200	14.5/87.8	45-55 GUSTING TO 65	DEPRESSION
09.10.18/0000	15.5/86.8	50-60 GUSTING TO 70	DEEP DEPRESSION
09.10.18/1200	16.5/86.0	55-65 GUSTING TO 75	DEEP DEPRESSION
10.10.18/0000	17.5/85.6	60-70 GUSTING TO 80	CYCLONIC STORM
10.10.18/1200	18.5/85.3	65-75 GUSTING TO 85	CYCLONIC STORM
11.10.18/1200	19.2/85.0	70-80 GUSTING TO 90	CYCLONIC STORM

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
MODERATE	HIGH	HIGH	---	---

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. THE GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR INTENSIFICATION INTO CYCLONIC STORM. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 100 X10⁻⁵SEC⁻¹ TO THE SOUTH OF SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED IN PAST 06 HOURS AND IS ABOUT 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF ORDER 30 X10⁻⁵SEC⁻¹ TO THE NORTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE. IT IS INCREASING BECOMING MORE THAN 20 KT TO THE NORTH OF 13°N OVER AS. IT IS INCREASING OVER WESTCENTRAL ARABIAN SEA ALONG THE EXPECTED TRACK OF SYSTEM. HOWEVER, IT IS MODERATE (15-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A CYCLONIC STORM DURING NEXT 24 HRS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPING OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 70 X10⁻⁵SEC⁻¹ OVER ANDAMAN SEA. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ OVER NORTH ANDAMAN SEA.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

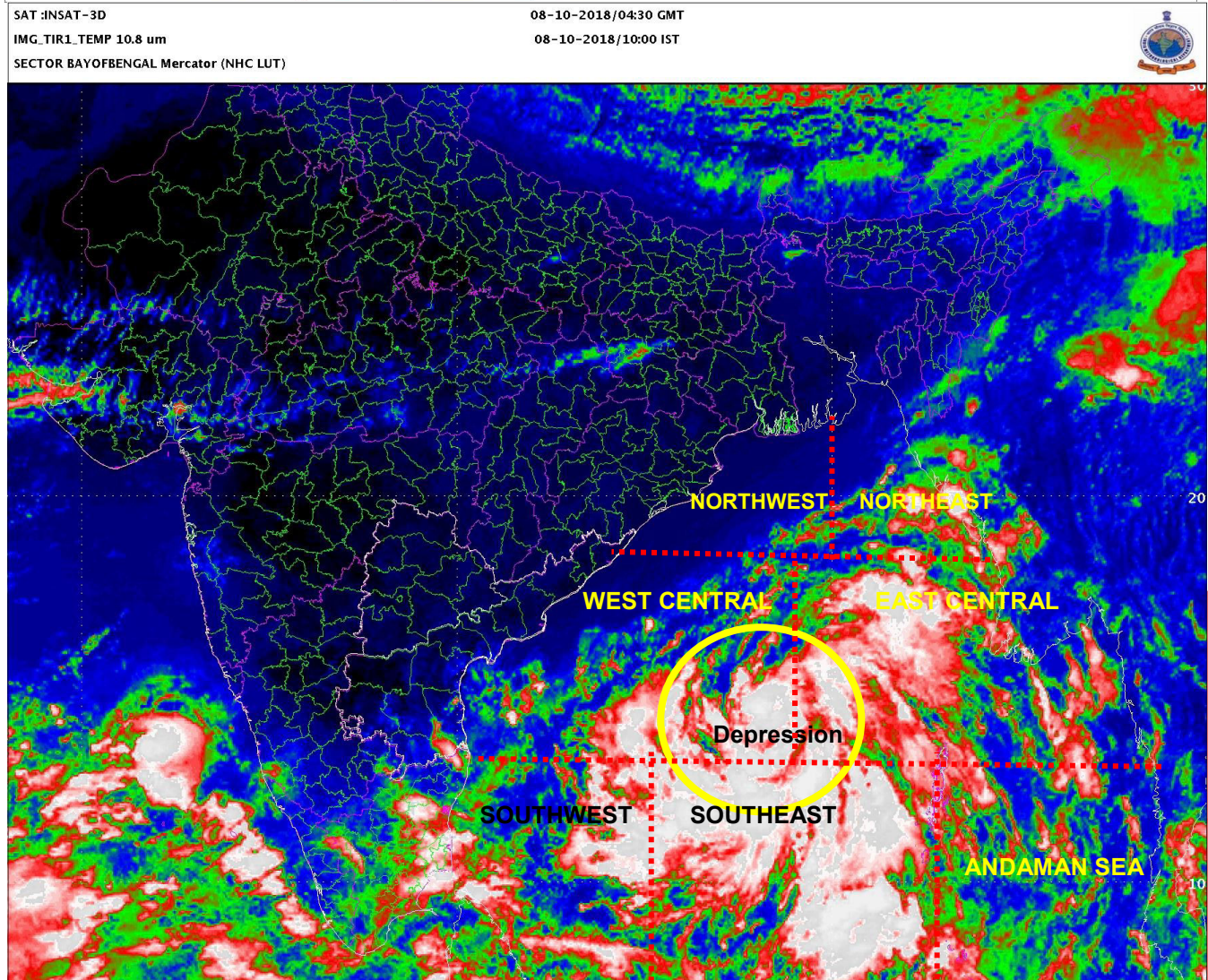
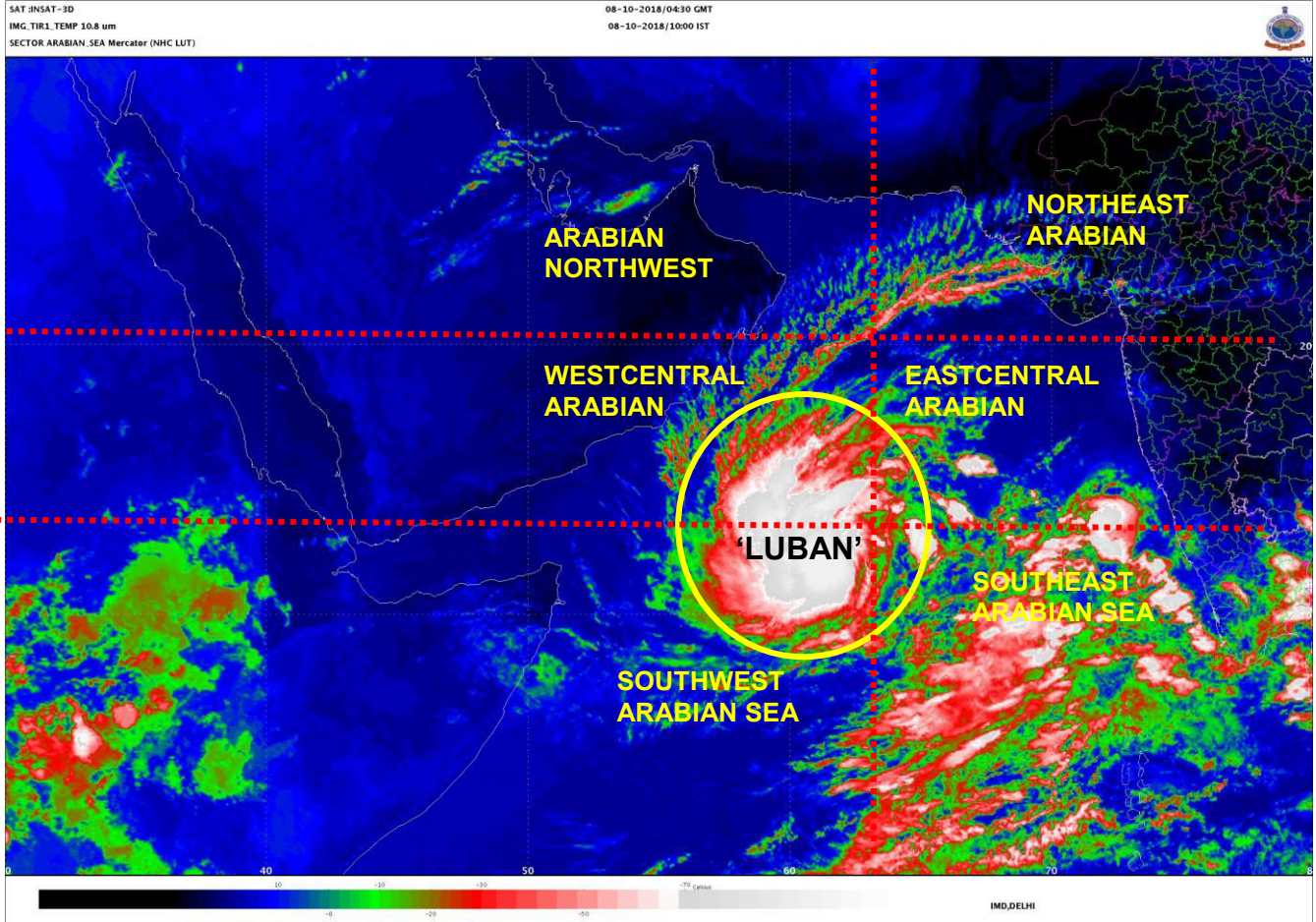
THE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT $20 \times 10^{-5} \text{ SEC}^{-1}$ OVER NORTH ANDAMAN SEA. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (5-15 KT) OVER SOUTH & CENTRAL BOB AND ADJOINING ANDAMAN SEA. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS ODISHA COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(NARESH KUMAR)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

GRAPHICS FOR CYCLONIC STORM 'LUBAN' OVER ARABIAN SEA





REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 1

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

CYCLONIC STORM 'LUBAN' OVER ARABIAN SEA - ADVISORY NO. ONE ISSUED AT 0300 UTC OF 08TH OCTOBER, 2018 BASED ON 0000 UTC OF 08TH OCTOBER 2018.

A. ARABIAN SEA:

THE DEEP DEPRESSION OVER EASTCENTRAL & ADJOINING SOUTHEAST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 20 KMPH IN PAST 06 HOURS, INTENSIFIED INTO A CYCLONIC STORM, **LUBAN** OVER WESTCENTRAL AND ADJOINING SOUTHWEST ARABIAN SEA AND AND LAY CENTERED AT 0000 UTC OF TODAY, THE 08TH OCTOBER 2018, NEAR LATITUDE 12.3°N AND LONGITUDE 62.4°E, ABOUT 1040 KM EAST-SOUTHEAST OF SALALAH (OMAN), 920 KM EAST-SOUTHEAST OF SOCOTRA ISLANDS (YEMEN) AND 1260 KM WEST-NORTHWEST OF MINICOY (LAKSHADWEEP ISLANDS). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0000 UTC OF TODAY, THE 8TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.5. THE CONVECTION HAS ORGANISED DURING PAST SIX HOURS. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 10.0°N & 16.5°N AND EAST OF LONGITUDE 57.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. STATE OF SEA IS HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/0000	12.3/62.4	65-75 gusting to 85	Cyclonic Storm
08.10.18/0600	12.5/61.8	70-80 gusting to 90	Cyclonic Storm
08.10.18/1200	12.8/61.2	80-90 gusting to 100	Cyclonic Storm
08.10.18/18000	13.1/60.6	80-90 gusting to 100	Cyclonic Storm
09.10.18/0000	13.4/60.0	90-100 gusting to 115	Severe Cyclonic Storm
09.10.18/1200	13.7/59.3	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0000	14.0/58.6	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/1200	14.4/57.9	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/0000	14.8/57.8	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/1200	15.1/56.3	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/0000	15.3/55.4	90-100 gusting to 115	Severe Cyclonic Storm
12.10.18/1200	15.5/54.0	80-90 gusting to 100	Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

B. BAY OF BENGAL:

THE WELL MARKED LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL & ADJOINING NORTH ANDAMAN SEA PERSISTED OVER THE SAME REGION. IT IS VERY LIKELY TO CONCENTRATE INTO A DEPRESSION DURING NEXT 24 HOURS AND VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA COAST DURING NEXT 72 HOURS.

AS PER LATEST SATELLITE IMAGERY BASED ON 0000 UTC OF TODAY, THE 8TH OCTOBER, INTENSITY OF THE SYSTEM IS T 1.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 13.2°N & 17.0°N AND LONGITUDE 87.0°E & 95.0°E. MAXIMUM SUSTAINED WIND SPEED IS 10-15 KNOTS, GUSTING TO 25 KNOTS.

PROBABILITY OF CYCLOGENESIS DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
HIGH	HIGH	HIGH	---	---

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. THE GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR INTENSIFICATION INTO CYCLONIC STORM. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 100 X10⁻⁵SEC⁻¹ TO THE SOUTH OF SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED IN PAST 06 HOURS AND IS ABOUT 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF ORDER 30 X10⁻⁵SEC⁻¹ TO THE NORTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE. IT IS INCREASING BECOMING MORE THAN 20 KT TO THE NORTH OF 13°N OVER AS. IT IS INCREASING OVER WESTCENTRAL ARABIAN SEA ALONG THE EXPECTED TRACK OF SYSTEM. HOWEVER, IT IS MODERATE (15-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A CYCLONIC STORM DURING NEXT 24 HRS.

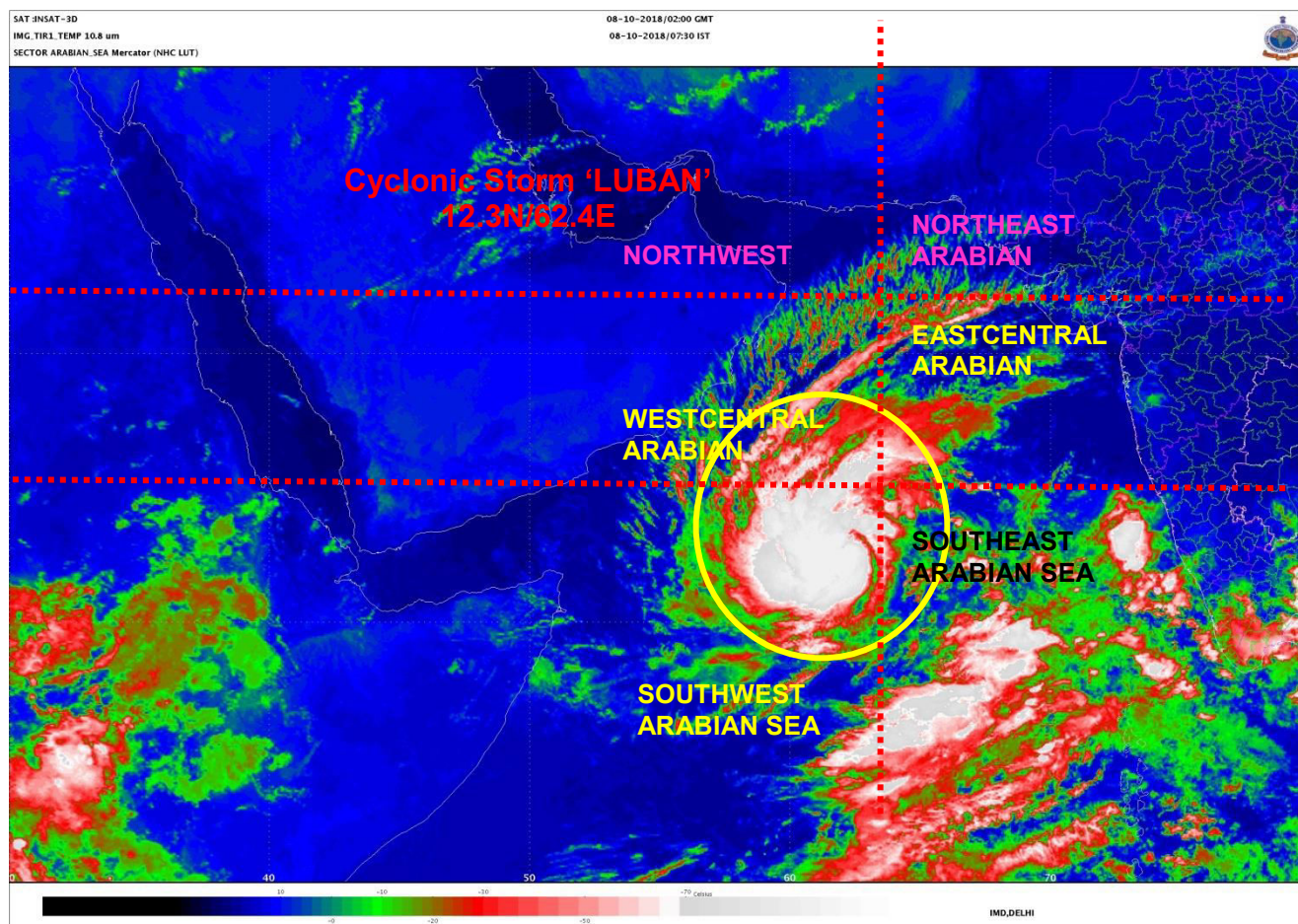
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPING OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 200 X10⁻⁵SEC⁻¹ OVER ANDAMAN SEA. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 30 X10⁻⁵SEC⁻¹ OVER NORTH ANDAMAN SEA. THE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT 40 X 10⁻⁵ SEC⁻¹ OVER NORTH ANDAMAN SEA. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (5-15 KT) OVER SOUTH & CENTRAL BOB AND ADJOINING ANDAMAN SEA. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS ODISHA COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(V R DURAI)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

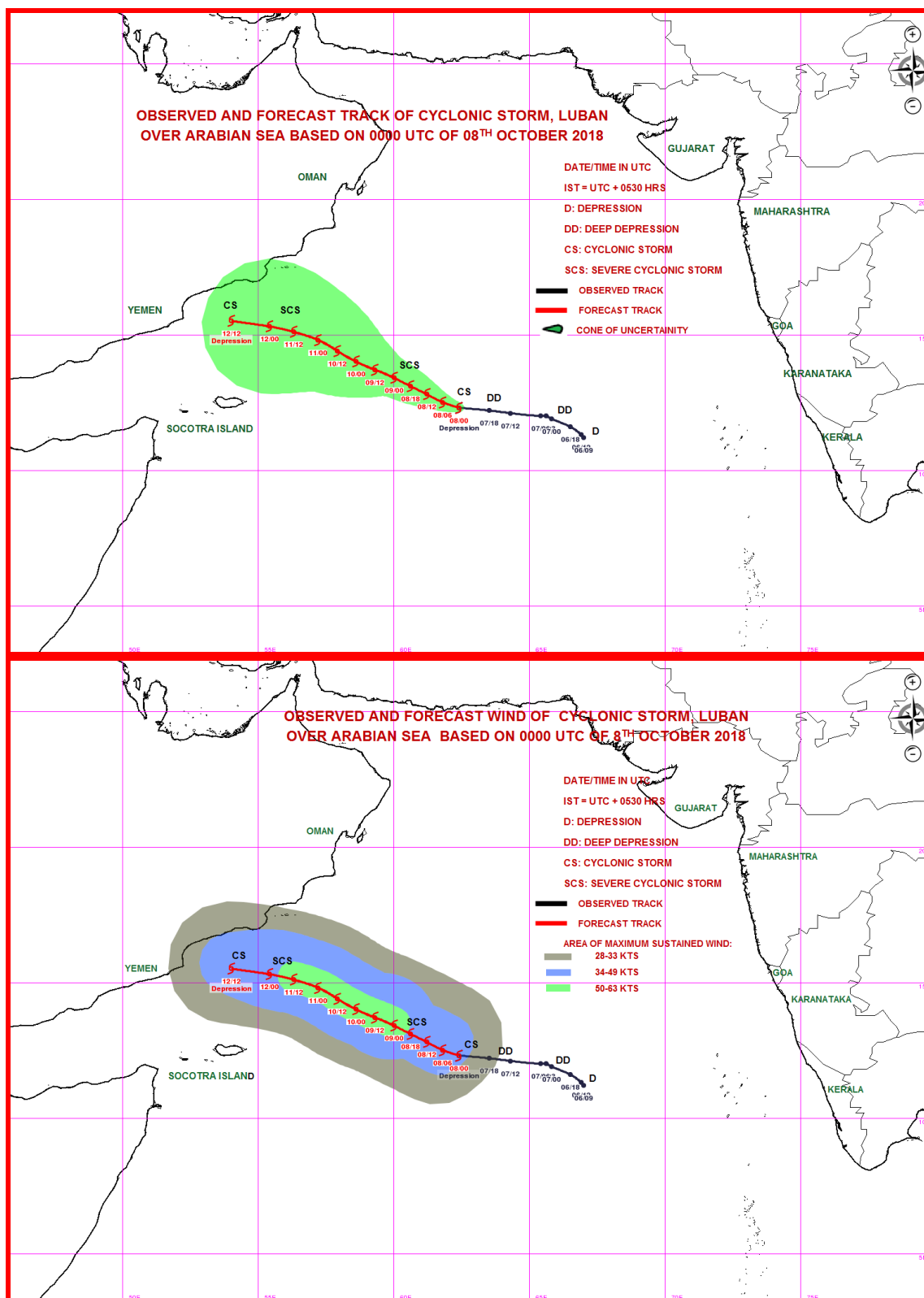
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

GRAPHICS FOR SYSTEM OVER ARABIAN SEA



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

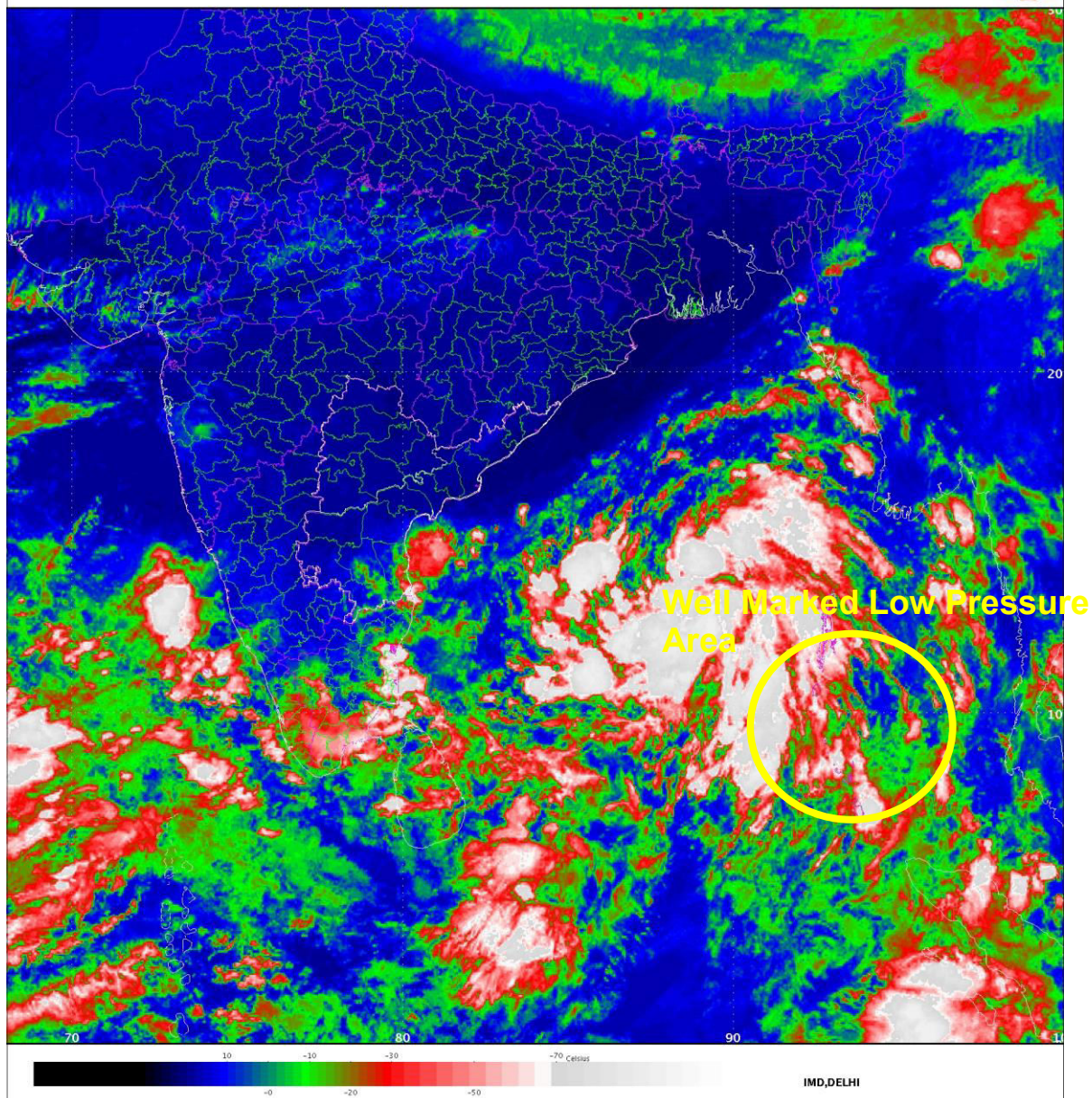


PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT:INSAT-3D
IMG_TIR1_TEMP 10.8 um
SECTOR BAYOFBENGAL Mercator (NHC LUT)

08-10-2018/02:00 GMT
08-10-2018/07:30 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 2

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 18 KMPH IN LAST 06 HOURS AND LAY CENTERED AT 0300 UTC OF TODAY, THE 08TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 12.4°N AND LONGITUDE 62.0°E, ABOUT 990 KM EAST-SOUTHEAST OF SALALAH (41316), 880 KM EAST OF SOCOTRA ISLANDS (41494) AND 1300 KM WEST-NORTHWEST OF MINICOY (43369). IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0300 UTC OF TODAY, THE 8TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.5. THE CONVECTION HAS ORGANISED DURING PAST SIX HOURS. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 10.0°N & 16.5°N AND EAST OF LONGITUDE 57.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. STATE OF SEA IS HIGH AROUND. THE SYSTEM CENTRE. FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	AXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
08.10.18/0300	12.4/62.0	65-75 gusting to 85	Cyclonic Storm
08.10.18/0600	12.5/61.8	70-80 gusting to 90	Cyclonic Storm
08.10.18/1200	12.8/61.2	80-90 gusting to 100	Cyclonic Storm
08.10.18/1800	13.1/60.6	80-90 gusting to 100	Cyclonic Storm
09.10.18/0000	13.4/60.0	90-100 gusting to 115	Severe Cyclonic Storm
09.10.18/1200	13.7/59.3	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0000	14.0/58.6	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/1200	14.4/57.9	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/0000	14.8/57.8	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/1200	15.1/56.3	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/0000	15.3/55.4	90-100 gusting to 115	Severe Cyclonic Storm
12.10.18/1200	15.5/54.0	80-90 gusting to 100	Cyclonic Storm

(B) DEPRESSION OVER EASTCENTRAL BAY OF BENGAL: PRE-CYCLONE WATCH FOR NORTH ANDHRA PRADESH AND ODISHA COAST:

THE WELL MARKED LOW PRESSURE AREA OVER SOUTHEAST AND ADJOINING EASTCENTRAL BAY OF BENGAL CONCENTRATED INTO A DEPRESSION AND LAY CENTRED AT 0300UTC OF TODAY, THE 8TH OCTOBER 2018 OVER EASTCENTRAL BAY OF BENGAL, NEAR LATITUDE 14.0°N AND LONGITUDE 88.8°E, ABOUT 720 KM SOUTH-SOUTHEAST OF GOPALPUR (43049) AND 690 KM SOUTHEAST OF KALINGAPATNAM (43105). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A DEEP DEPRESSION DURING NEXT 24 HOURS AND INTO A CYCLONIC STORM DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA AND ADJOINING NORTH ANDHRA PRADESH COASTS DURING NEXT 72 HOURS. FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/0300	14.0/88.8	40-50 gusting to 60	Depression
08.10.18/1200	14.5/87.8	45-55 gusting to 65	Depression
09.10.18/0000	15.5/86.8	50-60 gusting to 70	Deep Depression
09.10.18/1200	16.5/86.0	55-65 gusting to 75	Deep Depression
10.10.18/0000	17.5/85.6	60-70 gusting to 80	Cyclonic Storm
10.10.18/1200	18.5/85.3	65-75 gusting to 85	Cyclonic Storm
11.10.18/0000	19.2/85.0	70-80 gusting to 90	Cyclonic Storm

AS PER LATEST SATELLITE IMAGERY BASED ON 0300 UTC OF TODAY, THE 8TH OCTOBER, INTENSITY OF THE SYSTEM IS T 1.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 13.2°N & 17.0°N AND LONGITUDE 87.0°E & 95.0°E. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS, GUSTING TO 35 KNOTS. THE SEA CONDITION IS ROUGH TO VERY ROUGH AROUND SYSTEM CENTRE.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

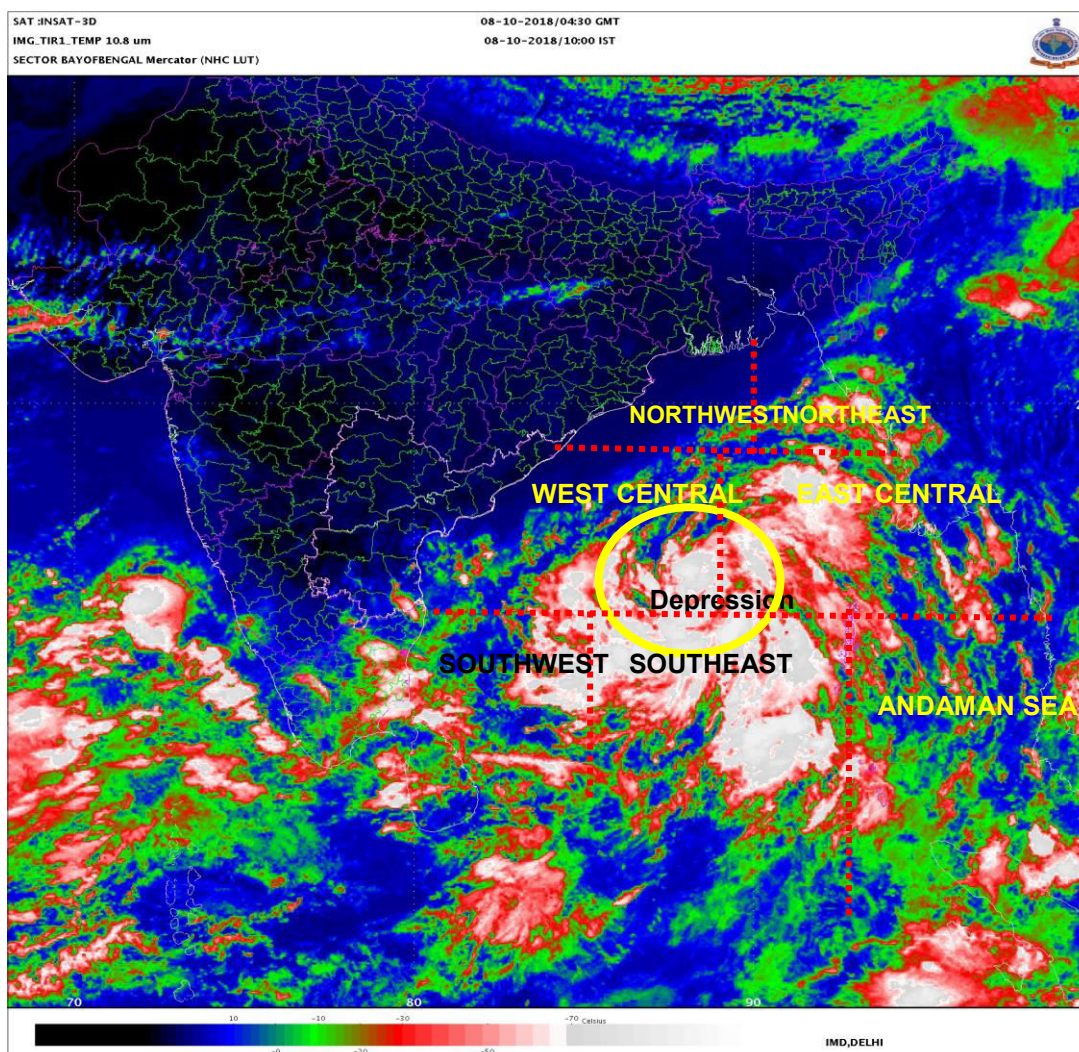
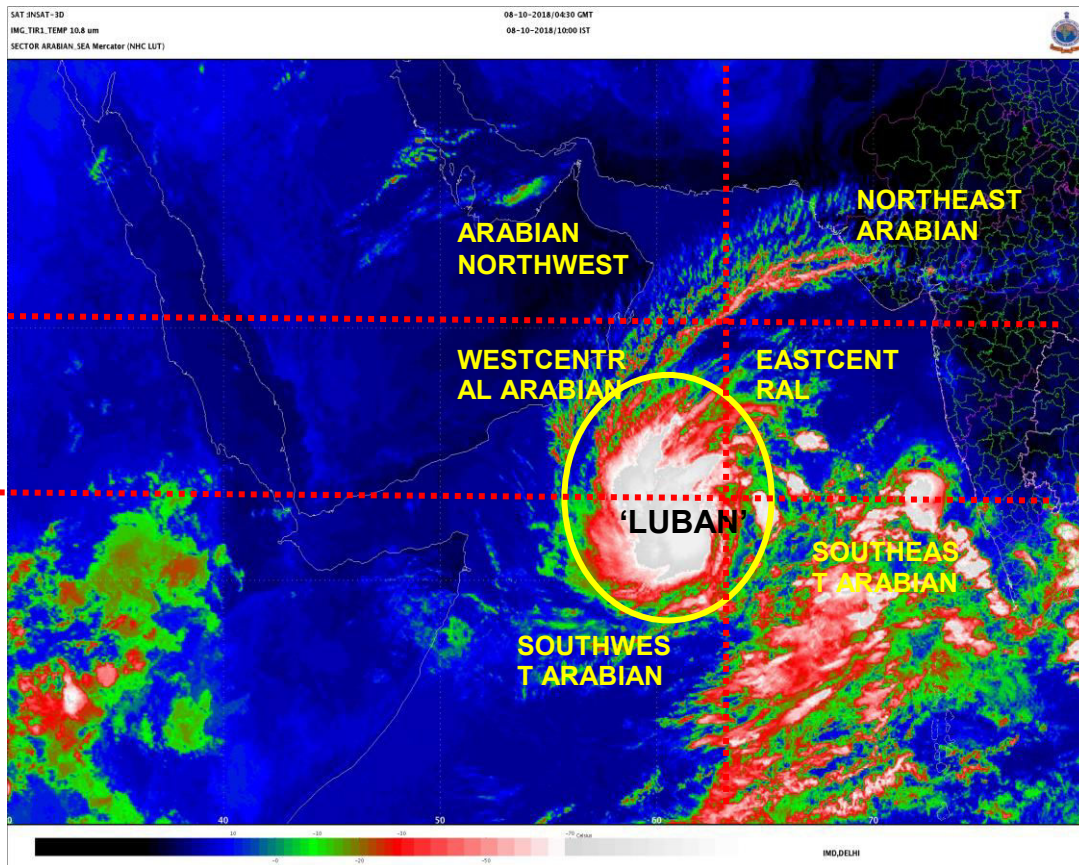
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. THE GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR INTENSIFICATION INTO CYCLONIC STORM. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY HAS INCREASED SIGNIFICANTLY AND IS AROUND 200 X10⁻⁵SEC⁻¹ AROUND SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT 40 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE HAS ALSO INCREASED AND IS OF THE ORDER 40 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (15-25 KT) AROUND THE SYSTEM CENTRE. IT IS INCREASING ALONG FORECAST TRACK. HOWEVER, IT IS MODERATE (10-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPING OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 70 X10⁻⁵SEC⁻¹ OVER ANDAMAN SEA. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ OVER EASTCENTRAL BOB TO THE NORTHEAST OF SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT 30 X 10⁻⁵ SEC⁻¹ OVER EASTCENTRAL BOB. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (5-15 KT) OVER SOUTH & CENTRAL BOB AND ADJOINING ANDAMAN SEA. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS ODISHA COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(NARESH KUMAR)
SCIENTIST-E, RSMC, NEW DELHI

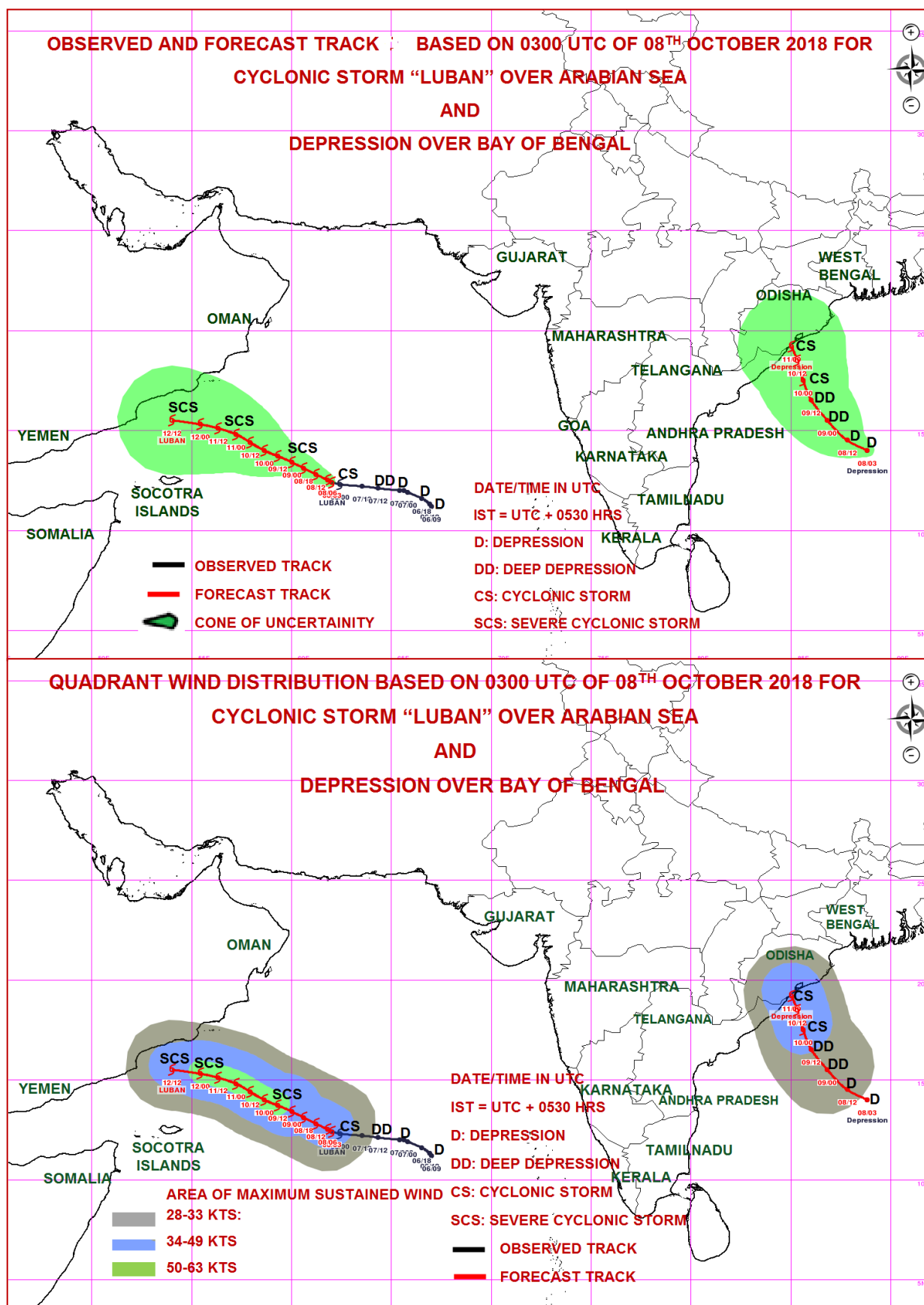
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 3

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 11 KMPH IN LAST 06 HOURS AND LAY CENTERED AT 0600 UTC OF TODAY, THE 08TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 12.4°N AND LONGITUDE 61.8°E, ABOUT 970 KM EAST-SOUTHEAST OF SALALAH (OMAN), 860 KM EAST OF SOCOTRA ISLANDS (YEMEN) AND 1320 KM WEST-NORTHWEST OF MINICOY. IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0600 UTC OF TODAY, THE 8TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. THE CONVECTION HAS ORGANISED DURING PAST SIX HOURS. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 09.0°N & 18.5°N AND BETWEEN LONGITUDE 56.5°E & 62.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. STATE OF SEA IS HIGH AROUND. THE SYSTEM CENTRE.FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/0600	12.4/61.8	75-85 gusting to 95	Cyclonic Storm
08.10.18/1200	12.7/61.2	80-90 gusting to 100	Cyclonic Storm
08.10.18/1800	12.9/60.6	80-90 gusting to 100	Cyclonic Storm
09.10.18/0000	13.2/60.0	90-100 gusting to 115	Severe Cyclonic Storm
09.10.18/0600	13.3/59.6	95-105 gusting to 120	Severe Cyclonic Storm
09.10.18/1800	13.7/59.1	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0600	14.1/58.5	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/1800	14.5/57.8	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/0600	14.8/57.0	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/1800	15.0/56.3	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/0600	15.2/55.2	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1800	15.4/54.2	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/0600	15.5/53.2	80-90 gusting to 100	Cyclonic Storm

(B) DEPRESSION OVER EASTCENTRAL BAY OF BENGAL: PRE-CYCLONE WATCH FOR NORTH ANDHRA PRADESH AND ODISHA COAST:

THE DEPRESSION OVER EASTCENTRAL BAY OF BENGAL REMAINED PRACTICALLY STATIONARY IN PAST 03 HOURS AND LAY CENTRED AT 0600 UTC OF TODAY, THE 8TH OCTOBER 2018 NEAR LATITUDE

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

14.0°N AND LONGITUDE 88.8°E, ABOUT 720 KM SOUTH-SOUTHEAST OF GOPALPUR (ODISHA) AND 690 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY INTO A DEEP DEPRESSION DURING NEXT 24 HOURS AND INTO A CYCLONIC STORM DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA AND ADJOINING NORTH ANDHRA PRADESH COASTS DURING NEXT 72 HOURS.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/0600	14.0/88.8	40-50 gusting to 60	Depression
08.10.18/1200	14.5/87.8	45-55 gusting to 65	Depression
09.10.18/0000	15.5/86.8	50-60 gusting to 70	Deep Depression
09.10.18/1200	16.5/86.0	55-65 gusting to 75	Deep Depression
10.10.18/0000	17.5/85.6	60-70 gusting to 80	Cyclonic Storm
10.10.18/1200	18.5/85.3	65-75 gusting to 85	Cyclonic Storm
11.10.18/0000	19.2/85.0	70-80 gusting to 90	Cyclonic Storm

AS PER LATEST SATELLITE IMAGERY BASED ON 0600 UTC OF TODAY, THE 8TH OCTOBER, INTENSITY OF THE SYSTEM IS T 1.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 7.0°N & 20.0°N AND LONGITUDE 83.0°E & 94.0°E. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS, GUSTING TO 35 KNOTS. THE SEA CONDITION IS ROUGH TO VERY ROUGH AROUND SYSTEM CENTRE.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. THE GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR INTENSIFICATION INTO CYCLONIC STORM. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY HAS INCREASED FURTHER AND IS AROUND 250 X10⁻⁵SEC⁻¹ TO THE SOUTHEAST AND SOUTH OF THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 40 X10⁻⁵SEC⁻¹ TO THE WEST OF THE SYSTEM CENTRE AND DIVERGENCE HAS FURTHER INCREASED AND IS OF THE ORDER 50 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (15-25 KT) TO THE WEST OF SYSTEM CENTRE AND NEUTRAL AROUND THE SYSTEM CENTER. IT IS INCREASING ALONG FORECAST TRACK. HOWEVER, IT IS MODERATE (10-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS.

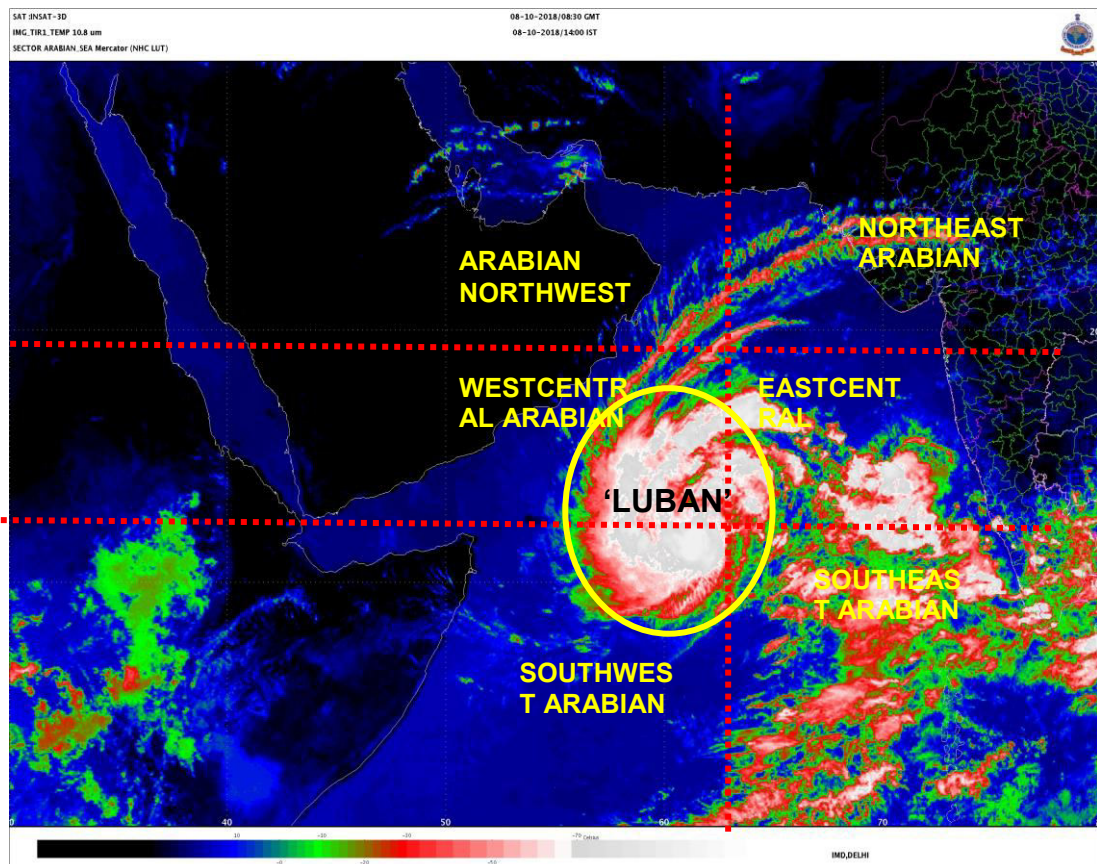
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPING OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 50 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10 X10⁻⁵SEC⁻¹ OVER EASTCENTRAL BOB TO THE NORTHEAST OF SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS IS ABOUT 30 X 10⁻⁵ SEC⁻¹ TO THE SOUTH OF

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

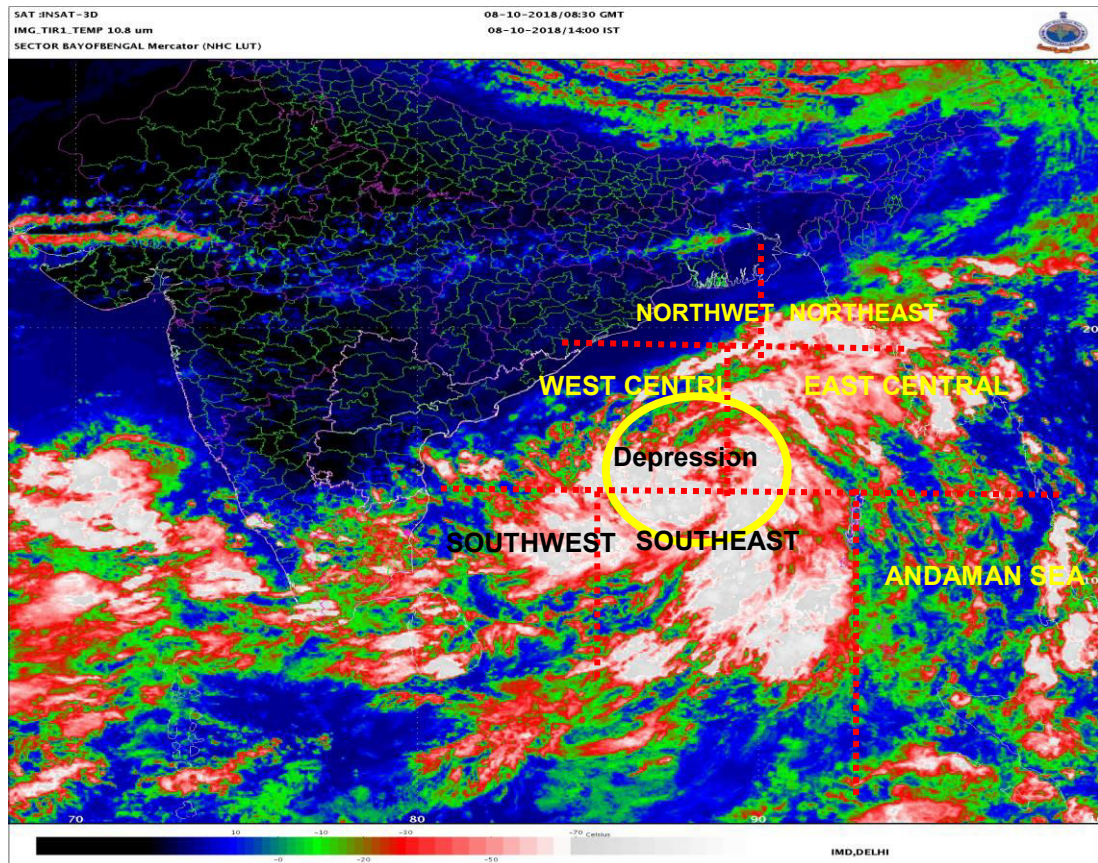
SYSTEM. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (5-15 KT) AROUND THE SYSTEM CENTER AND INCREASING ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS ODISHA COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(NARESH KUMAR)
SCIENTIST-E, RSMC, NEW DELHI



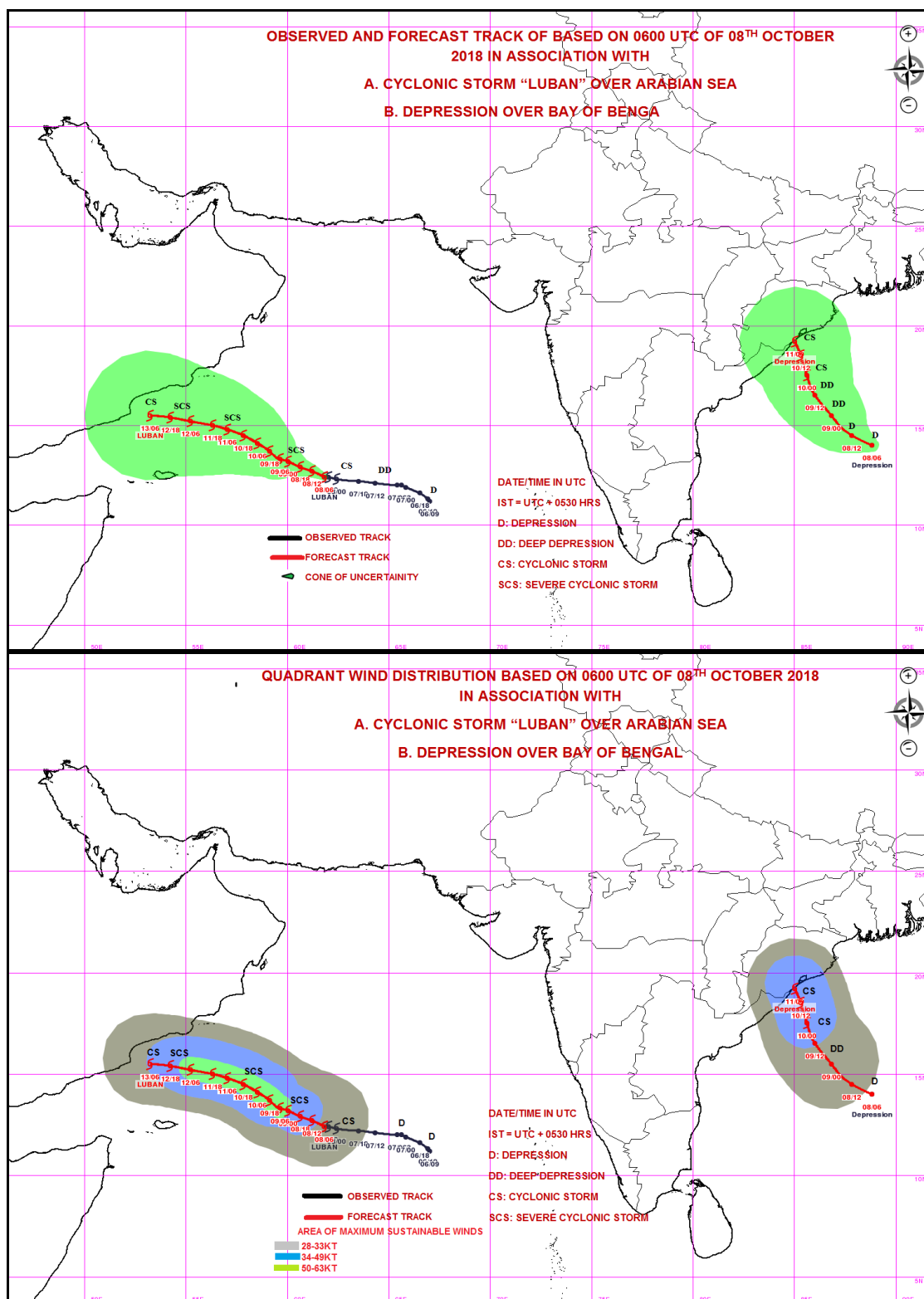
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 4

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 09 KMPH IN LAST 06 HOURS AND LAY CENTERED AT 0900 UTC OF TODAY, THE 08TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 12.5°N AND LONGITUDE 61.5°E, ABOUT 940 KM EAST-SOUTHEAST OF SALALAH (41316), 820 KM EAST OF SOCOTRA ISLANDS (41494) AND 1350 KM WEST-NORTHWEST OF MINICOY(43369). IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0900 UTC OF TODAY, THE 8TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 09.0°N & 18.5°N AND BETWEEN LONGITUDE 56.5°E & 62.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 45 KNOTS GUSTING TO 65 KNOTS. STATE OF SEA IS HIGH AROUND THE SYSTEM CENTRE. FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME(UTC)	POSITION (LAT.°N/ LONG.°E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
08.10.18/0900	12.5/61.5	80-90 GUSTING TO 100	CYCLONIC STORM
08.10.18/1200	12.7/61.2	80-90 GUSTING TO 100	CYCLONIC STORM
08.10.18/1800	12.9/60.6	80-90 GUSTING TO 100	CYCLONIC STORM
09.10.18/0000	13.2/60.0	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
09.10.18/0600	13.3/59.6	95-105 GUSTING TO 120	SEVERE CYCLONIC STORM
09.10.18/1800	13.7/59.1	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
10.10.18/0600	14.1/58.5	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
10.10.18/1800	14.5/57.8	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
11.10.18/0600	14.8/57.0	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
11.10.18/1800	15.0/56.3	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
12.10.18/0600	15.2/55.2	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
12.10.18/1800	15.4/54.2	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
13.10.18/0600	15.5/53.2	80-90 GUSTING TO 100	CYCLONIC STORM

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) DEPRESSION OVER EASTCENTRAL BAY OF BENGAL:

THE DEPRESSION OVER EASTCENTRAL BAY OF BENGAL MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 07 KMPH IN LAST 06 HOURS AND LAY CENTRED AT 0900 UTC OF TODAY, THE 8TH OCTOBER 2018 NEAR LATITUDE 14.2°N AND LONGITUDE 88.5°E, ABOUT 680 KM SOUTHEAST OF GOPALPUR (43049) AND 650 KM SOUTHEAST OF KALINGAPATNAM (43105). IT IS VERY LIKELY TO INTENSIFY INTO A DEEP DEPRESSION DURING NEXT 18 HOURS AND INTO A CYCLONIC STORM DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTH-WESTWARDS TOWARDS ODISHA AND ADJOINING NORTH ANDHRA PRADESH COASTS DURING NEXT 72 HOURS. AS PER LATEST SATELLITE IMAGERY BASED ON 0900 UTC OF TODAY, THE 8TH OCTOBER, INTENSITY OF THE SYSTEM IS T 1.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 7.0°N & 20.0°N AND LONGITUDE 83.0°E & 94.0°E. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS, GUSTING TO 35 KNOTS. THE SEA CONDITION IS ROUGH TO VERY ROUGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
08.10.18/0900	14.2/88.5	40-50 GUSTING TO 60	DEPRESSION
08.10.18/1200	14.5/87.8	45-55 GUSTING TO 65	DEPRESSION
09.10.18/0000	15.5/86.8	50-60 GUSTING TO 70	DEEP DEPRESSION
09.10.18/1200	16.5/86.0	55-65 GUSTING TO 75	DEEP DEPRESSION
10.10.18/0000	17.5/85.6	60-70 GUSTING TO 80	CYCLONIC STORM
10.10.18/1200	18.5/85.3	65-75 GUSTING TO 85	CYCLONIC STORM
11.10.18/0000	19.2/85.0	70-80 GUSTING TO 90	CYCLONIC STORM

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. THE GENESIS POTENTIAL PARAMETER INDEX DEVELOPED BY IMD INDICATES POTENTIAL ZONE FOR INTENSIFICATION INTO CYCLONIC STORM. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 40 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF THE ORDER 50 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (15-25 KT) TO THE WEST OF SYSTEM CENTRE AND NEUTRAL AROUND THE SYSTEM CENTER. IT IS INCREASING ALONG FORECAST TRACK. HOWEVER, IT IS MODERATE (10-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPING OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 50 X10⁻⁵SEC⁻¹

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

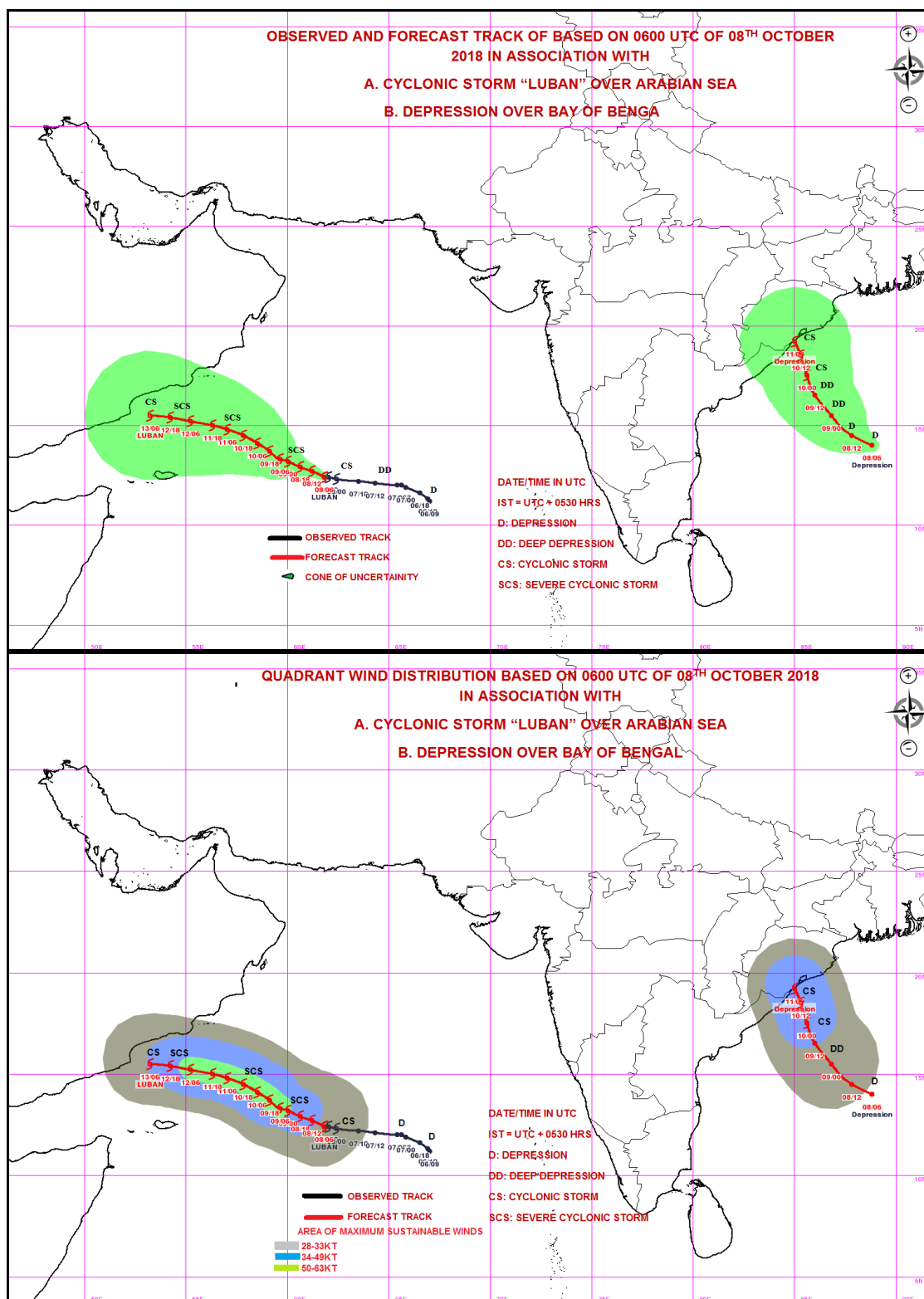
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

AROUND THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT $10 \times 10^{-5} \text{SEC}^{-1}$ OVER EASTCENTRAL BOB TO THE NORTHEAST OF SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS IS ABOUT $30 \times 10^{-5} \text{SEC}^{-1}$ TO THE SOUTH OF SYSTEM. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (5-15 KT) AROUND THE SYSTEM CENTER AND INCREASING ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS ODISHA COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(NARESH KUMAR)
SCIENTIST-E, RSMC, NEW DELHI

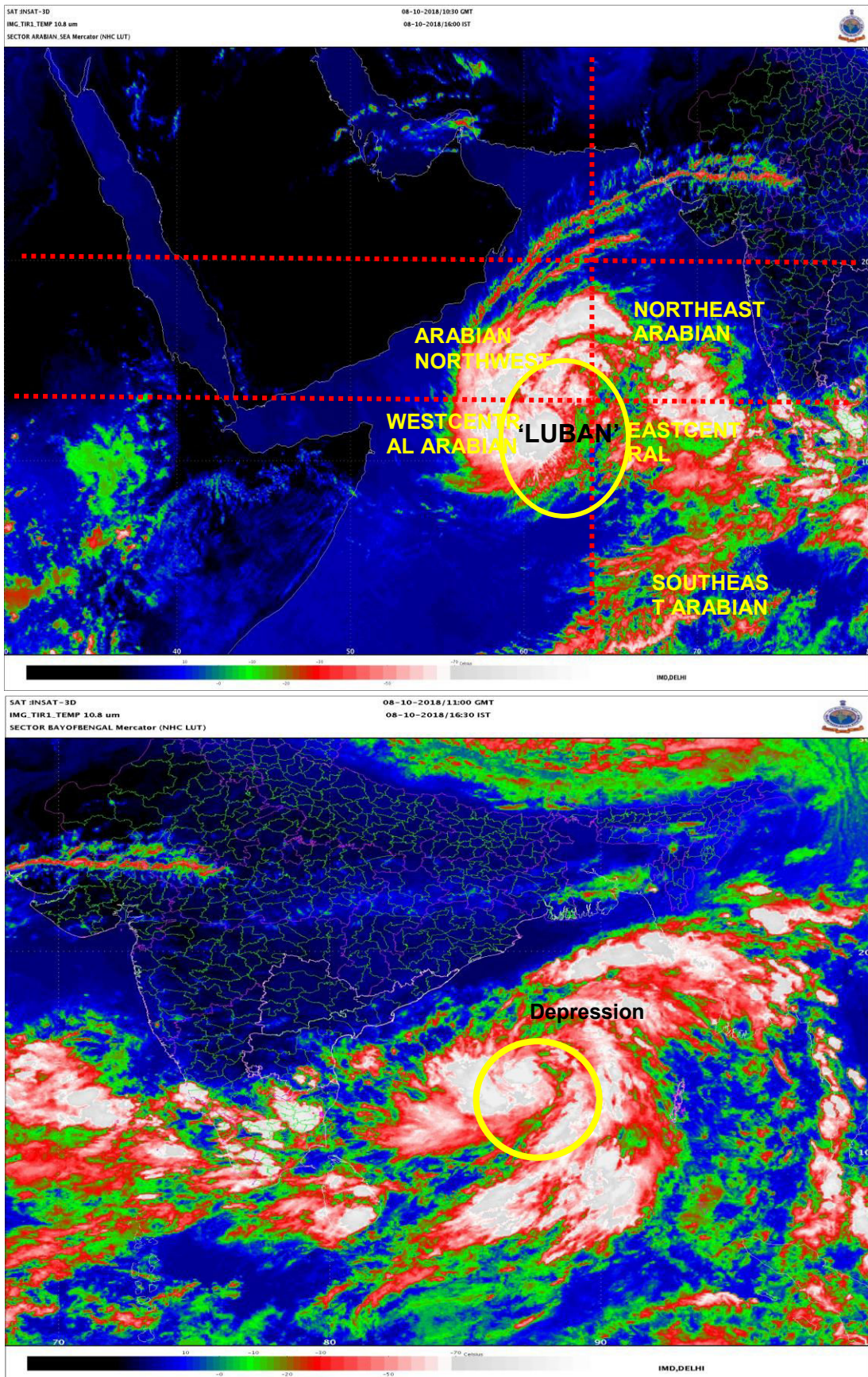
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 5

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED FURTHER WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 14 KMPH IN LAST 06 HOURS AND LAY CENTERED AT 1200 UTC OF TODAY, THE 08TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 12.5°N AND LONGITUDE 61.0°E, ABOUT 900 KM EAST-SOUTHEAST OF SALALAH (OMAN) AND 770 KM EAST OF SOCOTRA ISLANDS (YEMEN). IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1200 UTC OF TODAY, THE 8TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 09.0°N & 19°N AND BETWEEN LONGITUDE 55.5°E & 63.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 45 KNOTS GUSTING TO 65 KNOTS. STATE OF SEA IS HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/1200	12.5/61.0	80-90 gusting to 100	Cyclonic Storm
08.10.18/1800	12.7/60.5	85-95 gusting to 105	Cyclonic Storm
09.10.18/0000	12.9/60.0	90-100 gusting to 115	Severe Cyclonic Storm
09.10.18/0600	13.1/59.5	95-105 gusting to 120	Severe Cyclonic Storm
09.10.18/1200	13.3/59.0	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0000	13.7/58.1	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1200	14.1/57.1	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/0000	14.4/56.1	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/1200	14.7/55.1	105-115 gusting to 130	Severe Cyclonic Storm
12.10.18/0000	14.9/54.1	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1200	15.1/53.2	95-105 gusting to 120	Severe Cyclonic Storm
13.10.18/0000	15.2/52.3	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/1200	15.2/51.4	90-100 gusting to 115	Severe Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) DEPRESSION OVER EASTCENTRAL BAY OF BENGAL:

THE DEPRESSION OVER EASTCENTRAL BAY OF BENGAL MOVED FURTHER WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 12 KMPH IN LAST 06 HOURS AND LAY CENTRED AT 1200 UTC OF TODAY, THE 8TH OCTOBER 2018 NEAR LATITUDE 14.3°N AND LONGITUDE 88.2°E, ABOUT 650 KM SOUTHEAST OF GOPALPUR (ODISHA) AND 620 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY INTO A DEEP DEPRESSION DURING NEXT 18 HOURS AND INTO A CYCLONIC STORM DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS DURING NEXT 72 HOURS.

AS PER LATEST SATELLITE IMAGERY BASED ON 1200 UTC OF TODAY, THE 8TH OCTOBER, INTENSITY OF THE SYSTEM IS T 1.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 6.0°N & 20.5°N AND LONGITUDE 83.5°E & 96.5°E. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS, GUSTING TO 35 KNOTS. THE SEA CONDITION IS ROUGH TO VERY ROUGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/1200	14.3/88.2	45-55 gusting to 65	Depression
09.10.18/0000	14.8/87.4	50-60 gusting to 70	Deep Depression
09.10.18/1200	15.9/86.0	55-65 gusting to 75	Deep Depression
10.10.18/0000	17.2/85.3	60-70 gusting to 80	Cyclonic Storm
10.10.18/1200	18.1/85.0	65-75 gusting to 85	Cyclonic Storm
11.10.18/0000	18.8/84.8	70-80 gusting to 90	Cyclonic Storm
11.10.18/1200	19.5/84.8	70-80 gusting to 90	Cyclonic Storm

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 40 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (15-25 KT) TO THE WEST AND NORTHWEST OF SYSTEM CENTRE AND NEUTRAL AROUND THE SYSTEM CENTER. HOWEVER, IT IS MODERATE (10-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS LEADING TO SLIGHT WEAKENING OF THE SYSTEM BEFORE LANFALL OVER YEMEN AND ADJOINING SOUTH OMAN COAST. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPING OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT $100 \times 10^{-5} \text{SEC}^{-1}$ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT $10 \times 10^{-5} \text{SEC}^{-1}$ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS IS ABOUT $20 \times 10^{-5} \text{SEC}^{-1}$ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTER. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

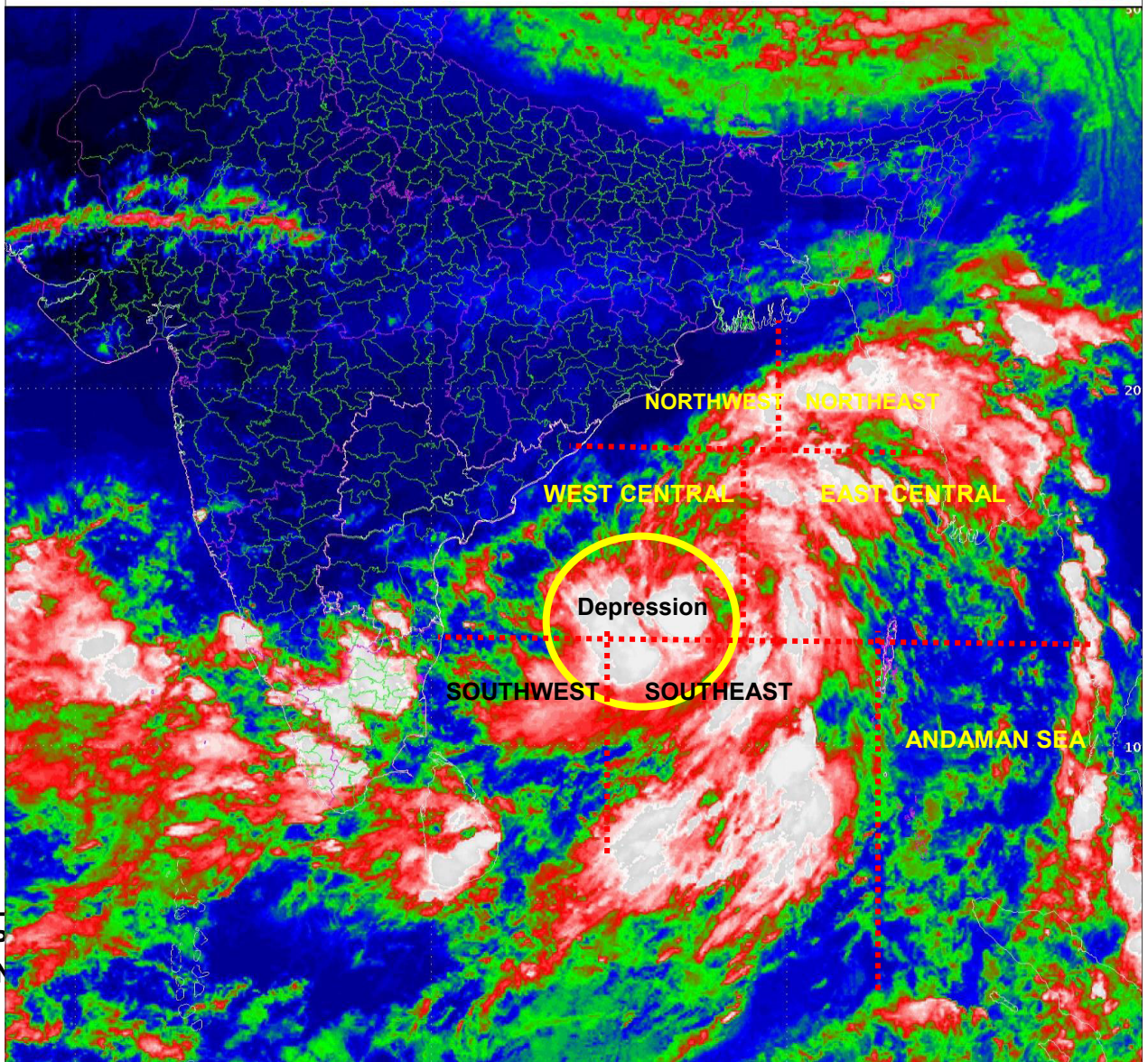
(D JOARDAR)
SCIENTIST-E, RSMC, NEW DELHI

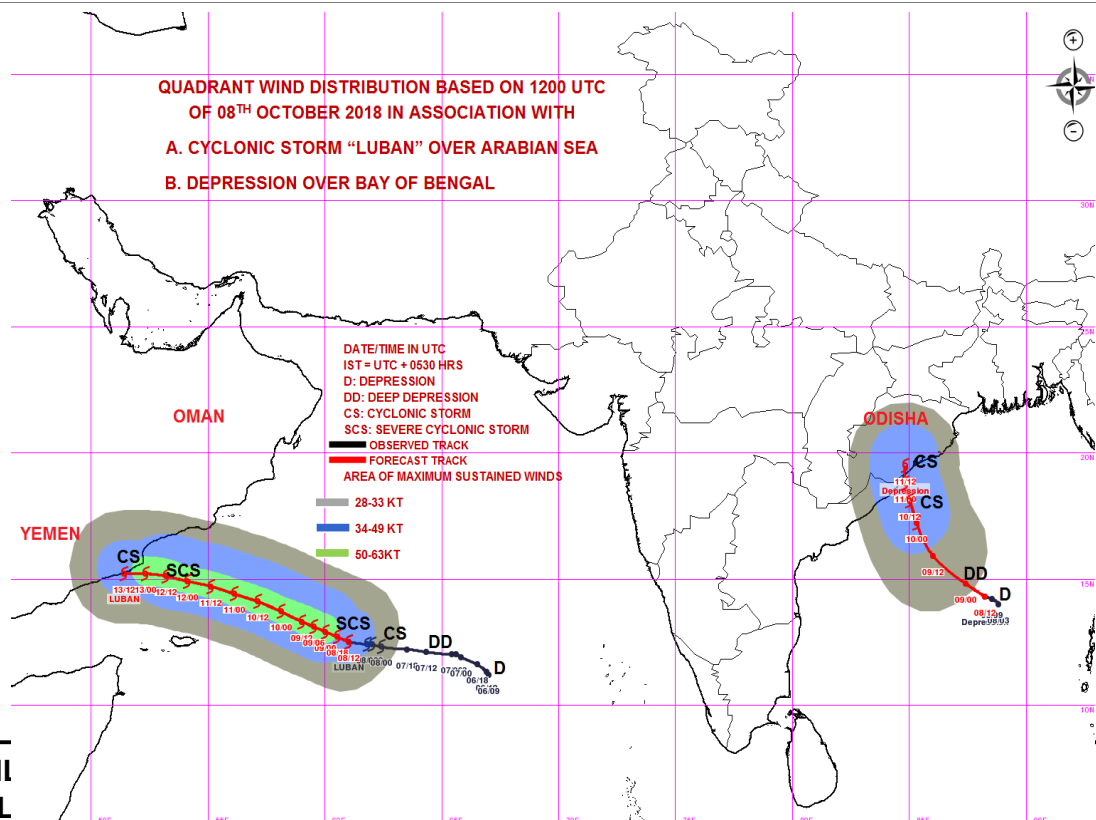
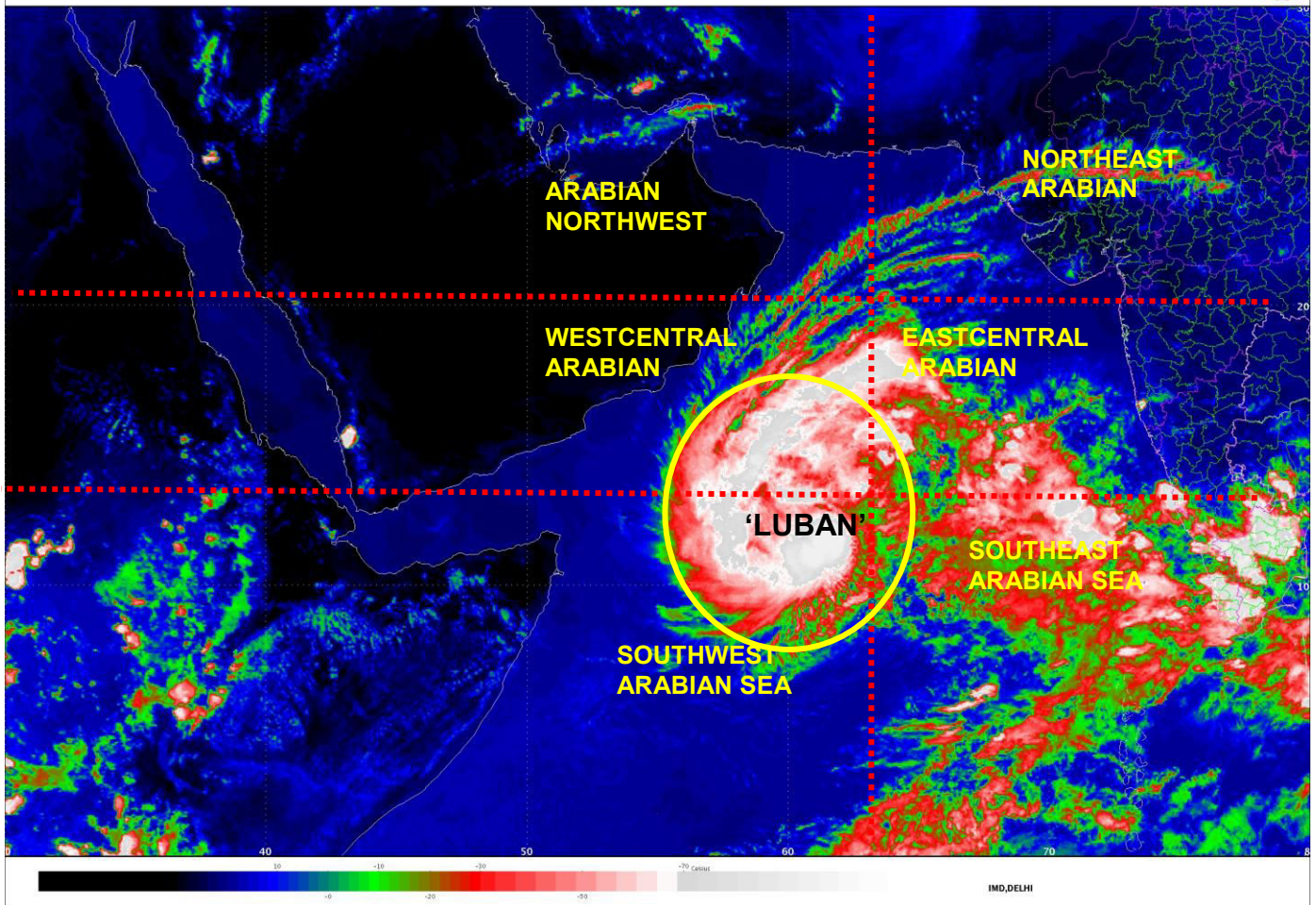
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

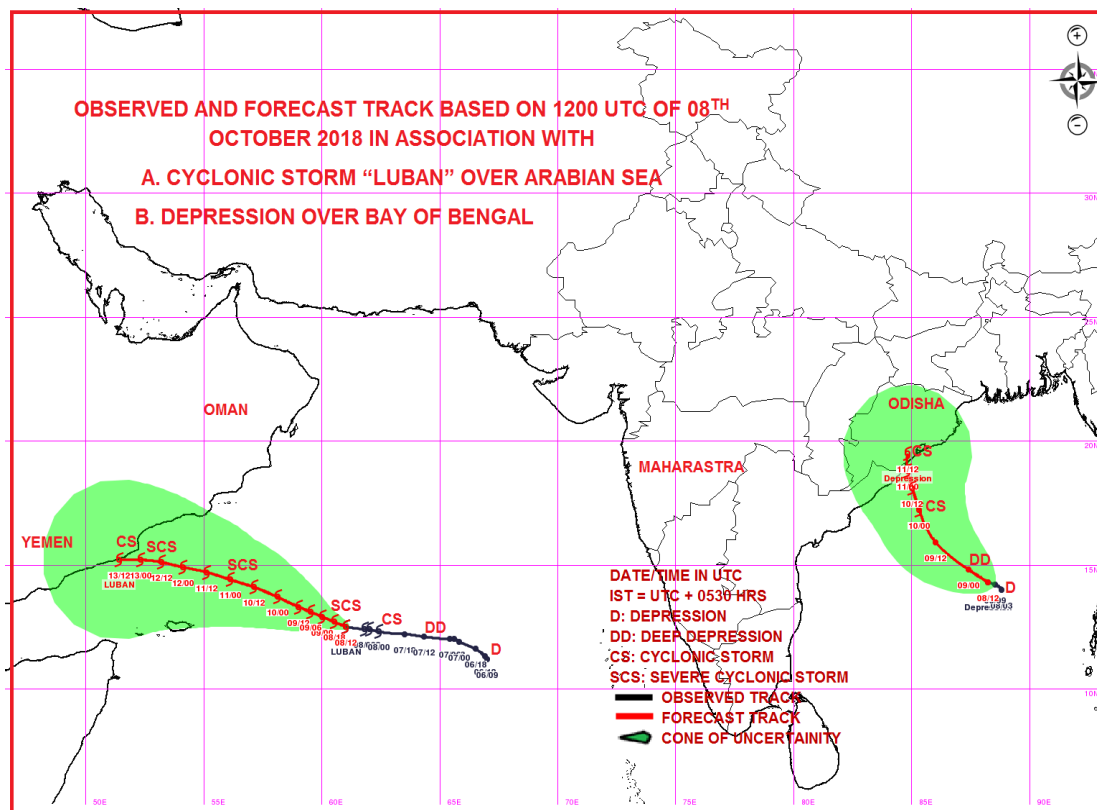
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

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IMG.TIR1_TEMP 10.8 um
SECTOR BAYOFBENGAL Mercator (NHC LUT)

08-10-2018/12:00 GMT
08-10-2018/17:30 IST







PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 6

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED FURTHER WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 08 KMPH IN LAST 03 HOURS AND LAY CENTERED AT 1500 UTC OF TODAY, THE 08TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 12.6°N AND LONGITUDE 60.8°E, ABOUT 870 KM EAST-SOUTHEAST OF SALALAH (OMAN), 1010 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398-YEMEN) AND 740 KM EAST OF SOCOTRA ISLANDS (YEMEN). IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1500 UTC OF TODAY, THE 8TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 09.0°N & 19°N AND BETWEEN LONGITUDE 55.5°E & 63.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 45 KNOTS GUSTING TO 65 KNOTS. STATE OF SEA IS HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/1500	12.6/60.8	80-90 gusting to 100	Cyclonic Storm
08.10.18/1800	12.7/60.5	85-95 gusting to 105	Cyclonic Storm
09.10.18/0000	12.9/60.0	90-100 gusting to 115	Severe Cyclonic Storm
09.10.18/0600	13.1/59.5	95-105 gusting to 120	Severe Cyclonic Storm
09.10.18/1200	13.3/59.0	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0000	13.7/58.1	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1200	14.1/57.1	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/0000	14.4/56.1	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/1200	14.7/55.1	105-115 gusting to 130	Severe Cyclonic Storm
12.10.18/0000	14.9/54.1	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1200	15.1/53.2	95-105 gusting to 120	Severe Cyclonic Storm
13.10.18/0000	15.2/52.3	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/1200	15.2/51.4	90-100 gusting to 115	Severe Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) DEPRESSION OVER EASTCENTRAL BAY OF BENGAL:

THE DEPRESSION OVER EASTCENTRAL BAY OF BENGAL MOVED FURTHER WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 08 KMPH IN LAST 03 HOURS AND LAY CENTRED AT 1500 UTC OF TODAY, THE 8TH OCTOBER 2018 NEAR LATITUDE 14.4°N AND LONGITUDE 87.9°E, ABOUT 620 KM SOUTHEAST OF GOPALPUR (ODISHA) AND 590 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY INTO A DEEP DEPRESSION DURING NEXT 06 HOURS AND INTO A CYCLONIC STORM DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS DURING NEXT 72 HOURS.

AS PER LATEST SATELLITE IMAGERY BASED ON 1500 UTC OF TODAY, THE 8TH OCTOBER, INTENSITY OF THE SYSTEM IS T 1.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 6.0°N & 20.5°N AND LONGITUDE 83.5°E & 96.5°E. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS, GUSTING TO 35 KNOTS. THE SEA CONDITION IS ROUGH TO VERY ROUGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/1500	14.4/87.9	45-55 gusting to 65	Depression
09.10.18/0000	14.8/87.4	50-60 gusting to 70	Deep Depression
09.10.18/1200	15.9/86.0	55-65 gusting to 75	Deep Depression
10.10.18/0000	17.2/85.3	60-70 gusting to 80	Cyclonic Storm
10.10.18/1200	18.1/85.0	65-75 gusting to 85	Cyclonic Storm
11.10.18/0000	18.8/84.8	70-80 gusting to 90	Cyclonic Storm
11.10.18/1200	19.5/84.8	70-80 gusting to 90	Cyclonic Storm

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 40 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (15-25 KT) TO THE WEST AND NORTHWEST OF SYSTEM CENTRE AND NEUTRAL AROUND THE SYSTEM CENTER. HOWEVER, IT IS MODERATE (10-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS LEADING TO SLIGHT WEAKENING OF THE SYSTEM BEFORE LANFALL OVER YEMEN AND ADJOINING SOUTH OMAN COAST. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS.

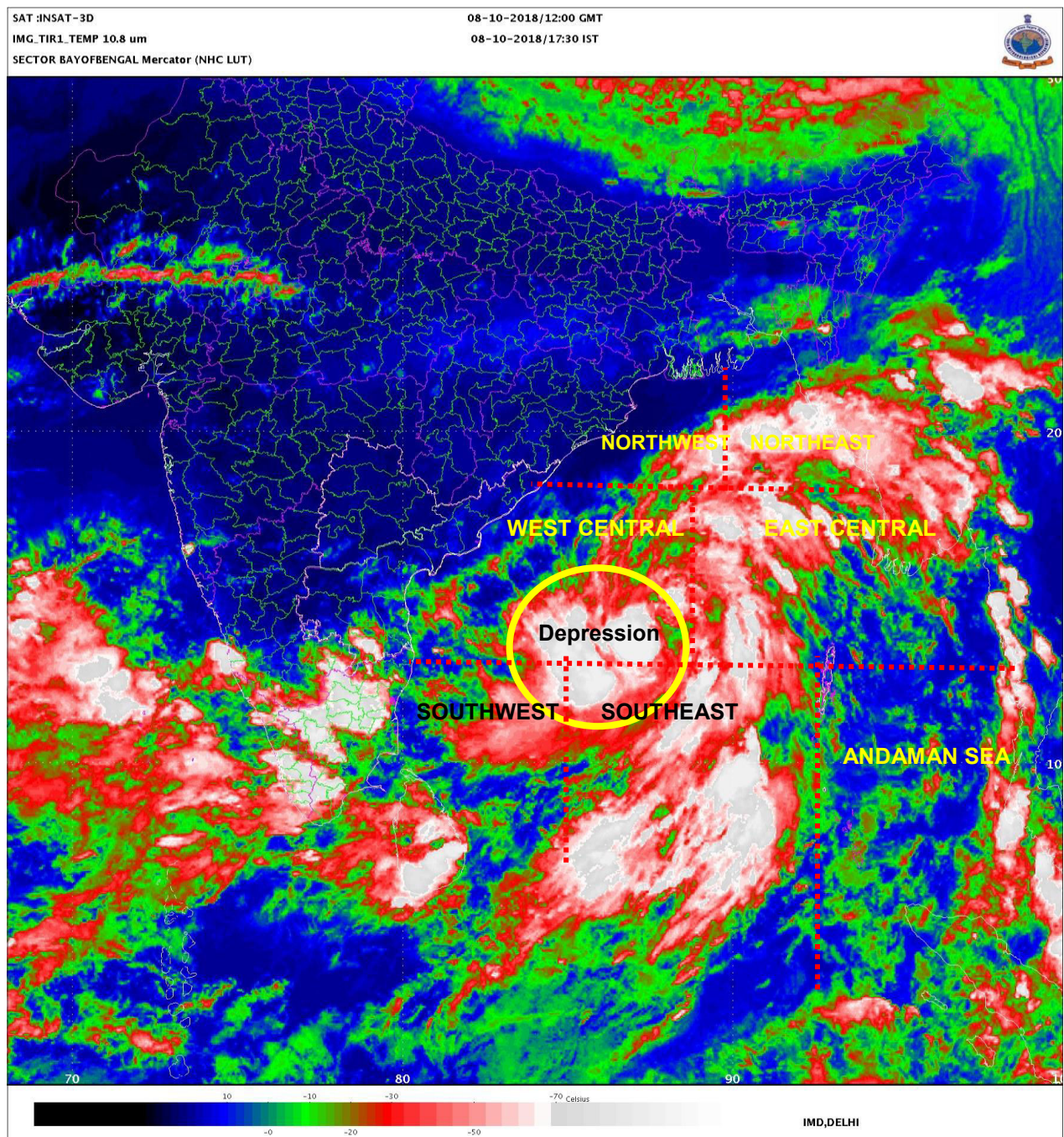
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPING OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

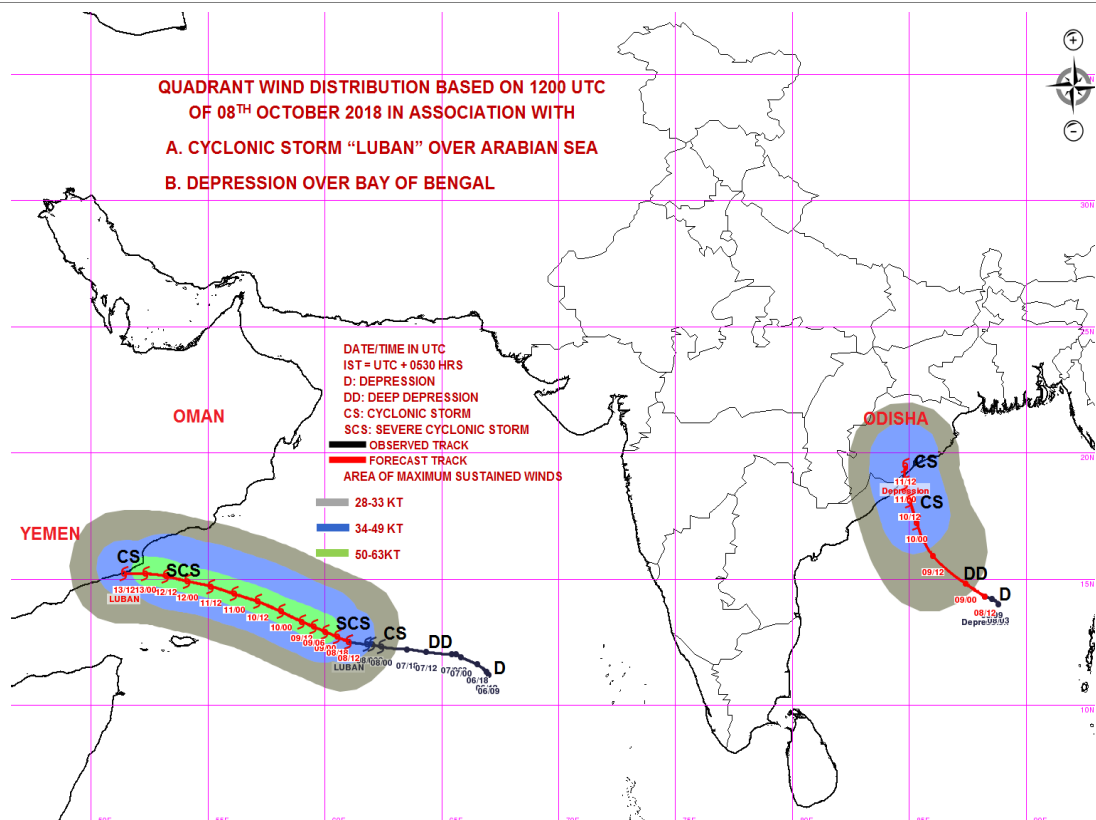
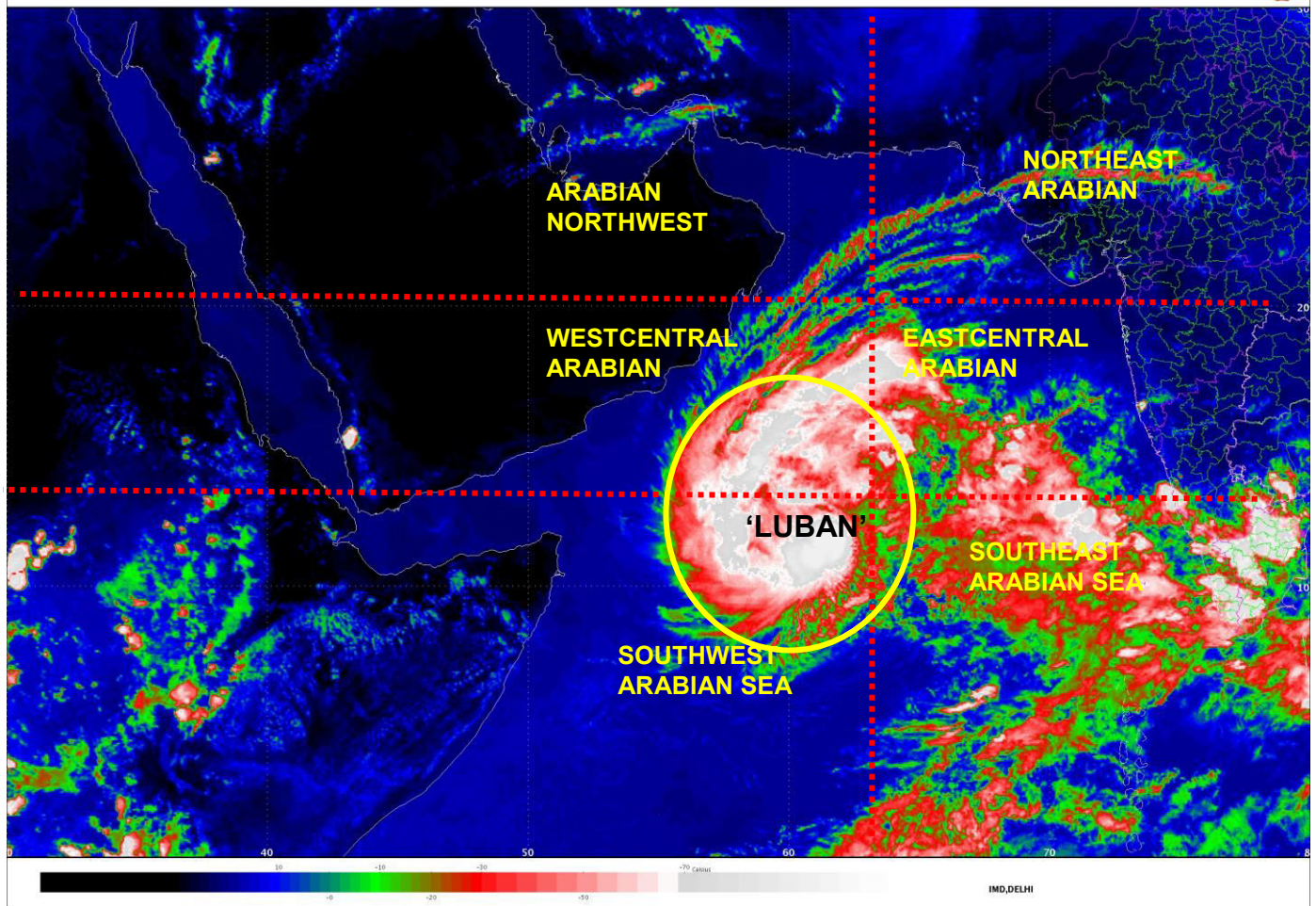
POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT $100 \times 10^{-5} \text{SEC}^{-1}$ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT $10 \times 10^{-5} \text{SEC}^{-1}$ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS IS ABOUT $20 \times 10^{-5} \text{SEC}^{-1}$ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTER. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(D JOARDAR)
SCIENTIST-E, RSMC, NEW DELHI



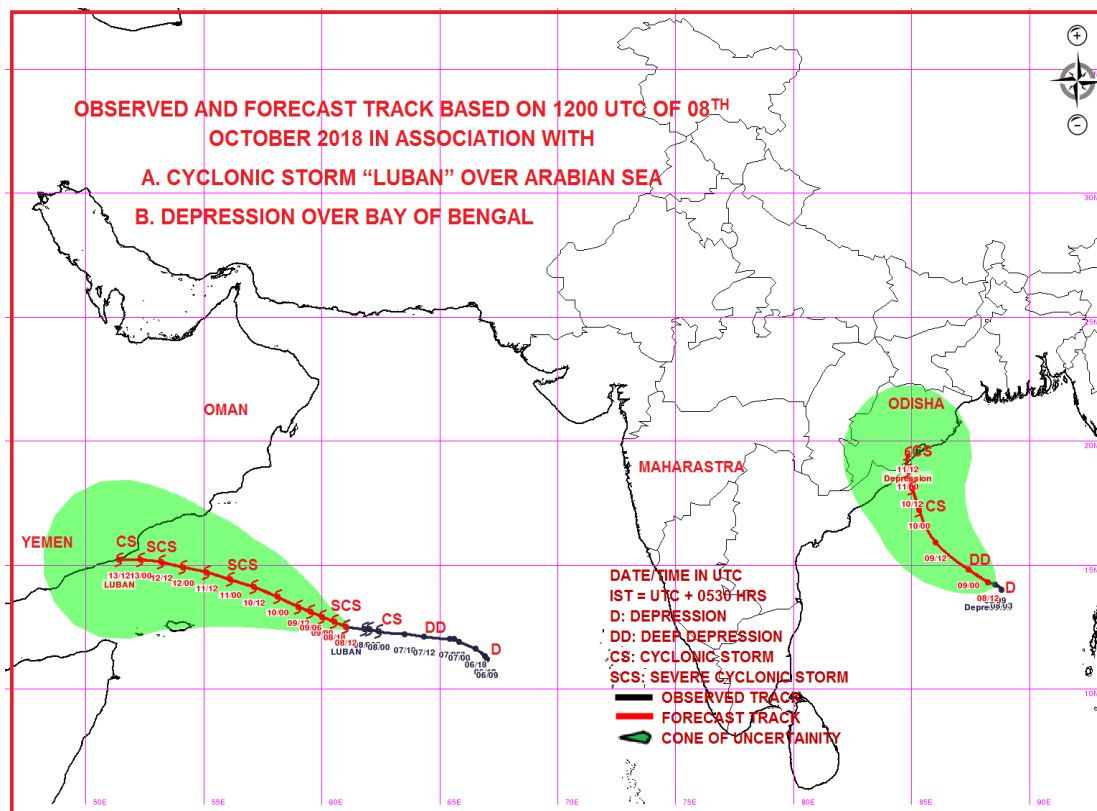
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 7

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED FURTHER WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 11 KMPH IN LAST 03 HOURS AND LAY CENTERED AT 1800 UTC OF 08TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 12.7°N AND LONGITUDE 60.5°E, ABOUT 840 KM EAST-SOUTHEAST OF SALALAH (OMAN), 980 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398-YEMEN) AND 710 KM EAST OF SOCOTRA ISLANDS (YEMEN). IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1800 UTC OF 8TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 09.0°N & 19°N AND BETWEEN LONGITUDE 55.5°E & 63.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 45 KNOTS GUSTING TO 65 KNOTS. STATE OF SEA IS HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/1800	12.7/60.5	85-95 gusting to 105	Cyclonic Storm
09.10.18/0000	12.9/60.0	90-100 gusting to 115	Severe Cyclonic Storm
09.10.18/0600	13.1/59.5	95-105 gusting to 120	Severe Cyclonic Storm
09.10.18/1200	13.3/59.0	100-110 gusting to 125	Severe Cyclonic Storm
09.10.18/1800	13.5/58.5	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0600	14.0/57.3	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1800	14.3/56.3	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/0600	14.5/55.6	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/1800	14.7/55.1	105-115 gusting to 130	Severe Cyclonic Storm
12.10.18/0600	15.0/53.7	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1800	15.1/52.7	95-105 gusting to 120	Severe Cyclonic Storm
13.10.18/0600	15.2/51.8	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/1800	15.3/51.3	80-90 gusting to 100	Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) DEPRESSION INTENSIFIED INTO DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL:

THE DEPRESSION OVER EASTCENTRAL BAY OF BENGAL MOVED FURTHER WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 10 KMPH IN LAST 03 HOURS, INTENSIFIED INTO A DEEP DEPRESSION AND LAY CENTRED AT 1800 UTC OF 8TH OCTOBER 2018 NEAR LATITUDE 14.5°N AND LONGITUDE 87.6°E, ABOUT 600 KM SOUTHEAST OF GOPALPUR (ODISHA) AND 560 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS DURING NEXT 72 HOURS.

AS PER LATEST SATELLITE IMAGERY BASED ON 1800 UTC OF 8TH OCTOBER, INTENSITY OF THE SYSTEM IS T 2.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 6.0°N & 20.5°N AND LONGITUDE 83.5°E & 96.5°E. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS, GUSTING TO 35 KNOTS. THE SEA CONDITION IS ROUGH TO VERY ROUGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/1800	14.5/87.6	50-60 gusting to 70	Deep Depression
09.10.18/0000	15.0/86.9	50-60 gusting to 70	Deep Depression
09.10.18/0600	15.4/86.5	55-65 gusting to 75	Deep Depression
09.10.18/1200	15.9/86.0	60-70 gusting to 80	Cyclonic Storm
09.10.18/1800	16.5/85.7	65-75 gusting to 85	Cyclonic Storm
10.10.18/0600	17.6/85.1	70-80 gusting to 90	Cyclonic Storm
10.10.18/1800	18.4/84.9	80-90 gusting to 100	Cyclonic Storm
11.10.18/0600	19.1/84.8	70-80 gusting to 90	Cyclonic Storm
11.10.18/1800	19.8/84.8	55-65 gusting to 75	Deep Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 40 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (15-25 KT) TO THE WEST AND NORTHWEST OF SYSTEM CENTRE AND NEUTRAL AROUND THE SYSTEM CENTER. HOWEVER, IT IS MODERATE (10-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS LEADING TO SLIGHT WEAKINING OF THE SYSTEM BEFORE LANFALL OVER YEMEN AND ADJOINING SOUTH OMAN COAST. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS.

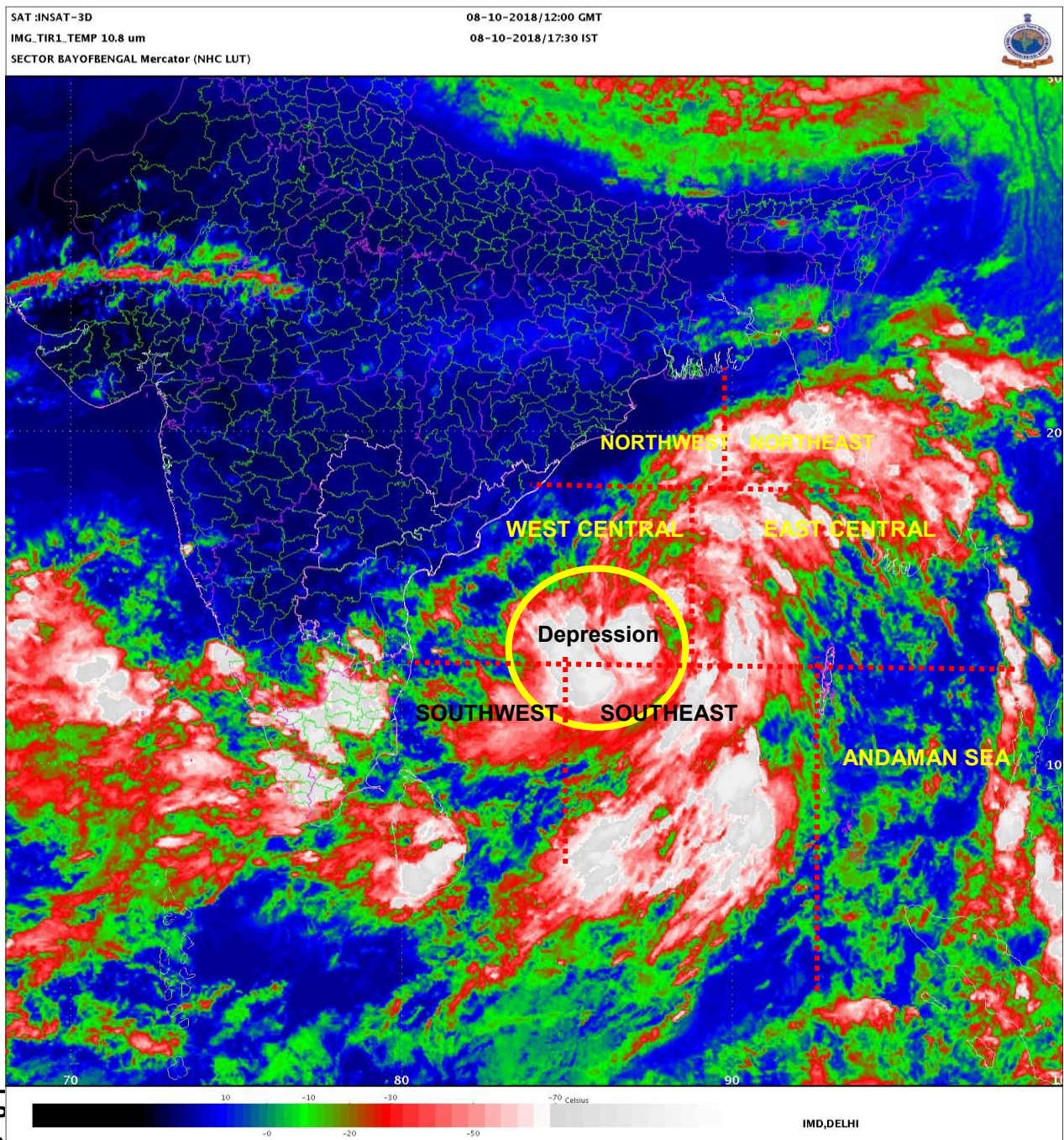
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

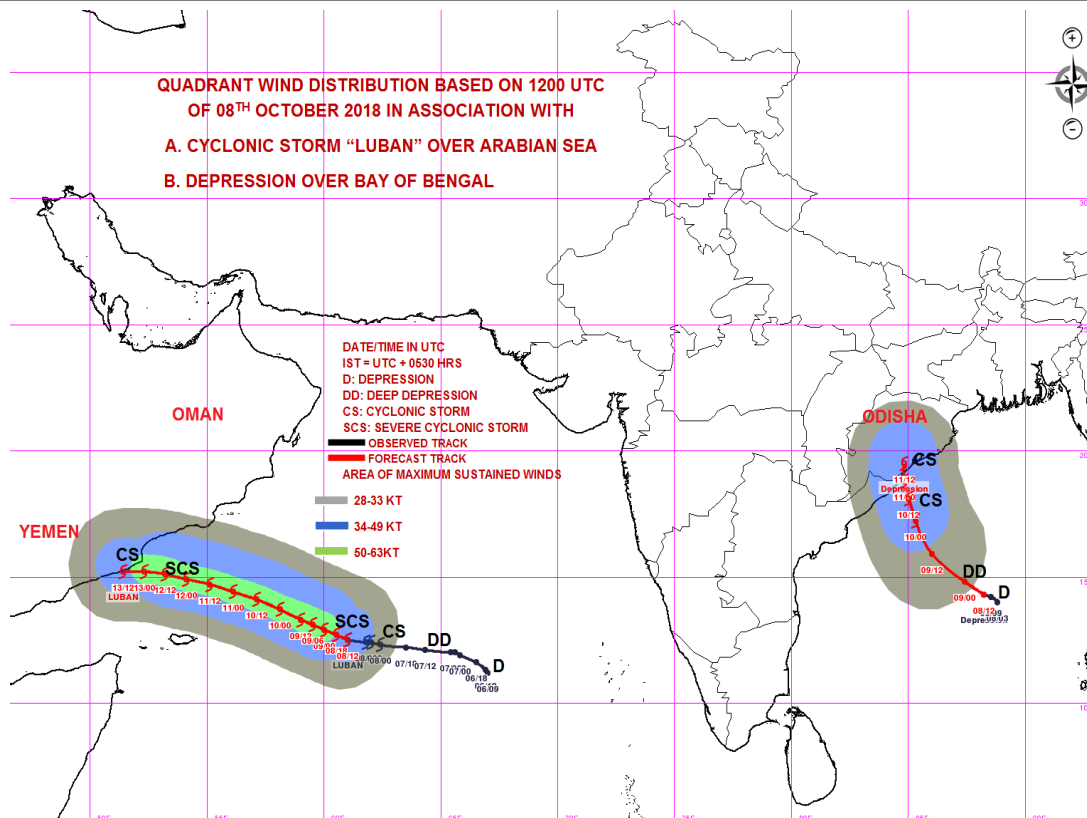
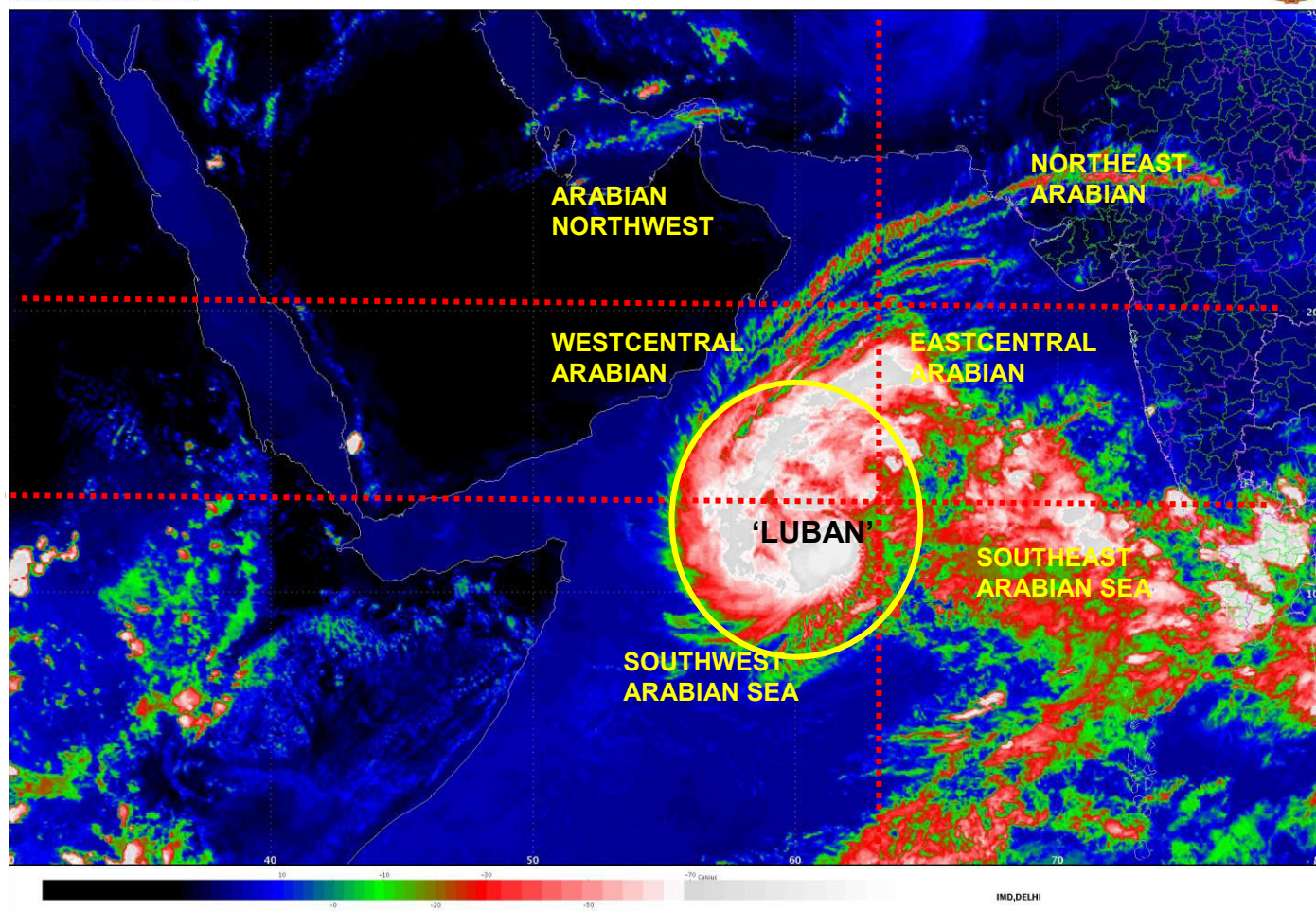
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

DEVELOPED OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 100 X10⁻⁵SEC⁻¹ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTER. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(D JOARDAR)
SCIENTIST-E, RSMC, NEW DELHI



P
NIL. 0%, LOW. 1-25%, FAIR. 26-50%, MODERATE. 51-75% AND HIGH. 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO.8

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED FURTHER WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 11 KMPH IN LAST 03 HOURS AND LAY CENTERED AT 2100 UTC OF 08TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 12.8°N AND LONGITUDE 60.2°E, ABOUT 800 KM EAST-SOUTHEAST OF SALALAH (OMAN), 940 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398-YEMEN) AND 680 KM EAST OF SOCOTRA ISLANDS (YEMEN). IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 12 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 2100 UTC OF 8TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 09.0°N & 19°N AND BETWEEN LONGITUDE 55.5°E & 63.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 45 KNOTS GUSTING TO 65 KNOTS. STATE OF SEA IS HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/2100	12.8/60.2	85-95 gusting to 105	Cyclonic Storm
09.10.18/0000	12.9/60.0	90-100 gusting to 115	Severe Cyclonic Storm
09.10.18/0600	13.1/59.5	95-105 gusting to 120	Severe Cyclonic Storm
09.10.18/1200	13.3/59.0	100-110 gusting to 125	Severe Cyclonic Storm
09.10.18/1800	13.5/58.5	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0600	14.0/57.3	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1800	14.3/56.3	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/0600	14.5/55.6	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/1800	14.7/55.1	105-115 gusting to 130	Severe Cyclonic Storm
12.10.18/0600	15.0/53.7	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1800	15.1/52.7	95-105 gusting to 120	Severe Cyclonic Storm
13.10.18/0600	15.2/51.8	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/1800	15.3/51.3	80-90 gusting to 100	Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL:

THE DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL MOVED FURTHER WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 11 KMPH IN LAST 03 HOURS AND LAY CENTRED AT 2100 UTC OF 8TH OCTOBER 2018 NEAR LATITUDE 14.6°N AND LONGITUDE 87.3°E, ABOUT 570 KM SOUTHEAST OF GOPALPUR (ODISHA) AND 530 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS DURING NEXT 72 HOURS.

AS PER LATEST SATELLITE IMAGERY BASED ON 1800 UTC OF 8TH OCTOBER, INTENSITY OF THE SYSTEM IS T 2.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 6.0°N & 20.5°N AND LONGITUDE 83.5°E & 96.5°E. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS, GUSTING TO 35 KNOTS. THE SEA CONDITION IS ROUGH TO VERY ROUGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.10.18/2100	14.6/87.3	50-60 gusting to 70	Deep Depression
09.10.18/0000	15.0/86.9	50-60 gusting to 70	Deep Depression
09.10.18/0600	15.4/86.5	55-65 gusting to 75	Deep Depression
09.10.18/1200	15.9/86.0	60-70 gusting to 80	Cyclonic Storm
09.10.18/1800	16.5/85.7	65-75 gusting to 85	Cyclonic Storm
10.10.18/0600	17.6/85.1	70-80 gusting to 90	Cyclonic Storm
10.10.18/1800	18.4/84.9	80-90 gusting to 100	Cyclonic Storm
11.10.18/0600	19.1/84.8	70-80 gusting to 90	Cyclonic Storm
11.10.18/1800	19.8/84.8	55-65 gusting to 75	Deep Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 40 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS MODERATE (15-25 KT) TO THE WEST AND NORTHWEST OF SYSTEM CENTRE AND NEUTRAL AROUND THE SYSTEM CENTER. HOWEVER, IT IS MODERATE (10-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL AS. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS LEADING TO SLIGHT WEAKINING OF THE SYSTEM BEFORE LANFALL OVER YEMEN AND ADJOINING SOUTH OMAN COAST. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS.

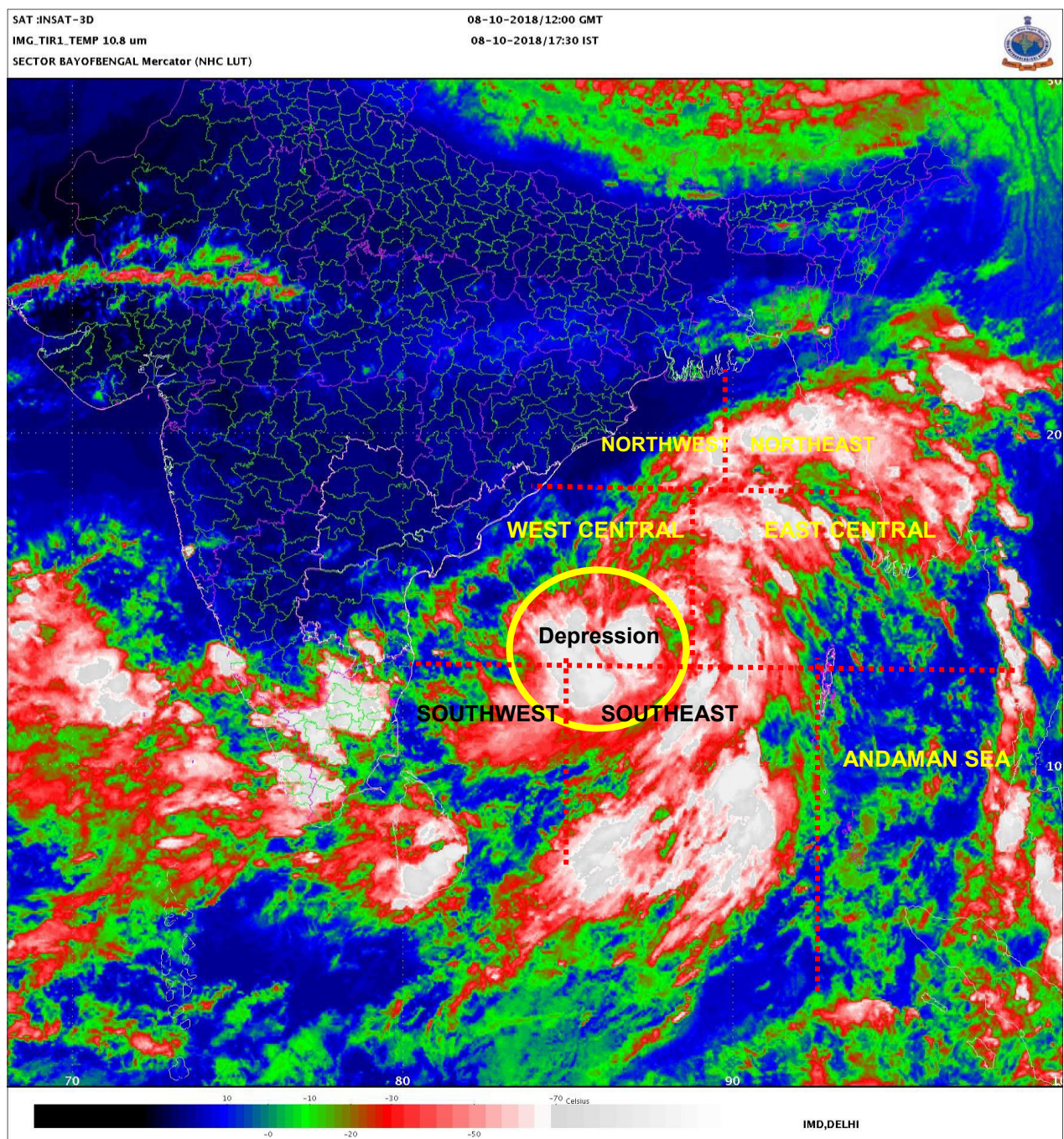
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE DEVELOPED OVER EASTCENTRAL BOB ON 8TH AND REACHING NORTH BOB ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

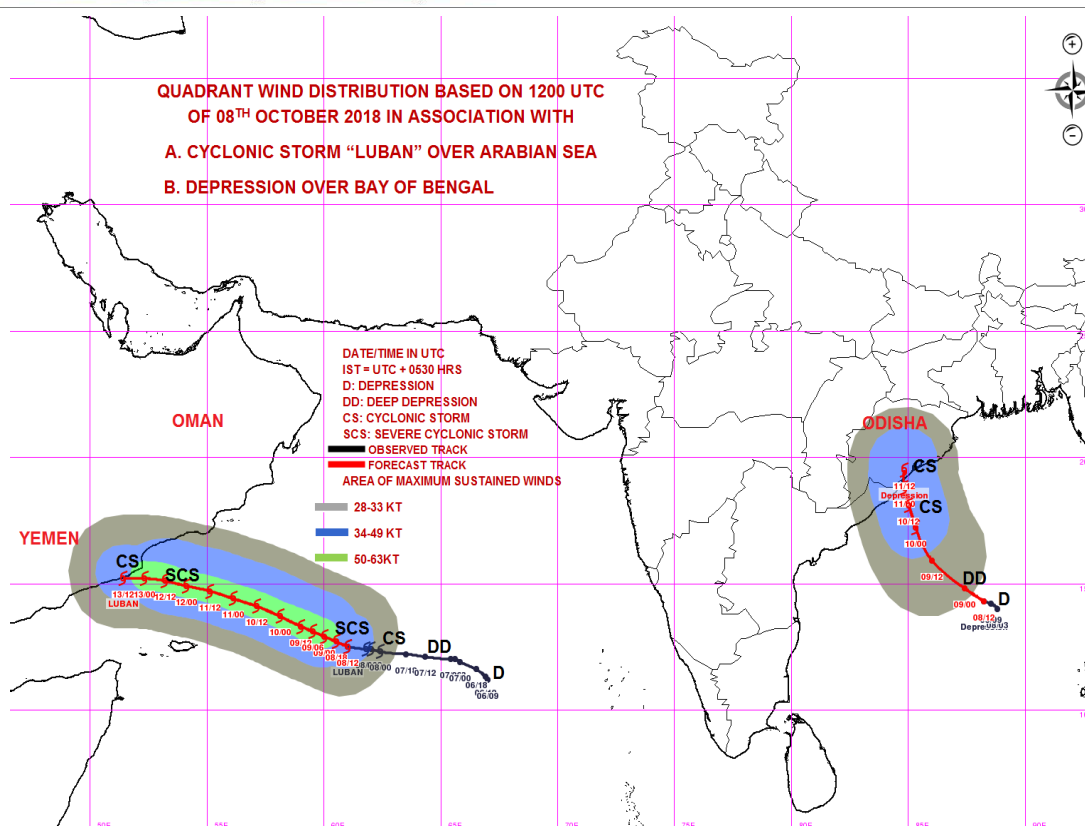
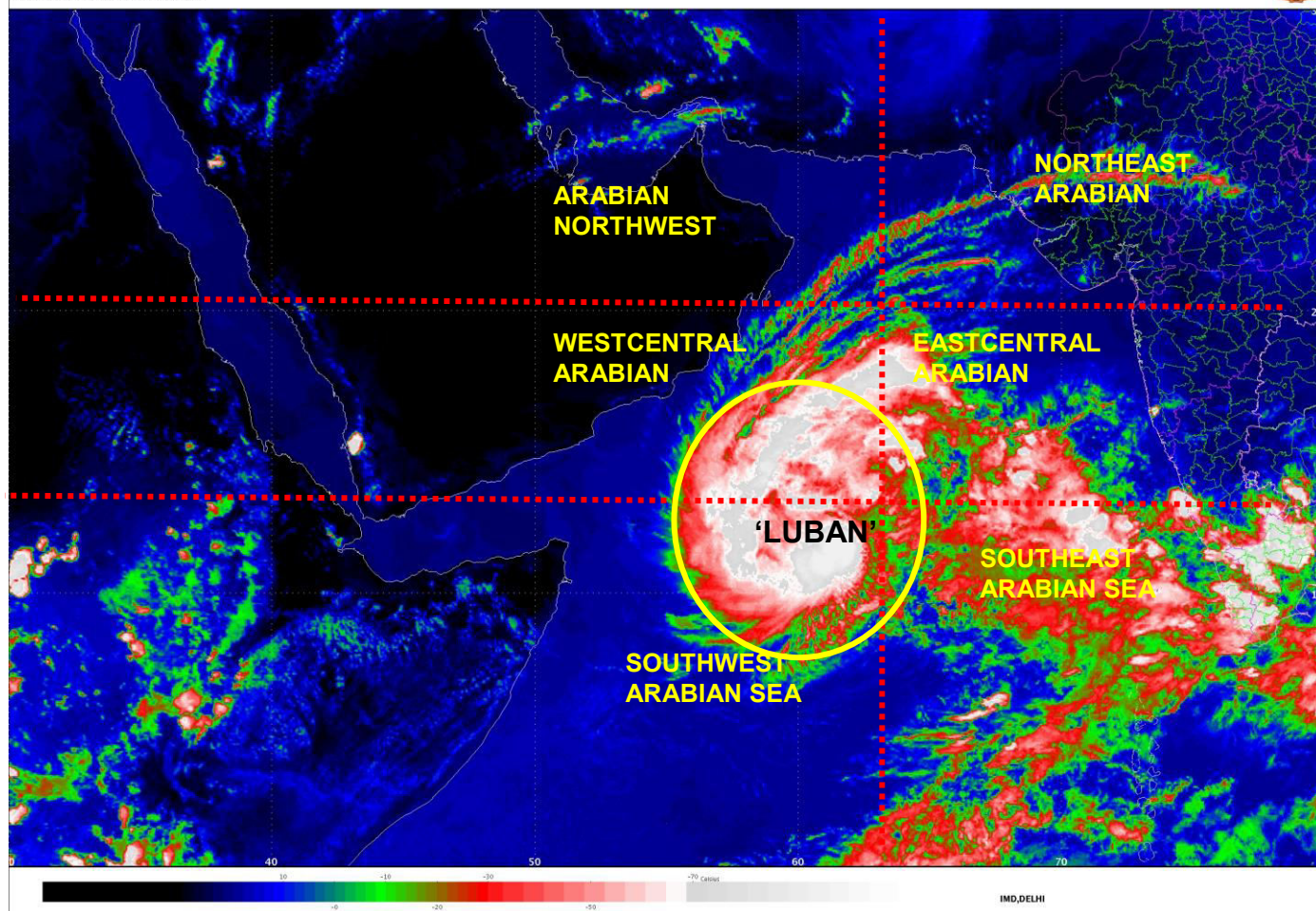
SEA BECOMING 30-31⁰C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 100 X10⁻⁵SEC⁻¹ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTER. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(D JOARDAR)
SCIENTIST-E, RSMC, NEW DELHI



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO.9

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY No. 09 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0330 UTC OF 09.10.2018 BASED ON 0000 UTC OF 09.10.2018.

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA (AS) MOVED FURTHER WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 07 KMPH IN LAST 06 HOURS AND LAY CENTERED AT 0000 UTC OF 09TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 12.9°N AND LONGITUDE 60.2°E, ABOUT 800 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 940 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) YEMEN) AND 680 KM EAST OF SOCOTRA ISLANDS (41494) (YEMEN). IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 12 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0000 UTC OF 9TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 09.0°N & 19°N AND BETWEEN LONGITUDE 55.5°E & 63.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 45 KNOTS GUSTING TO 65 KNOTS. STATE OF SEA IS HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/0000	12.9/60.2	90-100 gusting to 115	Severe Cyclonic Storm
09.10.18/0600	13.1/59.9	95-105 gusting to 120	Severe Cyclonic Storm
09.10.18/1200	13.3/59.5	100-110 gusting to 125	Severe Cyclonic Storm
09.10.18/1800	13.5/59.1	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0000	13.7/58.7	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1200	14.1/58.1	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/0000	14.4/57.4	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/1200	14.6/56.7	105-115 gusting to 130	Severe Cyclonic Storm
12.10.18/0000	14.8/56.0	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1200	14.9/55.3	95-105 gusting to 120	Severe Cyclonic Storm
13.10.18/0600	15.0/54.0	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/1200	15.0/52.7	80-90 gusting to 100	Cyclonic Storm
14.10.18/0000	15.0/51.4	80-90 gusting to 100	Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL:

THE DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL MOVED FURTHER WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 10 KMPH IN LAST 06 HOURS AND LAY CENTRED AT 0000 UTC OF 9TH OCTOBER 2018 NEAR LATITUDE 14.7°N AND LONGITUDE 87.1°E, OVER WESTCENTRAL BAY OF BENGAL, ABOUT 560 KM SOUTHEAST OF GOPALPUR (ODISHA) AND 510 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR (43049) & KALINGAPATNAM (43105) AROUND MORNING OF 11TH OCTOBER.

AS PER LATEST SATELLITE IMAGERY BASED ON 0000 UTC OF 9TH OCTOBER, INTENSITY OF THE SYSTEM IS T 2.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.0°N & 18.0°N AND LONGITUDE 83.0°E & 90.0°E. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS, GUSTING TO 35 KNOTS. THE SEA CONDITION IS ROUGH TO VERY ROUGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/0000	14.7/87.1	50-60 gusting to 70	Deep Depression
09.10.18/0600	15.0/86.7	55-65 gusting to 75	Deep Depression
09.10.18/1200	15.6/86.4	60-70 gusting to 80	Deep Depression
09.10.18/1800	16.0/86.2	65-75 gusting to 85	Cyclonic Storm
10.10.18/0000	16.5/85.9	70-80 gusting to 90	Cyclonic Storm
10.10.18/1200	17.5/85.2	80-90 gusting to 100	Cyclonic Storm
11.10.18/0000	18.7/84.7	80-90 gusting to 100	Cyclonic Storm
11.10.18/1200	19.2/84.6	60-70 gusting to 80	Cyclonic Storm
12.10.18/0000	19.7/84.7	50-60 gusting to 70	Deep Depression
12.10.18/1200	20.2/85.3	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS NOW DECREASED AND IS NOW ABOUT 40 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (10-15 KT) TO THE WEST AND NORTHWEST OF SYSTEM CENTRE AND NEUTRAL AROUND THE SYSTEM CENTER. HOWEVER, IT IS MODERATE (10-20 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL ARABIAN SEA. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS LEADING TO SLIGHT WEAKENING OF THE SYSTEM BEFORE LANDFALL OVER YEMEN AND ADJOINING SOUTH OMAN COAST. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS

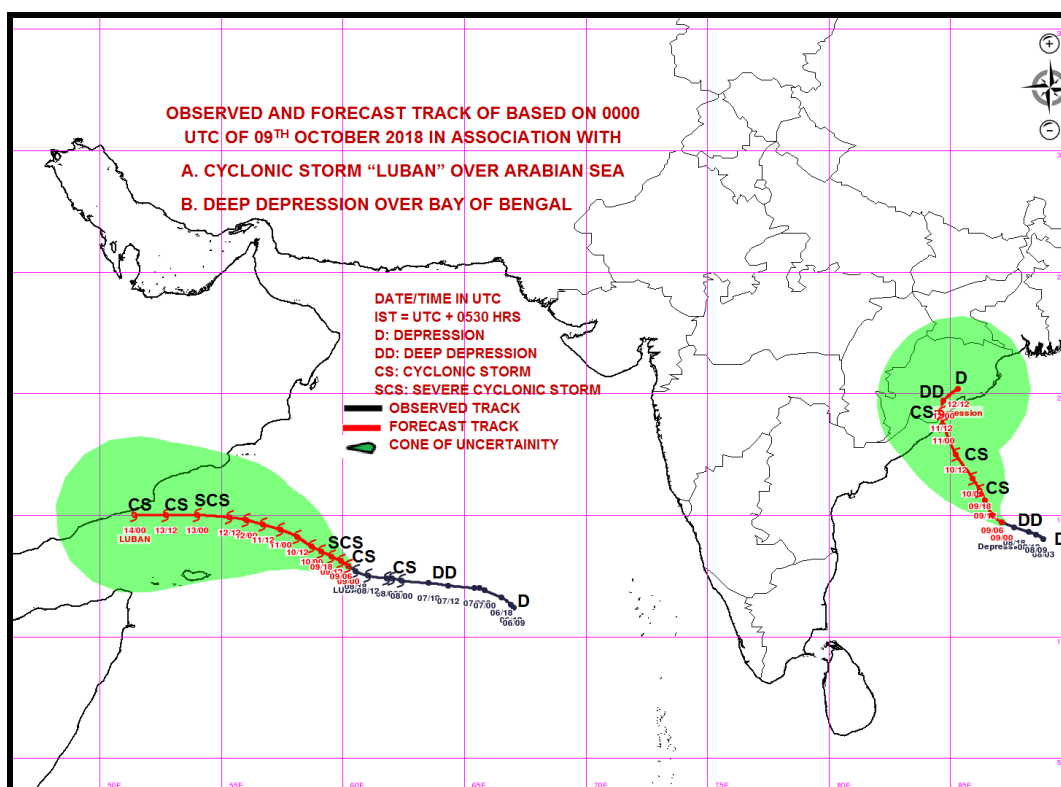
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

TOWARDS SOUTH OMAN AND YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 12 HRS.

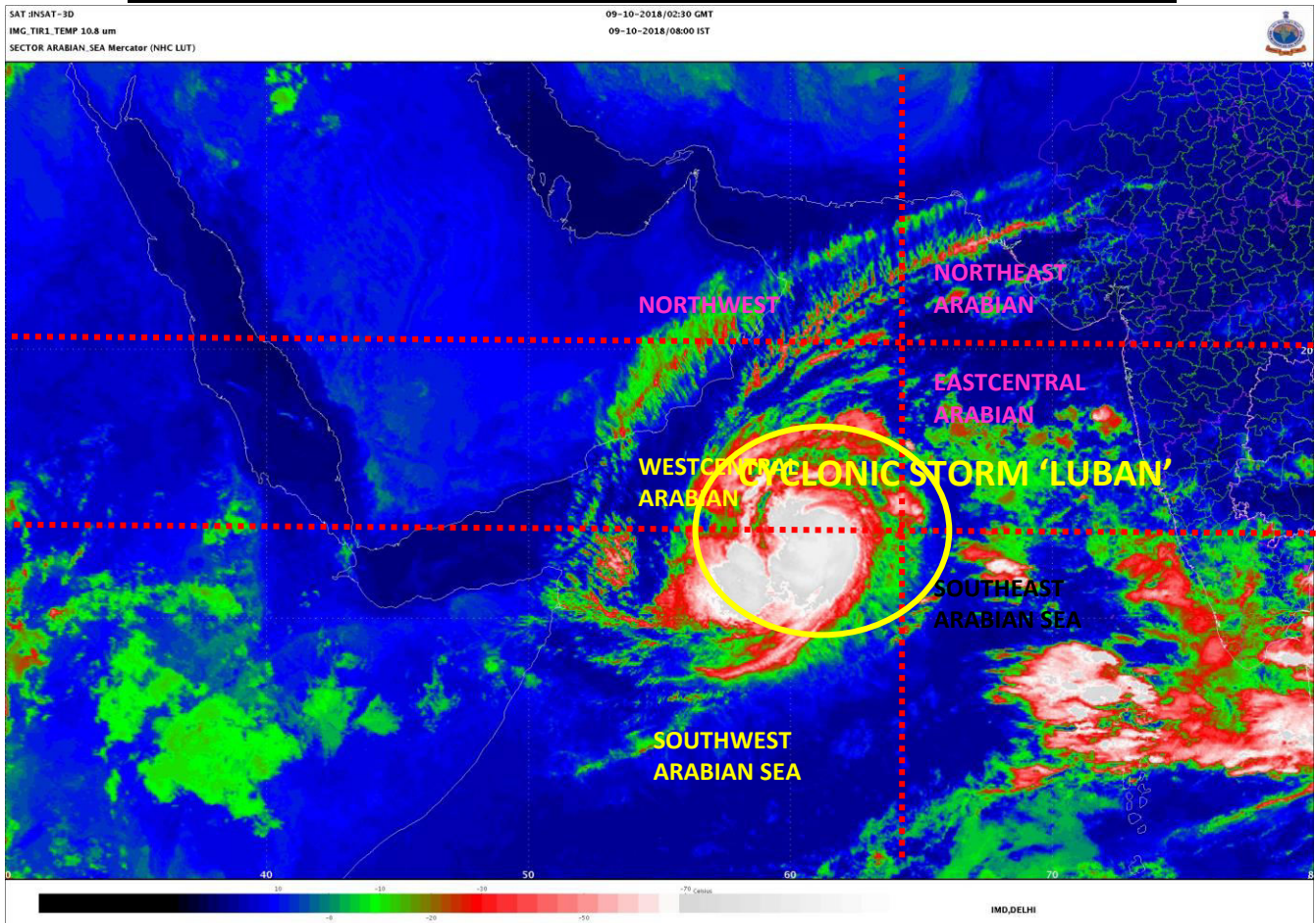
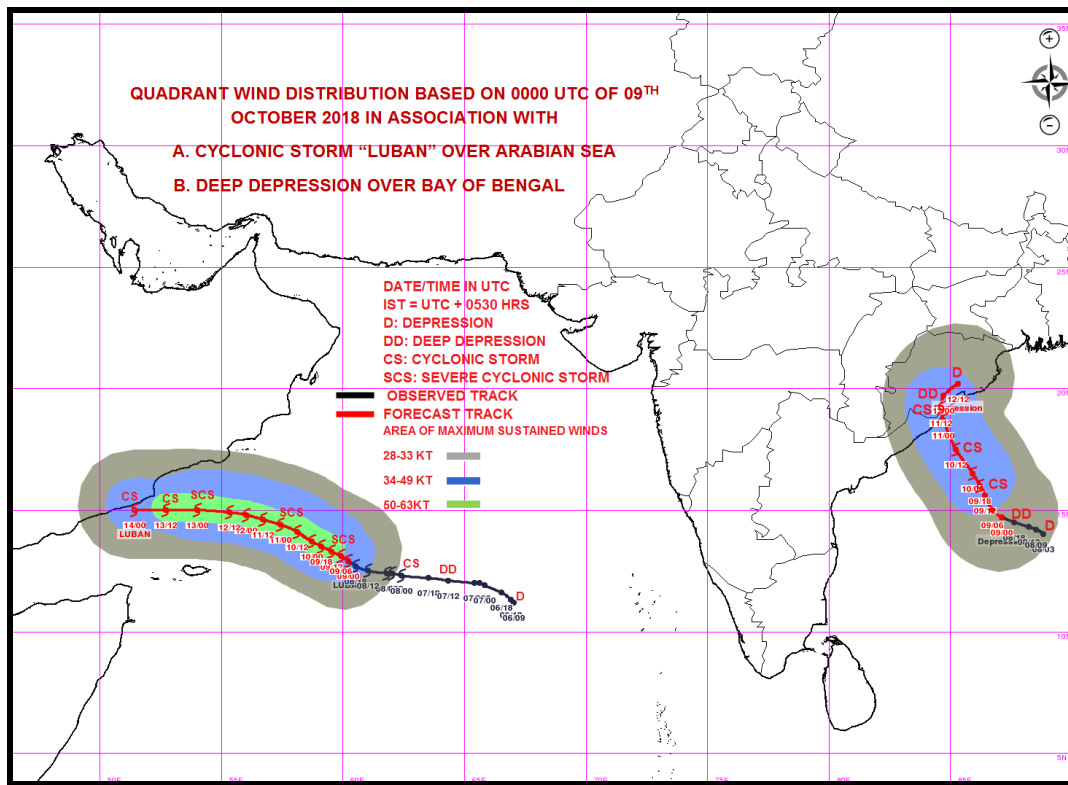
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE FOR INTENSIFICATION OF DEEP DEPRESSION INTO CYCLONIC STORM OVER WESTCENTRAL BAY OF BENGAL ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 100 X10⁻⁵ SEC⁻¹ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT 15 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTER. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(CHARAN SINGH)
SCIENTIST-F, RSMC, NEW DELHI



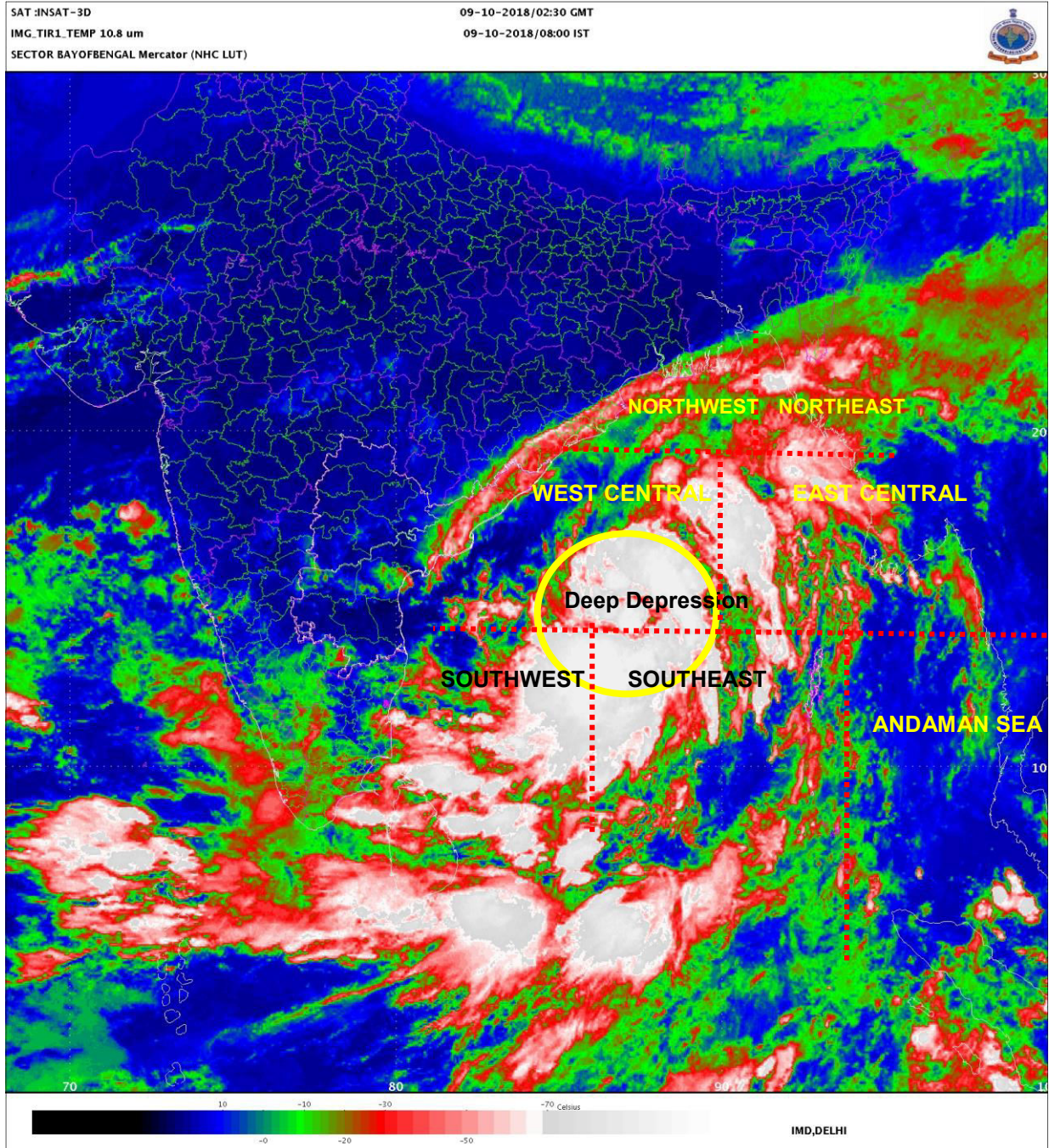
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 10

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY No. 10 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0600 UTC OF 09.10.2018 BASED ON 0300 UTC OF 09.10.2018.

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA (AS) REMAINED PRACTICALLY STATIONARY AND LAY CENTERED AT 0300 UTC OF 09TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 12.9°N AND LONGITUDE 60.2°E, ABOUT 800 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 940 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) YEMEN) AND 680 KM EAST OF SOCOTRA ISLANDS (41494) (YEMEN). IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 12 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS SOUTH OMAN & YEMEN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0300 UTC OF 9TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 10.0°N & 17°N AND BETWEEN LONGITUDE 55.0°E & 63.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 45 KNOTS GUSTING TO 65 KNOTS. STATE OF SEA IS HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/0300	12.9/60.2	90-100 gusting to 115	Severe Cyclonic Storm
09.10.18/0600	13.1/59.9	95-105 gusting to 120	Severe Cyclonic Storm
09.10.18/1200	13.3/59.5	100-110 gusting to 125	Severe Cyclonic Storm
09.10.18/1800	13.5/59.1	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0000	13.7/58.7	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1200	14.1/58.1	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/0000	14.4/57.4	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/1200	14.6/56.7	105-115 gusting to 130	Severe Cyclonic Storm
12.10.18/0000	14.8/56.0	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1200	14.9/55.3	95-105 gusting to 120	Severe Cyclonic Storm
13.10.18/0600	15.0/54.0	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/1200	15.0/52.7	80-90 gusting to 100	Cyclonic Storm
14.10.18/0000	15.0/51.4	80-90 gusting to 100	Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL:

THE DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL REMAINED PRACTICALLY STATIONARY AND LAY CENTRED AT 0300 UTC OF 9TH OCTOBER 2018 NEAR LATITUDE 14.7°N AND LONGITUDE 87.1°E, OVER WESTCENTRAL BAY OF BENGAL, ABOUT 560 KM SOUTHEAST OF GOPALPUR (ODISHA) AND 510 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR (43049) & KALINGAPATNAM (43105) AROUND MORNING OF 11TH OCTOBER. AFTER THE LANDFALL, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS TOWARDS GANGETIC WEST BENGAL ACROSS COASTAL ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 0300 UTC OF 9TH OCTOBER, INTENSITY OF THE SYSTEM IS T 2.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.0°N & 18.0°N AND LONGITUDE 83.0°E & 90.0°E. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1002 HPA. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE SEA CONDITION IS ROUGH TO VERY ROUGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/0300	14.7/87.1	50-60 gusting to 70	Deep Depression
09.10.18/0600	15.0/86.7	55-65 gusting to 75	Deep Depression
09.10.18/1200	15.6/86.4	60-70 gusting to 80	Deep Depression
09.10.18/1800	16.0/86.2	65-75 gusting to 85	Cyclonic Storm
10.10.18/0000	16.5/85.9	70-80 gusting to 90	Cyclonic Storm
10.10.18/1200	17.5/85.2	80-90 gusting to 100	Cyclonic Storm
11.10.18/0000	18.7/84.7	80-90 gusting to 100	Cyclonic Storm
11.10.18/1200	19.2/84.6	60-70 gusting to 80	Cyclonic Storm
12.10.18/0000	19.7/84.7	50-60 gusting to 70	Deep Depression
12.10.18/1200	20.2/85.3	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE. HOWEVER, IT IS LOW (05 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL ARABIAN SEA. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS LEADING TO SLIGHT WEAKENING OF THE SYSTEM BEFORE LANDFALL OVER YEMEN AND ADJOINING SOUTH OMAN COAST. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS,

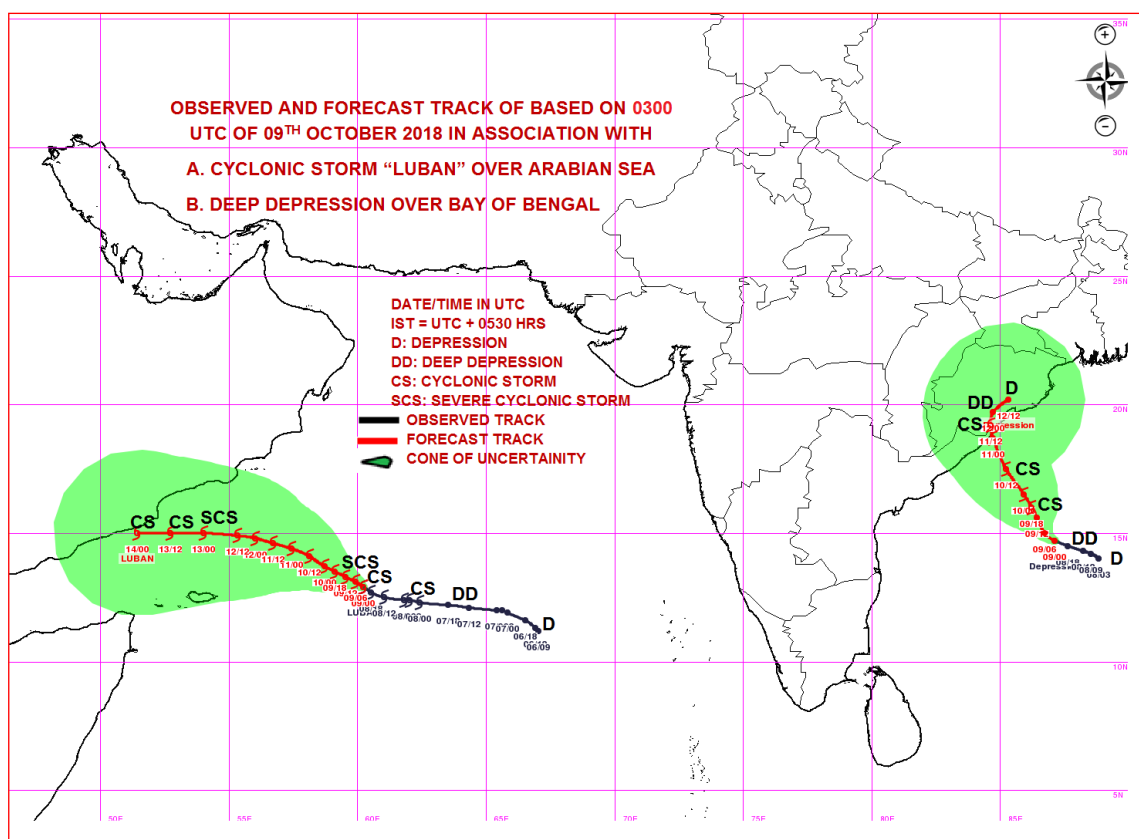
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 12 HRS.

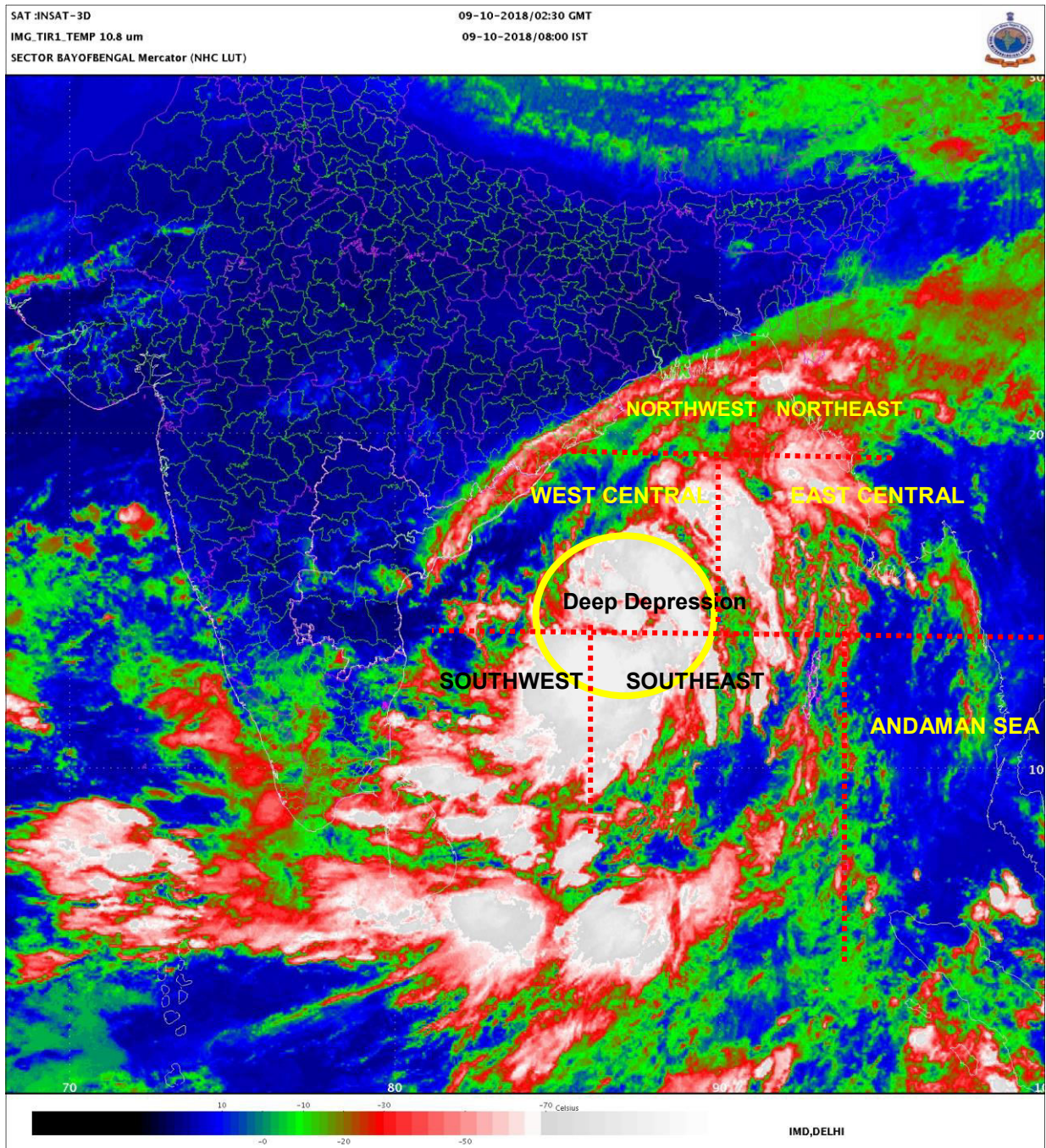
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE FOR INTENSIFICATION OF DEEP DEPRESSION INTO CYCLONIC STORM OVER WESTCENTRAL BAY OF BENGAL ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT $150 \times 10^{-5} \text{ SEC}^{-1}$ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT $20 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS ALSO INCREASED AND IS ABOUT $30 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(SUNITHA DEVI)
SCIENTIST-E, RSMC, NEW DELHI



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 11

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY No. 11 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0900 UTC OF 09.10.2018 BASED ON 0600 UTC OF 09.10.2018.

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED NORTHWESTWARDS WITH A SPEED OF ABOUT 04 KMPH IN LAST 06 HOURS AND LAY CENTERED AT 0600 UTC OF 09TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 13.1°N AND LONGITUDE 60.1°E, ABOUT 780 KM EAST-SOUTHEAST OF SALALAH (OMAN), 670 KM EAST OF SOCOTRA ISLANDS (YEMEN) AND 920 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN). IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 06 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 5 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0600 UTC OF 09TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 10.0°N & 17°N AND BETWEEN LONGITUDE 55.0°E & 63.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 45 KNOTS GUSTING TO 65 KNOTS. STATE OF SEA IS HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/0600	13.1/60.1	80-90 gusting to 100	Cyclonic Storm
09.10.18/1200	13.3/59.5	90-100 gusting to 115	Severe Cyclonic Storm
09.10.18/1800	13.5/59.1	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0000	13.7/58.7	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0600	13.9/58.4	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/1800	14.2/57.7	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/0600	14.5/57.0	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/1800	14.7/56.3	110-120 gusting to 135	Severe Cyclonic Storm
12.10.18/0600	14.8/55.7	110-120 gusting to 135	Severe Cyclonic Storm
12.10.18/1800	14.8/54.6	110-120 gusting to 135	Severe Cyclonic Storm
13.10.18/0600	14.7/53.3	100-110 gusting to 125	Severe Cyclonic Storm
13.10.18/1800	14.6/52.0	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/0600	14.5/50.7	70-80 gusting to 90	Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 08 KMPH DURING PAST 06 HOURS AND INTENSIFIED INTO A **CYCLONIC STORM 'TITLI'** AND LAY CANTERED AT 1130 HRS IST OF TODAY, THE 09TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 14.8°N AND LONGITUDE 86.7°E, ABOUT 530 KM SOUTHEAST OF GOPALPUR (ODISHA) AND 480 KM EAST-SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS FOR SOME MORE TIME, THEN NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR & KALINGAPATNAM AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS COASTAL ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 0600 UTC OF 9TH OCTOBER, INTENSITY OF THE SYSTEM IS T 2.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.0°N & 18.0°N AND LONGITUDE 83.0°E & 90.0°E. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE SEA CONDITION IS HIGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/0600	14.8/86.7	65-75 gusting to 85	Cyclonic Storm
09.10.18/1200	15.2/86.3	70-80 gusting to 90	Cyclonic Storm
09.10.18/1800	15.6/85.9	80-90 gusting to 100	Cyclonic Storm
10.10.18/0000	16.0/85.6	90-100 gusting to 110	Severe Cyclonic Storm
10.10.18/0600	16.9/85.2	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/1800	18.0/84.9	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/0600	19.2/84.7	80-90 gusting to 100	Cyclonic Storm
11.10.18/1800	19.6/84.7	50-60 gusting to 70	Deep Depression
12.10.18/0600	20.2/85.0	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE. HOWEVER, IT IS LOW (05 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL ARABIAN SEA. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS LEADING TO SLIGHT WEAKENING OF THE SYSTEM BEFORE LANDFALL OVER YEMEN AND ADJOINING SOUTH OMAN COAST. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GES), NCEP GES,

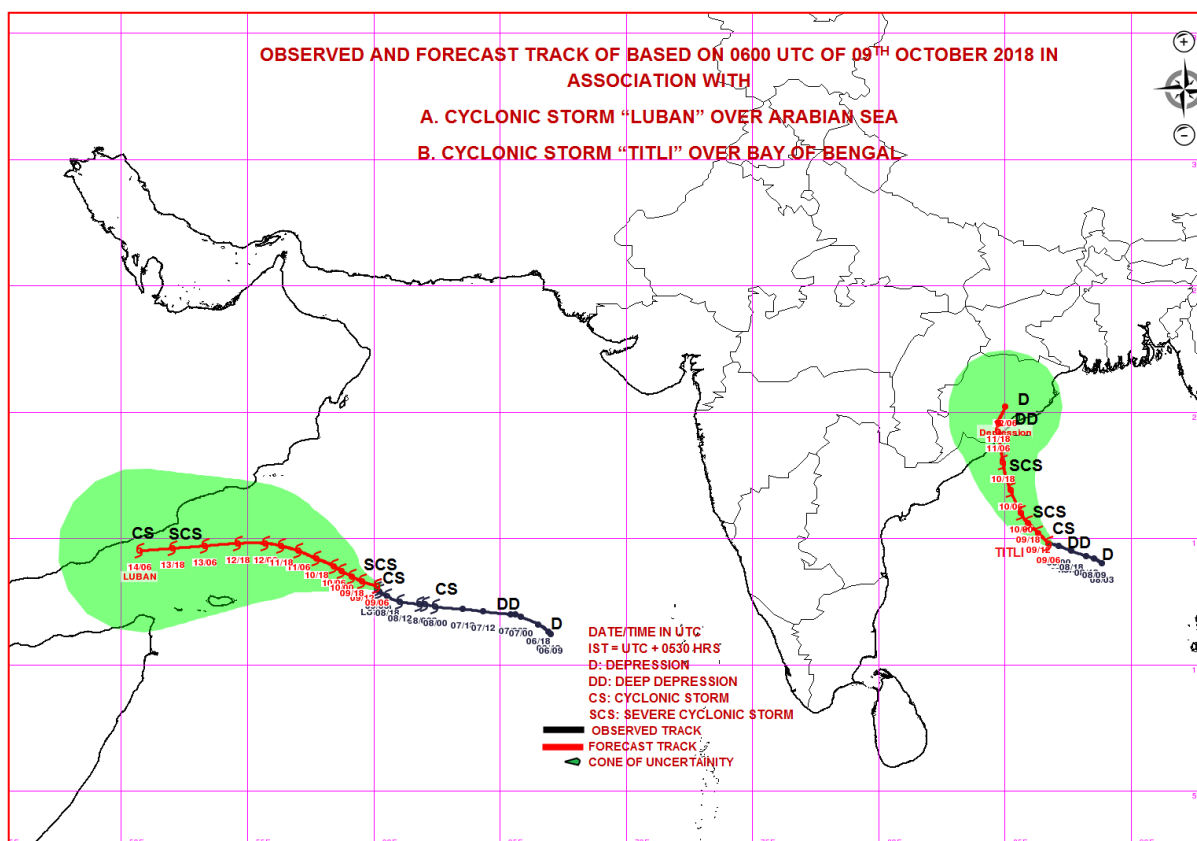
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 12 HRS.

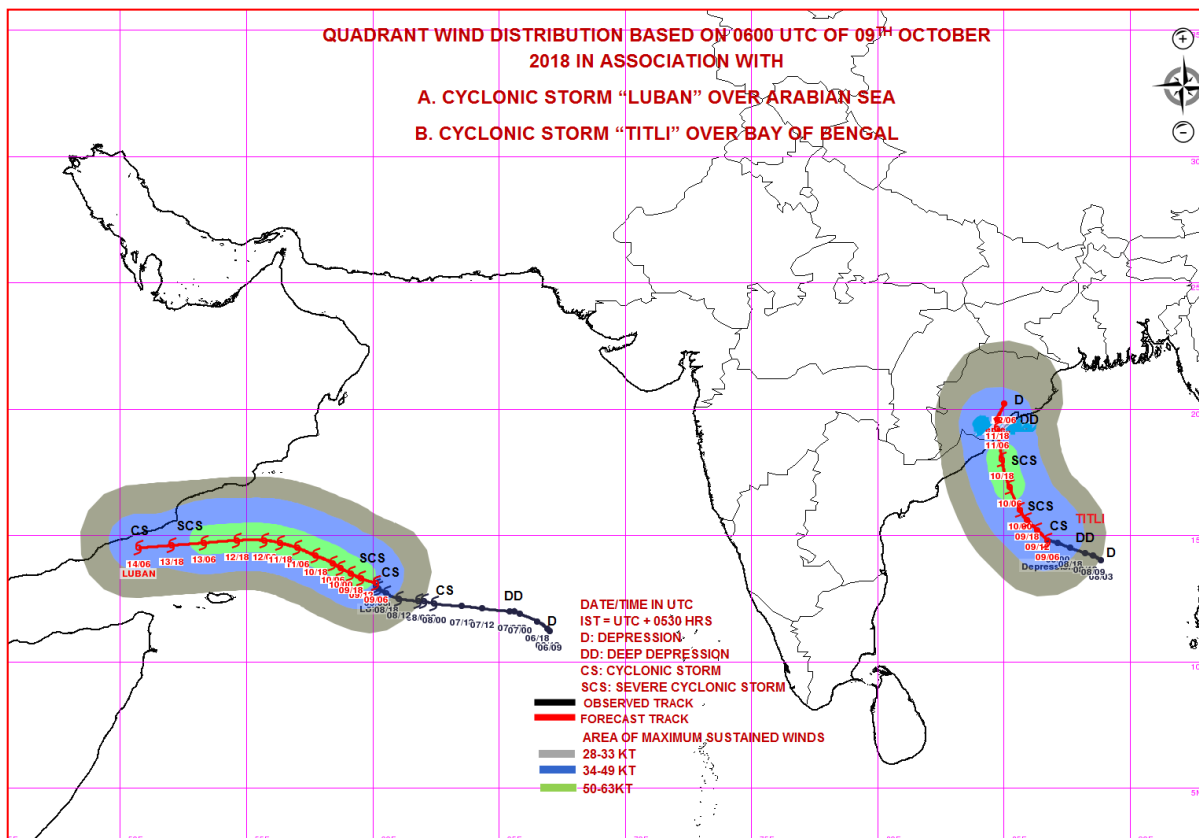
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE FOR INTENSIFICATION OF DEEP DEPRESSION INTO CYCLONIC STORM OVER WESTCENTRAL BAY OF BENGAL ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT $150 \times 10^{-5} \text{ SEC}^{-1}$ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT $20 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS ALSO INCREASED AND IS ABOUT $30 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

(NARESH KUMAR)
SCIENTIST-E, RSMC, NEW DELHI



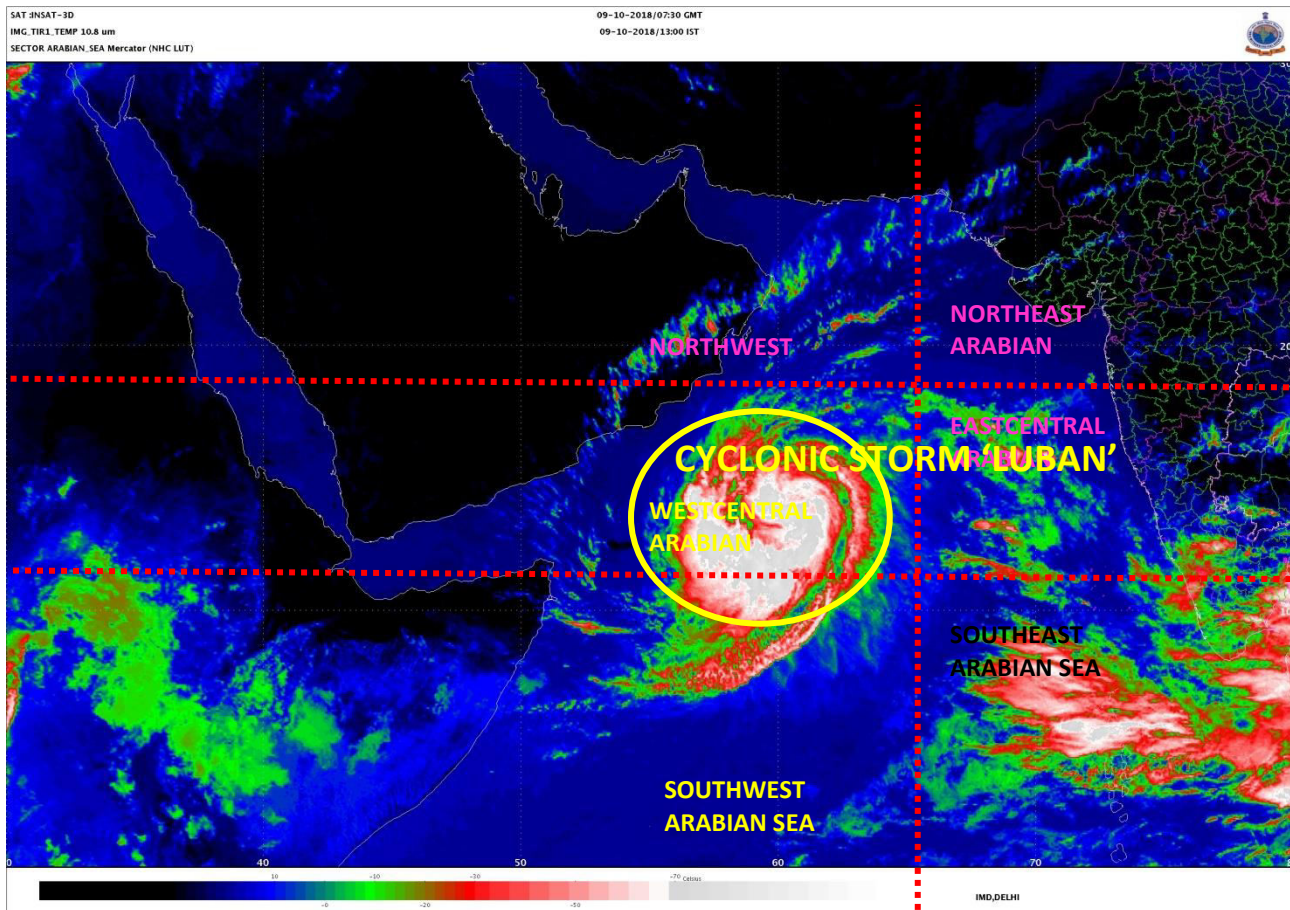
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



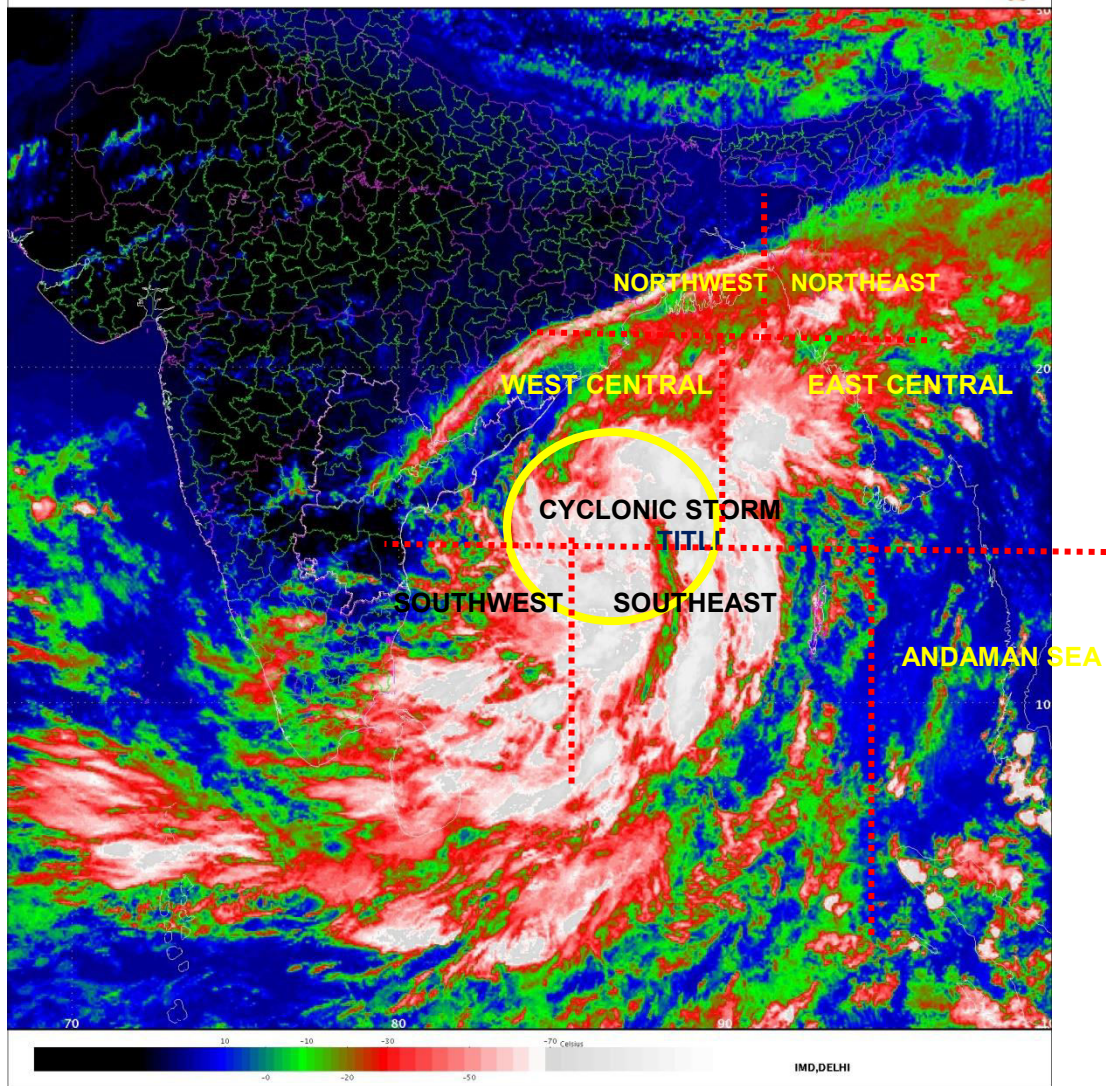
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 12

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY No. 12 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1200 UTC OF 09.10.2018 BASED ON 0900 UTC OF 09.10.2018.

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA:

THE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED NORTHWESTWARDS WITH A SPEED OF ABOUT 07 KMPH IN LAST 06 HOURS, INTENSIFIED INTO SEVERE CYCLONIC STORM AND LAY CENTERED AT 0900 UTC OF 09TH OCTOBER 2018 OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA, NEAR LATITUDE 13.2°N AND LONGITUDE 60.0°E, ABOUT 760 KM EAST-SOUTHEAST OF SALALAH (41316), 660 KM EAST OF SOCOTRA ISLANDS (41494) AND 900 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398). IT IS VERY LIKELY TO INTENSIFY FURTHER AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0900 UTC OF 09TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 10.0°N & 17°N AND BETWEEN LONGITUDE 55.0°E & 63.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C THE ESTIMATED CENTRAL PRESSURE IS ABOUT 992 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 50 TO 60 KNOTS GUSTING TO 70 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
09.10.18/0900	13.2/60.0	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
09.10.18/1200	13.3/59.5	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
09.10.18/1800	13.5/59.1	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
10.10.18/0000	13.7/58.7	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
10.10.18/0600	13.9/58.4	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
10.10.18/1800	14.2/57.7	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
11.10.18/0600	14.5/57.0	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
11.10.18/1800	14.7/56.3	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
12.10.18/0600	14.8/55.7	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
12.10.18/1800	14.8/54.6	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
13.10.18/0600	14.7/53.3	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
13.10.18/1800	14.6/52.0	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
13.10.18/0600	14.5/50.7	70-80 GUSTING TO 90	CYCLONIC STORM

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHWESTWARDS WITH A SPEED OF ABOUT 10 KMPH DURING PAST 06 HOURS AND LAY CANTERED AT 0900 UTC OF TODAY, THE 09TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 14.9°N AND LONGITUDE 86.6°E, ABOUT 510 KM SOUTHEAST OF GOPALPUR (430490) AND 460 KM EAST-SOUTHEAST OF KALINGAPATNAM (43105). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 18 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR & KALINGAPATNAM AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS COASTAL ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 0900 UTC OF 9TH OCTOBER, INTENSITY OF THE SYSTEM IS T 2.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.0°N & 18.0°N AND LONGITUDE 83.0°E & 90.0°E. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA. MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE SEA CONDITION IS HIGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/0900	14.9/86.6	65-75 gusting to 85	Cyclonic Storm
09.10.18/1200	15.2/86.3	70-80 gusting to 90	Cyclonic Storm
09.10.18/1800	15.6/85.9	80-90 gusting to 100	Cyclonic Storm
10.10.18/0000	16.0/85.6	90-100 gusting to 110	Severe Cyclonic Storm
10.10.18/0600	16.9/85.2	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/1800	18.0/84.9	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/0600	19.2/84.7	80-90 gusting to 100	Cyclonic Storm
11.10.18/1800	19.6/84.7	50-60 gusting to 70	Deep Depression
12.10.18/0600	20.2/85.0	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN AND YEMEN COASTS. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE. HOWEVER, IT IS LOW (05 KT) OVER GULF OF ADEN AND ADJOINING WESTCENTRAL ARABIAN SEA. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE UNFAVOURABLE CONDITIONS LIKE HIGH WIND SHEAR, LOWER SST & OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS LEADING TO SLIGHT WEAKENING OF THE SYSTEM BEFORE LANDFALL OVER YEMEN AND ADJOINING SOUTH OMAN COAST. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH OMAN AND YEMEN COASTS. THEY ALSO SUGGEST INTENSIFICATION INTO A SEVERE CYCLONIC STORM DURING NEXT 12 HRS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE FOR INTENSIFICATION OF DEEP DEPRESSION INTO CYCLONIC STORM OVER WESTCENTRAL BAY OF

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

BENGAL ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30⁰C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31⁰C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT 150 X10⁻⁵ SEC⁻¹ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS ALSO INCREASED AND IS ABOUT 30 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 72 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE THEREAFTER.

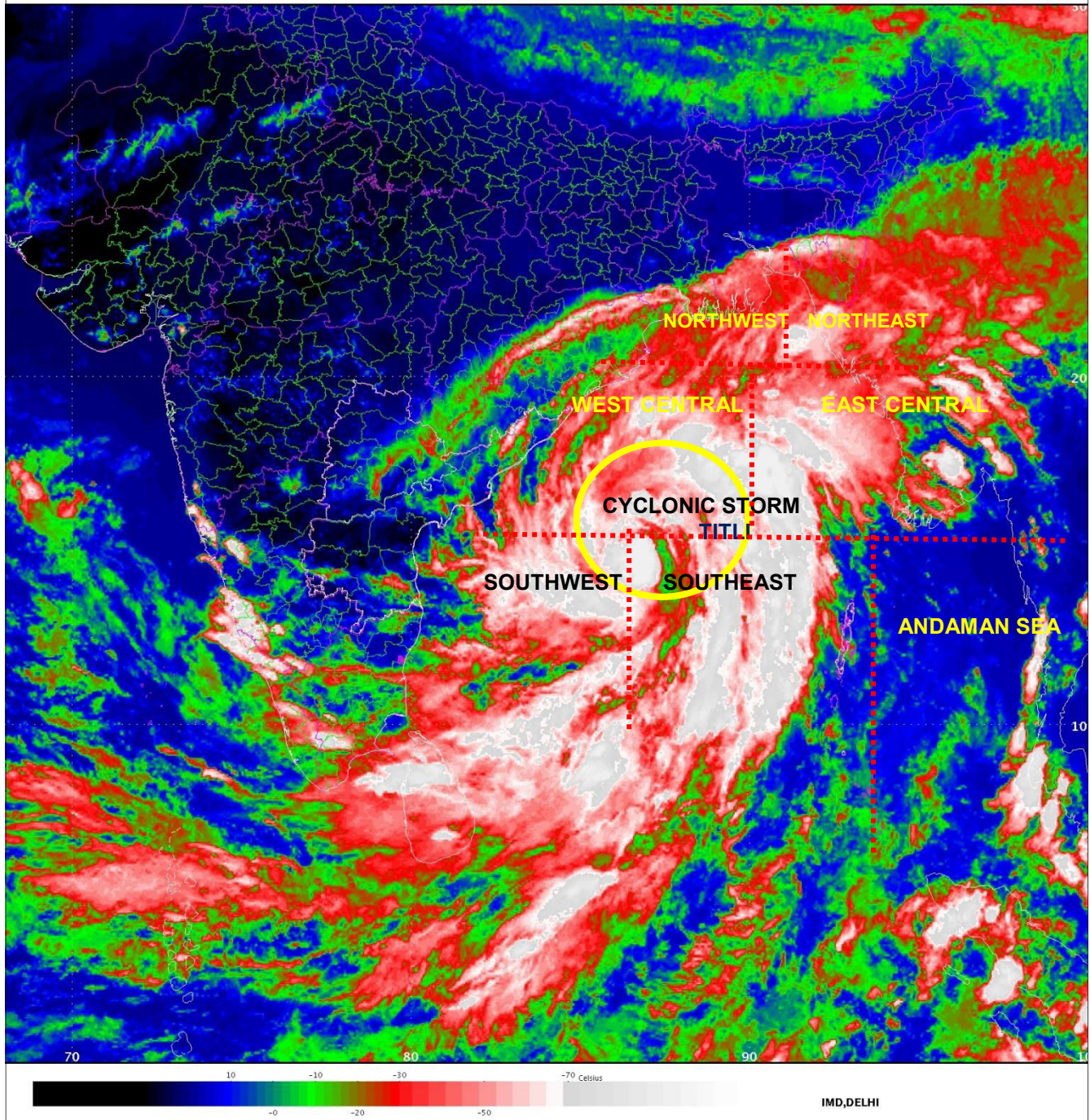
(SUNITHA DEVI)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

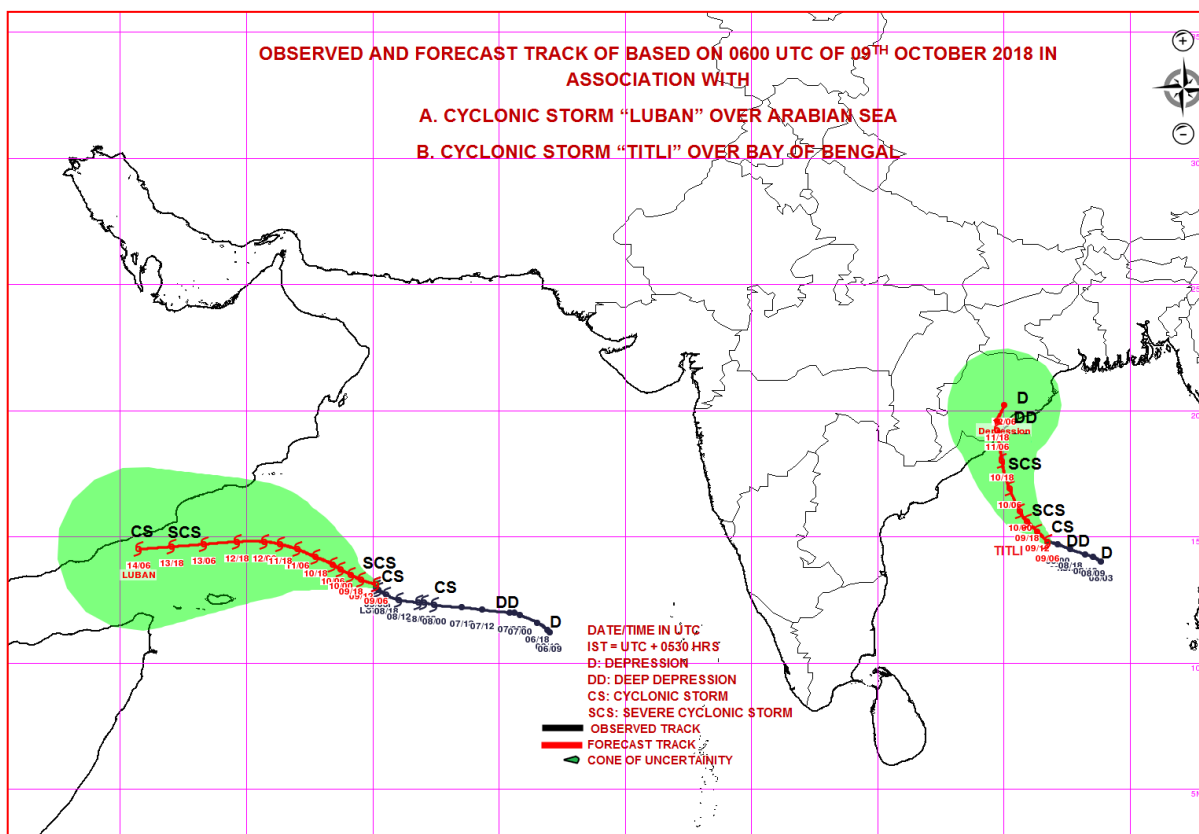
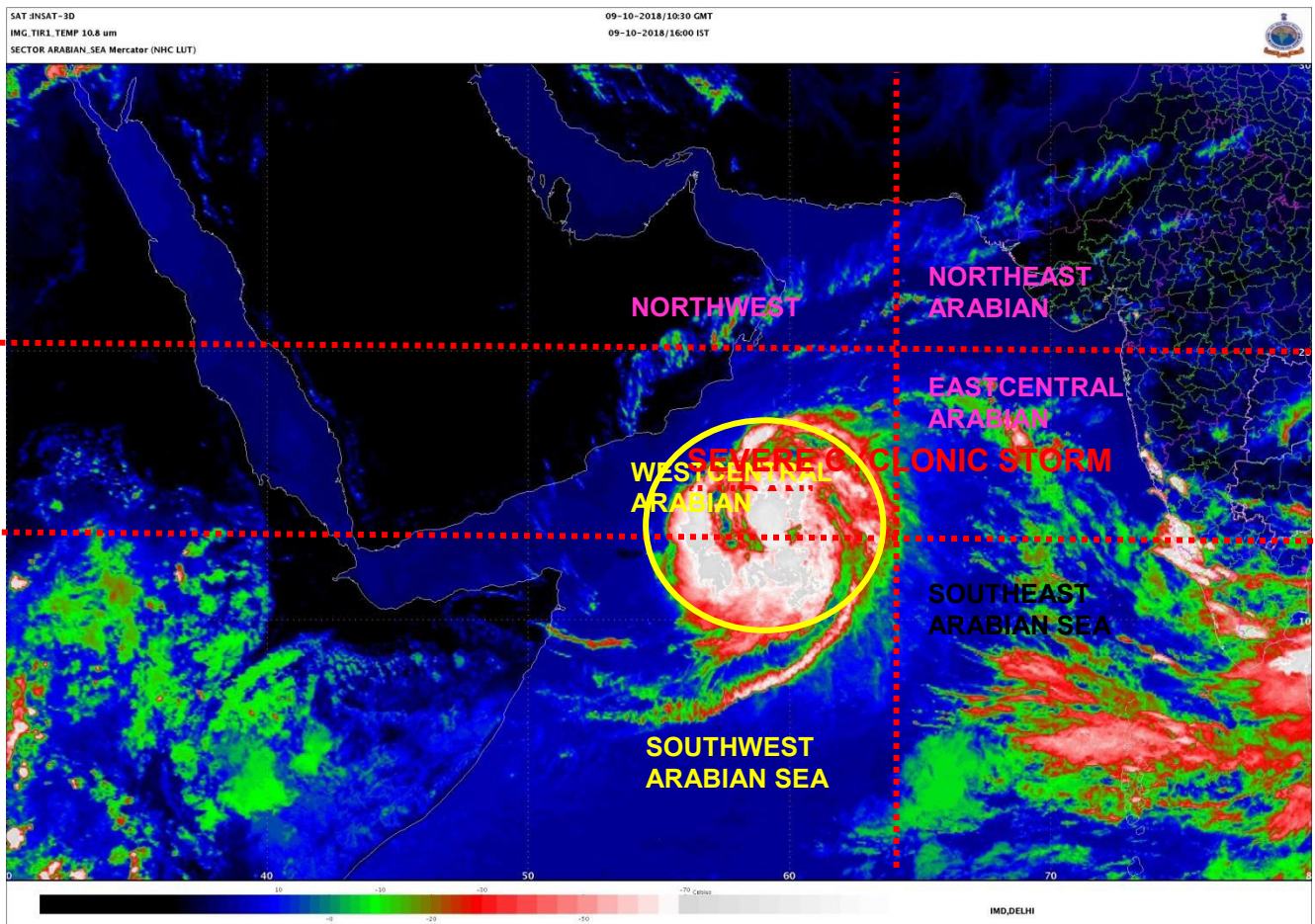
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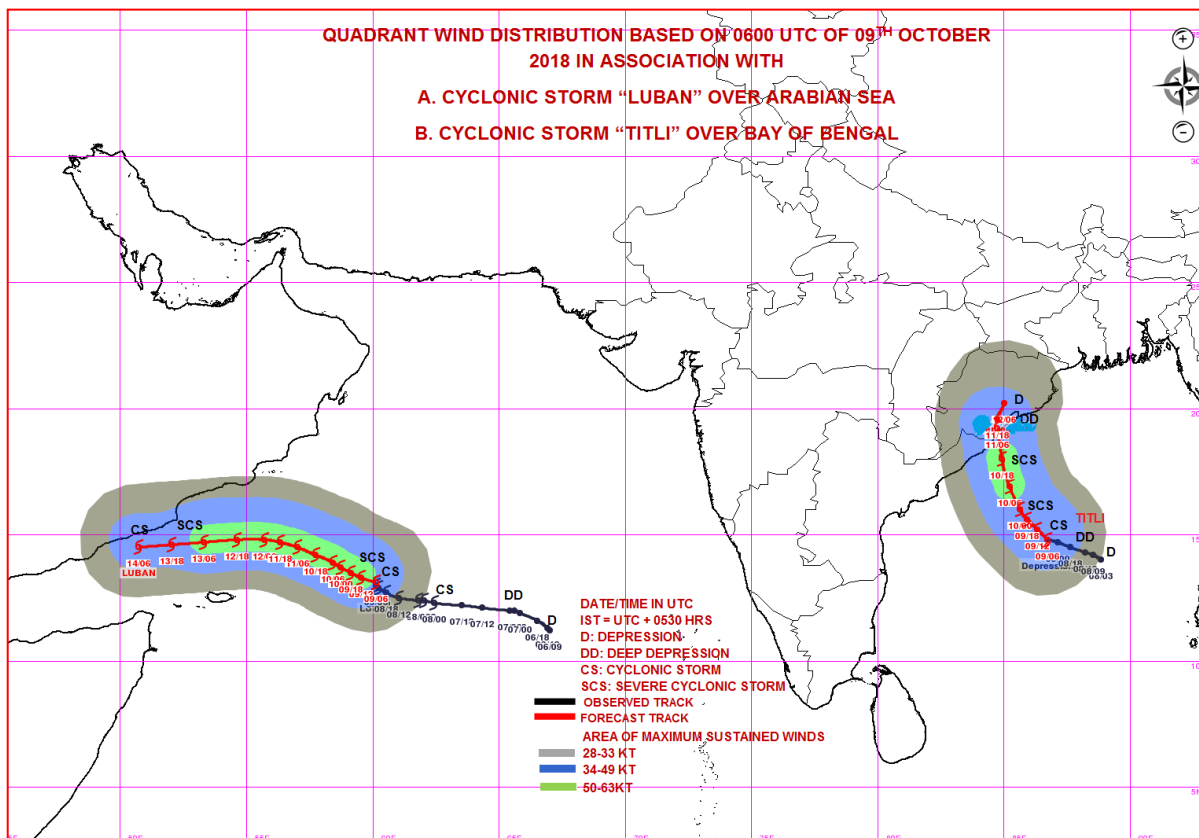
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 13

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY No. 13 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 09.10.2018 BASED ON 1200 UTC OF 09.10.2018.

(A) SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE SEVERE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 08 KMPH IN LAST 06 HOURS, AND LAY CENTERED AT 1200 UTC OF 09TH OCTOBER 2018 OVER WESTCENTRAL, NEAR LATITUDE 13.3°N AND LONGITUDE 59.7°E, ABOUT 730 KM EAST-SOUTHEAST OF SALALAH (41316), 630 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) AND 870 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A VERY SEVERE CYCLONIC STORM AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1200 UTC OF 09TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 10.0°N & 17°N AND BETWEEN LONGITUDE 55.0°E & 62.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 992 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 50 TO 60 KNOTS GUSTING TO 70 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/1200	13.3/59.7	100-110 gusting to 125	Severe Cyclonic Storm
09.10.18/1800	13.5/59.3	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0000	13.7/58.9	105-115 gusting to 130	Severe Cyclonic Storm
10.10.18/0600	13.9/58.4	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1200	14.1/58.0	120-130 gusting to 145	Very Severe Cyclonic Storm
11.10.18/0000	14.3/57.3	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/1200	14.6/56.6	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/0000	14.7/55.8	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/1200	14.8/54.9	125-135 gusting to 150	Very Severe Cyclonic Storm
13.10.18/0000	14.7/53.9	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/1200	14.5/52.6	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/0000	14.3/51.3	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/1200	14.1/50.0	90-100 gusting to 115	Severe Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED FURTHER NORTHWESTWARDS WITH A SPEED OF ABOUT 08 KMPH DURING PAST 06 HOURS AND LAY CANTERED AT 1200 UTC OF TODAY, THE 09TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 15.1°N AND LONGITUDE 86.4°E, ABOUT 490 KM SOUTH-SOUTHEAST OF GOPALPUR (430490) AND 430 KM SOUTHEAST OF KALINGAPATNAM (43105). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 18 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR & KALINGAPATNAM AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS COASTAL ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 1200 UTC OF 9TH OCTOBER, INTENSITY OF THE SYSTEM IS T 2.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.0°N & 19.0°N AND LONGITUDE 83.0°E & 91.0°E. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA. MAXIMUM SUSTAINED WIND SPEED IS 40 KNOTS GUSTING TO 50 KNOTS. THE SEA CONDITION IS HIGH TO VERY HIGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/1200	15.1/86.4	70-80 gusting to 90	Cyclonic Storm
09.10.18/1800	15.6/85.9	75-85 gusting to 95	Cyclonic Storm
10.10.18/0000	16.0/85.6	80-90 gusting to 100	Cyclonic Storm
10.10.18/0600	16.9/85.2	90-100 gusting to 115	Severe Cyclonic Storm
10.10.18/1200	17.5/85.0	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/0000	18.6/84.7	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/1200	19.4/84.7	65-75 gusting to 85	Cyclonic Storm
12.10.18/0000	19.9/84.9	50-60 gusting to 70	Deep Depression
12.10.18/1200	20.4/85.5	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 20 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵SEC⁻¹ TO THE WEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE FOR INTENSIFICATION OF DEEP DEPRESSION INTO CYCLONIC STORM OVER WESTCENTRAL BAY OF BENGAL ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

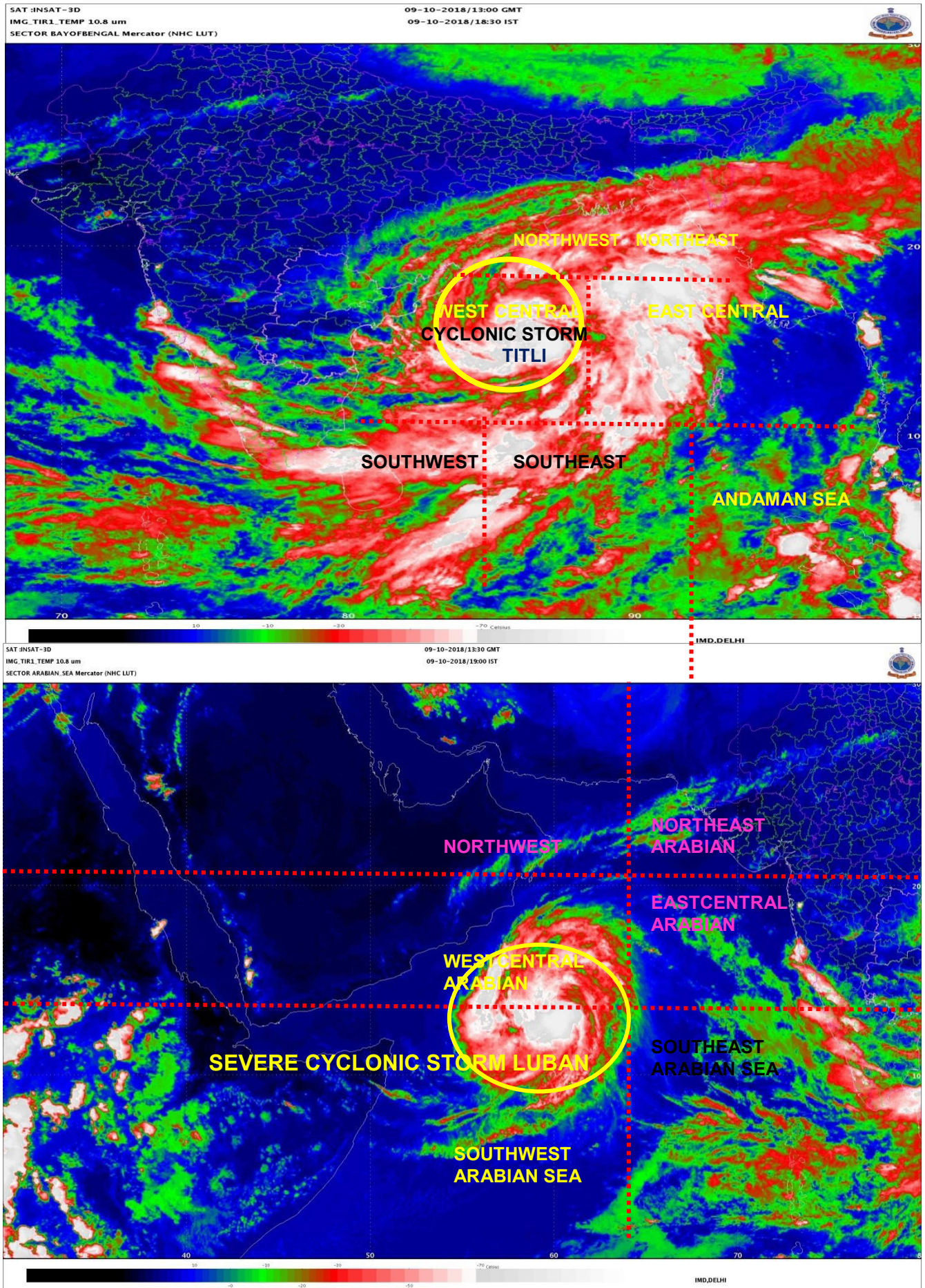
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM^2 OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT $150 \times 10^{-5} \text{ SEC}^{-1}$ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT $20 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS ALSO INCREASED AND IS ABOUT $30 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N . THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 24 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE AFTER LANDFALL.

(SUNITHA DEVI)
SCIENTIST-E, RSMC, NEW DELHI

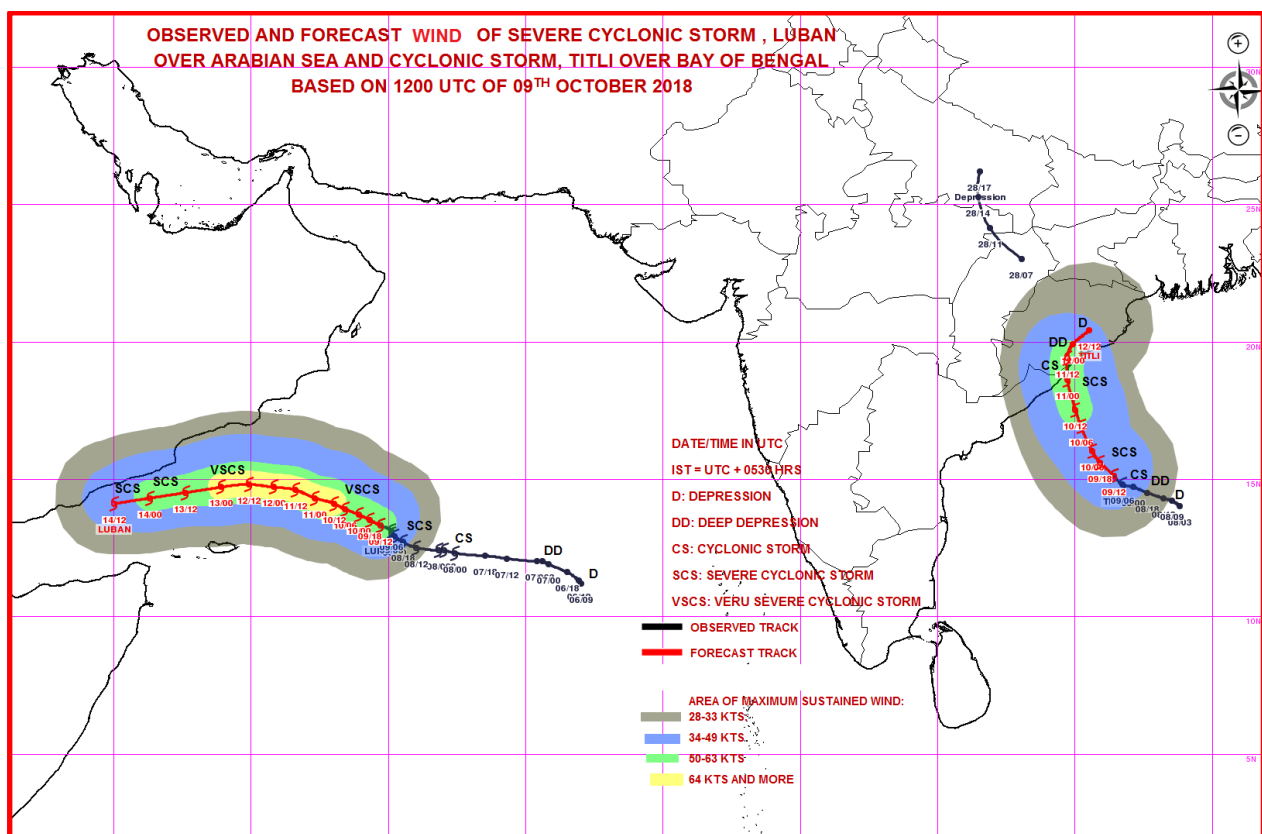
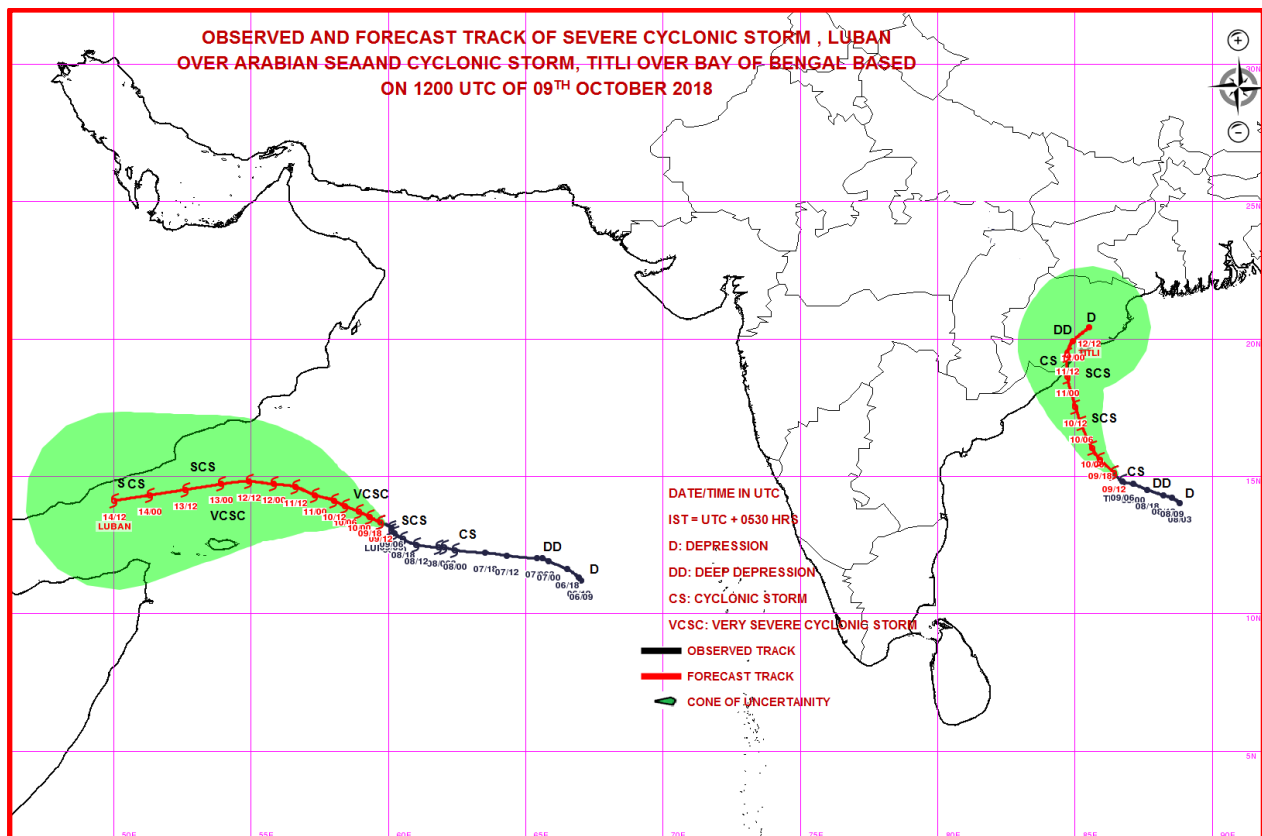
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 14

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY No. 14 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1800 UTC OF 09.10.2018 BASED ON 1500 UTC OF 09.10.2018.

(A) SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE SEVERE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 10 KMPH IN LAST 06 HOURS AND LAY CENTERED AT 1500 UTC OF 09TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 13.4°N AND LONGITUDE 59.5°E, ABOUT 700 KM EAST-SOUTHEAST OF SALALAH (OMAN), 610 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN) AND 850 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A VERY SEVERE CYCLONIC STORM DURING NEXT 24 HOURS AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1500 UTC OF 09TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 9.0°N & 18.5°N AND BETWEEN LONGITUDE 55.3°E & 62.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 992 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 50 TO 60 KNOTS GUSTING TO 70 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/1500	13.4/59.5	100-110 gusting to 125	Severe Cyclonic Storm
09.10.18/1800	13.5/59.3	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0000	13.7/58.9	105-115 gusting to 130	Severe Cyclonic Storm
10.10.18/0600	13.9/58.4	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1200	14.1/58.0	120-130 gusting to 145	Very Severe Cyclonic Storm
11.10.18/0000	14.3/57.3	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/1200	14.6/56.6	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/0000	14.7/55.8	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/1200	14.8/54.9	125-135 gusting to 150	Very Severe Cyclonic Storm
13.10.18/0000	14.7/53.9	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/1200	14.5/52.6	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/0000	14.3/51.3	100-110 gusting to 125	Severe Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

14.10.18/1200	14.1/50.0	90-100 gusting to 115	Severe Cyclonic Storm
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(B) CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHWESTWARDS WITH A SPEED OF ABOUT 10 KMPH DURING PAST 06 HOURS AND LAY CANTERED AT 1500UTC OF TODAY, THE 09TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 15.3°N AND LONGITUDE 86.2°E, ABOUT 460 KM SOUTH-SOUTHEAST OF GOPALPUR (ODISHA) AND 400 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 18 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR & KALINGAPATNAM AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS COASTAL ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 1500 UTC OF 9TH OCTOBER, INTENSITY OF THE SYSTEM IS T 2.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.0°N & 22.0°N AND LONGITUDE 80.5°E & 93.0°E. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA. MAXIMUM SUSTAINED WIND SPEED IS 40 KNOTS GUSTING TO 50 KNOTS. THE SEA CONDITION IS HIGH TO VERY HIGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/1500	15.3/86.2	75-85 gusting to 95	Cyclonic Storm
09.10.18/1800	15.6/85.9	75-85 gusting to 95	Cyclonic Storm
10.10.18/0000	16.0/85.6	80-90 gusting to 100	Cyclonic Storm
10.10.18/0600	16.9/85.2	90-100 gusting to 115	Severe Cyclonic Storm
10.10.18/1200	17.5/85.0	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/0000	18.6/84.7	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/1200	19.4/84.7	65-75 gusting to 85	Cyclonic Storm
12.10.18/0000	19.9/84.9	50-60 gusting to 70	Deep Depression
12.10.18/1200	20.4/85.5	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 20 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵SEC⁻¹ TO THE WEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE FOR INTENSIFICATION OF DEEP DEPRESSION INTO CYCLONIC STORM OVER WESTCENTRAL BAY OF

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

BENGAL ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30⁰C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31⁰C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT 150 X10⁻⁵ SEC⁻¹ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 500 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS ALSO INCREASED AND IS ABOUT 30 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 24 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE AFTER LANDFALL.

(S.D. KOTAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

**SATELLITE BULLETIN BASED ON SATELLITE IMAGERIES
AND PRODUCTS**

09.10.2018 TIME 1500 UTC

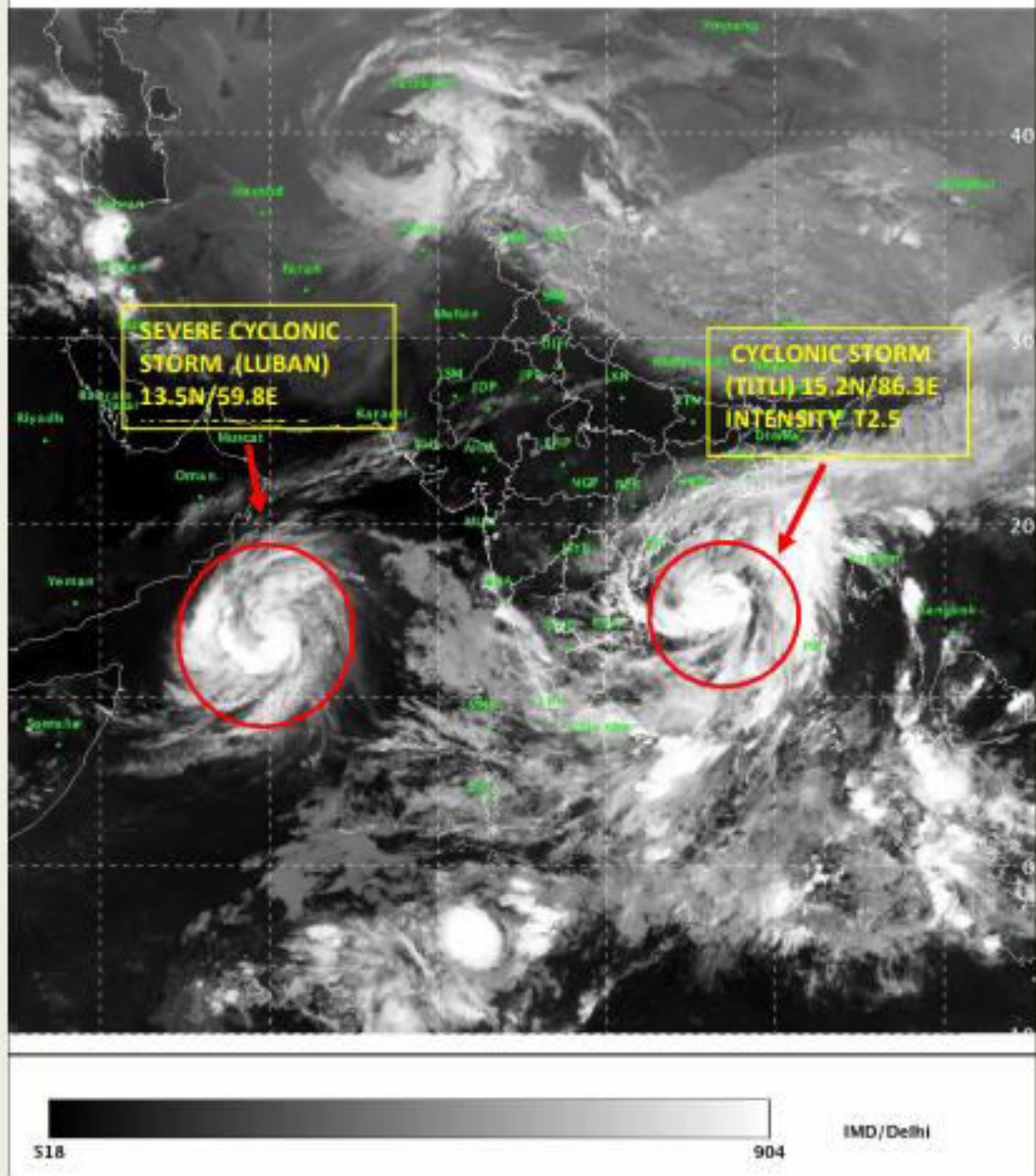
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09-10-2018/15:00 GMT

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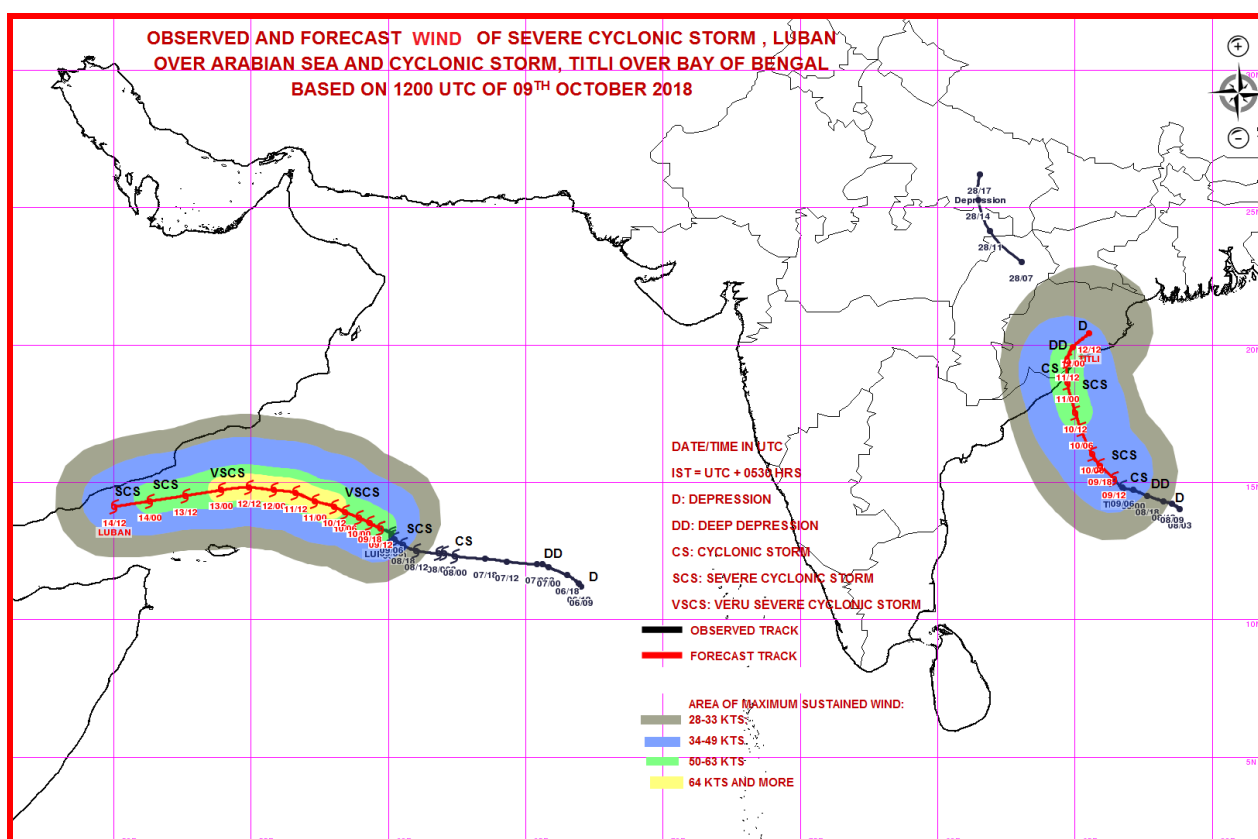
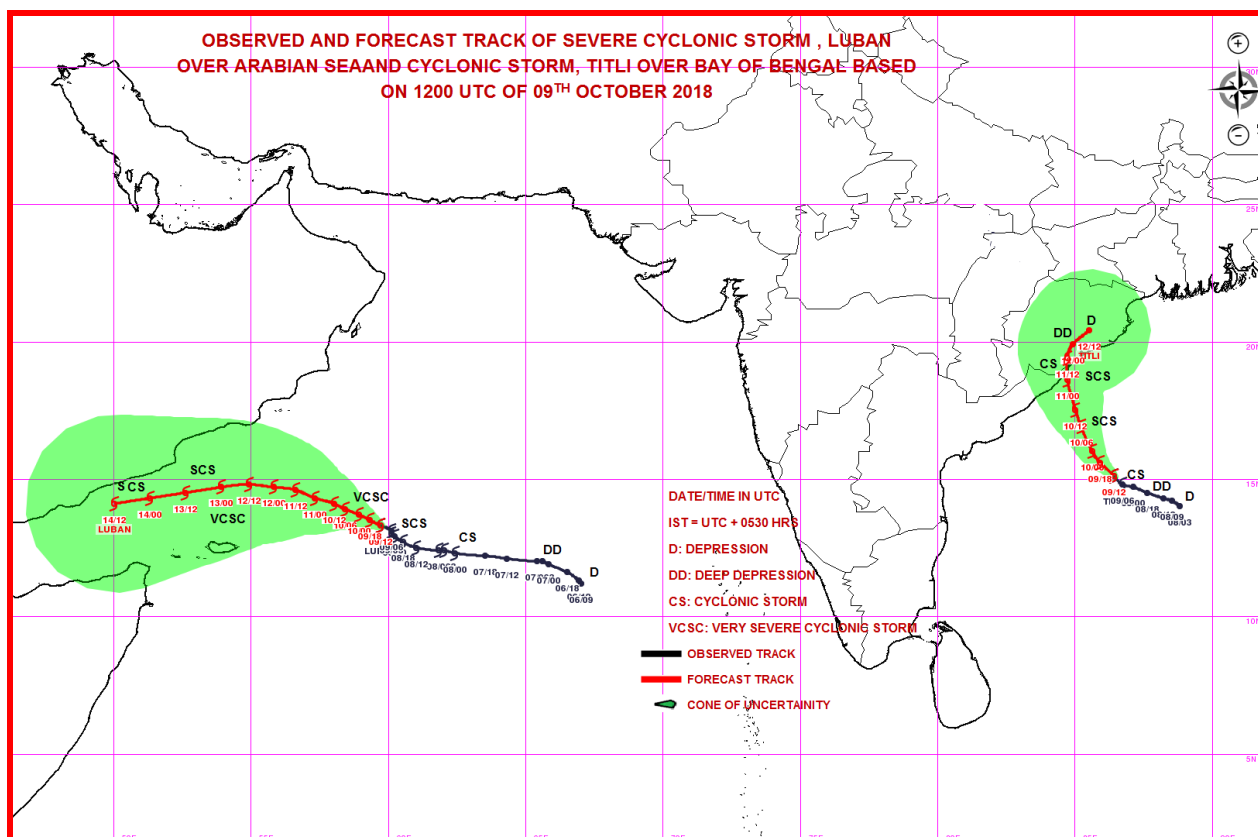
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L1C Mercator (LINEAR STRETCH: 1.0%)



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 15

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY No. 15 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2100 UTC OF 09.10.2018 BASED ON 1800 UTC OF 09.10.2018.

(A) SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE SEVERE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 08 KMPH IN LAST 06 HOURS AND LAY CENTERED AT 1800 UTC OF 09TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 13.5°N AND LONGITUDE 59.3°E, ABOUT 680 KM EAST-SOUTHEAST OF SALALAH (OMAN), 590 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN) AND 820 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A VERY SEVERE CYCLONIC STORM DURING NEXT 24 HOURS AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1800 UTC OF 09TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 9.0°N & 18.5°N AND BETWEEN LONGITUDE 55.3°E & 62.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 992 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 50 TO 60 KNOTS GUSTING TO 70 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/1800	13.5/59.3	105-115 gusting to 130	Severe Cyclonic Storm
10.10.18/0000	13.7/58.9	105-115 gusting to 130	Severe Cyclonic Storm
10.10.18/0600	13.9/58.4	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1200	14.1/58.0	120-130 gusting to 145	Very Severe Cyclonic Storm
10.10.18/1800	14.2/57.6	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/0600	14.4/57.0	130-140 gusting to 155	Very Severe Cyclonic Storm
11.10.18/1800	14.6/56.2	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/0600	14.7/55.4	130-140 gusting to 150	Very Severe Cyclonic Storm
12.10.18/1800	14.7/54.4	125-135 gusting to 145	Very Severe Cyclonic Storm
13.10.18/0600	14.6/53.4	120-130 gusting to 140	Very Severe Cyclonic Storm
13.10.18/1800	14.4/52.0	105-115 gusting to 125	Severe Cyclonic Storm
14.10.18/0600	14.2/50.6	95-105 gusting to 115	Severe Cyclonic Storm
14.10.18/1800	14.0/49.2	95-105 gusting to 115	Severe Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHWESTWARDS WITH A SPEED OF ABOUT 10 KMPH DURING PAST 06 HOURS AND LAY CANTERED AT 1800UTC OF TODAY, THE 09TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 15.5°N AND LONGITUDE 86.0°E, ABOUT 430 KM SOUTH-SOUTHEAST OF GOPALPUR (ODISHA) AND 370 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 12 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR & KALINGAPATNAM AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS COASTAL ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 1800 UTC OF 9TH OCTOBER, INTENSITY OF THE SYSTEM IS T 2.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.0°N & 22.0°N AND LONGITUDE 80.5°E & 93.0°E. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA. MAXIMUM SUSTAINED WIND SPEED IS 40 KNOTS GUSTING TO 50 KNOTS. THE SEA CONDITION IS HIGH TO VERY HIGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/1800	15.5/86.0	85-95 gusting to 105	Cyclonic Storm
10.10.18/0000	16.0/85.6	85-95 gusting to 105	Cyclonic Storm
10.10.18/0600	16.9/85.2	90-100 gusting to 115	Severe Cyclonic Storm
10.10.18/1200	17.5/85.0	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/1800	18.2/84.8	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/0600	19.0/84.7	80-90 gusting to 100	Cyclonic Storm
11.10.18/1800	19.7/84.8	50-60 gusting to 70	Deep Depression
12.10.18/0600	20.2/85.2	50-60 gusting to 70	Deep Depression
12.10.18/1800	20.6/85.6	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 20 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE WEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE FOR INTENSIFICATION OF DEEP DEPRESSION INTO CYCLONIC STORM OVER WESTCENTRAL BAY OF BENGAL ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT 150 X10⁻⁵ SEC⁻¹ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS ALSO INCREASED AND IS ABOUT 30 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 24 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE AFTER LANDFALL.

(S.D. KOTAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

**SATELLITE BULLETIN BASED ON SATELLITE IMAGERIES
AND PRODUCTS**

09.10.2018 TIME 1700 UTC

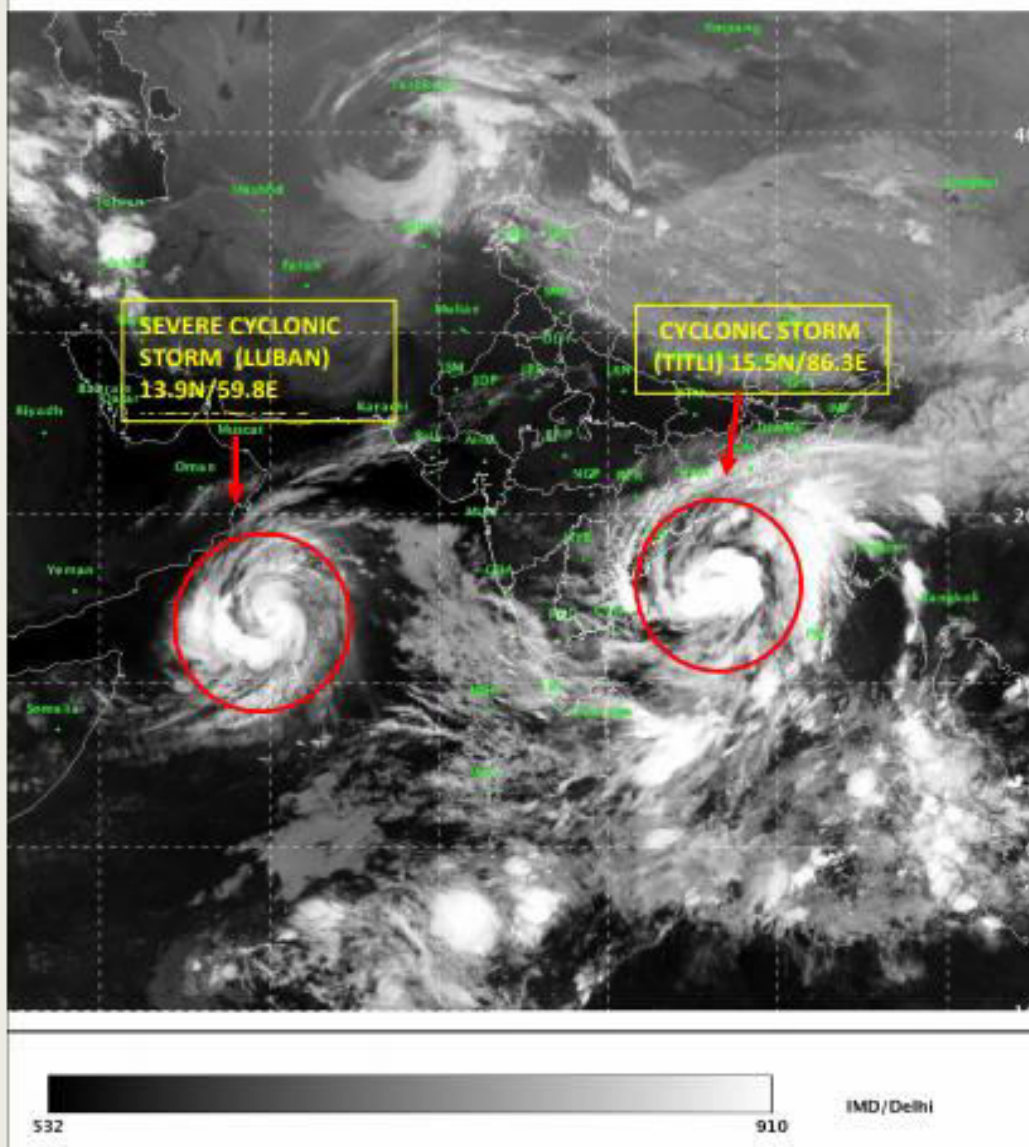
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09-10-2018/16:30 GMT

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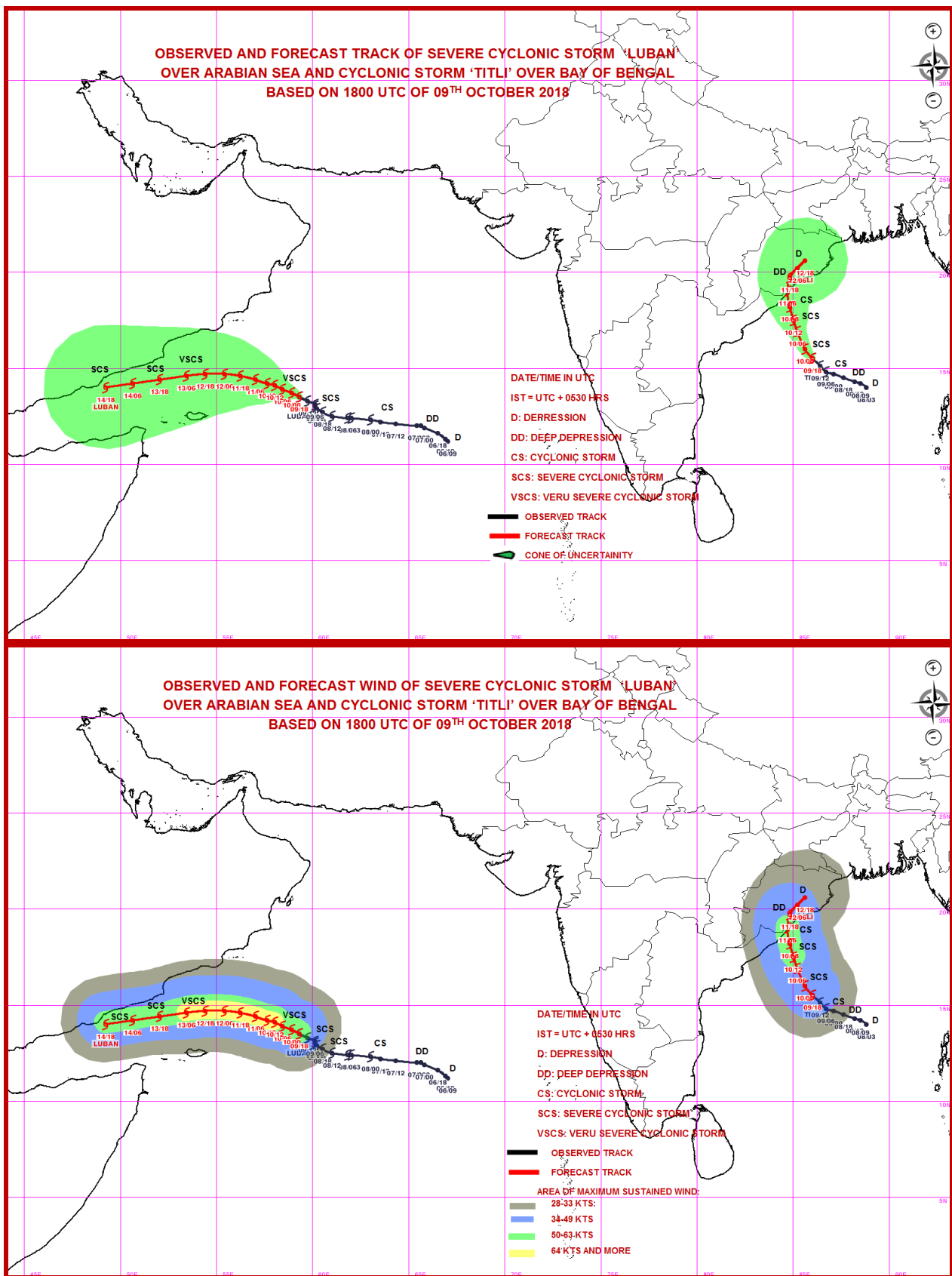
09-10-2018/22:00 IST

L1C Mercator (LINEAR STRETCH: 1.0%)



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 16

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY No. 16 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0000 UTC OF 10.10.2018 BASED ON 2100 UTC OF 09.10.2018.

(A) SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE SEVERE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 08 KMPH IN LAST 06 HOURS AND LAY CENTERED AT 2100 UTC OF 09TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 13.6°N AND LONGITUDE 59.1°E, ABOUT 660 KM EAST-SOUTHEAST OF SALALAH (OMAN), 570 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN) AND 800 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A VERY SEVERE CYCLONIC STORM DURING NEXT 24 HOURS AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 2100 UTC OF 09TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 9.0°N & 18.5°N AND BETWEEN LONGITUDE 55.3°E & 62.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 992 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 50 TO 60 KNOTS GUSTING TO 70 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/2100	13.6/59.1	105-115 gusting to 130	Severe Cyclonic Storm
10.10.18/0000	13.7/58.9	105-115 gusting to 130	Severe Cyclonic Storm
10.10.18/0600	13.9/58.4	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1200	14.1/58.0	120-130 gusting to 145	Very Severe Cyclonic Storm
10.10.18/1800	14.2/57.6	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/0600	14.4/57.0	130-140 gusting to 155	Very Severe Cyclonic Storm
11.10.18/1800	14.6/56.2	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/0600	14.7/55.4	130-140 gusting to 150	Very Severe Cyclonic Storm
12.10.18/1800	14.7/54.4	125-135 gusting to 145	Very Severe Cyclonic Storm
13.10.18/0600	14.6/53.4	120-130 gusting to 140	Very Severe Cyclonic Storm
13.10.18/1800	14.4/52.0	105-115 gusting to 125	Severe Cyclonic Storm
14.10.18/0600	14.2/50.6	95-105 gusting to 115	Severe Cyclonic Storm
14.10.18/1800	14.0/49.2	95-105 gusting to 115	Severe Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHWESTWARDS WITH A SPEED OF ABOUT 10 KMPH DURING PAST 06 HOURS AND LAY CANTERED AT 2100UTC OF TODAY, THE 09TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 15.7°N AND LONGITUDE 85.8°E, ABOUT 410 KM SOUTH-SOUTHEAST OF GOPALPUR (ODISHA) AND 340 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 12 HOURS. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR & KALINGAPATNAM AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS COASTAL ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 1800 UTC OF 9TH OCTOBER, INTENSITY OF THE SYSTEM IS T 2.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.0°N & 22.0°N AND LONGITUDE 80.5°E & 93.0°E. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA. MAXIMUM SUSTAINED WIND SPEED IS 40 KNOTS GUSTING TO 50 KNOTS. THE SEA CONDITION IS HIGH TO VERY HIGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.10.18/2100	15.7/85.8	85-95 gusting to 105	Cyclonic Storm
10.10.18/0000	16.0/85.6	85-95 gusting to 105	Cyclonic Storm
10.10.18/0600	16.9/85.2	90-100 gusting to 115	Severe Cyclonic Storm
10.10.18/1200	17.5/85.0	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/1800	18.2/84.8	100-110 gusting to 125	Severe Cyclonic Storm
11.10.18/0600	19.0/84.7	80-90 gusting to 100	Cyclonic Storm
11.10.18/1800	19.7/84.8	50-60 gusting to 70	Deep Depression
12.10.18/0600	20.2/85.2	50-60 gusting to 70	Deep Depression
12.10.18/1800	20.6/85.6	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 20 X10⁻⁵SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE WEST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. HENCE, AS THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS, THERE WILL BE GRADUAL INTENSIFICATION. HOWEVER, AS THE SYSTEM WOULD REACH NEAR THE COAST, IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE FOR INTENSIFICATION OF DEEP DEPRESSION INTO CYCLONIC STORM OVER WESTCENTRAL BAY OF BENGAL ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

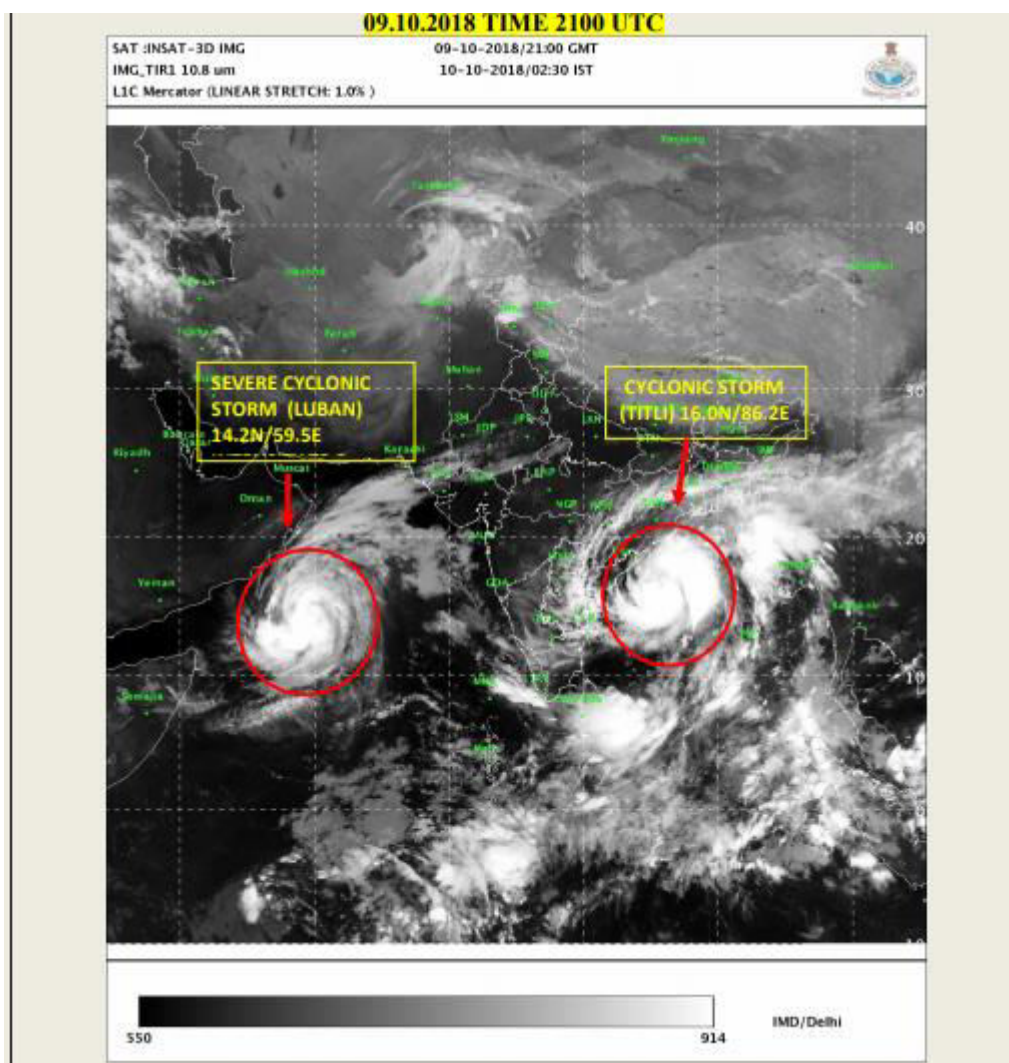
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT 150 X10⁻⁵ SEC⁻¹ TO THE WEST OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS ALSO INCREASED AND IS ABOUT 30 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 24 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE AFTER LANDFALL.

(S.D. KOTAL)
SCIENTIST-E, RSMC, NEW DELHI

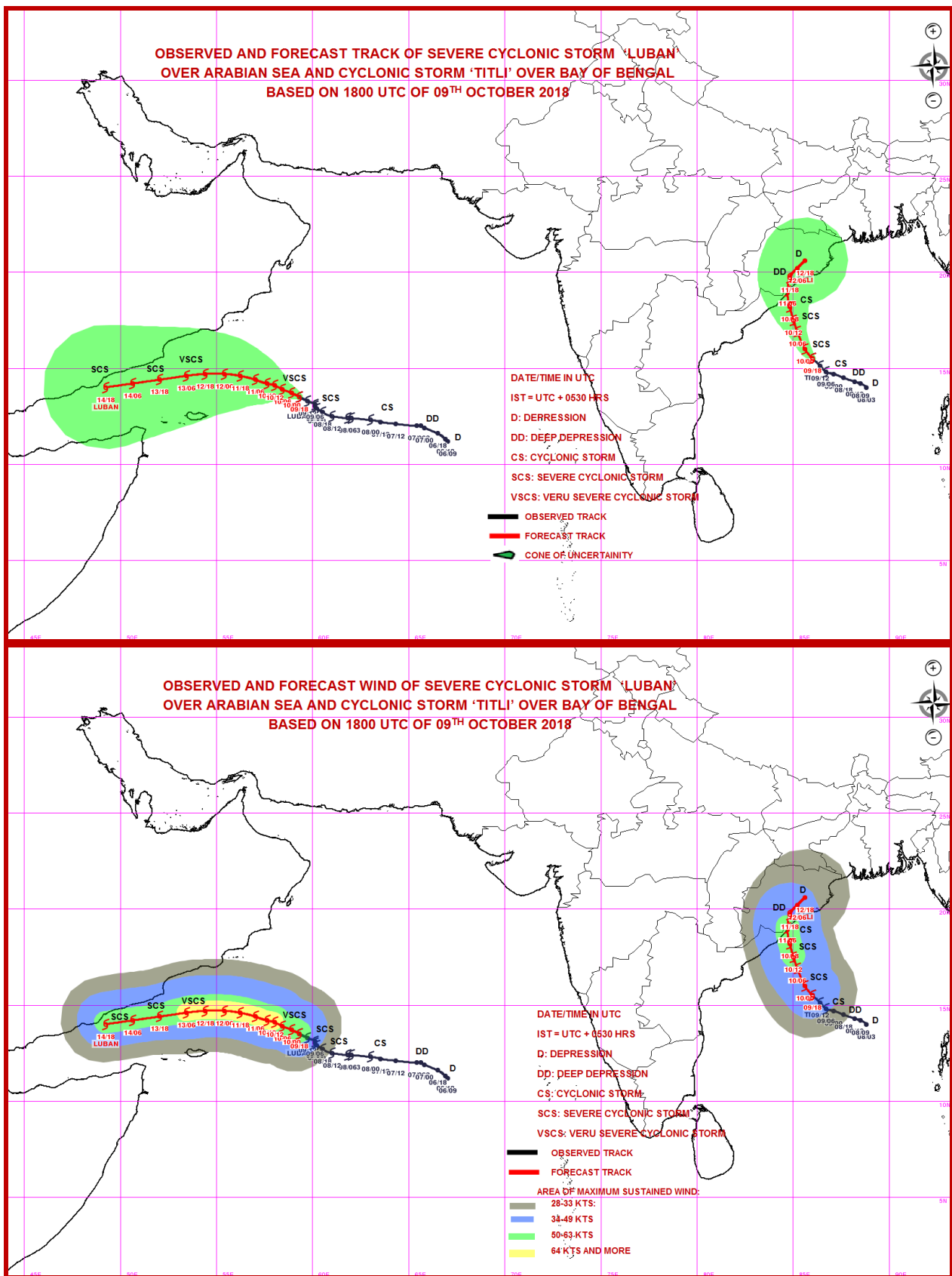
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 17

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY No. 17 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 10.10.2018 BASED ON 0000 UTC OF 10.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE SEVERE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF ABOUT 12 KMPH IN LAST 06 HOURS, INTENSIFIED INTO A VERY SEVERE CYCLONIC STORM AND LAY CENTERED AT 0000UTC OF 10TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.1°N AND LONGITUDE 59.0°E, ABOUT 610 KM EAST-SOUTHEAST OF SALALAH (OMAN), 570 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN) AND 770 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0000 UTC OF 10TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T4.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 11.0°N & 18.5°N AND BETWEEN LONGITUDE 55.5°E & 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 984 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 65 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
10.10.18/0000	14.1/59.0	120-130 gusting to 145	Very Severe Cyclonic Storm
10.10.18/0600	14.2/58.8	125-135 gusting to 150	Very Severe Cyclonic Storm
10.10.18/1200	14.4/58.6	130-140 gusting to 155	Very Severe Cyclonic Storm
10.10.18/1800	14.5/58.3	130-140 gusting to 155	Very Severe Cyclonic Storm
11.10.18/0000	14.6/58.1	130-140 gusting to 155	Very Severe Cyclonic Storm
11.10.18/1200	14.8/57.5	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/0000	15.0/56.7	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/1200	15.1/55.9	135-145 gusting to 160	Very Severe Cyclonic Storm
13.10.18/0000	15.2/55.0	135-145 gusting to 160	Very Severe Cyclonic Storm
13.10.18/1200	15.2/53.8	120-130 gusting to 145	Very Severe Cyclonic Storm
14.10.18/0000	15.1/52.0	110-120 gusting to 130	Severe Cyclonic Storm
14.10.18/1200	14.8/49.8	90-100 gusting to 110	Severe Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF ABOUT 10 KMPH DURING PAST 06 HOURS, INTENSIFIED INTO A SEVERE CYCLONIC STORM AND LAY CANTERED AT 0000 UTC OF TODAY, THE 10TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 16.0°N AND LONGITUDE 85.8°E, ABOUT 370 KM SOUTH-SOUTHEAST OF GOPALPUR (ODISHA) AND 310 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A VERY SEVERE CYCLONIC STORM DURING NEXT 18 HOURS. IT IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR & KALINGAPATNAM AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 0000 UTC OF 10TH OCTOBER, INTENSITY OF THE SYSTEM IS T 3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 13.5°N & 21.0°N AND LONGITUDE 81.5°E & 90.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA. MAXIMUM SUSTAINED WIND SPEED IS 55 KNOTS. THE SEA CONDITION IS HIGH TO VERY HIGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
10.10.18/0000	16.0/85.8	100-110 gusting to 125	Severe Cyclonic Storm
10.10.18/0600	16.7/85.6	105-115 gusting to 130	Severe Cyclonic Storm
10.10.18/1200	17.4/85.3	110-120 gusting to 135	Severe Cyclonic Storm
10.10.18/1800	18.0/85.1	120-130 gusting to 145	Very Severe Cyclonic Storm
11.10.18/0000	18.6/84.9	120-130 gusting to 145	Very Severe Cyclonic Storm
11.10.18/1200	19.5/84.7	70-80 gusting to 90	Cyclonic Storm
12.10.18/0000	20.5/85.2	50-60 gusting to 70	Deep Depression
12.10.18/1200	22.1/86.4	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. HENCE. THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS AND IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE FOR INTENSIFICATION OF DEEP DEPRESSION INTO CYCLONIC STORM OVER WESTCENTRAL BAY OF BENGAL ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT 250 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

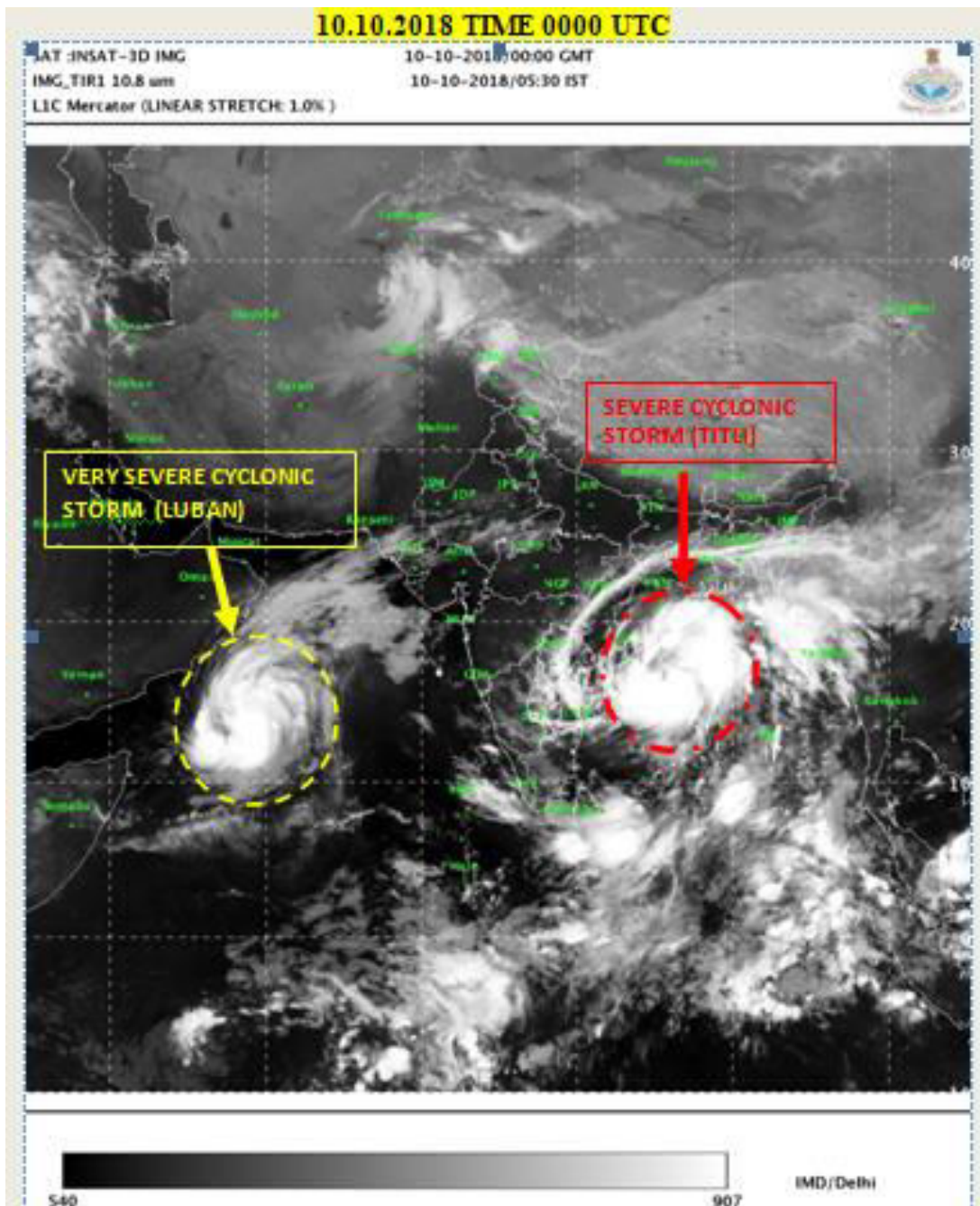
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT $20 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS ABOUT $30 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 24 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE AFTER LANDFALL.

(S.D. KOTAL)
SCIENTIST-E, RSMC, NEW DELHI

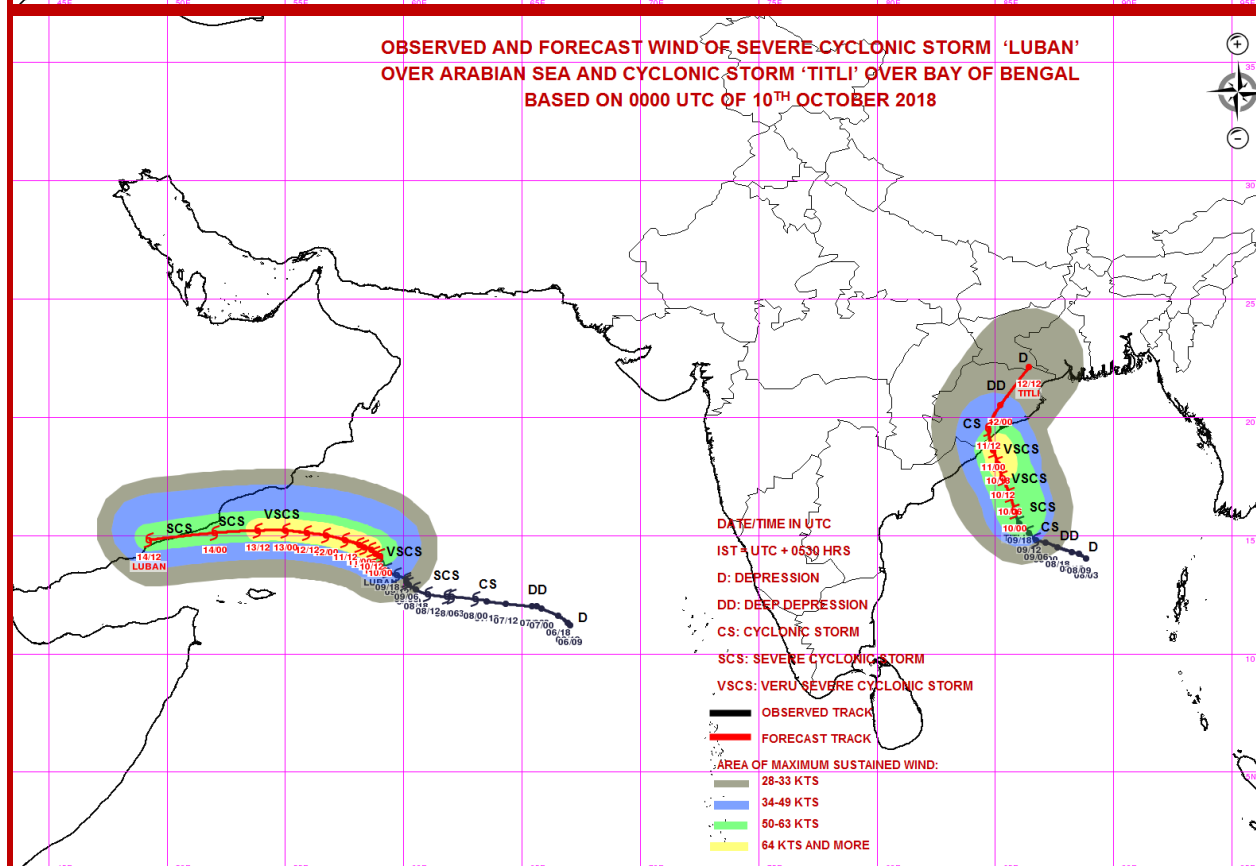
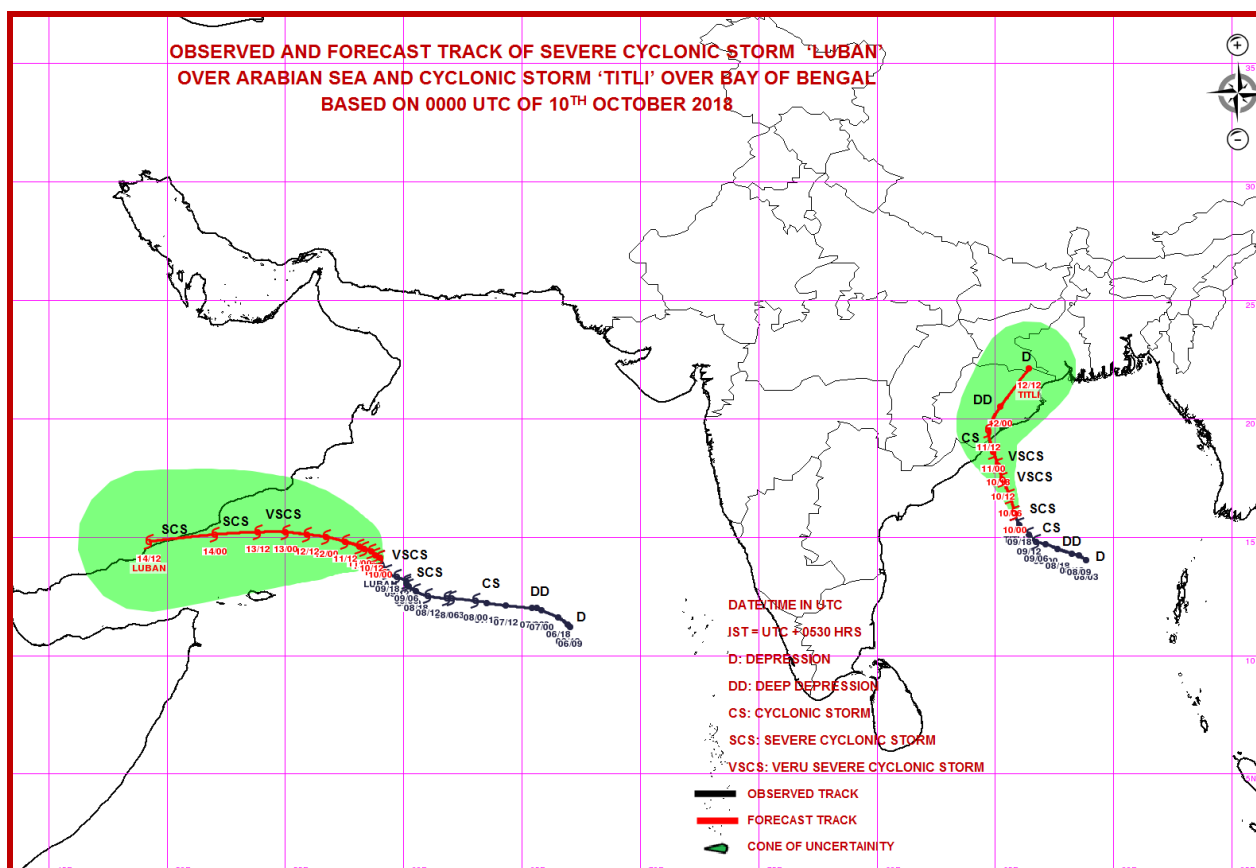
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 18

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY No. 18 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0600 UTC OF 10.10.2018 BASED ON 0300 UTC OF 10.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM OVER WESTCENTRAL ARABIAN SEA REMAINED PRACTICALLY STATIONARY AND LAY CENTERED AT 0300 UTC OF 10TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.1°N AND LONGITUDE 59.0°E, ABOUT 610 KM EAST-SOUTHEAST OF SALALAH (41316), 570 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) AND 770 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0300 UTC OF 10TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T4.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 11.0°N & 18.5°N AND BETWEEN LONGITUDE 55.5°E & 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 984 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 65 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
10.10.18/0300	14.1/59.0	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
10.10.18/0600	14.2/58.8	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
10.10.18/1200	14.4/58.6	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
10.10.18/1800	14.5/58.3	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
11.10.18/0000	14.6/58.1	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
11.10.18/1200	14.8/57.5	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
12.10.18/0000	15.0/56.7	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
12.10.18/1200	15.1/55.9	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
13.10.18/0000	15.2/55.0	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
13.10.18/1200	15.2/53.8	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
14.10.18/0000	15.1/52.0	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
14.10.18/1200	14.8/49.8	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHWARDS WITH A SPEED OF ABOUT 14 KMPH DURING PAST 06 HOURS, AND LAY CANTERED AT 0300 UTC OF TODAY, THE 10TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 16.5°N AND LONGITUDE 85.8°E, ABOUT 320 KM SOUTH-SOUTHEAST OF GOPALPUR (430490) AND 270 KM SOUTHEAST OF KALINGAPATNAM (43105). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A VERY SEVERE CYCLONIC STORM DURING NEXT THREE HOURS. IT IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR & KALINGAPATNAM AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 0300 UTC OF 10TH OCTOBER, INTENSITY OF THE SYSTEM IS T 3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 13.5°N & 21.0°N AND LONGITUDE 81.5°E & 90.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA. MAXIMUM SUSTAINED WIND SPEED IS 55 KNOTS. THE SEA CONDITION IS HIGH TO VERY HIGH AROUND SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
10.10.18/0300	16.5/85.8	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
10.10.18/0600	16.8/85.6	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
10.10.18/1200	17.4/85.3	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
10.10.18/1800	18.0/85.1	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0000	18.6/84.9	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/1200	19.5/84.7	70-80 GUSTING TO 90	CYCLONIC STORM
12.10.18/0000	20.5/85.2	50-60 GUSTING TO 70	DEEP DEPRESSION
12.10.18/1200	22.1/86.4	40-50 GUSTING TO 60	DEPRESSION

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. HENCE, THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS AND IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER BOB, GPP IS INDICATING POTENTIAL ZONE FOR INTENSIFICATION OF DEEP DEPRESSION INTO CYCLONIC STORM OVER WESTCENTRAL BAY OF BENGAL ON 10TH. THE SEA SURFACE TEMPERATURE (SST) IS 29-30°C OVER MOST PARTS OF EASTCENTRAL BOB AND ANDAMAN SEA BECOMING 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

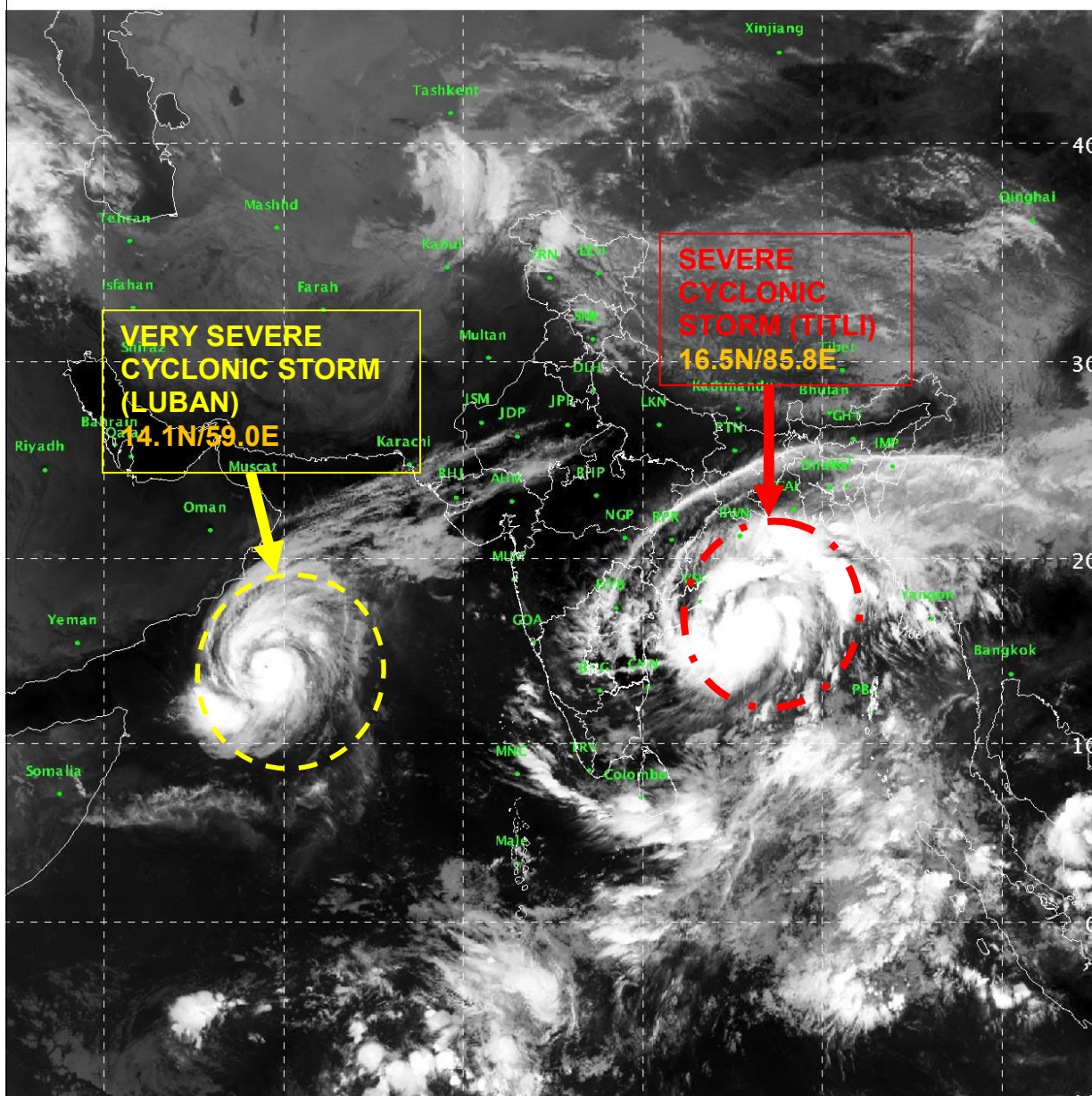
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT $250 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT $20 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS ABOUT $30 \times 10^{-5} \text{ SEC}^{-1}$ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N . THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 24 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE AFTER LANDFALL.

(NARESH KUMAR)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



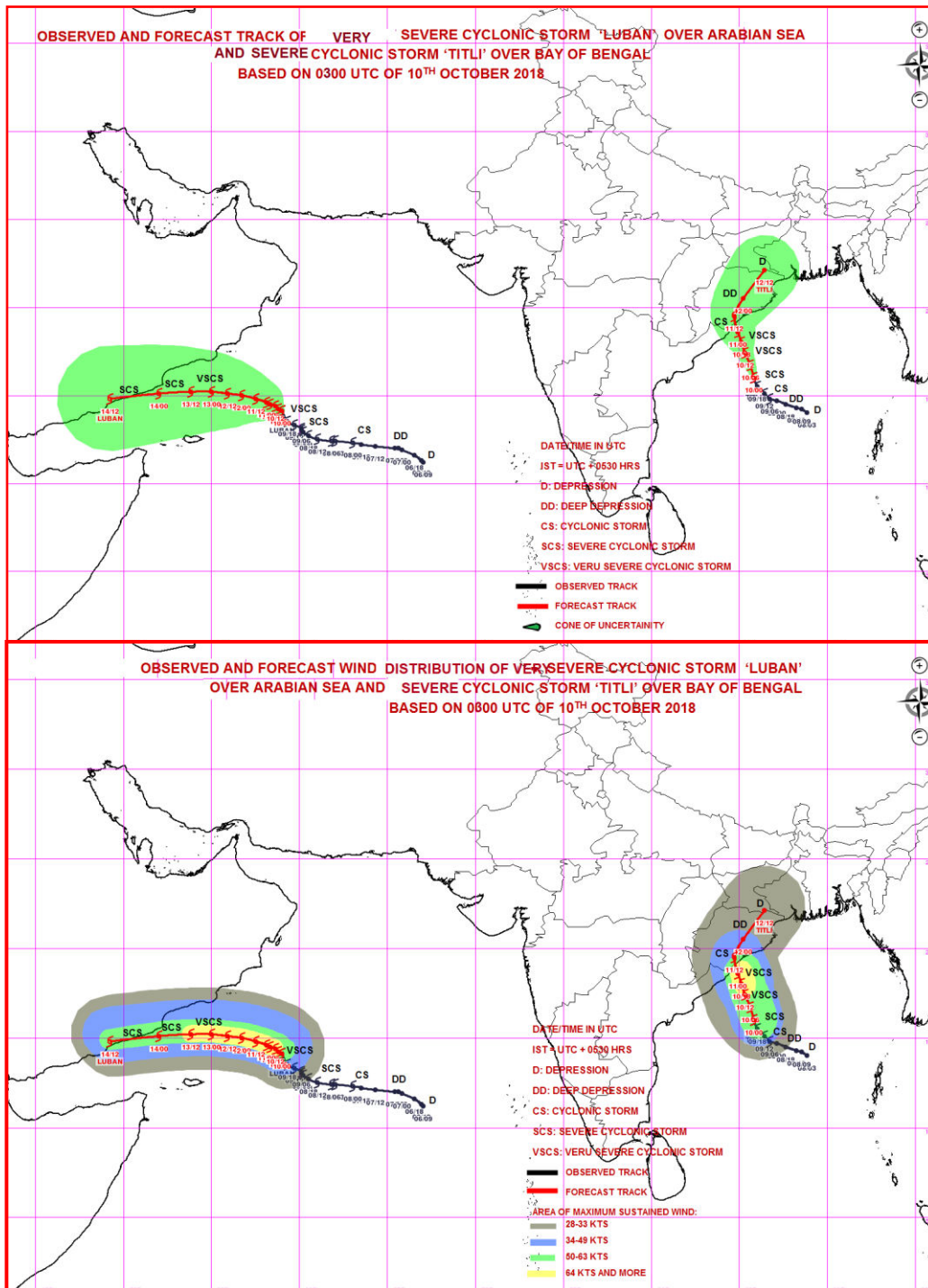
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IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 19

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 19 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0800 UTC OF 10.10.2018 BASED ON 0600 UTC OF 10.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM OVER WESTCENTRAL ARABIAN SEA MOVED NORTHWESTWARDS WITH A SPEED OF 03 KMPH DURING PAST SIX HOURS AND LAY CENTERED AT 0600 UTC OF 10TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.2°N AND LONGITUDE 58.9°E, ABOUT 600 KM EAST-SOUTHEAST OF SALALAH (41316), 560 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) AND 760 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398). IT IS VERY LIKELY TO INTENSIFY FURTHER AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0600 UTC OF 10TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 11.0°N & 18.5°N AND BETWEEN LONGITUDE 55.5°E & 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 984 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 75 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
10.10.18/0600	14.2/58.9	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
10.10.18/1200	14.4/58.7	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
10.10.18/1800	14.5/58.3	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0000	14.6/58.1	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0600	14.7/57.8	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/1800	14.9/57.1	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
12.10.18/0600	15.0/56.3	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
12.10.18/1800	15.1/55.4	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
13.10.18/0600	15.2/54.4	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
13.10.18/1800	15.2/52.9	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
14.10.18/0600	15.2/51.1	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
14.10.18/1800	15.0/48.3	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM

(B) VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHWESTWARDS WITH A SPEED OF ABOUT 15 KMPH DURING PAST 06 HOURS, INTENSIFIED INTO A VERY SEVERE CYCLONIC STORM AND LAY CENTERED AT 0600 UTC OF TODAY, THE 10TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 16.8°N AND LONGITUDE 85.6°E, ABOUT

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

280 KM SOUTH-SOUTHEAST OF GOPALPUR (43049) AND 230 KM SOUTHEAST OF KALINGAPATNAM (43105). IT IS VERY LIKELY TO INTENSIFY FURTHER DURING NEXT 12 HOURS. IT IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR & KALINGAPATNAM AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 0600 UTC OF 10TH OCTOBER, INTENSITY OF THE SYSTEM IS T 4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 13.5°N & 21.0°N AND LONGITUDE 81.5°E & 90.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA. MAXIMUM SUSTAINED WIND SPEED IS 70 KNOTS. THE SEA CONDITION IS HIGH TO VERY HIGH AROUND SYSTEM CENTRE. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
10.10.18/0600	16.8/85.6	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
10.10.18/1200	17.4/85.3	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
10.10.18/1800	18.0/85.1	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0000	18.6/84.9	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0600	19.3/84.8	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/1800	20.5/85.5	70-80 GUSTING TO 90	CYCLONIC STORM
12.10.18/0600	21.8/87.0	50-60 GUSTING TO 70	DEEP DEPRESSION
12.10.18/1800	23.1/88.7	40-50 GUSTING TO 60	DEPRESSION

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE,AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

THE SEA SURFACE TEMPERATURE (SST) IS 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT 250 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT 30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS ABOUT 40 X 10⁻⁵ SEC⁻¹ TO THE NORTH OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 24 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE AFTER LANDFALL.

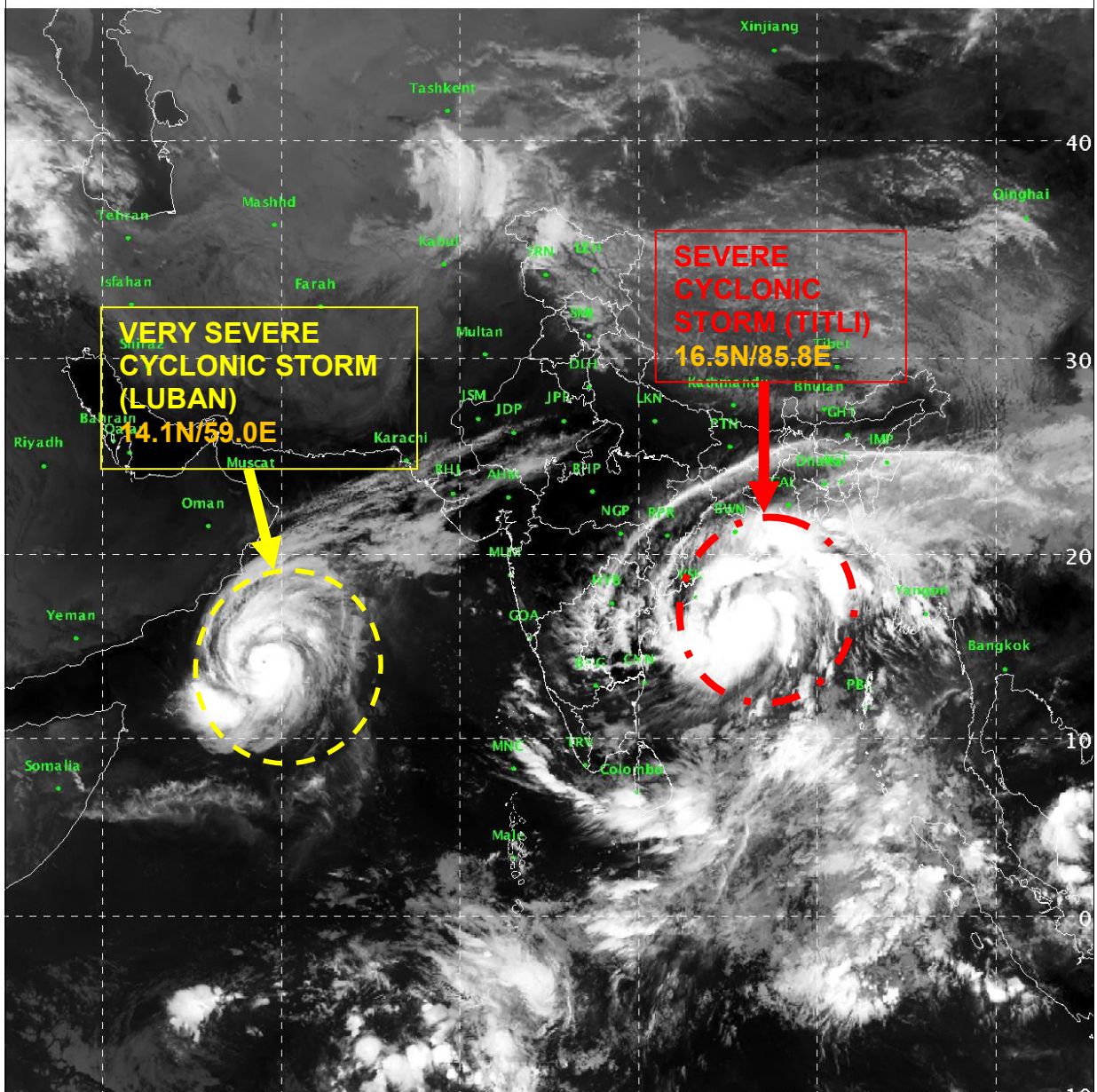
(SUNITHA DEVI)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

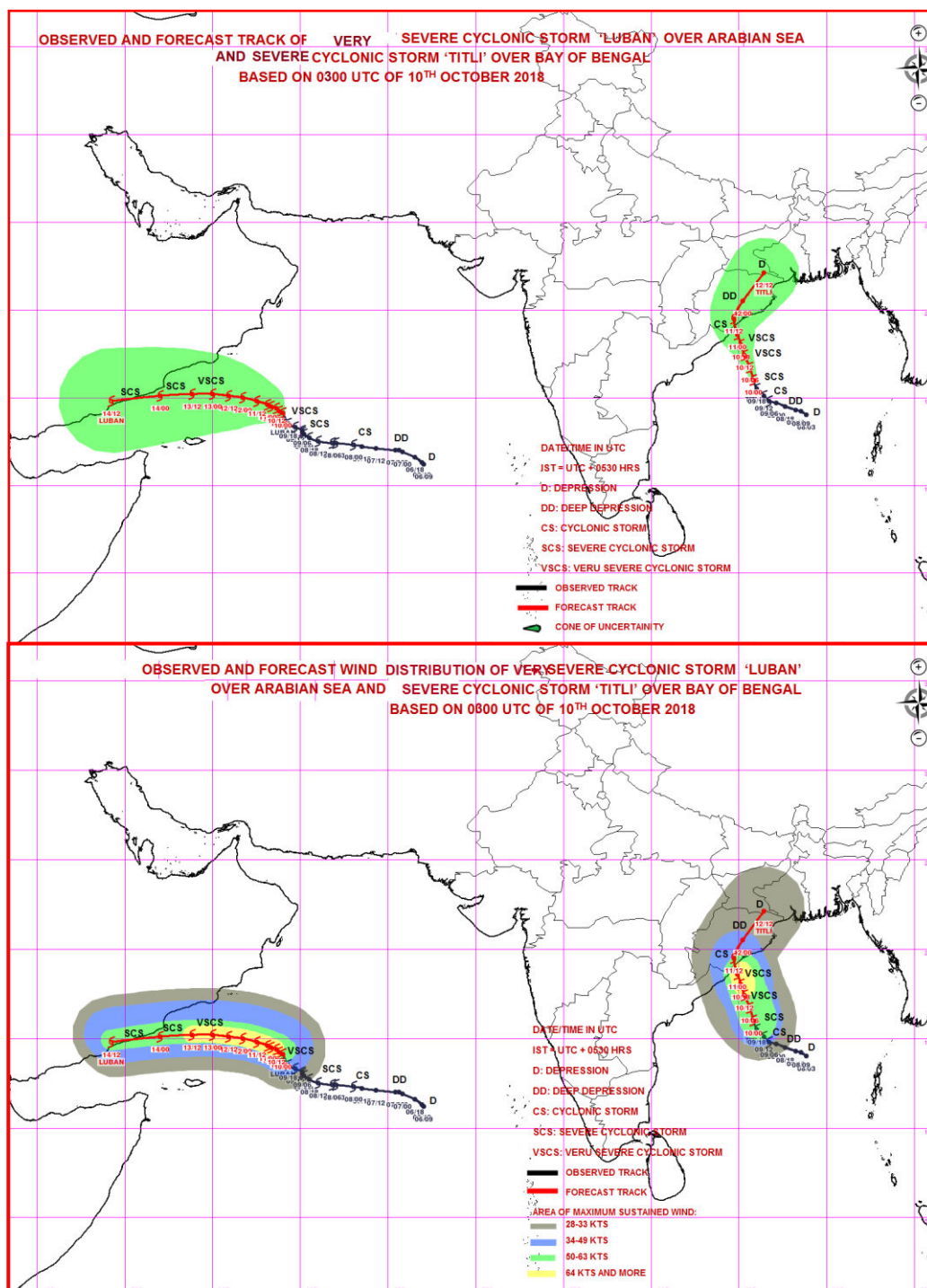
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IMG_TIR1 10.8 um
L1C Mercator (LINEAR STRETCH: 1.0%)

10-10-2018/03:00 GMT
10-10-2018/08:30 IST



IMD/Delhi

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



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 20- MODIFIED

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 20 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1030 UTC OF 10.10.2018 BASED ON 0900 UTC OF 10.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM OVER WESTCENTRAL ARABIAN SEA MOVED NORTHWESTWARDS WITH A SPEED OF 07 KMPH DURING PAST SIX HOURS AND LAY CENTERED AT 0900 UTC OF 10TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.4°N AND LONGITUDE 58.7°E, ABOUT 570 KM EAST-SOUTHEAST OF SALALAH (41316), 550 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) AND 730 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398). IT IS VERY LIKELY TO INTENSIFY FURTHER AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0900 UTC OF 10TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 11.0°N & 18.5°N AND BETWEEN LONGITUDE 55.5°E & 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 984 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 75 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
10.10.18/0900	14.4/58.7	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
10.10.18/1200	14.5/58.6	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
10.10.18/1800	14.6/58.3	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0000	14.7/58.1	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0600	14.8/57.8	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/1800	14.9/57.1	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
12.10.18/0600	15.0/56.3	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
12.10.18/1800	15.1/55.4	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
13.10.18/0600	15.2/54.4	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
13.10.18/1800	15.2/52.9	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
14.10.18/0600	15.2/51.1	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
14.10.18/1800	15.0/48.3	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM

(B) VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHWESTWARDS WITH A SPEED OF ABOUT 18 KMPH DURING PAST 06 HOURS, AND LAY CENTERED AT 0900 UTC OF TODAY, THE 10TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 17.2°N AND LONGITUDE 85.5°E, ABOUT 230 KM SOUTH-SOUTHEAST OF GOPALPUR

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(43049) AND 190 KM SOUTHEAST OF KALINGAPATNAM (43105). IT IS VERY LIKELY TO INTENSIFY FURTHER DURING NEXT 12 HOURS. IT IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS BETWEEN GOPALPUR & KALINGAPATNAM AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 0900 UTC OF 10TH OCTOBER, INTENSITY OF THE SYSTEM IS T 4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 13.5°N & 21.0°N AND LONGITUDE 81.5°E & 90.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA. MAXIMUM SUSTAINED WIND SPEED IS 75 KNOTS. THE SEA CONDITION IS VERY HIGH AROUND SYSTEM CENTRE. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
10.10.18/0900	17.5/85.4	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
10.10.18/1800	18.0/85.1	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0000	18.6/84.9	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0600	19.3/84.8	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/1800	20.5/85.5	70-80 GUSTING TO 90	CYCLONIC STORM
12.10.18/0600	21.8/87.0	50-60 GUSTING TO 70	DEEP DEPRESSION
12.10.18/1800	23.1/88.7	40-50 GUSTING TO 60	DEPRESSION

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE,AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

THE SEA SURFACE TEMPERATURE (SST) IS 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT 250 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT 30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS ABOUT 40 X 10⁻⁵ SEC⁻¹ TO THE NORTH OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 24 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE AFTER LANDFALL.

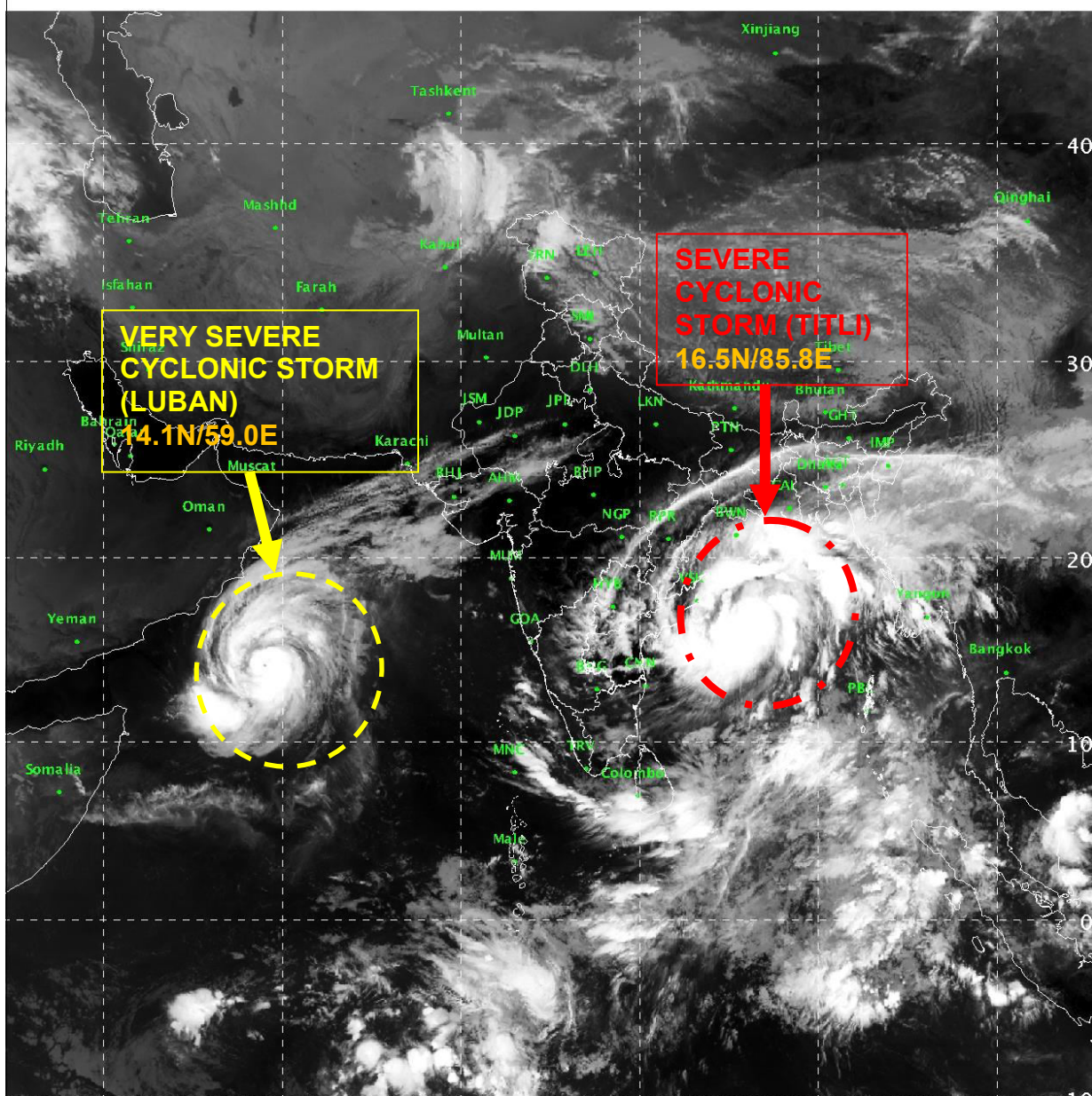
(SUNITHA DEVI)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT :INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator (LINEAR STRETCH: 1.0%)

10-10-2018/03:00 GMT
10-10-2018/08:30 IST



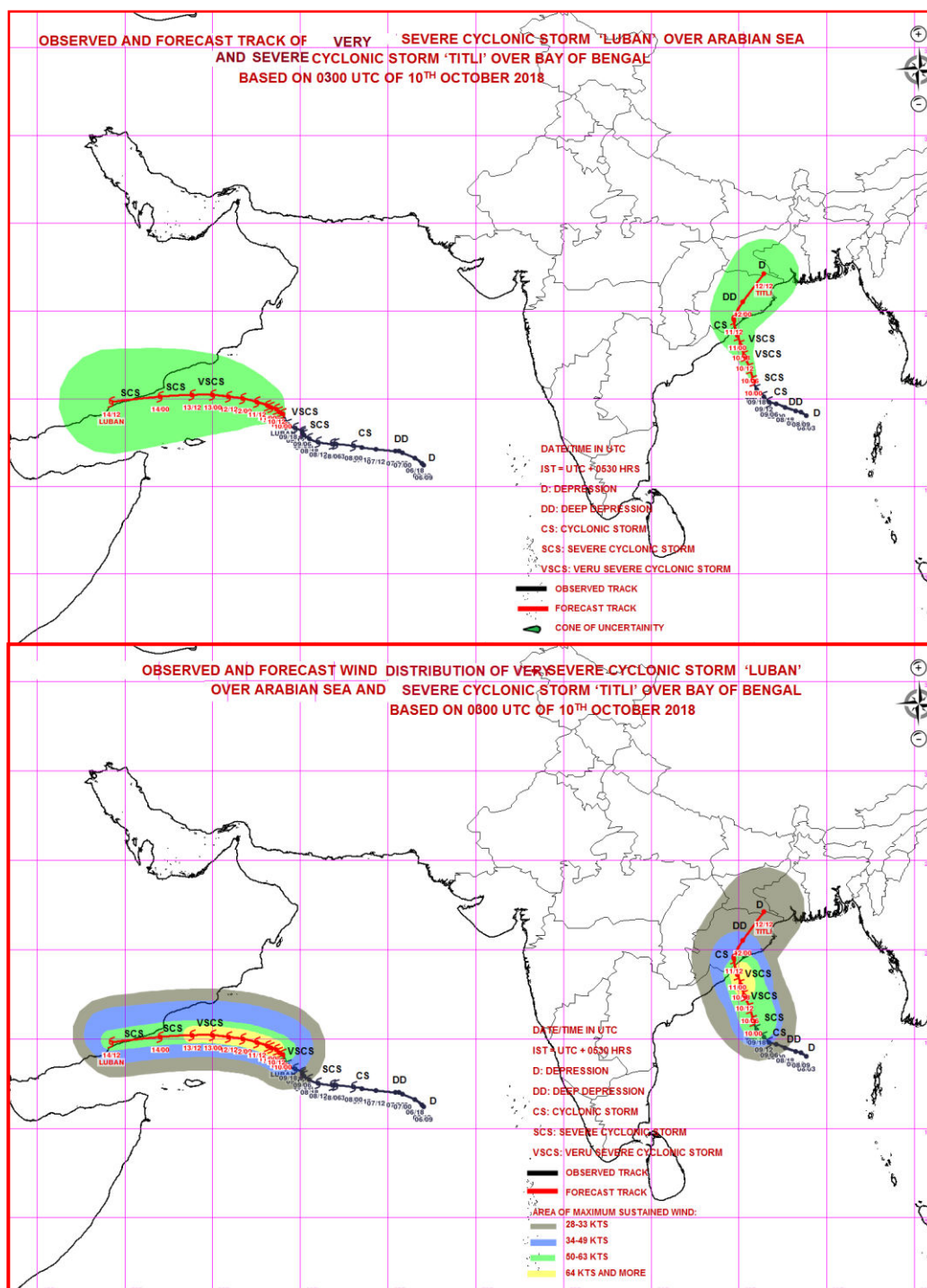
522

897

IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 21

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 21 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 10.10.2018 BASED ON 1200 UTC OF 10.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM OVER WESTCENTRAL ARABIAN SEA (AS) MOVED NORTHWESTWARDS WITH A SPEED OF 06 KMPH DURING PAST SIX HOURS AND LAY CENTERED AT 1200 UTC OF 10TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.4°N AND LONGITUDE 58.6°E, ABOUT 560 KM EAST-SOUTHEAST OF SALALAH (41316), 540 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) AND 720 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398). IT IS VERY LIKELY TO SLIGHTLY INTENSIFY FURTHER AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1200 UTC OF 10TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 9.5°N & 19.0°N AND BETWEEN LONGITUDE 55.5°E & 63.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 984 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 75 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
10.10.18/1200	14.4/58.6	130-140 gusting to 155	Very Severe Cyclonic Storm
10.10.18/1800	14.6/58.3	135-145 gusting to 160	Very Severe Cyclonic Storm
11.10.18/0000	14.7/58.1	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/0600	14.8/57.8	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/1200	14.8/57.4	140-150 gusting to 165	Very Severe Cyclonic Storm
12.10.18/0000	14.9/56.7	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/1200	15.0/55.8	130-140 gusting to 155	Very Severe Cyclonic Storm
13.10.18/0000	15.1/54.7	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/1200	15.2/53.4	110-120 gusting to 130	Severe Cyclonic Storm
14.10.18/0000	15.2/52.1	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/1200	15.3/50.7	70-80 gusting to 90	Cyclonic Storm
15.10.18/0000	15.4/49.2	50-60 gusting to 70	Deep Depression

(B) VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF ABOUT 14 KMPH DURING PAST 06 HOURS, AND LAY CENTERED AT 1200 UTC OF TODAY, THE 10TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 17.5°N AND LONGITUDE 85.3°E, ABOUT 200 KM SOUTH-SOUTHEAST OF GOPALPUR

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(43049) AND 150 KM SOUTHEAST OF KALINGAPATNAM (43105). IT IS VERY LIKELY TO INTENSIFY FURTHER DURING NEXT 12 HOURS. IT IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS CLOSE TO GOPALPUR AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 1200 UTC OF 10TH OCTOBER, INTENSITY OF THE SYSTEM IS T 5.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 14.0°N & 21.8°N AND LONGITUDE 81.5°E & 90.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 970 HPA. MAXIMUM SUSTAINED WIND SPEED IS 80 KNOTS. THE SEA CONDITION IS VERY HIGH AROUND SYSTEM CENTRE. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
10.10.18/1200	17.5/85.3	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
10.10.18/1800	18.0/85.1	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0000	18.6/84.9	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0600	19.3/84.7	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
11.10.18/1200	20.0/85.0	70-80 GUSTING TO 90	CYCLONIC STORM
12.10.18/0000	21.2/86.2	50-60 GUSTING TO 70	DEEP DEPRESSION
12.10.18/1200	22.5/87.6	40-50 GUSTING TO 60	DEPRESSION

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

THE SEA SURFACE TEMPERATURE (SST) IS 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT 250 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT 30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS ABOUT 40 X 10⁻⁵ SEC⁻¹ TO THE NORTH OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 24 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE AFTER LANDFALL.

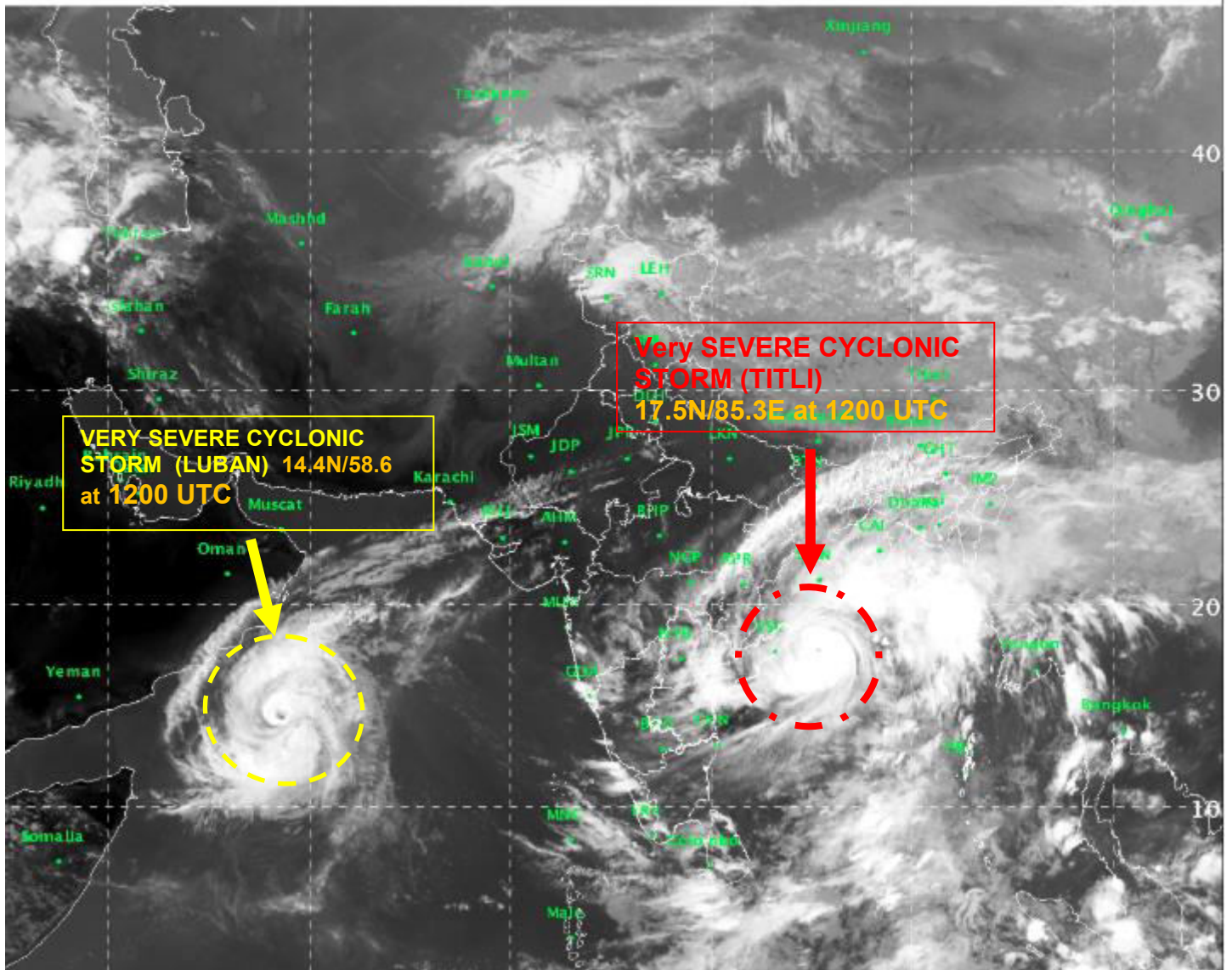
(SUNITHA DEVI)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

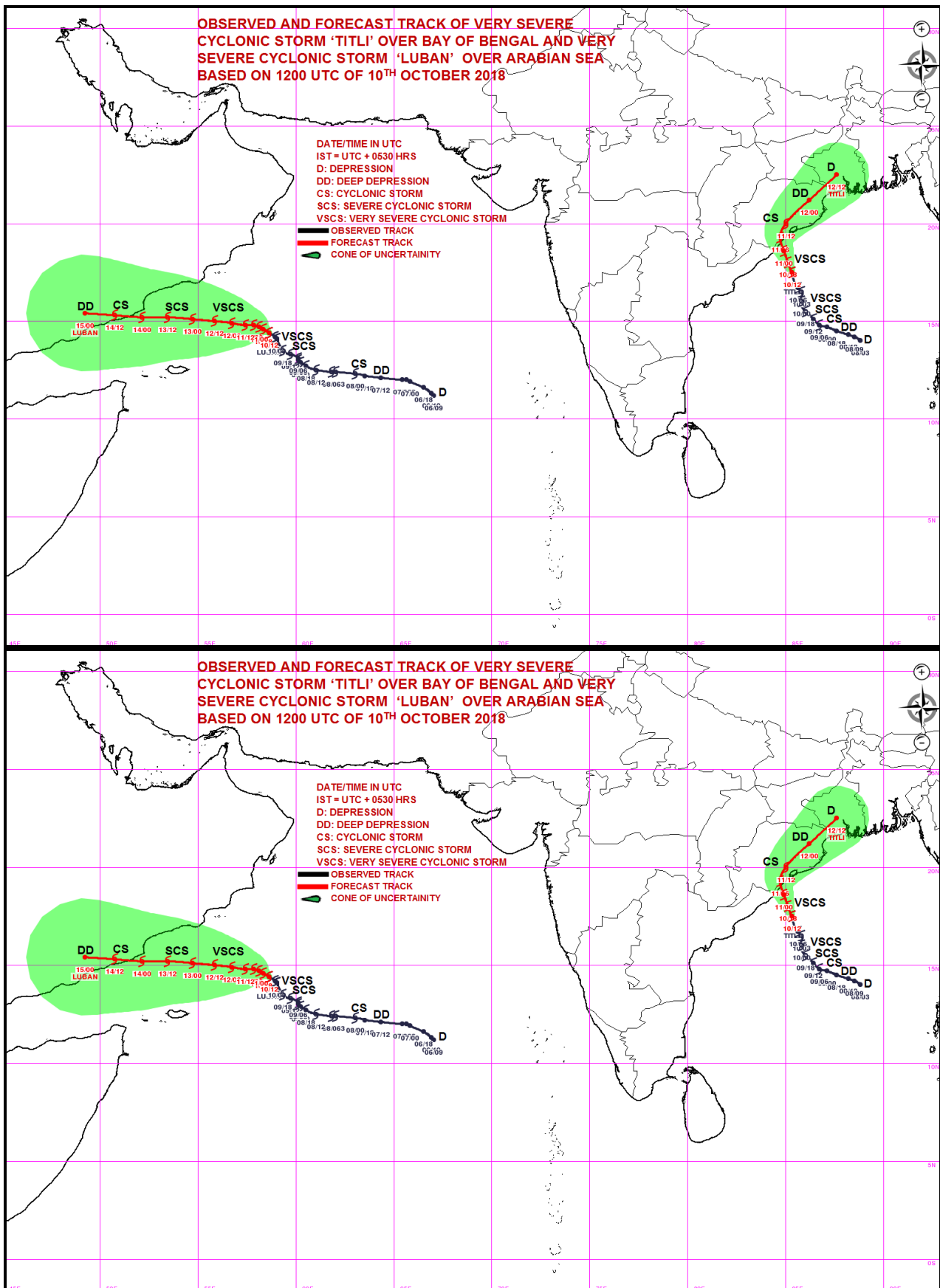
SAT :INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator (LINEAR STRETCH: 1.0%)

10-10-2018/12:00 GMT
10-10-2018/17:30 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 22

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE
FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 22 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1800 UTC OF 10.10.2018 BASED ON 1500 UTC OF 10.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM OVER WESTCENTRAL ARABIAN SEA (AS) MOVED NORTHWESTWARDS WITH A SPEED OF 04 KMPH DURING PAST SIX HOURS AND LAY CENTERED AT 1500 UTC OF 10TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.5°N AND LONGITUDE 58.5°E, ABOUT 550 KM EAST-SOUTHEAST OF SALALAH (41316), 540 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) AND 710 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398). IT IS VERY LIKELY TO INTENSIFY FURTHER AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1500 UTC OF 10TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 9.5°N & 19.0°N AND BETWEEN LONGITUDE 55.5°E & 63.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 984 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 75 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
10.10.18/1500	14.5/58.5	130-140 gusting to 155	Very Severe Cyclonic Storm
10.10.18/1800	14.6/58.3	135-145 gusting to 160	Very Severe Cyclonic Storm
11.10.18/0000	14.7/58.1	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/0600	14.8/57.8	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/1200	14.8/57.4	140-150 gusting to 165	Very Severe Cyclonic Storm
12.10.18/0000	14.9/56.7	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/1200	15.0/55.8	130-140 gusting to 155	Very Severe Cyclonic Storm
13.10.18/0000	15.1/54.7	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/1200	15.2/53.4	110-120 gusting to 130	Severe Cyclonic Storm
14.10.18/0000	15.2/52.1	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/1200	15.3/50.7	70-80 gusting to 90	Cyclonic Storm
15.10.18/0000	15.4/49.2	50-60 gusting to 70	Deep Depression

(B) VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF ABOUT 11 KMPH DURING PAST 06 HOURS, AND LAY CENTERED AT 1500 UTC OF TODAY, THE 10TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 17.7°N AND LONGITUDE 85.2°E, ABOUT 180 KM SOUTH-SOUTHEAST OF GOPALPUR

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(43049) AND 130 KM SOUTHEAST OF KALINGAPATNAM (43105). IT IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND CROSS ODISHA & ADJOINING NORTH ANDHRA PRADESH COASTS CLOSE TO GOPALPUR AROUND MORNING OF 11TH OCTOBER. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 1500 UTC OF 10TH OCTOBER, INTENSITY OF THE SYSTEM IS T 5.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 14.0°N & 21.8°N AND LONGITUDE 81.5°E & 90.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 970 HPA. MAXIMUM SUSTAINED WIND SPEED IS 80 KNOTS. THE SEA CONDITION IS VERY HIGH AROUND SYSTEM CENTRE. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
10.10.18/1500	17.7/85.2	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
10.10.18/1800	18.0/85.1	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0000	18.6/84.9	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.10.18/0600	19.3/84.7	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
11.10.18/1200	20.0/85.0	70-80 GUSTING TO 90	CYCLONIC STORM
12.10.18/0000	20.2/86.2	50-60 GUSTING TO 70	DEEP DEPRESSION
12.10.18/1200	22.5/87.6	40-50 GUSTING TO 60	DEPRESSION

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS NOW ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

THE SEA SURFACE TEMPERATURE (SST) IS 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY HAS NOW INCREASED AND IS ABOUT 250 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT 30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS ABOUT 40 X 10⁻⁵ SEC⁻¹ TO THE NORTH OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) TO THE NORTHWEST OF THE SYSTEM CENTRE. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST GRADUAL INTENSIFICATION AND NORTHWESTWARD MOVEMENT OF THE SYSTEM DURING NEXT 24 HOURS TOWARDS SOUTH ODISHA COAST AND ADJOINING NORTH ANDHRA PRADESH COAST AND NORTHEASTWARD RECURVATURE AFTER LANDFALL.

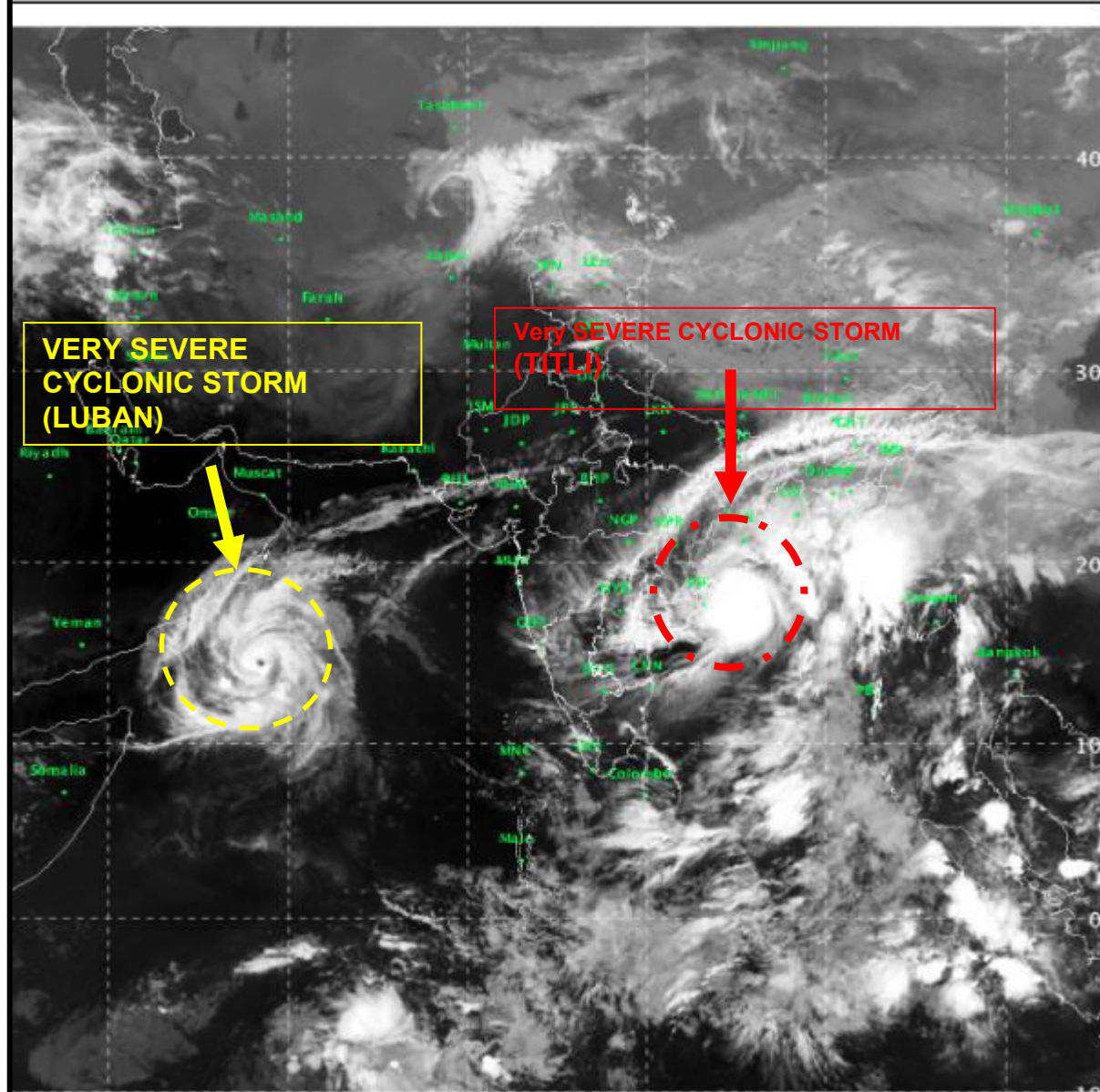
(D JOARDAR)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT :INSAT-3D IMG
IMG_TIR1 10.8 um
LIC Mercator (LINEAR STRETCH: 1.0%)

10-10-2018/15:00 GMT
10-10-2018/20:30 IST

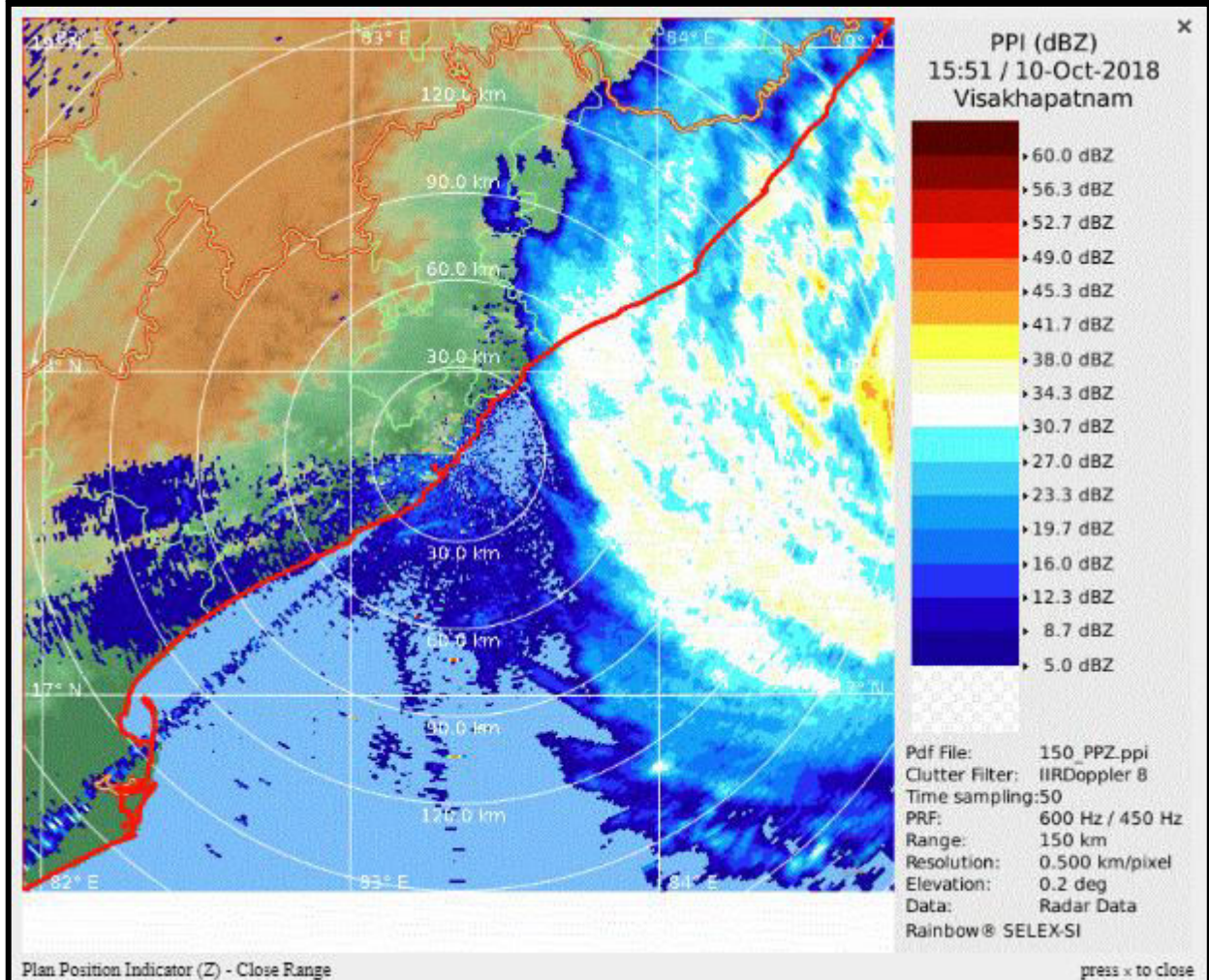
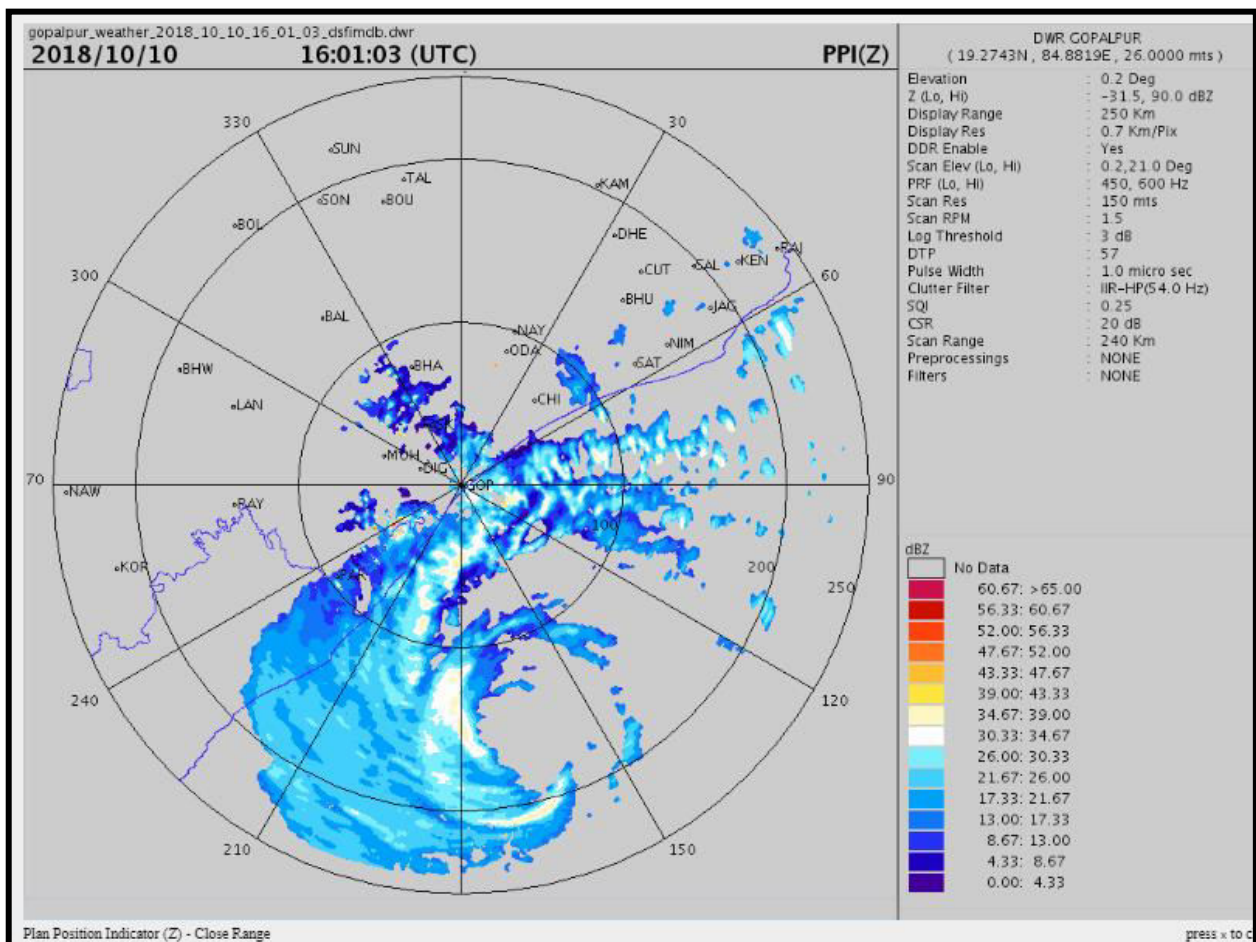


PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

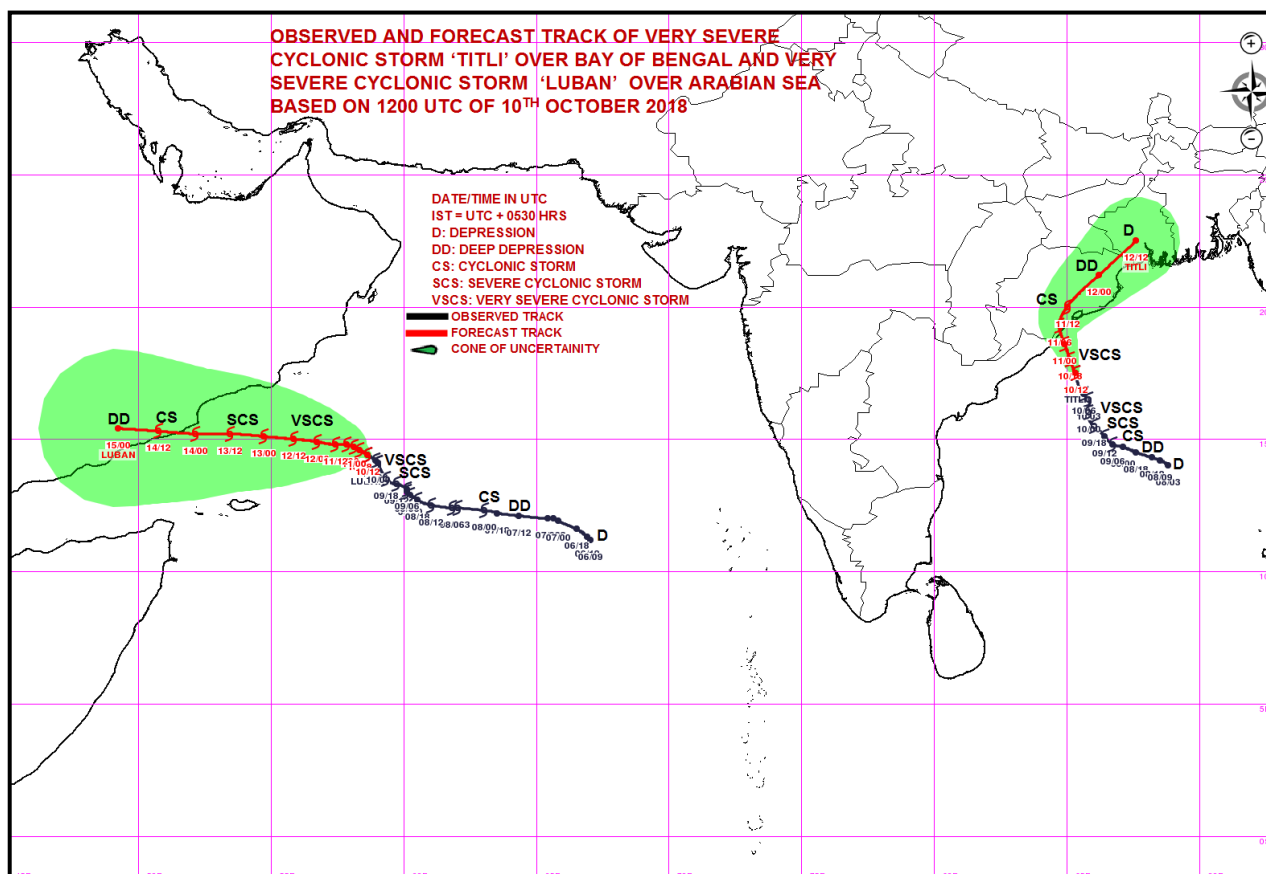
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



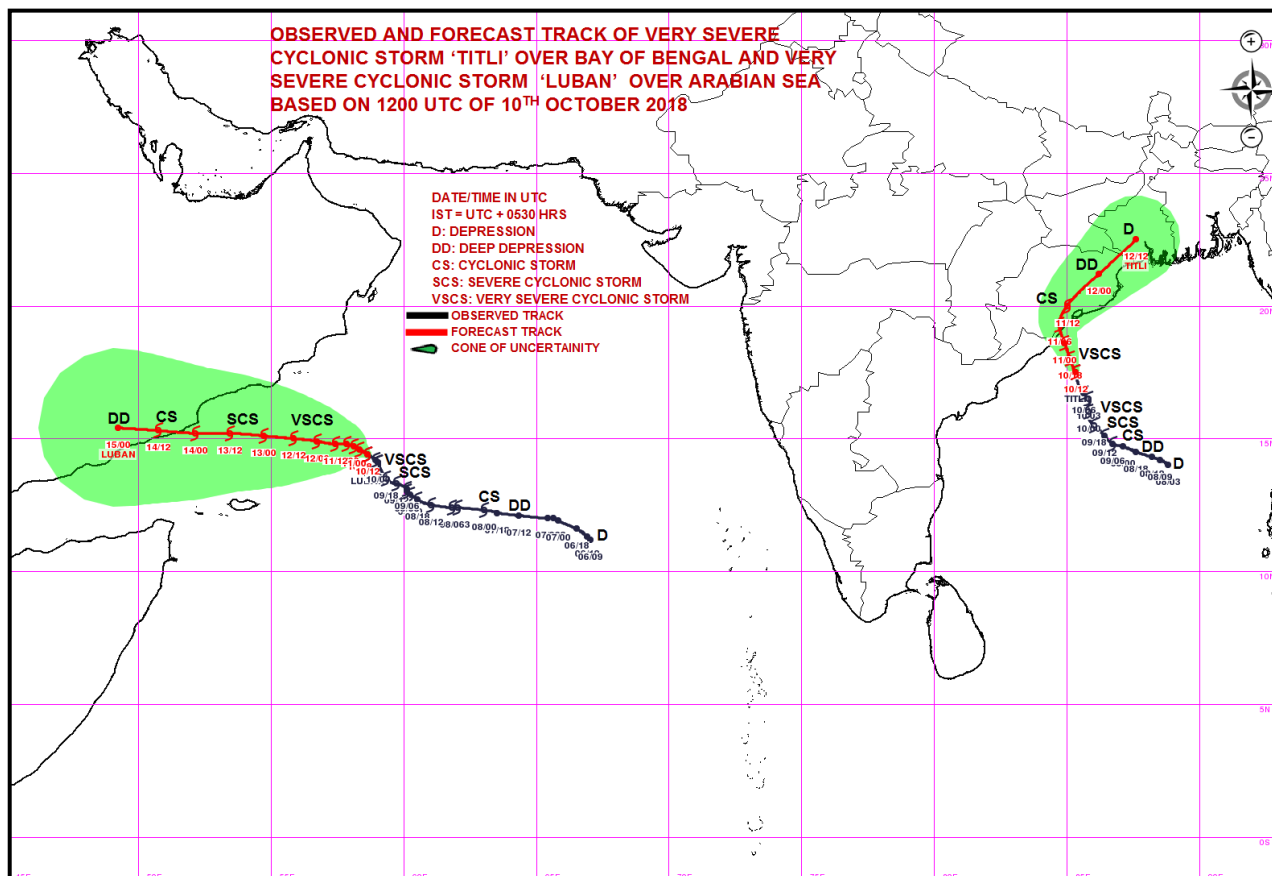
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 23

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE
FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 23 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2100 UTC OF 10.10.2018 BASED ON 1800 UTC OF 10.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA (AS) MOVED NORTHWESTWARDS WITH A SPEED OF 05 KMPH DURING PAST SIX HOURS AND LAY CENTERED AT 1800 UTC OF TODAY, THE 10TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.6°N AND LONGITUDE 58.4°E, ABOUT 530 KM EAST-SOUTHEAST OF SALALAH (OMAN), 530 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN) AND 700 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 1800 UTC OF 10TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 9.5°N & 19.0°N AND BETWEEN LONGITUDE 55.5°E & 63.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 984 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 75 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
10.10.18/1800	14.6/58.4	135-145 gusting to 160	Very Severe Cyclonic Storm
11.10.18/0000	14.7/58.1	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/0600	14.8/57.8	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/1200	14.8/57.4	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/1800	14.9/57.0	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/0600	14.9/56.2	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/1800	15.0/55.3	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/0600	15.1/54.1	115-125 gusting to 140	Very Severe Cyclonic Storm
13.10.18/1800	15.2/52.8	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/0600	15.2/51.4	90-100 gusting to 115	Cyclonic Storm
14.10.18/1800	15.3/50.0	70-80 gusting to 90	Cyclonic Storm
15.10.18/0600	15.4/48.9	50-60 gusting to 70	Deep Depression

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE VERY SEVERE CYCLONIC STORM, 'TITLI' IS BEING MONITORED BY THE COASTAL DOPPLER WEATHER RADARS AT VISAKHAPATNAM, GOPALPUR AND PARADIP. THE LATEST OBSERVATIONS INDICATE THAT THE VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF ABOUT 13 KMPH DURING PAST 06 HOURS AND LAY CANTERED AT 1800 UTC OF TODAY, THE 10TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 18.2°N AND LONGITUDE 85.1°E, ABOUT 120 KM SOUTH-SOUTHEAST OF GOPALPUR (ODISHA) AND 100 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT WILL CROSS NORTH ANDHRA PRADESH AND SOUTH ODISHA COAST SOUTHWEST OF GOPALPUR BY MORNING OF 11TH OCTOBER AS A VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED SURFACE WIND SPEED OF 140-150 KMPH GUSTING TO 165 KMPH. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 1800 UTC OF 10TH OCTOBER, INTENSITY OF THE SYSTEM IS T 5.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 14.0°N & 21.8°N AND LONGITUDE 81.5°E & 90.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 970 HPA. MAXIMUM SUSTAINED WIND SPEED IS 80 KNOTS. THE SEA CONDITION IS VERY HIGH AROUND SYSTEM CENTRE. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
10.10.18/1800	18.2/85.1	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/0000	18.6/84.9	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/0600	19.3/84.7	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/1200	20.0/85.0	70-80 gusting to 90	Cyclonic Storm
11.10.18/1800	20.6/85.6	60-70 gusting to 80	Cyclonic Storm
12.10.18/0600	21.8/86.9	50-60 gusting to 70	Deep Depression
12.10.18/1800	23.0/88.2	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

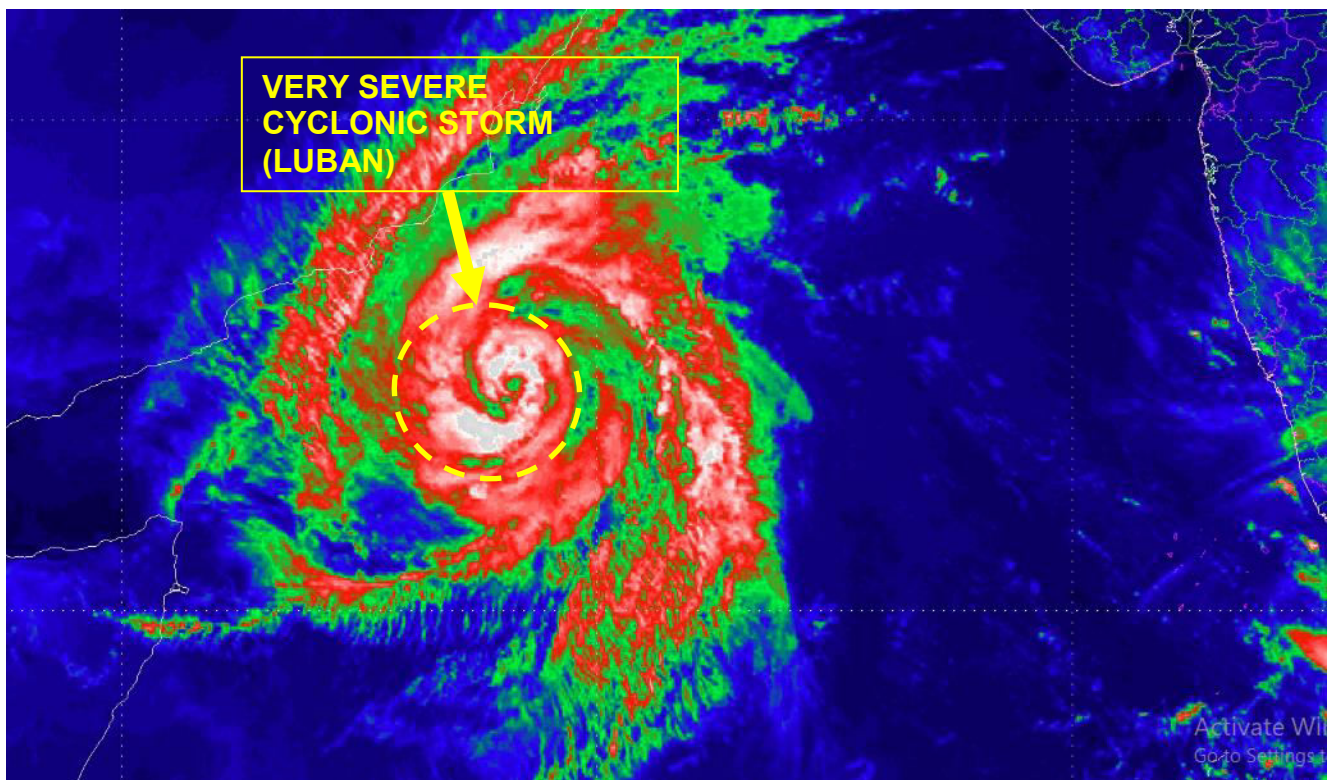
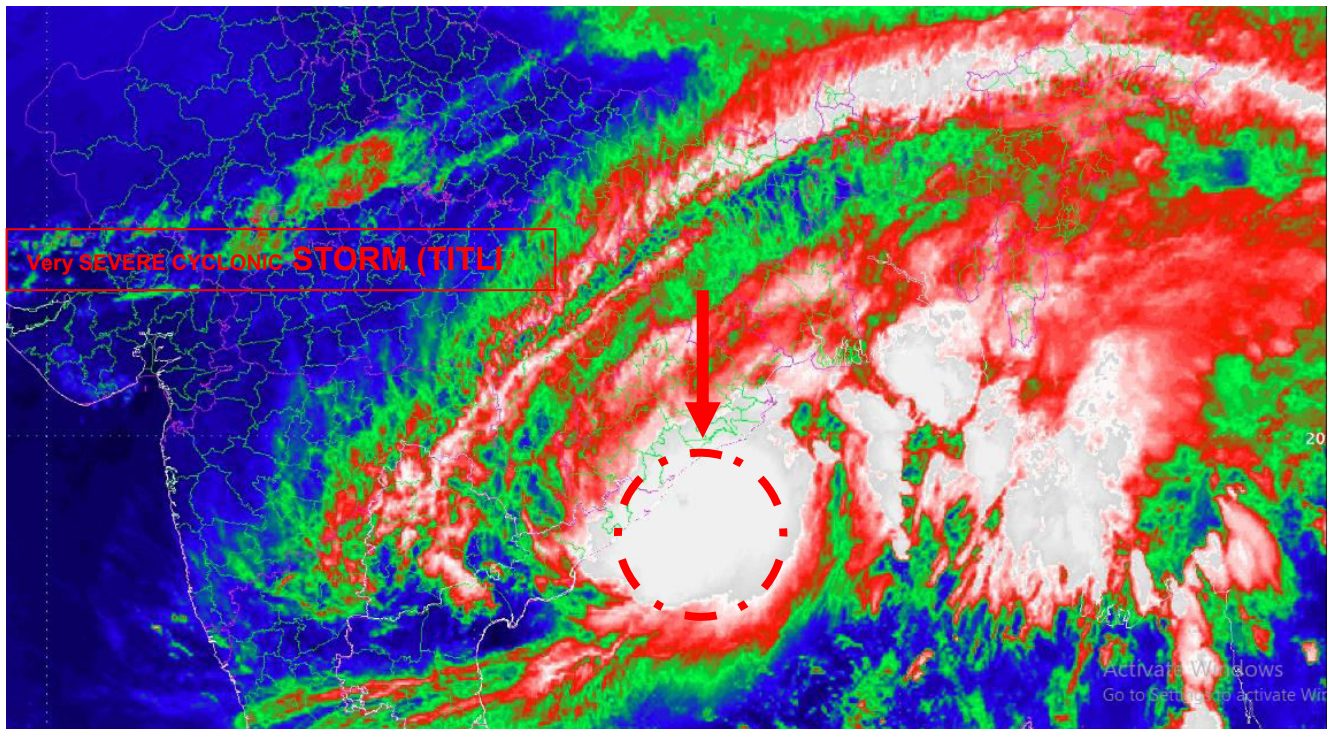
THE SEA SURFACE TEMPERATURE (SST) IS 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 250 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT 50 X

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

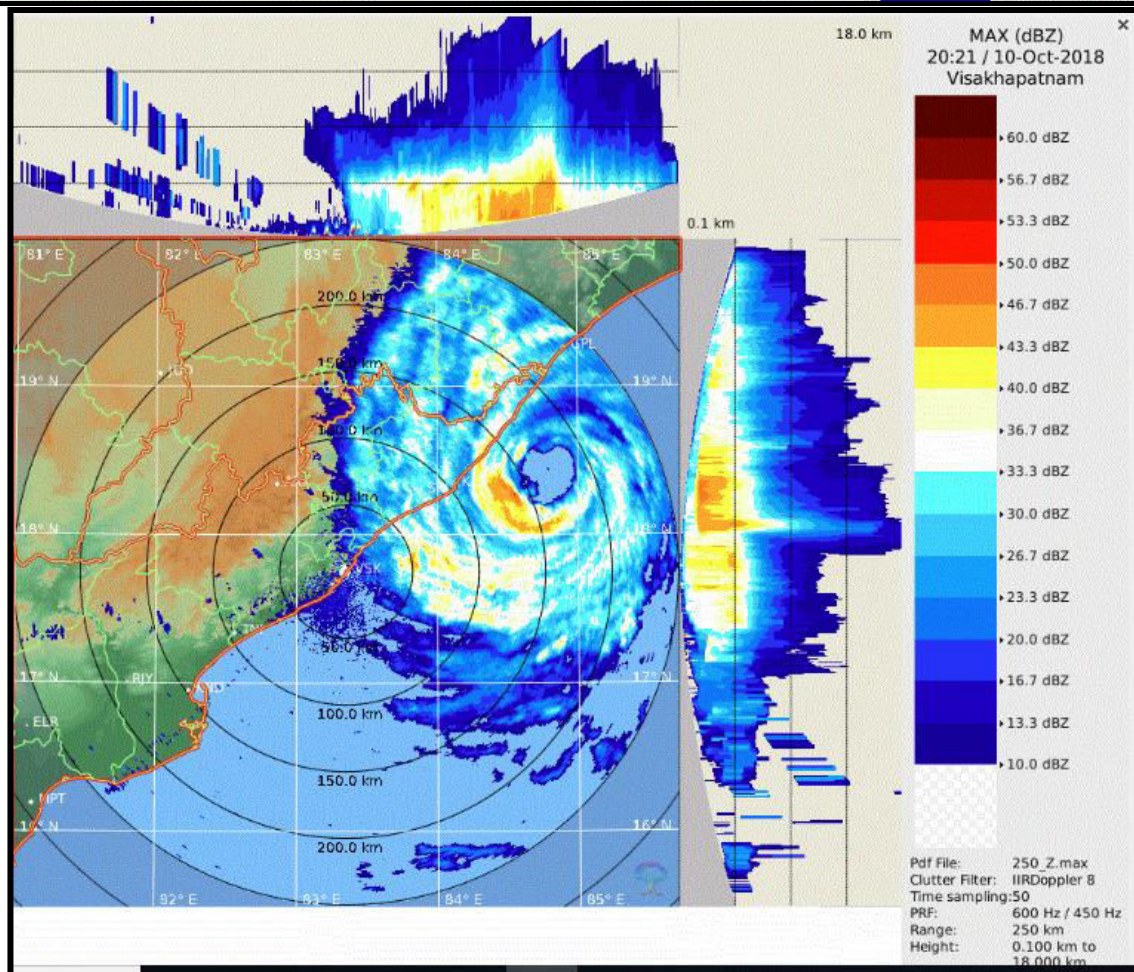
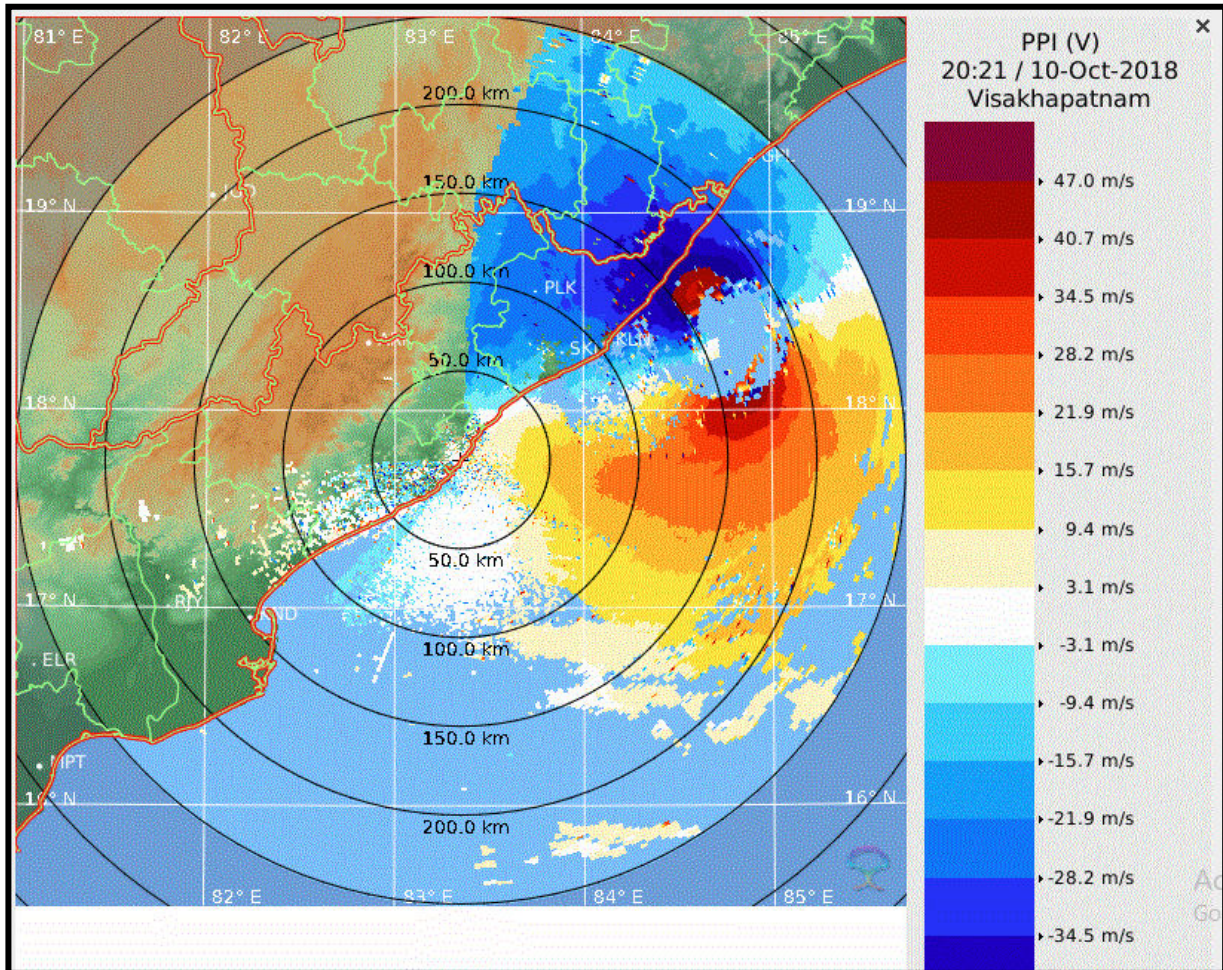
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(D JOARDAR)
SCIENTIST-E, RSMC, NEW DELHI



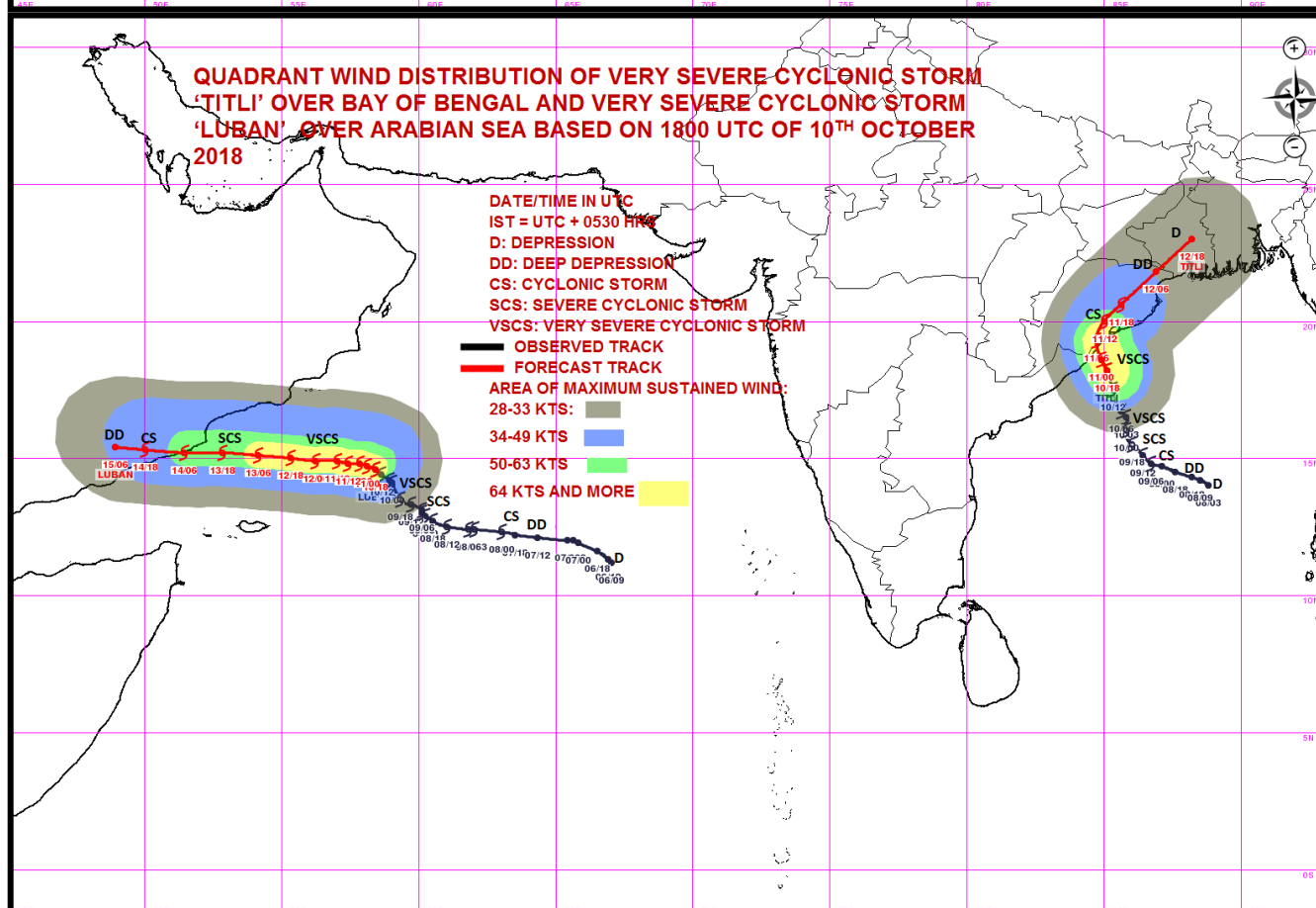
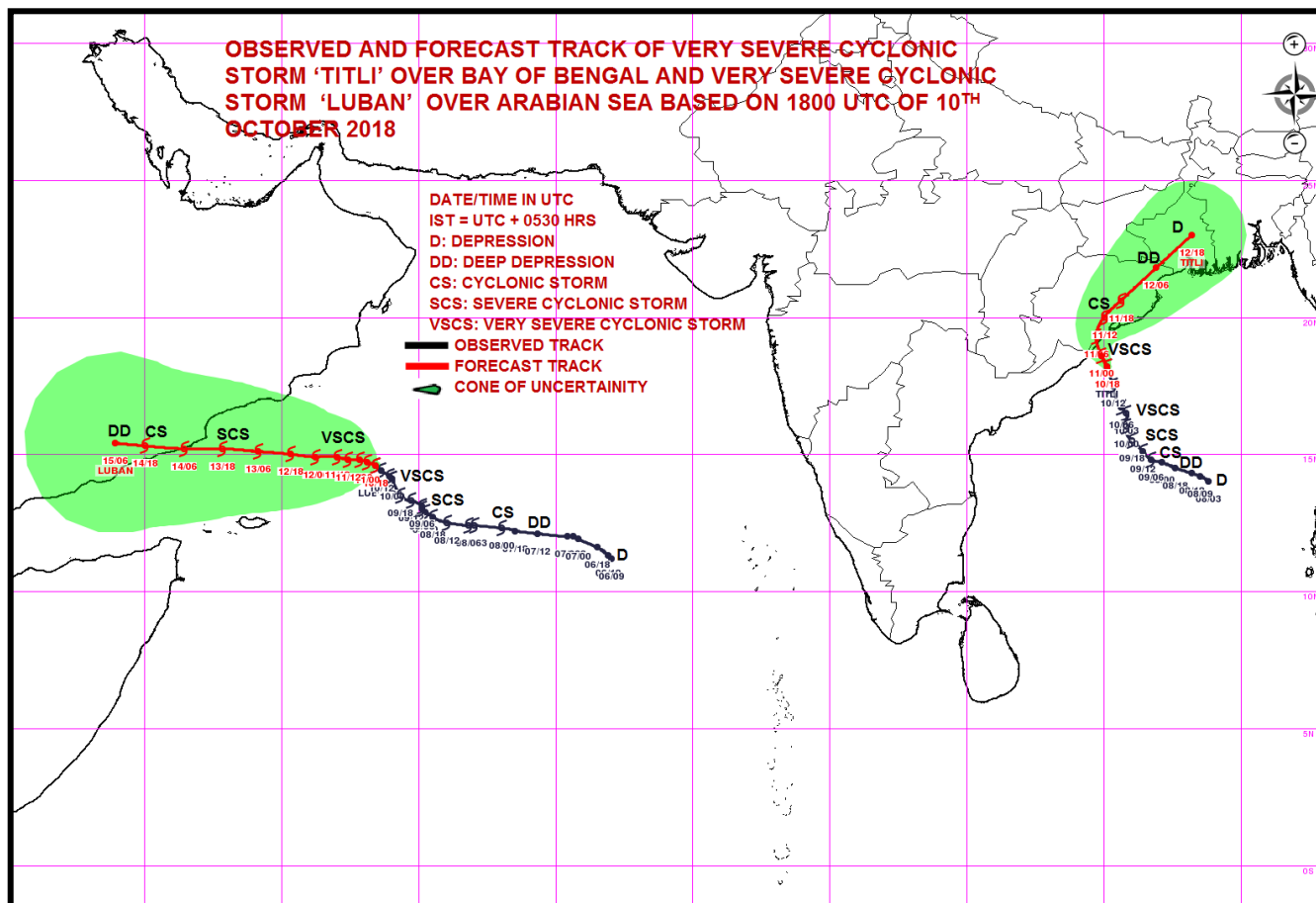
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 24

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE
FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 24 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0000 UTC OF 11.10.2018 BASED ON 2100 UTC OF 10.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA REMAINED PRACTICALLY STATIONARY DURING PAST THREE HOURS AND LAY CENTERED AT 0230 HRS IST OF TODAY, THE 11TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.6°N AND LONGITUDE 58.4°E, ABOUT 530 KM EAST-SOUTHEAST OF SALALAH (OMAN), 530 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN) AND 700 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 2100 UTC OF 10TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 9.5°N & 19.0°N AND BETWEEN LONGITUDE 55.5°E & 63.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 984 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 75 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
10.10.18/2100	14.6/58.4	135-145 gusting to 160	Very Severe Cyclonic Storm
11.10.18/0000	14.7/58.1	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/0600	14.8/57.8	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/1200	14.8/57.4	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/1800	14.9/57.0	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/0600	14.9/56.2	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/1800	15.0/55.3	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/0600	15.1/54.1	115-125 gusting to 140	Very Severe Cyclonic Storm
13.10.18/1800	15.2/52.8	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/0600	15.2/51.4	90-100 gusting to 115	Cyclonic Storm
14.10.18/1800	15.3/50.0	70-80 gusting to 90	Cyclonic Storm
15.10.18/0600	15.4/48.9	50-60 gusting to 70	Deep Depression

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(A) VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL:

THE VERY SEVERE CYCLONIC STORM, 'TITLI' IS BEING MONITORED BY THE COASTAL DOPPLER WEATHER RADARS AT VISAKHAPATNAM, GOPALPUR AND PARADIP. THE LATEST OBSERVATIONS INDICATE THAT THE VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF ABOUT 13 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 2100 UTC OF YESTERDAY, THE 10TH OCTOBER 2018 OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 18.2°N AND LONGITUDE 85.1°E, ABOUT 120 KM SOUTH-SOUTHEAST OF GOPALPUR (ODISHA) AND 100 KM SOUTHEAST OF KALINGAPATNAM (ANDHRA PRADESH). IT WILL CROSS NORTH ANDHRA PRADESH AND SOUTH ODISHA COAST SOUTHWEST OF GOPALPUR BY MORNING OF 11TH OCTOBER AS A VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED SURFACE WIND SPEED OF 140-150 KMPH GUSTING TO 165 KMPH. THEREAFTER, IT IS VERY LIKELY TO RE-CURVE NORTHEASTWARDS, MOVE TOWARDS GANGETIC WEST BENGAL ACROSS ODISHA AND WEAKEN GRADUALLY.

AS PER LATEST SATELLITE IMAGERY BASED ON 2100 UTC OF 10TH OCTOBER, INTENSITY OF THE SYSTEM IS T 5.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 14.0°N & 21.8°N AND LONGITUDE 81.5°E & 90.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 970 HPA. MAXIMUM SUSTAINED WIND SPEED IS 80 KNOTS. THE SEA CONDITION IS VERY HIGH AROUND SYSTEM CENTRE. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
10.10.18/2100	18.6/84.7	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/0000	18.6/84.9	140-150 gusting to 165	Very Severe Cyclonic Storm
11.10.18/0600	19.3/84.7	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/1200	20.0/85.0	70-80 gusting to 90	Cyclonic Storm
11.10.18/1800	20.6/85.6	60-70 gusting to 80	Cyclonic Storm
12.10.18/0600	21.8/86.9	50-60 gusting to 70	Deep Depression
12.10.18/1800	23.0/88.2	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

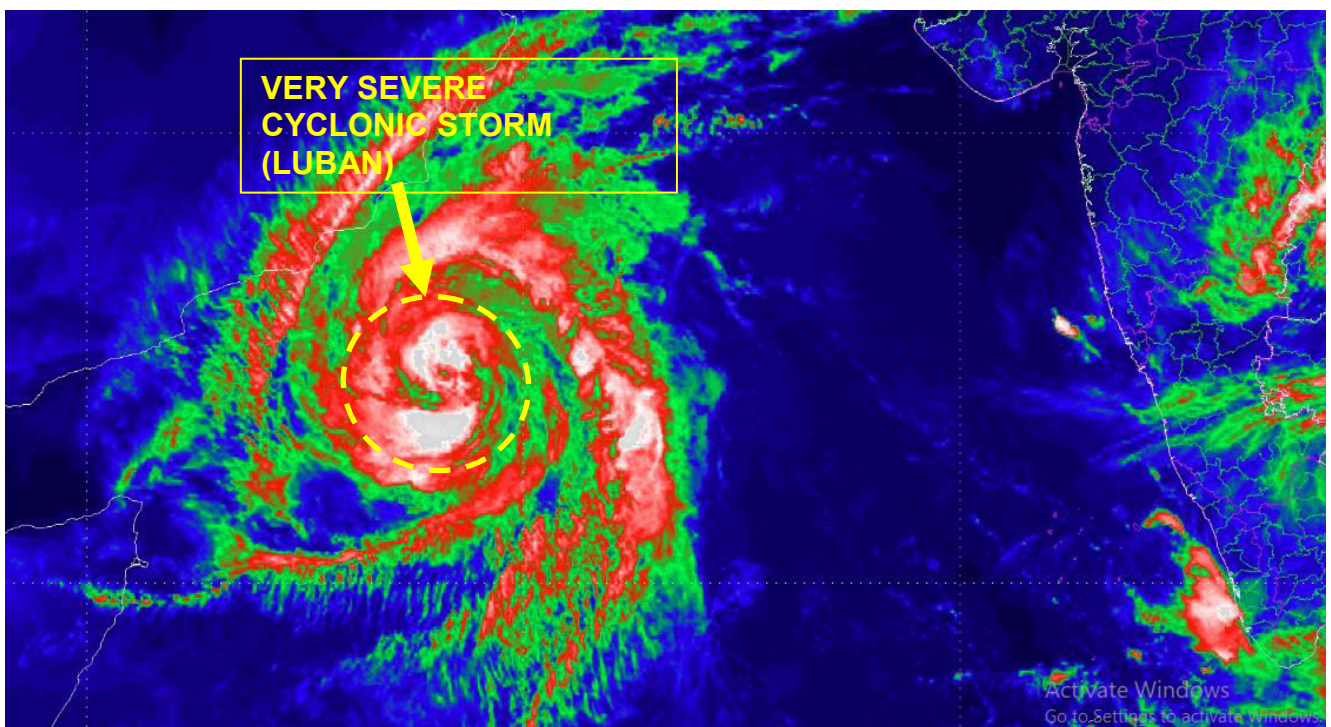
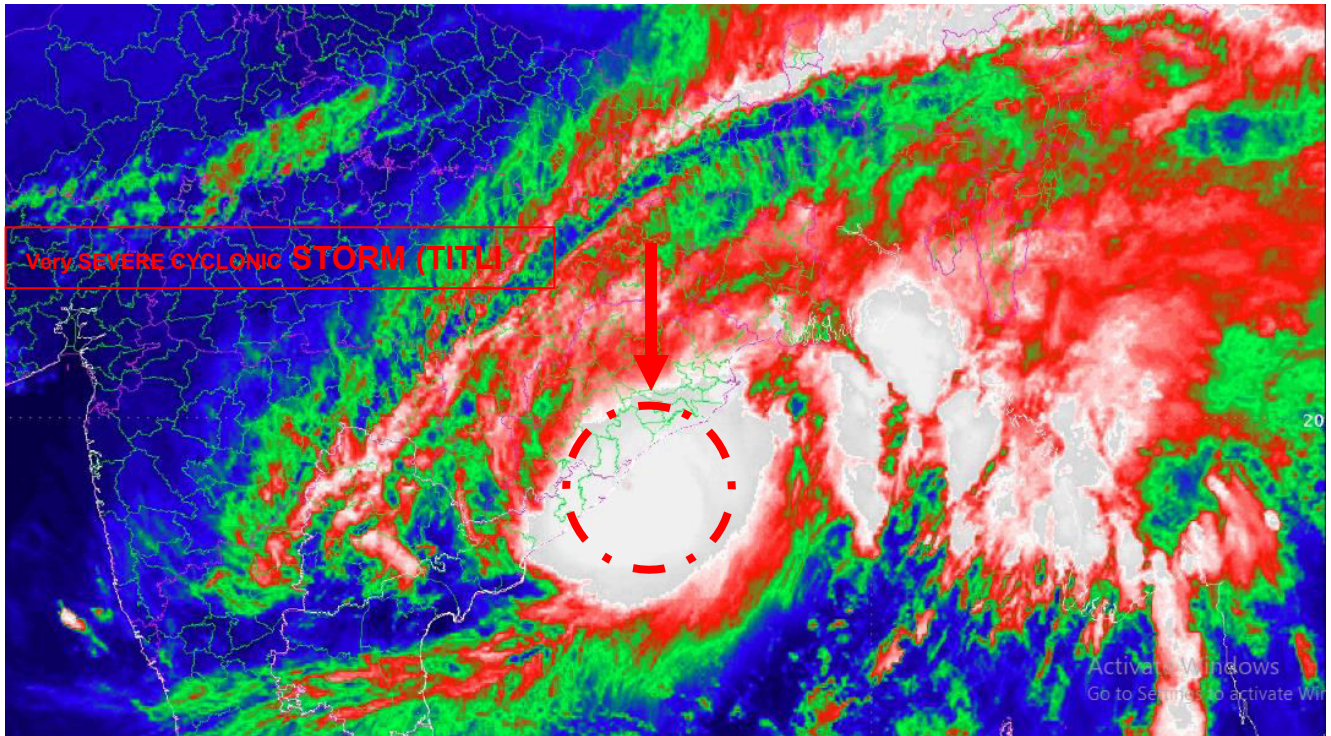
THE SEA SURFACE TEMPERATURE (SST) IS 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 250 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 30 X10⁻⁵ SEC⁻¹

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

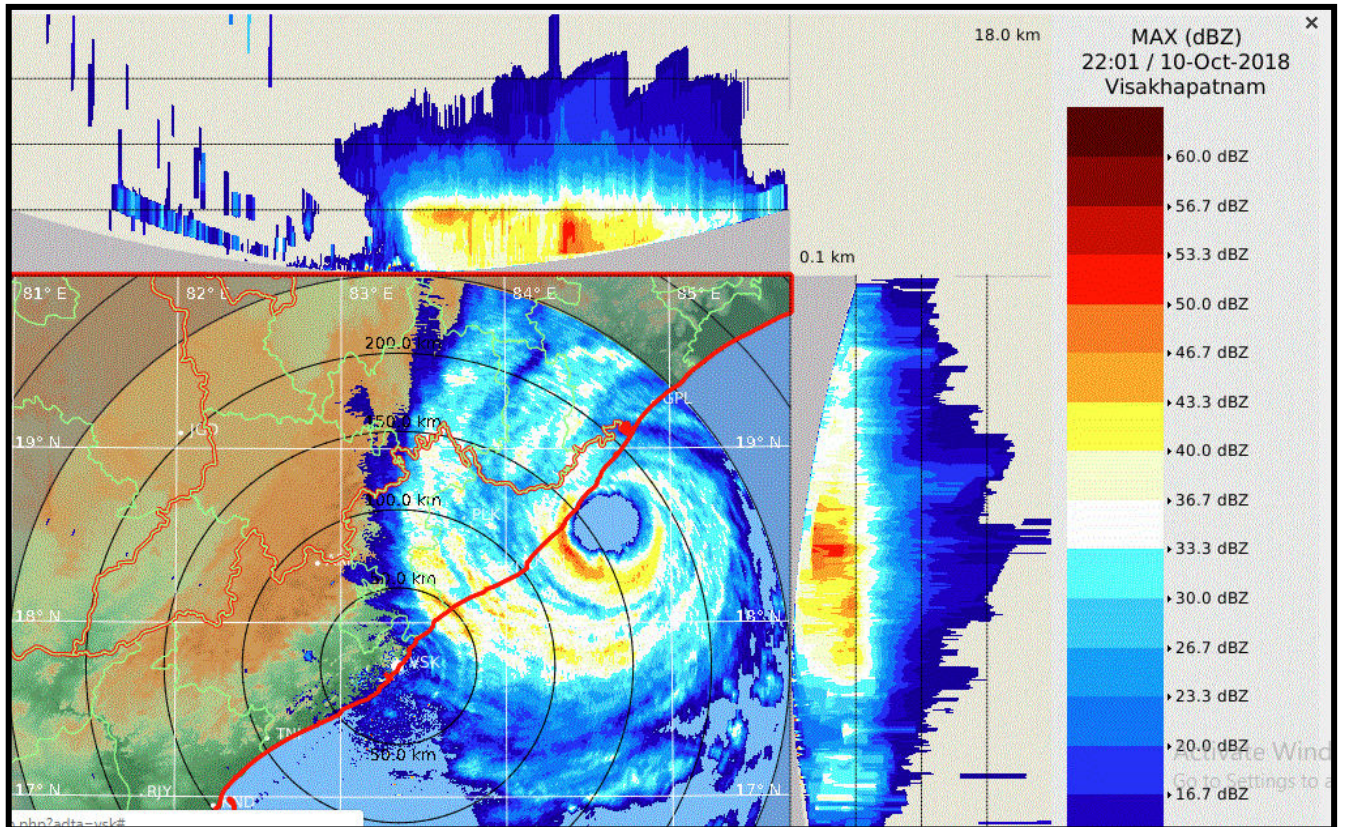
AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT $50 \times 10^{-5} \text{ SEC}^{-1}$ TO THE NORTHWEST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE . THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N . THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHEASTERLY INDICATING NORTHWESTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHEASTWARD RECURVATURE AFTER LANDFALL.

(D JOARDAR)
SCIENTIST-E, RSMC, NEW DELHI



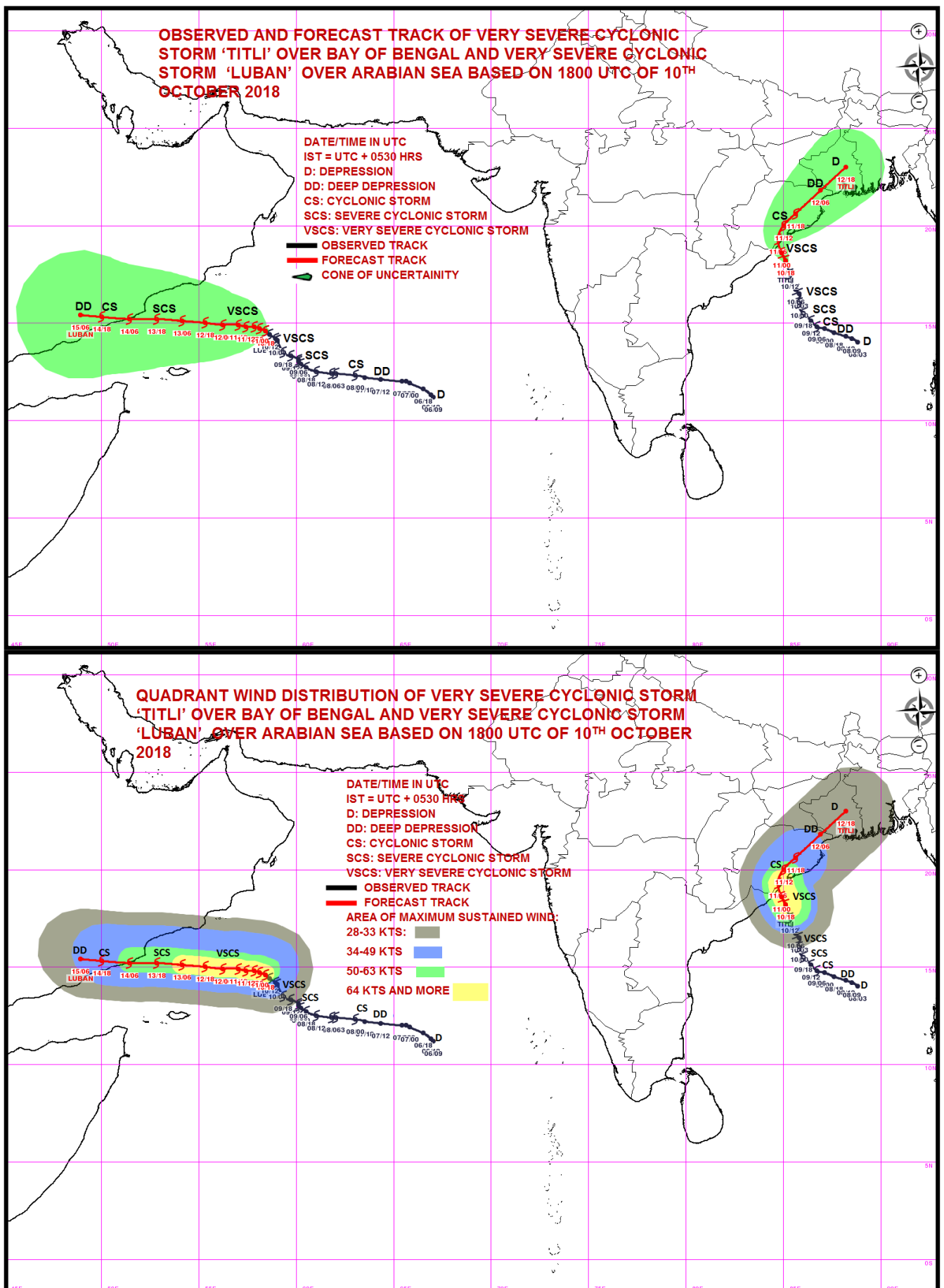
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 25

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 25 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 11.10.2018 BASED ON 0000 UTC OF 11.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 06 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 0000 UTC OF TODAY, THE 11TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.7°N AND LONGITUDE 58.1°E, ABOUT 500 KM EAST-SOUTHEAST OF SALALAH (OMAN), 510 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN) AND 660 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS.

AS PER THE SATELLITE IMAGERY BASED ON 0000 UTC OF 10TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AS BETWEEN LATITUDE 9.5°N & 19.0°N AND BETWEEN LONGITUDE 55.5°E & 63.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 976 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 75 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/0000	14.7/58.1	135-145 gusting to 165	Very Severe Cyclonic Storm
11.10.18/0600	14.8/57.9	130-140 gusting to 155	Very Severe Cyclonic Storm
11.10.18/1200	14.8/57.7	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/1800	14.9/57.3	125-135 gusting to 150	Very Severe Cyclonic Storm
12.10.18/0000	15.0/56.8	120-130 gusting to 145	Very Severe Cyclonic Storm
12.10.18/1200	15.0/56.0	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/0000	15.0/54.7	115-125 gusting to 140	Severe Cyclonic Storm
13.10.18/1200	15.1/53.5	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/0000	15.2/52.1	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/1200	15.2/50.7	90-100 gusting to 110	Severe Cyclonic Storm
15.10.18/0000	15.3/49.5	65-75 gusting to 85	Cyclonic Storm

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(B) VERY SEVERE CYCLONIC STORM 'TITLI' OVER NORTH COASTAL ANDHRA PRADESH & ADJOINING SOUTH ODISHA: CYCLONE WARNING FOR DISTRICTS OF NORTH ANDHRA PRADESH & ODISHA COASTS :

THE VERY SEVERE CYCLONIC STORM, 'TITLI' IS BEING MONITORED BY THE COASTAL DOPPLER WEATHER RADARS AT VISAKHAPATNAM, GOPALPUR AND PARADIP. THE LATEST OBSERVATIONS INDICATE THAT THE VERY SEVERE CYCLONIC STORM 'TITLI' OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHWESTWARDS WITH A SPEED OF ABOUT 17 KMPH DURING PAST 06 HOURS, CROSSED NORTH ANDHRA PRADESH- SOUTH ODISHA COASTS, NEAR LATITUDE 18.8°N AND LONGITUDE 84.5°E (NEAR PALASA, SRIKAKULAM DISTRICT) TO THE SOUTHWEST OF GOPALPUR, AS A VERY SEVERE CYCLONIC STORM WITH ESTIMATED MAXIMUM SUSTAINED SURFACE WIND SPEED OF 140-150 KMPH GUSTING TO 165 KMPH BETWEEN 0430 AND 0530 HOURS IST OF TODAY, THE 11TH OCTOBER 2018. IT LAY CENTRED AT 0530 HRS IST OF TODAY, THE 11TH OCTOBER 2018 OVER NORTH COASTAL ANDHRA PRADESH & ADJOINING SOUTH ODISHA NEAR LATITUDE 18.8°N AND LONGITUDE 84.4°E, ABOUT 70 KM SOUTHWEST OF GOPALPUR AND 60 KM NORTH-NORTHEAST OF KALINGAPATNAM.

ACCORDING TO HOURLY COASTAL OBSERVATIONS, GOPALPUR REPORTED SURFACE WIND SPEED OF 126 KMPH AT 0430 HOURS IST AND KALINGAPATNAM REPORTED 59 KMPH AT 0330 HRS IST OF TODAY, THE 11TH OCTOBER 2018.

IT IS VERY LIKELY TO MOVE NORTHWESTWARDS FOR NEXT 12 HOURS AND THEN RE-CURVE NORTHEASTWARDS TOWARDS GANGETIC WEST BENGAL ACROSS ODISHA. IT IS VERY LIKELY TO WEAKEN GRADUALLY BECOMING SEVERE CYCLONIC STORM AROUND NOON, CYCLONIC STORM AROUND EVENING OF TODAY AND A DEEP DEPRESSION BY MORNING OF TOMORROW, THE 12TH OCTOBER 2018.

AS PER LATEST SATELLITE IMAGERY BASED ON 0000 UTC OF 11TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 16.0°N & 21.0°N WEST OF LONGITUDE 87.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 972 HPA. MAXIMUM SUSTAINED WIND SPEED IS 75 KNOTS. THE SEA CONDITION IS VERY HIGH AROUND SYSTEM CENTRE. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/0000	18.8/84.4	135-145 gusting to 160	Very Severe Cyclonic Storm
11.10.18/0600	19.1/84.2	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/1200	19.5/84.0	80-90 gusting to 100	Cyclonic Storm
11.10.18/1800	20.1/84.5	60-70 gusting to 80	Cyclonic Storm
12.10.18/0000	20.7/85.1	50-60 gusting to 70	Deep Depression
12.10.18/1200	21.7/86.3	40-50 gusting to 60	Depression

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL MOVE TO PHASE 2 FROM 12TH OCTOBER AND WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH, IT WILL ALSO SUPPORT CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) DURING 12TH-15TH.

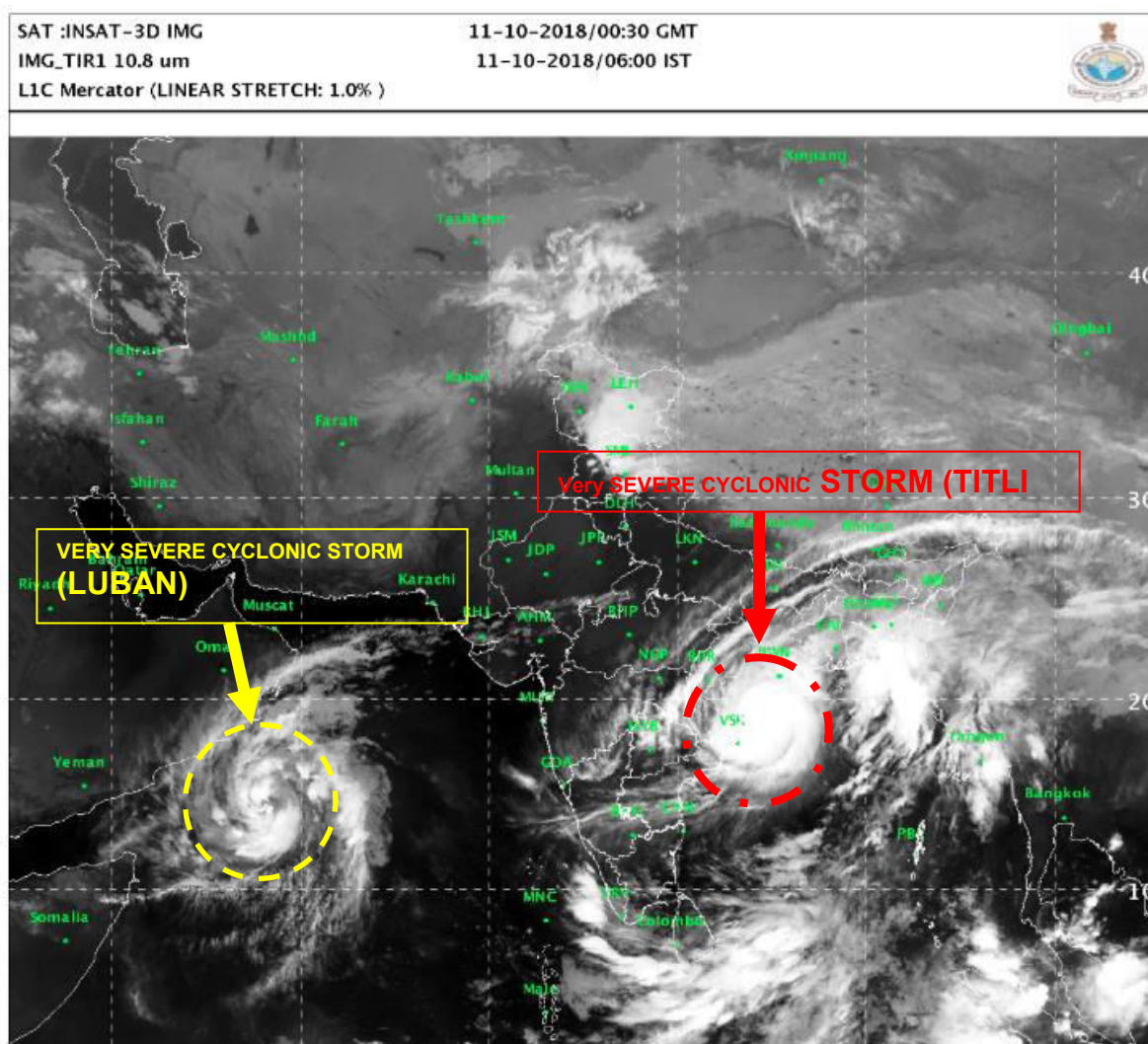
FOR **LUBAN** : CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER AS, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE HAS INCREASED AND NOW IS OF THE ORDER 30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

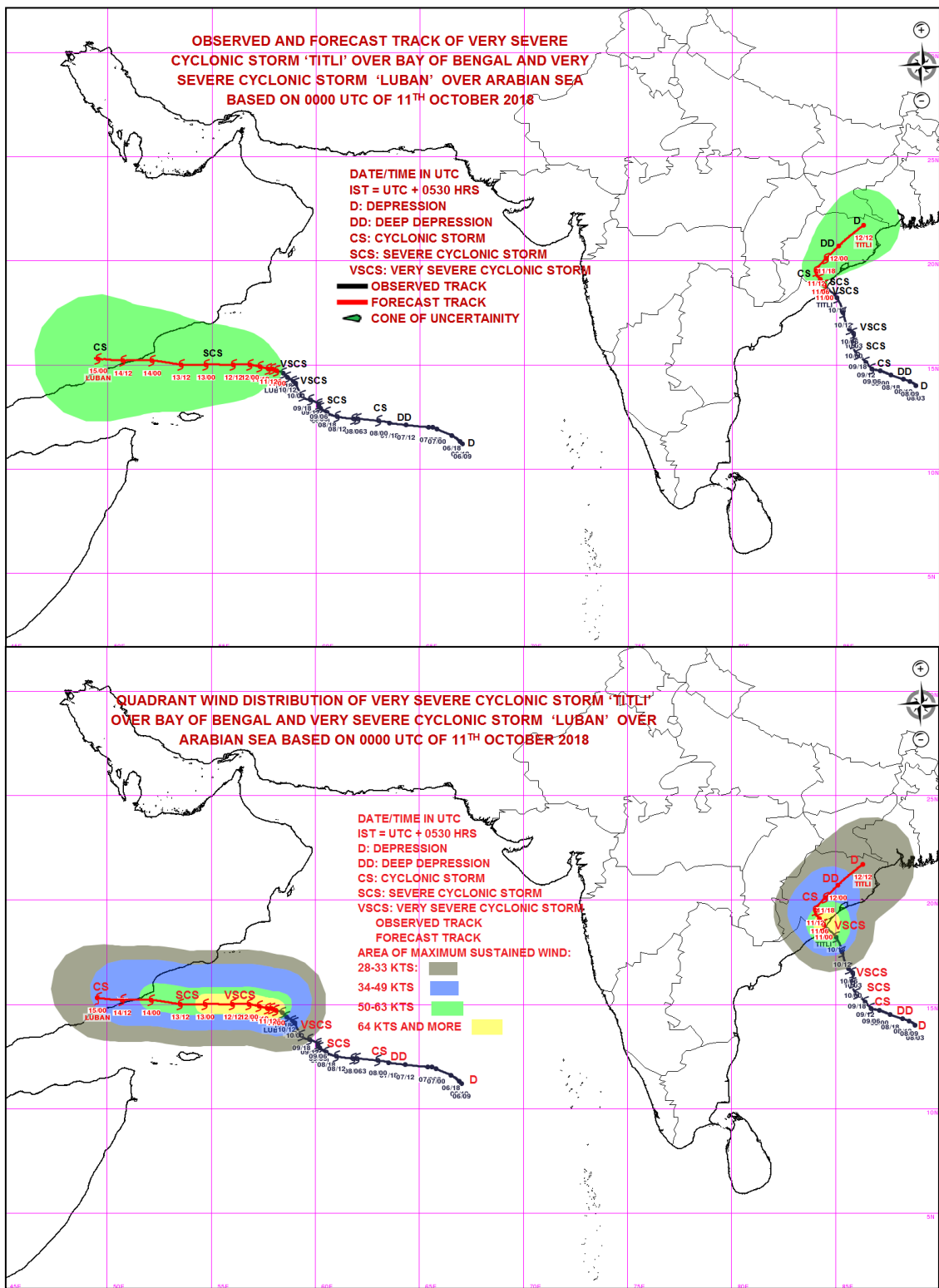
FOR **TITLI** : THE SEA SURFACE TEMPERATURE (SST) IS 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 250 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS ABOUT 50 X 10⁻⁵ SEC⁻¹ TO THE NORTHEAST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW (05 KT) TO THE EAST OF THE SYSTEM CENTRE . AS THE SYSTEM HAS MADE ITS LANDFALL, IT WILL WEAKEN GRADUALLY DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 20° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHEASTWARD RECURVATURE AND GRADUAL WEAKENING.

(NARESH KUMAR)
SCIENTIST-E, RSMC, NEW DELHI



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 26

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 26 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0600 UTC OF 11.10.2018 BASED ON 0300 UTC OF 11.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF ABOUT 07 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 0300 UTC OF TODAY, THE 11TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.5°N AND LONGITUDE 58.0°E, ABOUT 500 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 490 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494)(YEMEN) AND 670 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS. FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/0300	14.5/58.0	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/0600	14.6/57.8	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/1200	14.7/57.7	135-145 gusting to 160	Very Severe Cyclonic Storm
11.10.18/1800	14.9/57.3	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/0000	15.0/57.0	135-145 gusting to 160	Very Severe Cyclonic Storm
12.10.18/1200	15.0/56.5	125-135 gusting to 150	Very Severe Cyclonic Storm
13.10.18/0000	15.1/55.4	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/1200	15.1/53.5	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/0000	15.2/51.8	105-115 gusting to 130	Severe Cyclonic Storm
14.10.18/1200	15.2/50.5	80-90 gusting to 100	Cyclonic Storm
15.10.18/0000	15.3/49.1	50-60 gusting to 70	Deep Depression

AS PER THE SATELLITE IMAGERY BASED ON 0300 UTC OF 11TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS C.I 4.0/T4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.5°N & 19.0°N AND BETWEEN LONGITUDE 54.0°E & 62.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 980 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 70 KNOTS. STATE OF SEA IS PHENOMENAL AROUND THE SYSTEM CENTRE.

(B) VERY SEVERE CYCLONIC STORM 'TITLI' OVER SOUTH ODISHA

THE VERY SEVERE CYCLONIC STORM 'TITLI' OVER NORTH COASTAL ANDHRA PRADESH & ADJOINING SOUTH ODISHA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 13 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 0300 UTC OF TODAY, THE 11TH OCTOBER 2018 OVER SOUTH ODISHA NEAR LATITUDE 19.0°N AND LONGITUDE 84.1°E, ABOUT 90 KM WEST-SOUTHWEST OF

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

GOPALPUR (430471) AND 60 KM SOUTH-SOUTHEAST OF PHULBANI (42966).

IT IS VERY LIKELY TO MOVE NORTHWESTWARDS FOR NEXT 12 HOURS AND THEN RE-CURVE NORTHEASTWARDS TOWARDS GANGETIC WEST BENGAL ACROSS ODISHA. IT IS VERY LIKELY TO WEAKEN GRADUALLY BECOMING SEVERE CYCLONIC STORM AROUND 0600 UTC, CYCLONIC STORM AROUND 1200 UTC AND A DEEP DEPRESSION BY 1800 UTC OF TODAY, THE 11TH OCTOBER 2018. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time (UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/0300	19.0/84.1	120-130 gusting to 145	Very Severe Cyclonic Storm
11.10.18/0600	19.1/84.2	110-120 gusting to 135	Severe Cyclonic Storm
11.10.18/1200	19.5/84.0	80-90 gusting to 100	Cyclonic Storm
11.10.18/1800	20.1/84.5	55-65 gusting to 75	Deep Depression
12.10.18/0000	20.7/85.1	50-60 gusting to 70	Deep Depression
12.10.18/1200	21.7/86.3	40-50 gusting to 60	Depression

AS PER LATEST SATELLITE IMAGERY BASED ON 0300 UTC OF 11TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 16.0°N & 21.0°N WEST OF LONGITUDE 87.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. MAXIMUM SUSTAINED WIND SPEED IS 65 KNOTS.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 2 WITH AMPLITUDE MORE THAN 1. IT WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH.

FOR **LUBAN**: CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ TO THE SE OF THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 30 X10⁻⁵SEC⁻¹ TO THE SW OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

FOR **TITLI** : THE SEA SURFACE TEMPERATURE (SST) IS 30-31°C OVER WESTCENTRAL AND NORTHWEST BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB AND BECOMING LESS THAN 40 KJ/CM² OVER NORTH BOB. LOW LEVEL RELATIVE VORTICITY IS ABOUT 250 X10⁻⁵ SEC⁻¹ TO THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 30 X10⁻⁵ SEC⁻¹ TO THE SOUTH OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE DECREASED AND IS ABOUT 30 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW (05 KT) TO THE EAST OF THE SYSTEM CENTRE. AS THE SYSTEM HAS MADE ITS LANDFALL, IT WILL WEAKEN GRADUALLY DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 20° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHEASTWARD RECURVATURE AND GRADUAL WEAKENING.

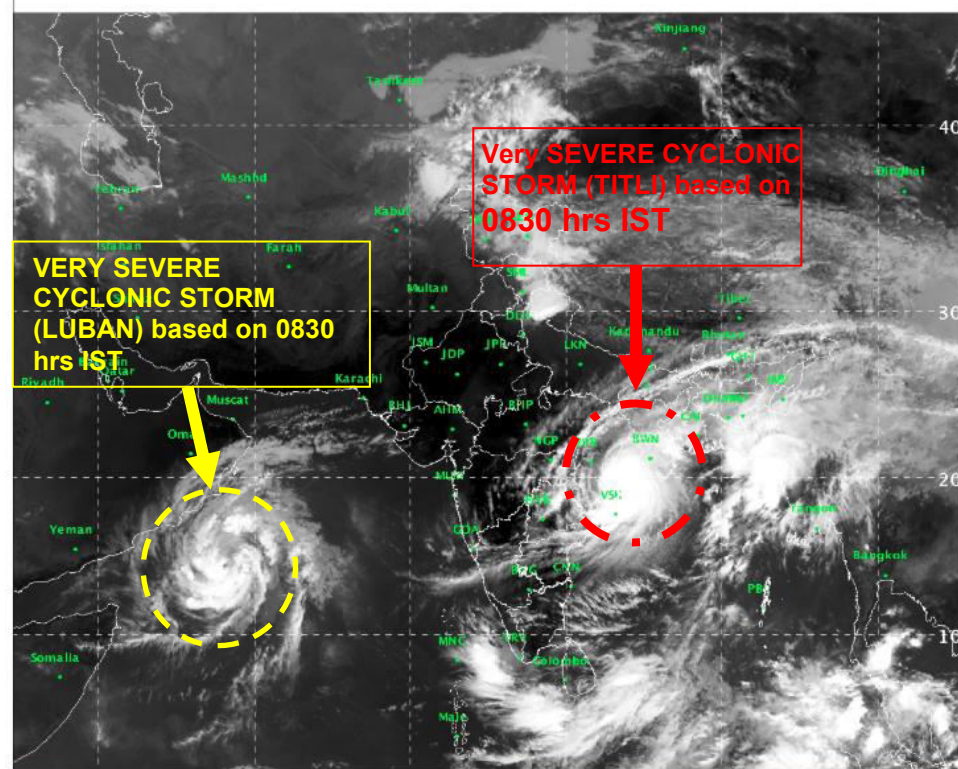
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

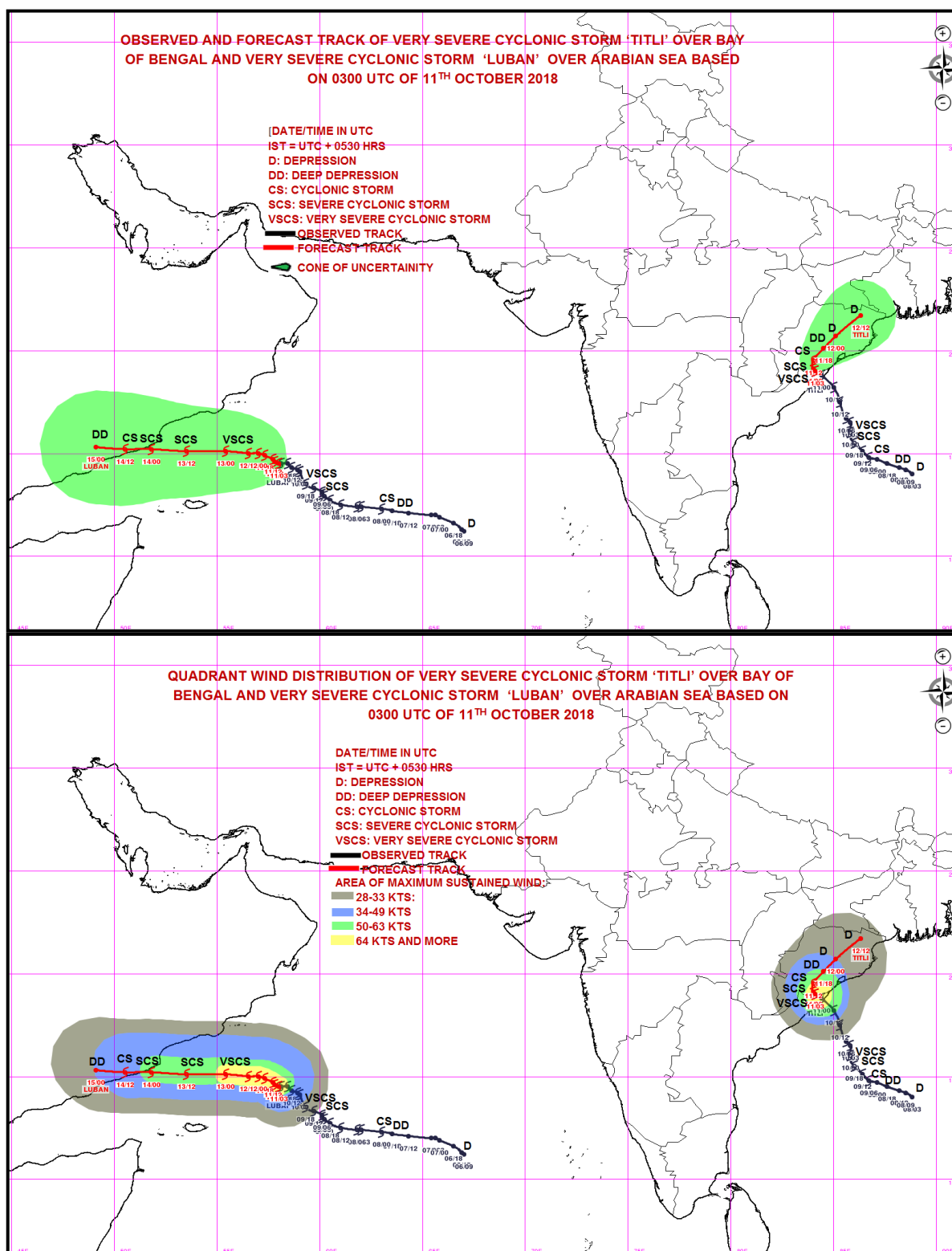
SAT :INSAT-3D IMG
IMG_TIR1 10.8 um
LIC Mercator (LINEAR STRETCH: 1.0%)

11-10-2018/04:30 GMT
11-10-2018/10:00 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 27

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 27 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0900 UTC OF 11.10.2018 BASED ON 0600 UTC OF 11.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA REMAINED PRACTICALLY STATIONARY AND LAY CENTERED AT 1130 HRS IST OF TODAY, THE 11TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.5°N AND LONGITUDE 58.0°E, ABOUT 500 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 490 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN) AND 670 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS. FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
11.10.18/0600	14.5/58.0	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
11.10.18/1200	14.7/57.7	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
11.10.18/1800	14.9/57.3	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
12.10.18/0000	15.0/57.0	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
12.10.18/0600	15.0/56.7	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
12.10.18/1800	15.1/55.9	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
13.10.18/0600	15.1/54.5	115-125 GUSTING TO 130	VERY SEVERE CYCLONIC STORM
13.10.18/1800	15.2/53.1	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
14.10.18/0600	15.2/51.6	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
14.10.18/1800	15.3/49.8	70-80 GUSTING TO 90	CYCLONIC STORM
15.10.18/0600	15.3/48.0	40-50 GUSTING TO 60	DEPRESSION

AS PER THE SATELLITE IMAGERY BASED ON 0600 UTC OF 11TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS C.I 4.0/T4.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.5°N & 19.0°N AND BETWEEN LONGITUDE 54.0°E & 61.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 976 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 65 KNOTS. STATE OF SEA IS PHENOMENAL AROUND THE SYSTEM CENTRE.

B) SEVERE CYCLONIC STORM 'TITLI' OVER SOUTH ODISHA

THE VERY SEVERE CYCLONIC STORM 'TITLI' OVER SOUTH ODISHA MOVED FURTHER NORTHWESTWARDS WITH A SPEED OF ABOUT 14 KMPH DURING PAST 06 HOURS, WEAKENED INTO A SEVERE CYCLONIC STORM AND LAY CENTRED AT 0600 UTC OF TODAY, THE 11TH OCTOBER 2018

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

OVER SOUTH ODISHA NEAR LATITUDE 19.3°N AND LONGITUDE 83.8°E, ABOUT 110 KM WEST OF GOPALPUR (430471) AND 140 KM SOUTHWEST OF PHULBANI (42966).

IT IS VERY LIKELY TO MOVE NORTHWESTWARDS FOR NEXT 06 HOURS AND THEN RE-CURVE NORTHEASTWARDS TOWARDS GANGETIC WEST BENGAL. IT IS VERY LIKELY TO WEAKEN GRADUALLY BECOMING CYCLONIC STORM AROUND 1200 UTC AND A DEEP DEPRESSION BY 1800 UTC OF TODAY, THE 11TH OCTOBER 2018. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
11.10.18/0600	19.3/83.8	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
11.10.18/1200	19.5/83.6	80-90 GUSTING TO 100	CYCLONIC STORM
11.10.18/1800	20.1/84.0	55-65 GUSTING TO 75	DEEP DEPRESSION
12.10.18/0000	20.8/85.0	50-60 GUSTING TO 70	DEEP DEPRESSION
12.10.18/0600	21.5/86.2	40-50 GUSTING TO 60	DEPRESSION
12.10.18/1800	22.9/88.4	30-40 GUSTING TO 50	DEPRESSION

AS PER LATEST SATELLITE IMAGERY BASED ON 0600 UTC OF 11TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 16.0°N & 21.0°N WEST OF LONGITUDE 87.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. MAXIMUM SUSTAINED WIND SPEED IS 65 KNOTS.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 2 WITH AMPLITUDE MORE THAN 1. IT WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH.

FOR **LUBAN**: CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA, THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

FOR **TITLI** : LOW LEVEL RELATIVE VORTICITY IS ABOUT 250 X10⁻⁵ SEC⁻¹ TO THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10-15 X10⁻⁵ SEC⁻¹ AROUND THE SOUTH OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE DECREASED AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW (05 KT) AROUND AND TO THE EAST OF THE SYSTEM CENTRE. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 20° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHEASTWARD RECURVATURE AND GRADUAL WEAKENING.

(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

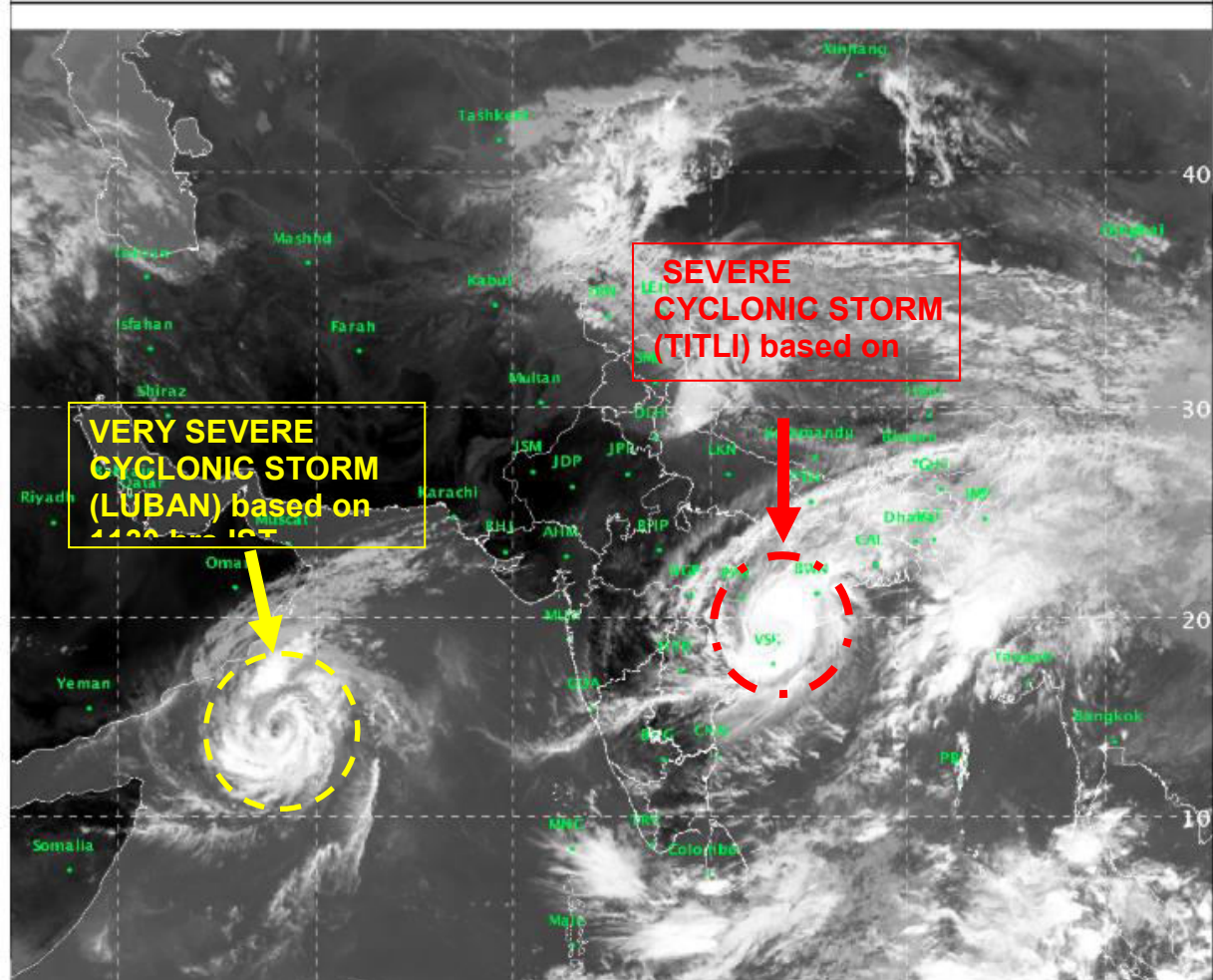
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IMG_TIR1 10.8 um

L1C Mercator (LINEAR STRETCH: 1.0%)

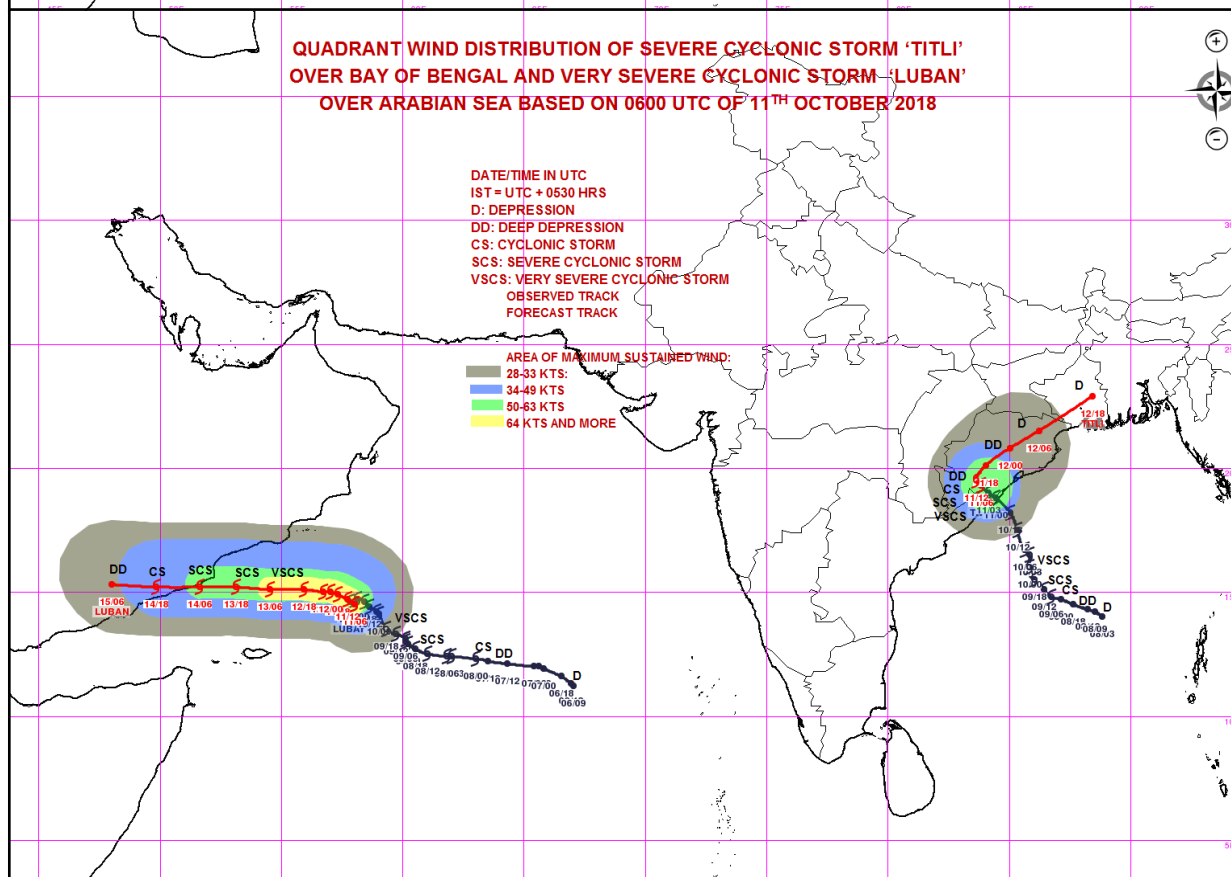
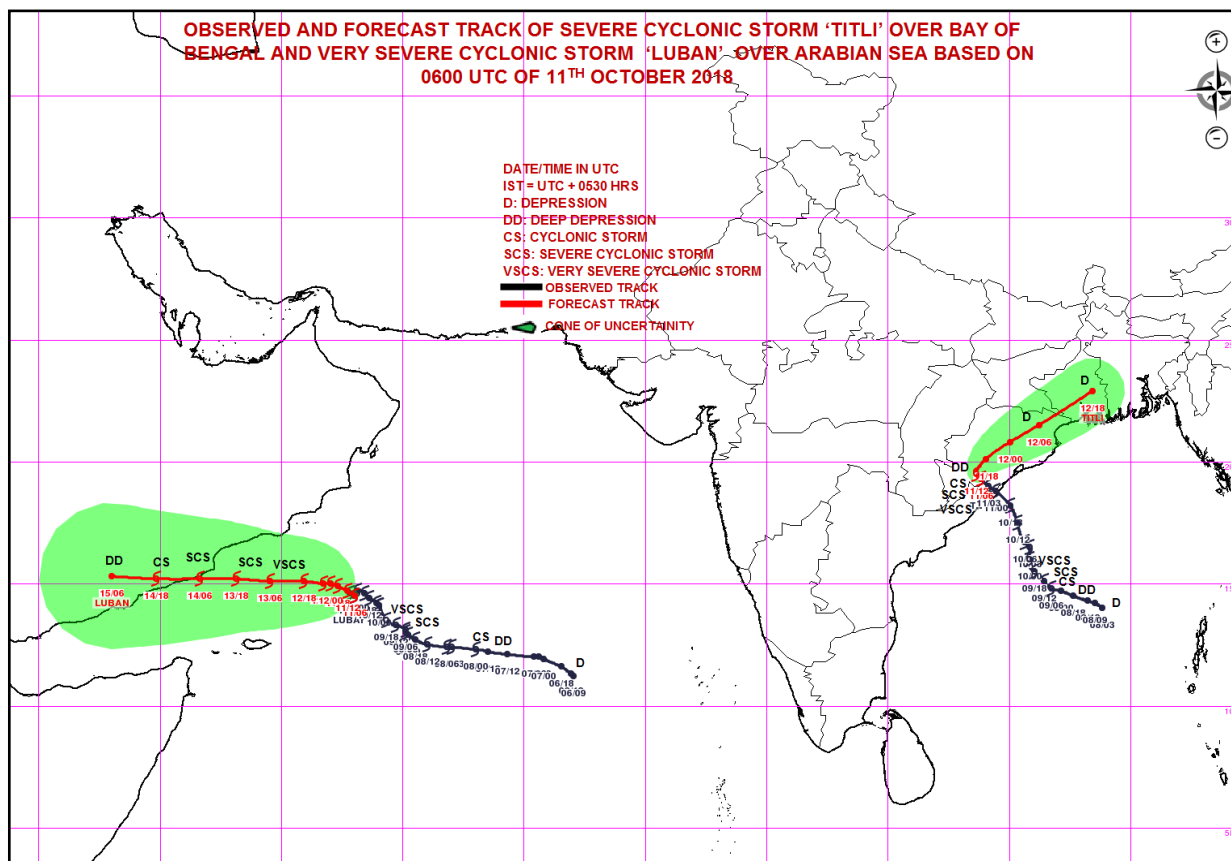
11-10-2018/07:30 GMT

11-10-2018/13:00 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 28

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 28 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1200 UTC OF 11.10.2018 BASED ON 0600 UTC OF 11.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WESTWARDS IN PAST SIX HOURS WITH A SPEED 04 KMPH AND LAY CENTERED AT 0900 UTC OF TODAY, THE 11TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.5°N AND LONGITUDE 57.8°E, ABOUT 480 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 470 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN) AND 640 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER SLIGHTLY AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS. FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
11.10.18/0900	14.5/57.8	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
11.10.18/1200	14.7/57.7	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
11.10.18/1800	14.9/57.3	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
12.10.18/0000	15.0/57.0	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
12.10.18/0000	15.0/56.7	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
12.10.18/1800	15.1/55.9	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
13.10.18/0600	15.1/54.5	115-125 GUSTING TO 130	VERY SEVERE CYCLONIC STORM
13.10.18/1800	15.2/53.1	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
14.10.18/0600	15.2/51.6	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
14.10.18/1800	15.3/49.8	70-80 GUSTING TO 90	CYCLONIC STORM
15.10.18/0600	15.3/48.0	40-50 GUSTING TO 60	DEPRESSION

AS PER THE SATELLITE IMAGERY BASED ON 0600 UTC OF 11TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS C.I 4.5/T4.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.5°N & 19.0°N AND BETWEEN LONGITUDE 54.0°E & 61.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 976 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 70 KNOTS. STATE OF SEA IS PHENOMENAL AROUND THE SYSTEM CENTRE.

B) SEVERE CYCLONIC STORM 'TITLI' OVER SOUTH ODISHA

THE SEVERE CYCLONIC STORM 'TITLI' OVER SOUTH ODISHA REMAINED PRACTICALLY STATIONARY, SLIGHTLY WEAKENED FURTHER AND LAY CENTRED AT 0900 UTC OF TODAY, THE 11TH OCTOBER 2018 OVER SOUTH ODISHA NEAR LATITUDE 19.3°N AND LONGITUDE 83.8°E, ABOUT 110 KM WEST OF

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

GOPALPUR (430471) AND 140 KM SOUTHWEST OF PHULBANI (42966). GOPALPUR (430471) REPORTED 65 KMPH SURFACE WIND AT 0900 UTC OF TODAY, THE 11TH OCTOBER 2018.

IT IS VERY LIKELY TO MOVE NORTHWESTWARDS FOR NEXT 06 HOURS AND THEN RE-CURVE NORTHEASTWARDS TOWARDS GANGETIC WEST BENGAL. IT IS VERY LIKELY TO WEAKEN GRADUALLY BECOMING CYCLONIC STORM AROUND 1200 UTC AND A DEEP DEPRESSION BY 1800 UTC OF TODAY, THE 11TH OCTOBER 2018. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
11.10.18/0900	19.3/83.8	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
11.10.18/1200	19.5/83.6	80-90 GUSTING TO 100	CYCLONIC STORM
11.10.18/1800	20.1/84.0	55-65 GUSTING TO 75	DEEP DEPRESSION
12.10.18/0000	20.8/85.0	50-60 GUSTING TO 70	DEEP DEPRESSION
12.10.18/0600	21.5/86.2	40-50 GUSTING TO 60	DEPRESSION
12.10.18/1800	22.9/88.4	30-40 GUSTING TO 50	DEPRESSION

AS PER LATEST SATELLITE IMAGERY BASED ON 0900 UTC OF 11TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 16.0°N & 21.0°N WEST OF LONGITUDE 87.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. MAXIMUM SUSTAINED WIND SPEED IS 50 KNOTS.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 2 WITH AMPLITUDE MORE THAN 1. IT WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH.

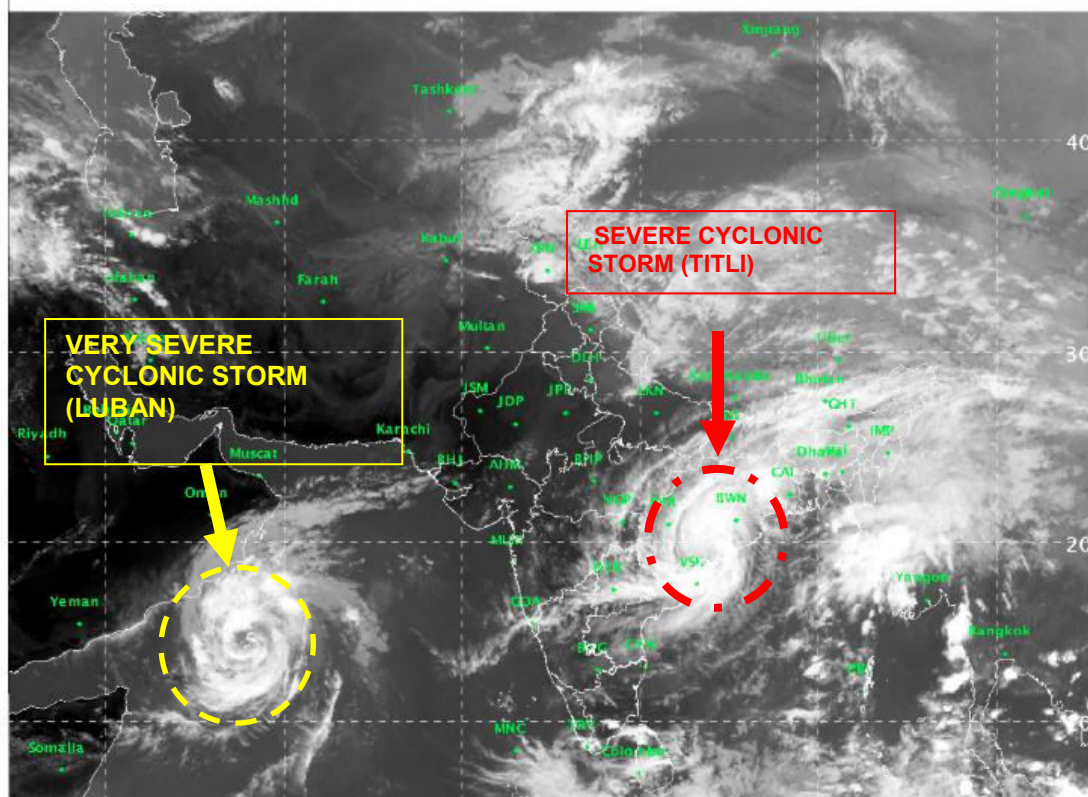
FOR **LUBAN**: CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

FOR **TITLI** : LOW LEVEL RELATIVE VORTICITY IS ABOUT 250 X10⁻⁵ SEC⁻¹ TO SOUTH OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵ SEC⁻¹ TO THE SOUTH OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW (05 KT) AROUND AND TO THE EAST OF THE SYSTEM CENTRE. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 20° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHEASTWARD RECURVATURE AND GRADUAL WEAKENING.

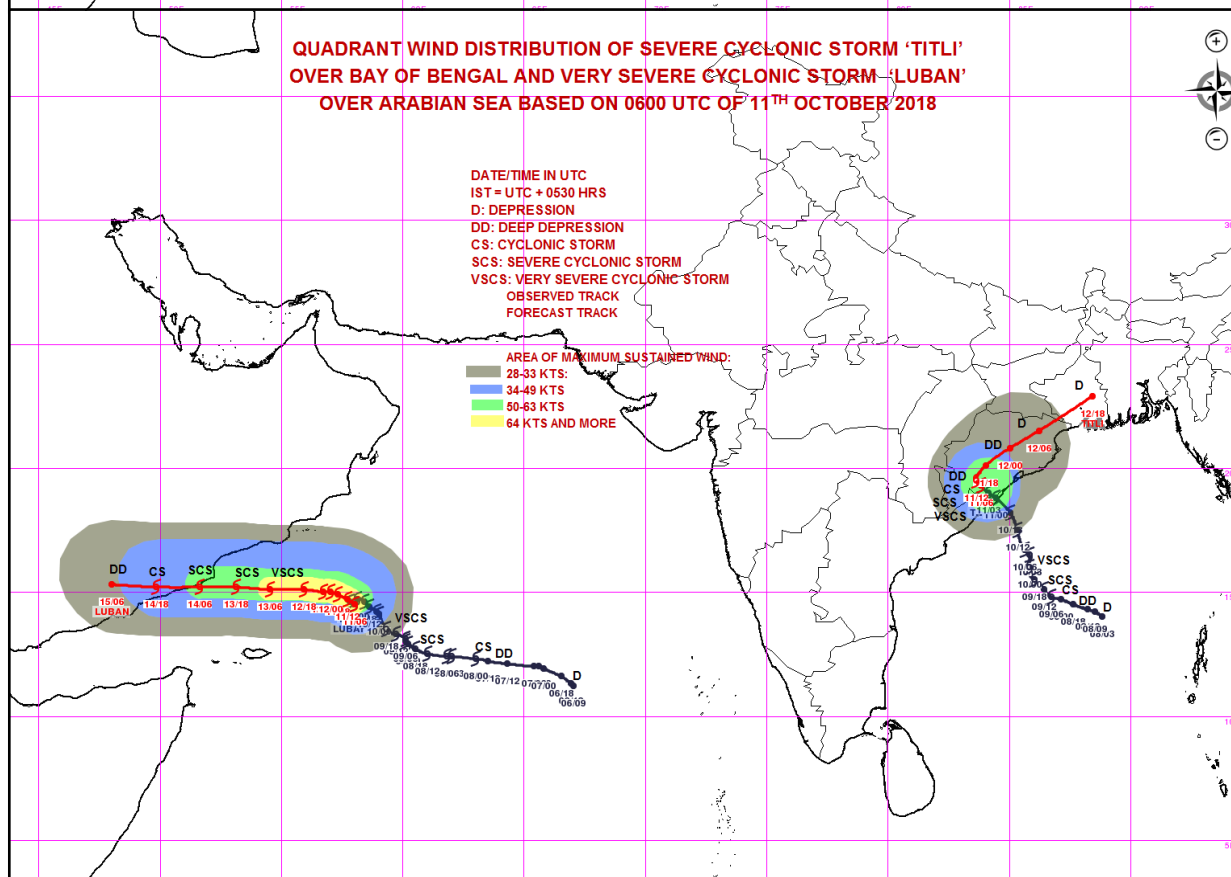
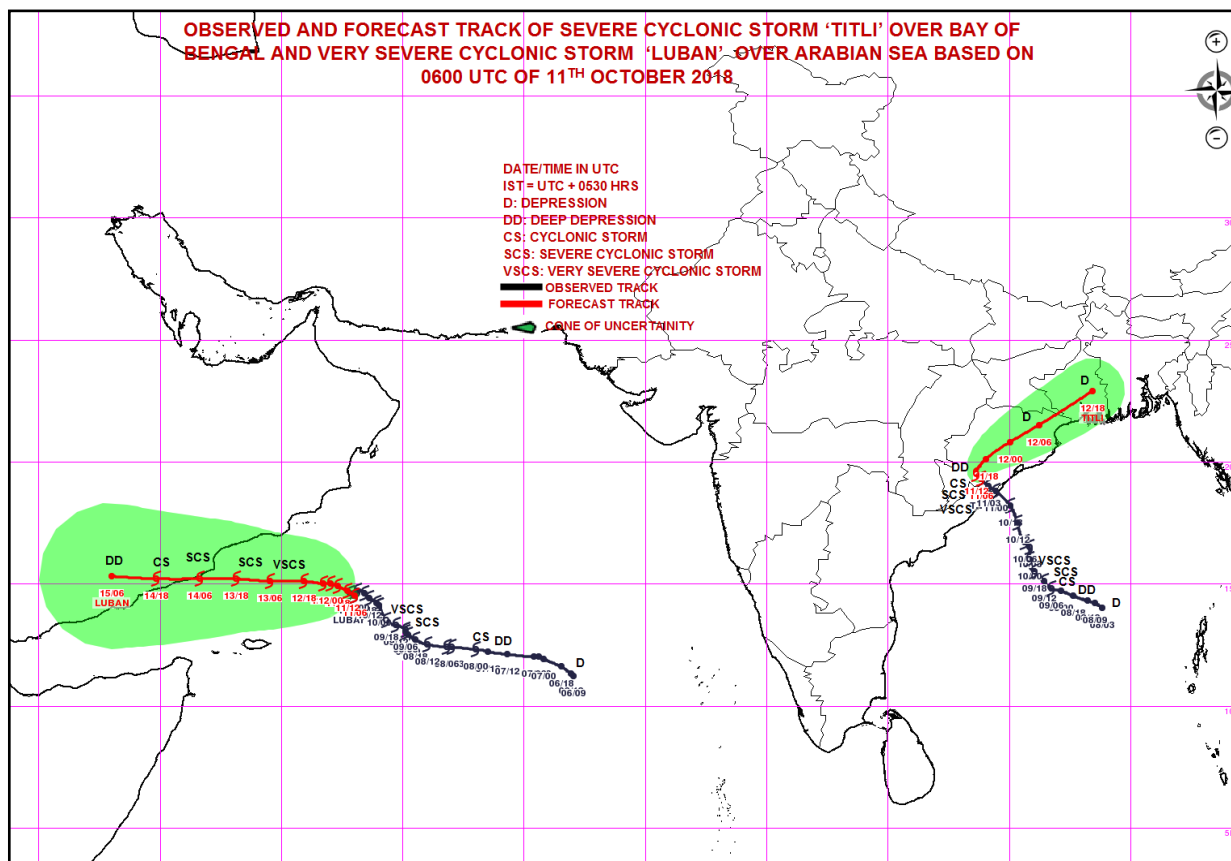
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 29

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 29 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1600 UTC OF 11.10.2018 BASED ON 1200 UTC OF 11.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WESTWARDS IN PAST SIX HOURS WITH A SPEED 05 KMPH AND LAY CENTERED AT 1200 UTC OF TODAY, THE 11TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.5°N AND LONGITUDE 57.7°E, ABOUT 480 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 460 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN) AND 620 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER SLIGHTLY AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS. FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/1200	14.5/57.7	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/1800	14.6/57.3	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/0000	14.7/57.0	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/0600	14.8/56.5	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/1200	14.9/56.0	130-140 gusting to 155	Very Severe Cyclonic Storm
13.10.18/0000	15.0/55.0	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/1200	15.1/53.2	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/0000	15.2/51.5	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/1200	15.2/50.7	80-90 gusting to 100	Cyclonic Storm
15.10.18/0000	15.3/48.9	55-65 gusting to 75	Deep Depression
15.10.18/1200	15.3/47.3	40-50 gusting to 60	Depression

AS PER THE SATELLITE IMAGERY BASED ON 1200 UTC OF 11TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS C.I 4.5/T4.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.0°N & 20.0°N AND BETWEEN LONGITUDE 54.0°E & 61.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 77°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 980 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 70 KNOTS. STATE OF SEA IS PHENOMENAL AROUND THE SYSTEM CENTRE.

B) SEVERE CYCLONIC STORM 'TITLI' OVER SOUTH ODISHA

THE SEVERE CYCLONIC STORM 'TITLI' OVER SOUTH ODISHA MOVED NORTH-NORTHWESTWARDS IN PAST 06 HOURS WITH SPEED 13 KMPH, WEAKENED INTO A CYCLONIC STORM AND LAY CENTRED AT 1200 UTC OF TODAY, THE 11TH OCTOBER 2018 OVER SOUTH ODISHA NEAR LATITUDE 20.0°N AND LONGITUDE 83.7°E, ABOUT 50 KM EAST-NORTHEAST OF BHAWANIPATNA(43042) AND 80 KM WEST-

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SOUTHWEST OF PHULBANI (42966). GOPALPUR (430471) REPORTED 55 KMPH AND BHAWANIPATNA REPORTED 52 KMPH SURFACE WIND AT 1200 UTC OF TODAY, THE 11TH OCTOBER 2018.

IT IS VERY LIKELY TO MOVE NORTHWESTWARDS FOR NEXT 06 HOURS AND THEN RE-CURVE NORTHEASTWARDS TOWARDS GANGETIC WEST BENGAL. IT IS VERY LIKELY TO WEAKEN GRADUALLY BECOMING CYCLONIC STORM AROUND 1200 UTC AND A DEEP DEPRESSION BY 1800 UTC OF TODAY, THE 11TH OCTOBER 2018. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/1200	20/83.7	80-90 gusting to 100	Cyclonic Storm
11.10.18/1800	20.5/84.0	60-70 gusting to 80	Cyclonic Storm
12.10.18/0030	21.1/85.0	50-60 gusting to 70	Deep Depression
12.10.18/0600	21.7/86.2	40-50 gusting to 60	Depression
12.10.18/1200	22.3/87.3	30-40 gusting to 50	Depression
13.10.18/0000	23.6/89.5	20-30 gusting to 40	Well Marked Low

AS PER LATEST SATELLITE IMAGERY BASED ON 0900 UTC OF 11TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 16.0°N & 21.0°N WEST OF LONGITUDE 87.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. MAXIMUM SUSTAINED WIND SPEED IS 45 KNOTS.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 2 WITH AMPLITUDE MORE THAN 1. IT WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH.

FOR **LUBAN**: CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

FOR **TITLI** : LOW LEVEL RELATIVE VORTICITY DECREASED AND IS ABOUT 200 X10⁻⁵ SEC⁻¹ TO SOUTH OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵ SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS INCREASING TO THE EAST AND TO THE NORTHEAST OF THE SYSTEM. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHEASTWARD RECURVATURE AND GRADUAL WEAKENING.

(D. R PATTANAIK)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

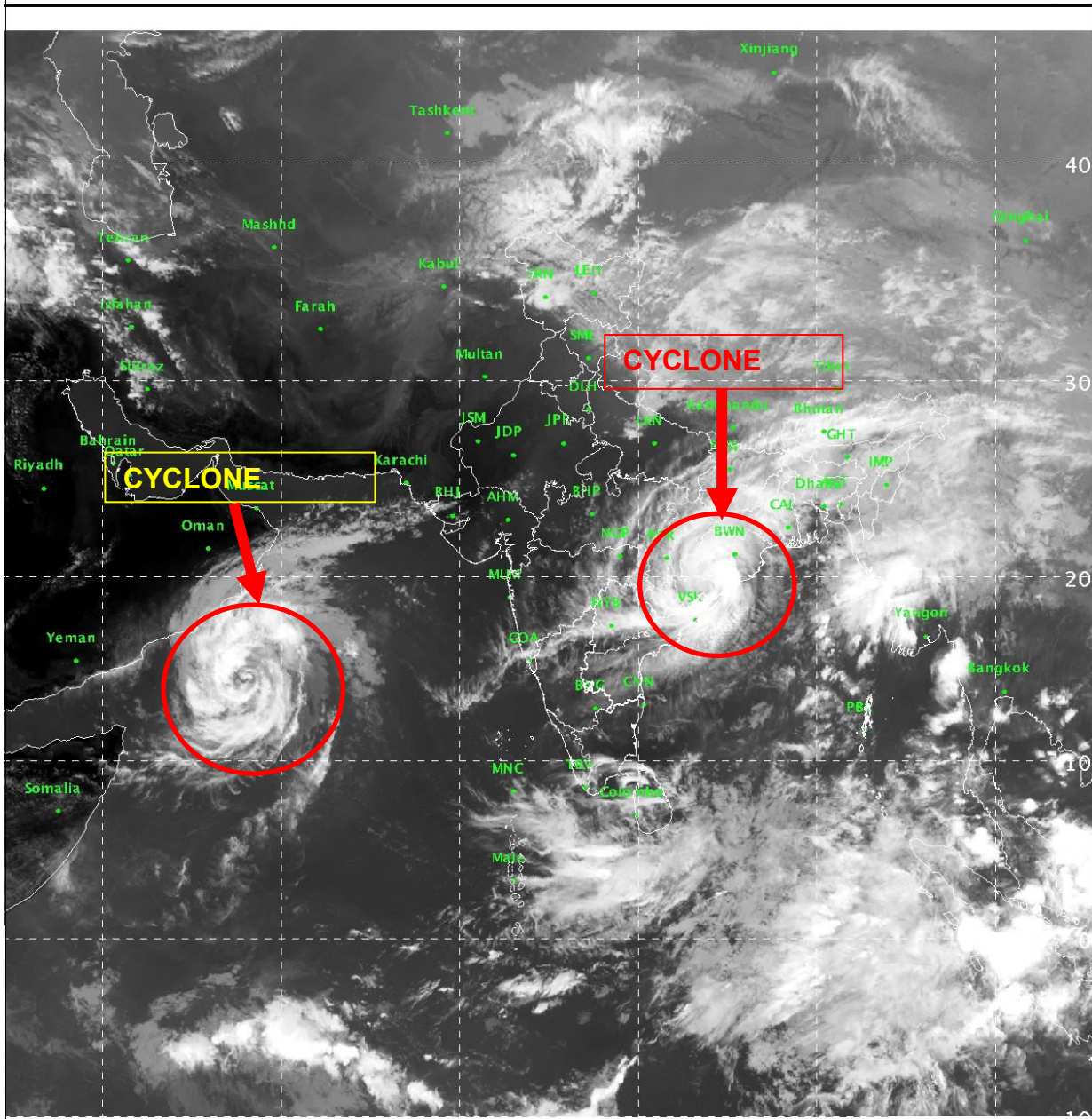
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IMG_TIR1 10.8 um

L1C Mercator (LINEAR STRETCH: 1.0%)

11-10-2018/12:00 GMT

11-10-2018/17:30 IST



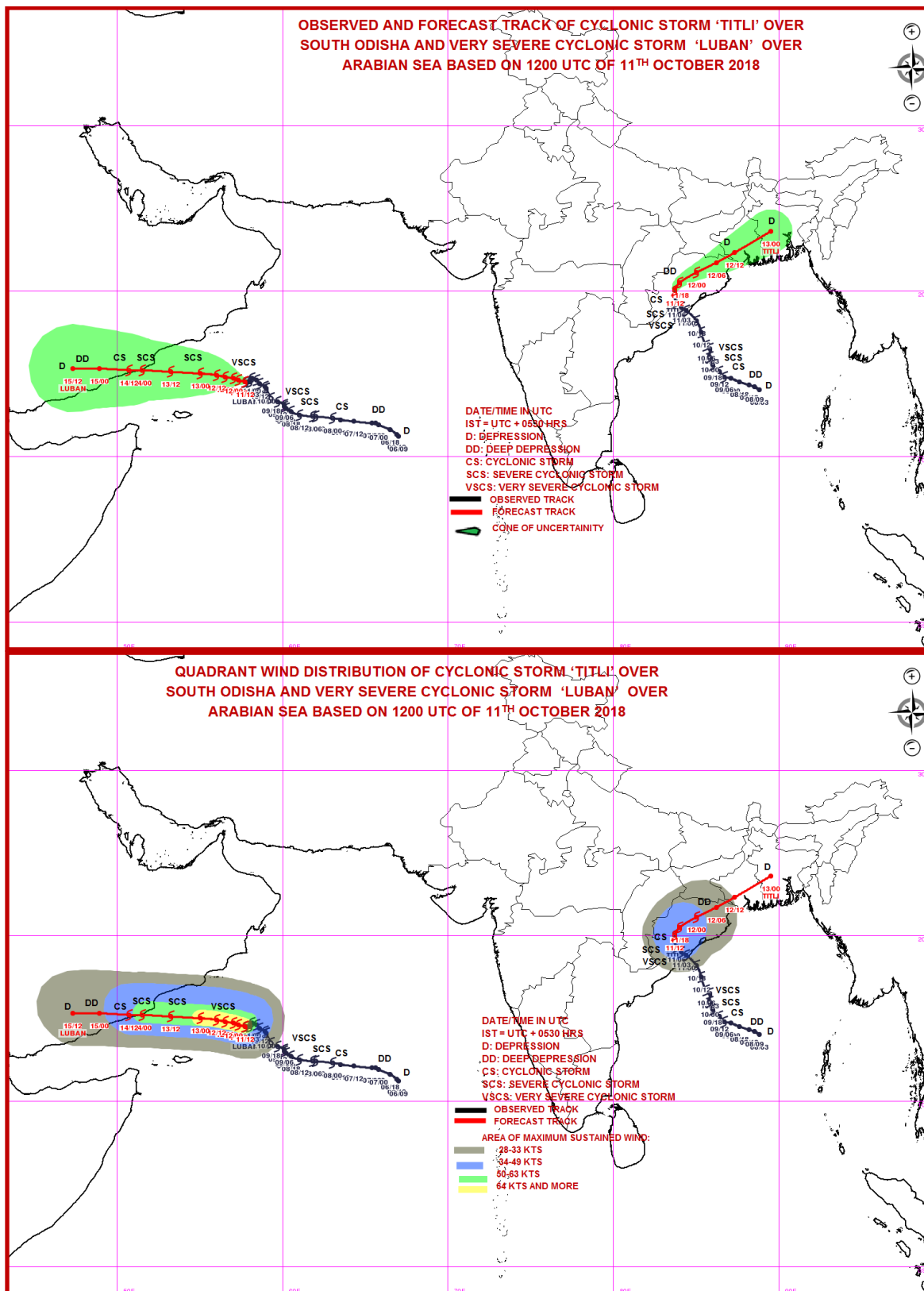
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IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 30

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 30 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1700 UTC OF 11.10.2018 BASED ON 1500 UTC OF 11.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN REMAINED PRACTICALLY STATIONARY AND LAY CENTERED AT 1500 UTC OF TODAY, THE 11TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.5°N AND LONGITUDE 57.7°E, ABOUT 480 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 460 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN) AND 620 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER SLIGHTLY AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS. FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/1500	14.5/57.7	125-135 gusting to 150	Very Severe Cyclonic Storm
11.10.18/1800	14.6/57.3	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/0000	14.7/57.0	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/0600	14.8/56.5	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/1200	14.9/56.0	130-140 gusting to 155	Very Severe Cyclonic Storm
13.10.18/0000	15.0/55.0	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/1200	15.1/53.2	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/0000	15.2/51.5	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/1200	15.2/50.7	80-90 gusting to 100	Cyclonic Storm
15.10.18/0000	15.3/48.9	55-65 gusting to 75	Deep Depression
15.10.18/1200	15.3/47.3	40-50 gusting to 60	Depression

AS PER THE SATELLITE IMAGERY BASED ON 1500 UTC OF 11TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS C.I 4.5/T4.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.0°N & 20.0°N AND BETWEEN LONGITUDE 54.0°E & 61.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 77°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 980 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 70 KNOTS. STATE OF SEA IS PHENOMENAL AROUND THE SYSTEM CENTRE.

B) CYCLONIC STORM 'TITLI' OVER SOUTH ODISHA

THE SEVERE CYCLONIC STORM 'TITLI' OVER SOUTH ODISHA MOVED NORTHEASTWARDS IN PAST 06 HOURS WITH SPEED 15 KMPH AND LAY CENTRED AT 1500 UTC OF TODAY, THE 11TH OCTOBER 2018 OVER SOUTH ODISHA NEAR LATITUDE 20.1°N AND LONGITUDE 84.0°E, ABOUT 90 KM EAST-NORTHEAST OF BHAWANIPATNA (43042) AND 50 KM WEST-SOUTHWEST OF PHULBANI (42966).

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS GANGETIC WEST BENGAL. IT IS VERY LIKELY TO WEAKEN TO WEAKEN FURTHER INTO A DEEP DEPRESSION DURING NEXT 06 HOURS. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/1500	20.1/84.0	70-80 gusting to 90	Cyclonic Storm
11.10.18/1800	20.5/84.0	60-70 gusting to 80	Cyclonic Storm
12.10.18/0000	21.1/85.0	50-60 gusting to 70	Deep Depression
12.10.18/0600	21.7/86.2	40-50 gusting to 60	Depression
12.10.18/1200	22.3/87.3	30-40 gusting to 50	Depression
13.10.18/0000	23.6/89.5	20-30 gusting to 40	Well Marked Low

AS PER LATEST SATELLITE IMAGERY BASED ON 1500 UTC OF 11TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 16.0°N & 21.0°N WEST OF LONGITUDE 87.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. MAXIMUM SUSTAINED WIND SPEED IS 45 KNOTS.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 2 WITH AMPLITUDE MORE THAN 1. IT WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH.

FOR **LUBAN**: CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

FOR **TITLI** : LOW LEVEL RELATIVE VORTICITY DECREASED AND IS ABOUT 200 X10⁻⁵ SEC⁻¹ TO SOUTH OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵ SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS INCREASING TO THE EAST AND TO THE NORTHEAST OF THE SYSTEM. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHEASTWARD RECURVATURE AND GRADUAL WEAKENING.

(D. R PATTANAIK)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

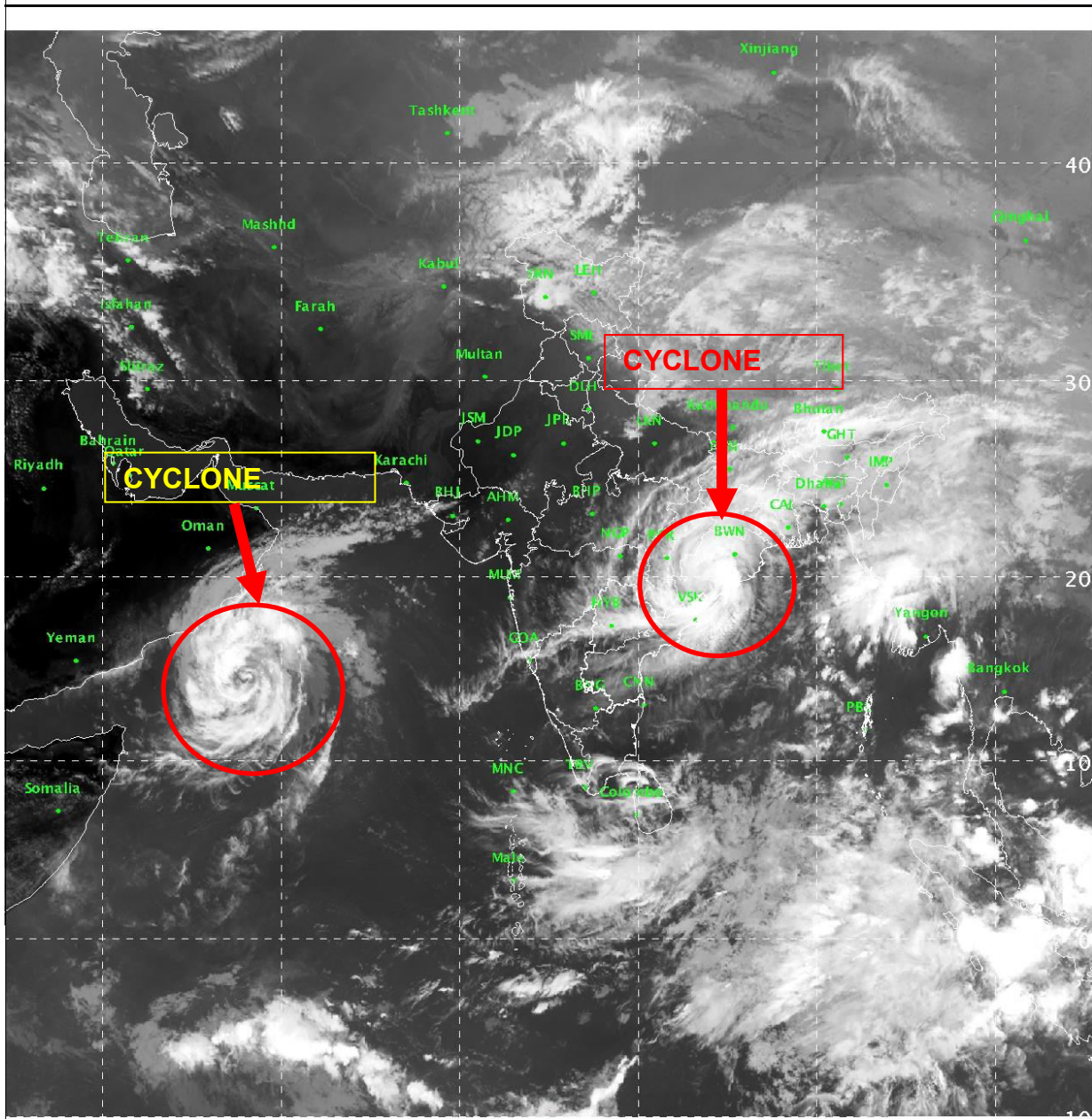
SAT :INSAT-3D IMG

IMG_TIR1 10.8 um

L1C Mercator (LINEAR STRETCH: 1.0%)

11-10-2018/12:00 GMT

11-10-2018/17:30 IST



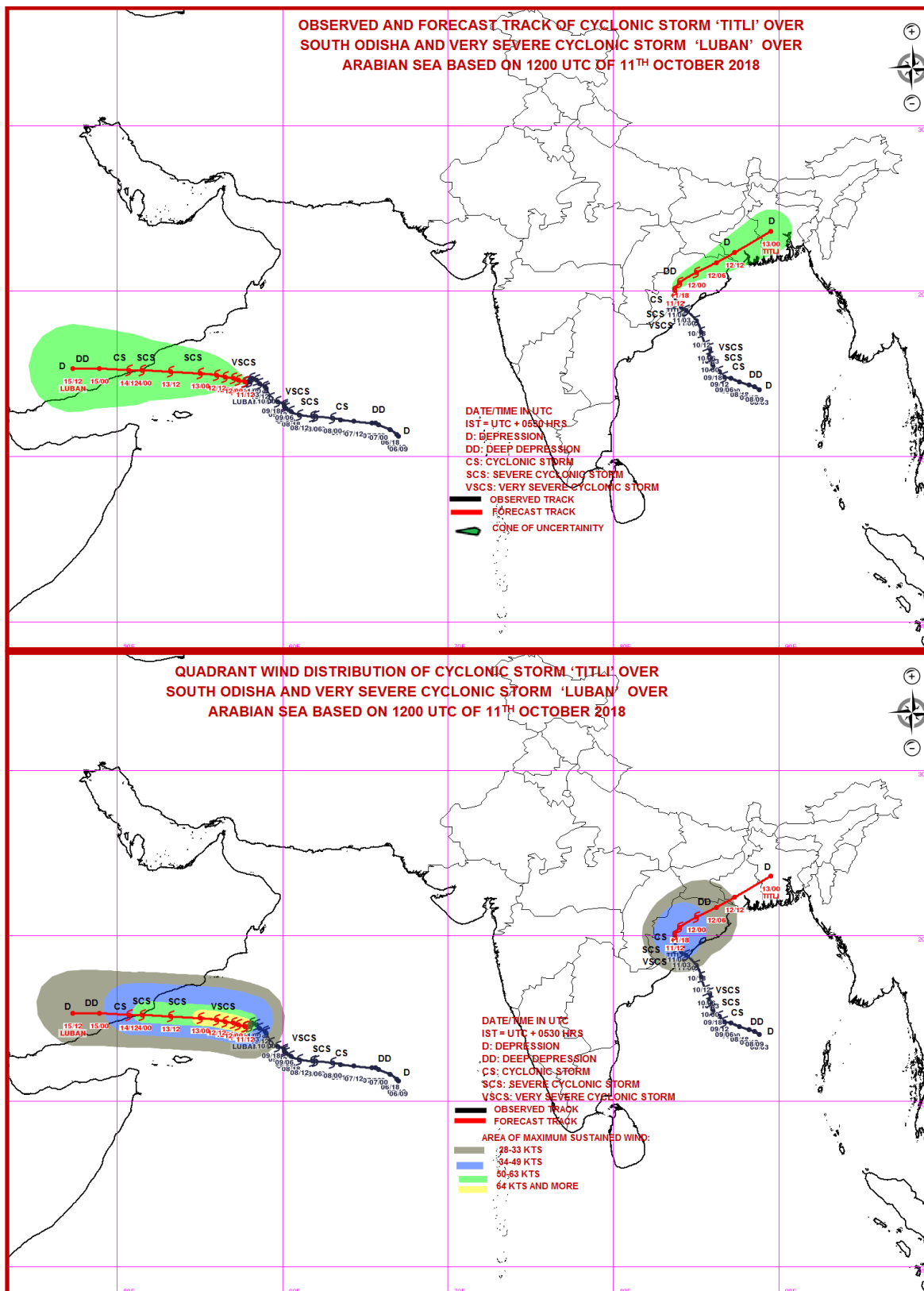
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IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 31

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 31 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2000 UTC OF 11.10.2018 BASED ON 1800 UTC OF 11.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN MOVED NORTH-WESTWARDS IN PAST SIX HOURS WITH A SPEED 03 KMPH AND LAY CENTERED AT 1800 UTC OF 11TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.6°N AND LONGITUDE 57.6°E, ABOUT 460 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 450 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN) AND 610 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN). IT IS VERY LIKELY TO INTENSIFY FURTHER SLIGHTLY AND MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS. FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/1800	14.6/57.6	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/0000	14.7/57.0	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/0600	14.8/56.5	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/1200	14.9/56.0	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/1800	15.0/55.5	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/0600	15.1/54.1	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/1800	15.1/52.4	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/0600	15.2/51.1	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/1800	15.2/50.0	80-90 gusting to 100	Cyclonic Storm
15.10.18/0600	15.3/48.1	55-65 gusting to 75	Deep Depression
15.10.18/1800	15.3/46.8	40-50 gusting to 60	Depression

AS PER THE SATELLITE IMAGERY BASED ON 1800 UTC OF 11TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS C.I 4.5/T4.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.0°N & 20.0°N AND BETWEEN LONGITUDE 54.5°E & 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 89°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 980 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 70 KNOTS. STATE OF SEA IS PHENOMENAL AROUND THE SYSTEM CENTRE.

B) CYCLONIC STORM 'TITLI' WEAKENED INTO A DEEP DEPRESSION OVER SOUTH ODISHA

THE CYCLONIC STORM 'TITLI' OVER SOUTH ODISHA MOVED EASTWARDS IN PAST 06 HOURS WITH SPEED 08 KMPH, WEAKENED INTO A DEEP DEPRESSION AND LAY CENTRED AT 1800 UTC OF 11TH OCTOBER 2018 OVER SOUTH ODISHA NEAR LATITUDE 20.1°N AND LONGITUDE 84.2°E, ABOUT 100 KM

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

EAST-NORTHEAST OF BHAWANIPATNA (43042) AND 50 KM NORTH-NORTHWEST OF PHULBANI (42966). IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS GANGETIC WEST BENGAL ACROSS NORTH ODISHA. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/1800	20.1/84.2	50-60 gusting to 70	Deep Depression
12.10.18/0000	21.8/85.0	50-60 gusting to 70	Deep Depression
12.10.18/0600	21.7/86.2	40-50 gusting to 60	Depression
12.10.18/1200	22.3/87.3	30-40 gusting to 50	Depression
13.10.18/0000	23.6/89.5	20-30 gusting to 40	Well Marked Low

AS PER LATEST SATELLITE IMAGERY BASED ON 1800 UTC OF 11TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 16.0°N & 22.0°N WEST OF LONGITUDE 87.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 2 WITH AMPLITUDE MORE THAN 1. IT WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH.

FOR **LUBAN**: CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

FOR **TITLI** : LOW LEVEL RELATIVE VORTICITY DECREASED AND IS ABOUT 200 X10⁻⁵ SEC⁻¹ TO SOUTH OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵ SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS INCREASING TO THE EAST AND TO THE NORTHEAST OF THE SYSTEM. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHEASTWARD RECURVATURE AND GRADUAL WEAKENING.

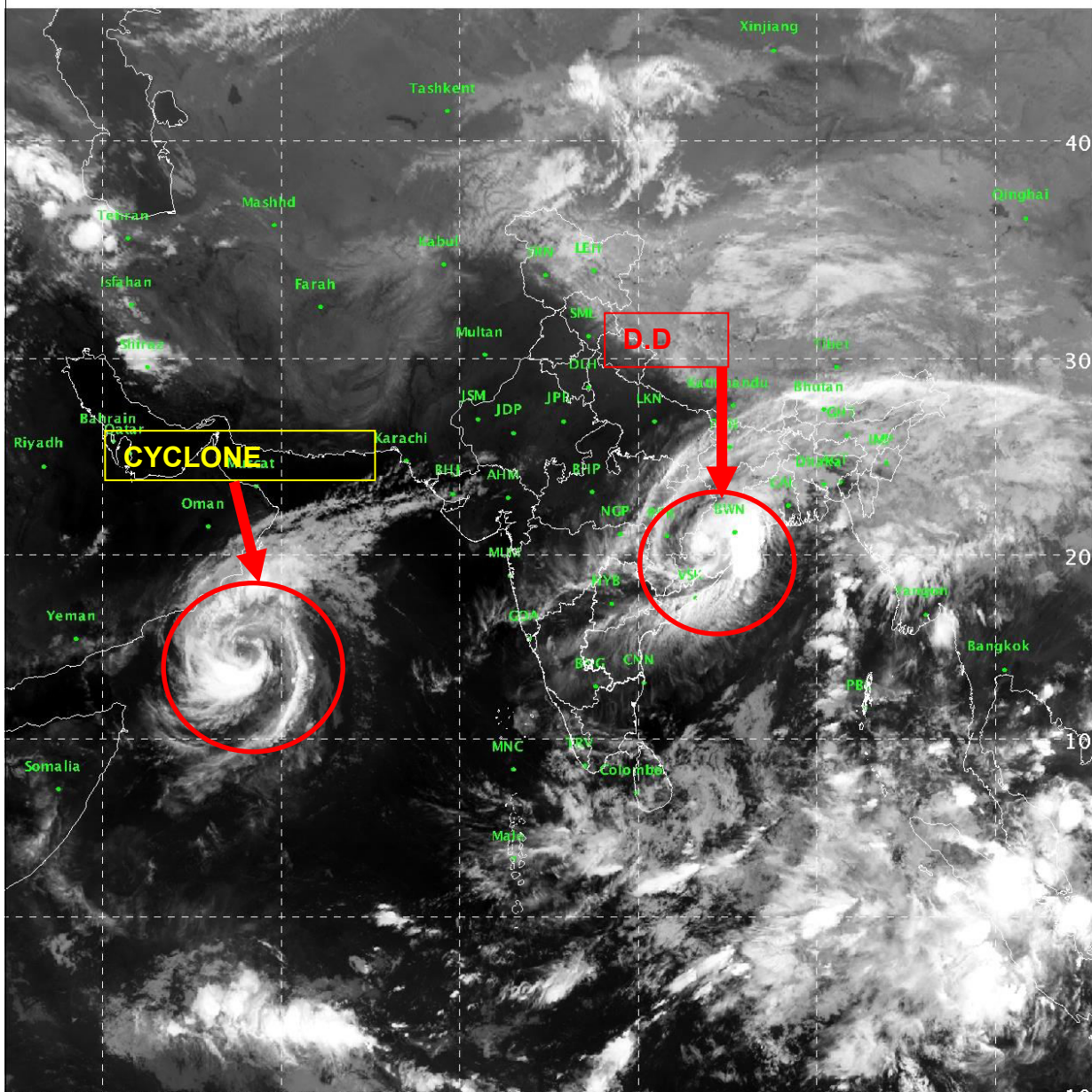
(D. R PATTANAIAK)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT :INSAT-3D IMG
IMG_TIR1 10.8 um
LIC Mercator (LINEAR STRETCH: 1.0%)

11-10-2018/16:30 GMT
11-10-2018/22:00 IST



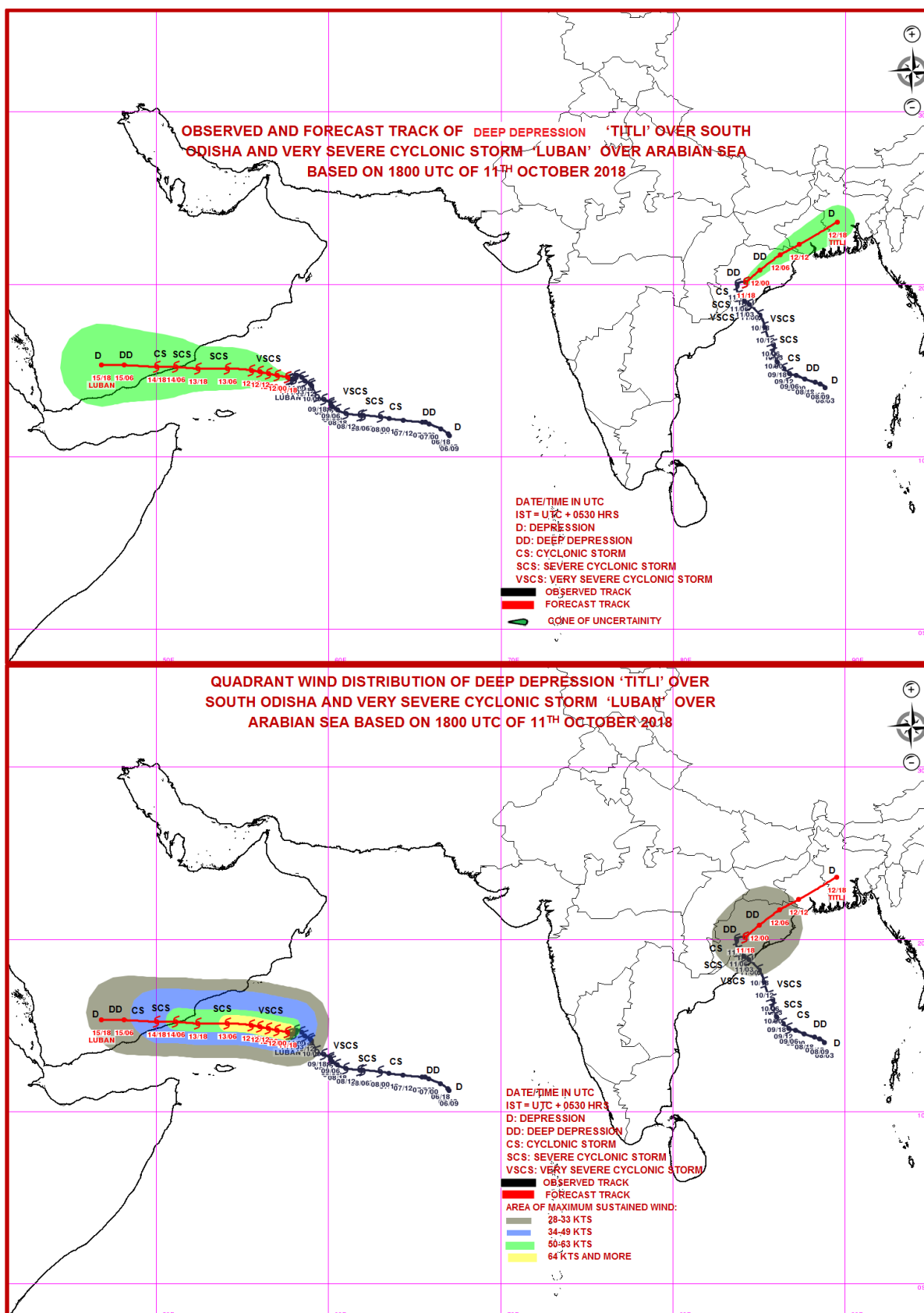
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IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 32

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 32 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0000 UTC OF 12.10.2018 BASED ON 2100 UTC OF 11.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN MOVED NORTHWESTWARDS IN PAST SIX HOURS WITH A SPEED 04 KMPH AND LAY CENTERED AT 2100 UTC OF 11TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.7°N AND LONGITUDE 57.6°E, ABOUT 450 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 460 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN) AND 610 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS YEMEN & SOUTH OMAN COASTS DURING NEXT 4 DAYS. FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/2100	14.7/57.6	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/0000	14.7/57.0	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/0600	14.8/56.5	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/1200	14.9/56.0	130-140 gusting to 155	Very Severe Cyclonic Storm
12.10.18/1800	15.0/55.5	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/0600	15.1/54.1	120-130 gusting to 145	Very Severe Cyclonic Storm
13.10.18/1800	15.1/52.4	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/0600	15.2/51.1	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/1800	15.2/50.0	80-90 gusting to 100	Cyclonic Storm
15.10.18/0600	15.3/48.1	55-65 gusting to 75	Deep Depression
15.10.18/1800	15.3/46.8	40-50 gusting to 60	Depression

AS PER THE SATELLITE IMAGERY BASED ON 2100 UTC OF 11TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS C.I 4.5/T4.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.0°N & 20.0°N AND BETWEEN LONGITUDE 54.5°E & 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 89°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 980 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 70 KNOTS. STATE OF SEA IS PHENOMENAL AROUND THE SYSTEM CENTRE.

B) DEEP DEPRESSION OVER ODISHA

THE DEEP DEPRESSION OVER SOUTH ODISHA MOVED EAST-NORTHEASTWARDS IN PAST 06 HOURS WITH SPEED 05 KMPH AND LAY CENTRED AT 2100 UTC OF 11TH OCTOBER 2018 OVER ODISHA NEAR LATITUDE 20.2°N AND LONGITUDE 84.3°E, ABOUT 120 KM EAST-NORTHEAST OF BHAWANIPATNA

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

(43042) AND 30 KM SOUTH OF PHULBANI (42966). IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS GANGETIC WEST BENGAL ACROSS NORTH ODISHA. FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
11.10.18/2100	20.2/84.3	50-60 gusting to 70	Deep Depression
12.10.18/0000	21.8/85.0	50-60 gusting to 70	Deep Depression
12.10.18/0600	21.7/86.2	40-50 gusting to 60	Depression
12.10.18/1200	22.3/87.3	30-40 gusting to 50	Depression
13.10.18/0000	23.6/89.5	20-30 gusting to 40	Well Marked Low

AS PER LATEST SATELLITE IMAGERY BASED ON 2100 UTC OF 11TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 16.0°N & 22.0°N WEST OF LONGITUDE 87.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 2 WITH AMPLITUDE MORE THAN 1. IT WILL REMAIN IN SAME PHASE TILL 15TH. AMPLITUDE WILL REMAIN MORE THAN 1 TILL 15TH OCTOBER. IT WILL BECOME LESS THAN 1 FROM 15TH ONWARDS. HENCE, MJO PHASE WILL BE FAVOURABLE FOR ENHANCEMENT OF CONVECTION & CYCLOGENESIS OVER SOUTH & ADJOINING CENTRAL ARABIAN SEA (AS) DURING THE PERIOD 10TH-15TH.

FOR **LUBAN**: CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 300 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N. HENCE, AS THE SYSTEM MOVE WEST-NORTHWESTWARDS IT WILL EXPERIENCE LOW TO MODERATE WIND SHEAR, WARMER SST & LOW OCEAN HEAT CONTENT AND COLD AIR ADVECTION FROM LAND AREAS.

FOR **TITLI** : LOW LEVEL RELATIVE VORTICITY DECREASED AND IS ABOUT 200 X10⁻⁵ SEC⁻¹ TO SOUTH OF THE SYSTEM CENTER. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵ SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS INCREASING TO THE EAST AND TO THE NORTHEAST OF THE SYSTEM. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, SUGGEST NORTHEASTWARD RECURVATURE AND GRADUAL WEAKENING.

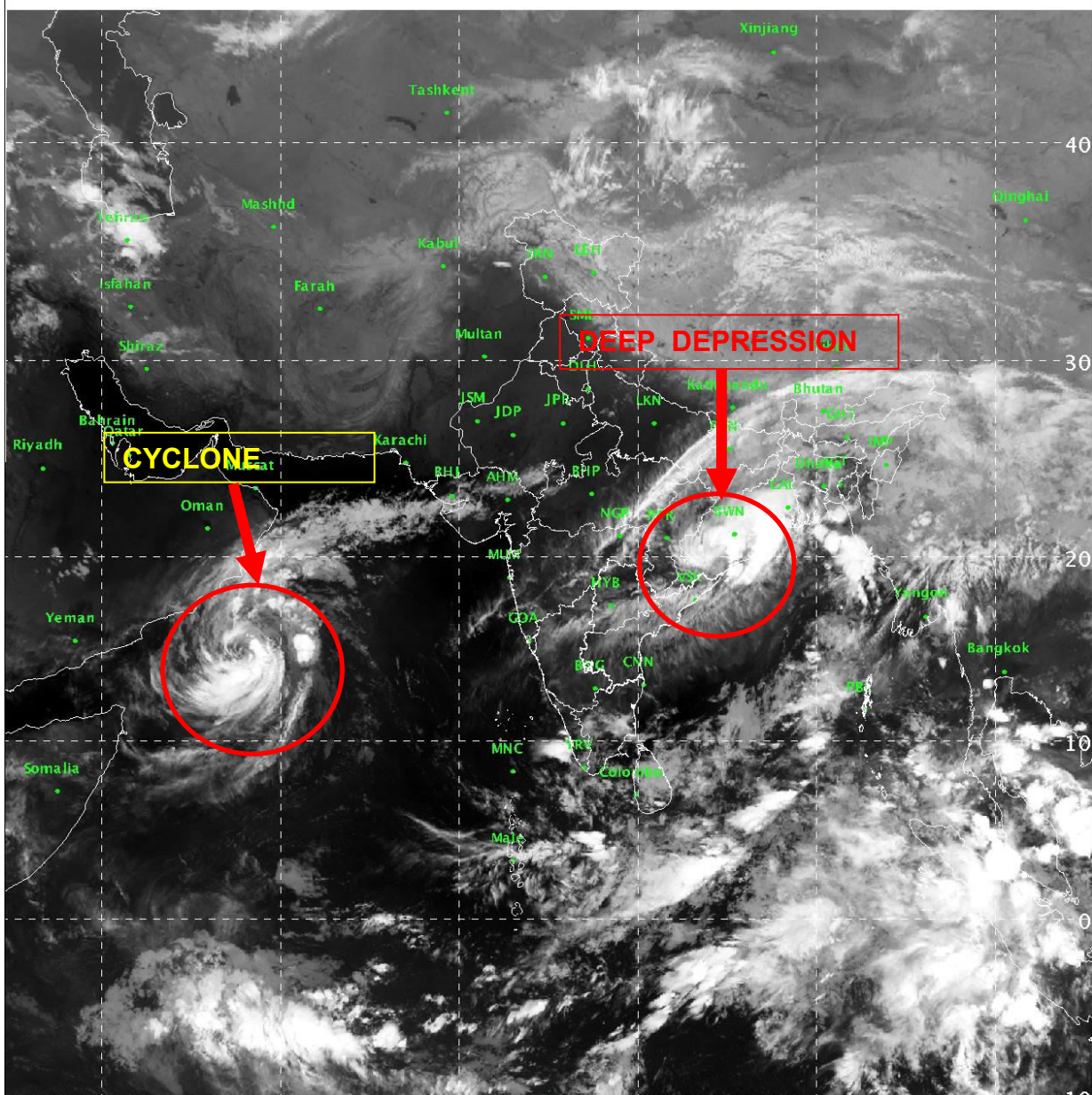
(D. R PATTANAIAK)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT :INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator (LINEAR STRETCH: 1.0%)

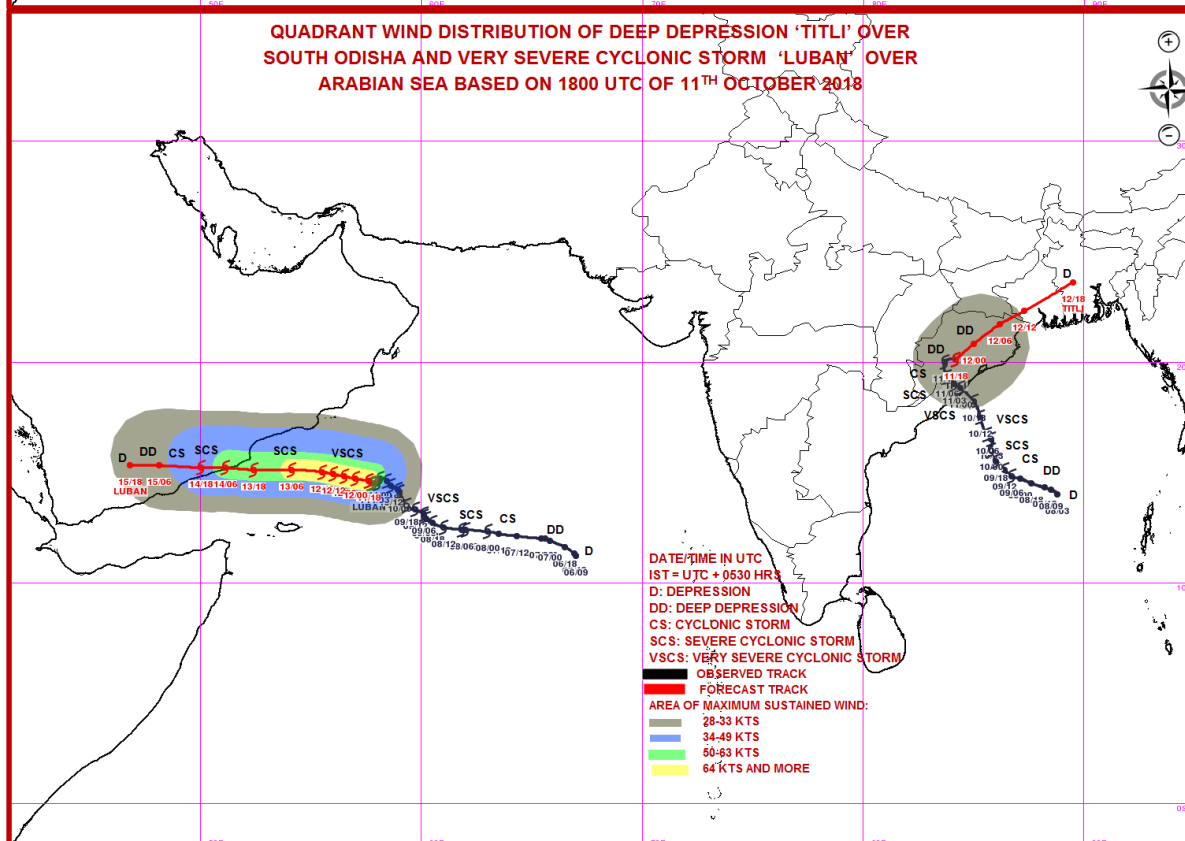
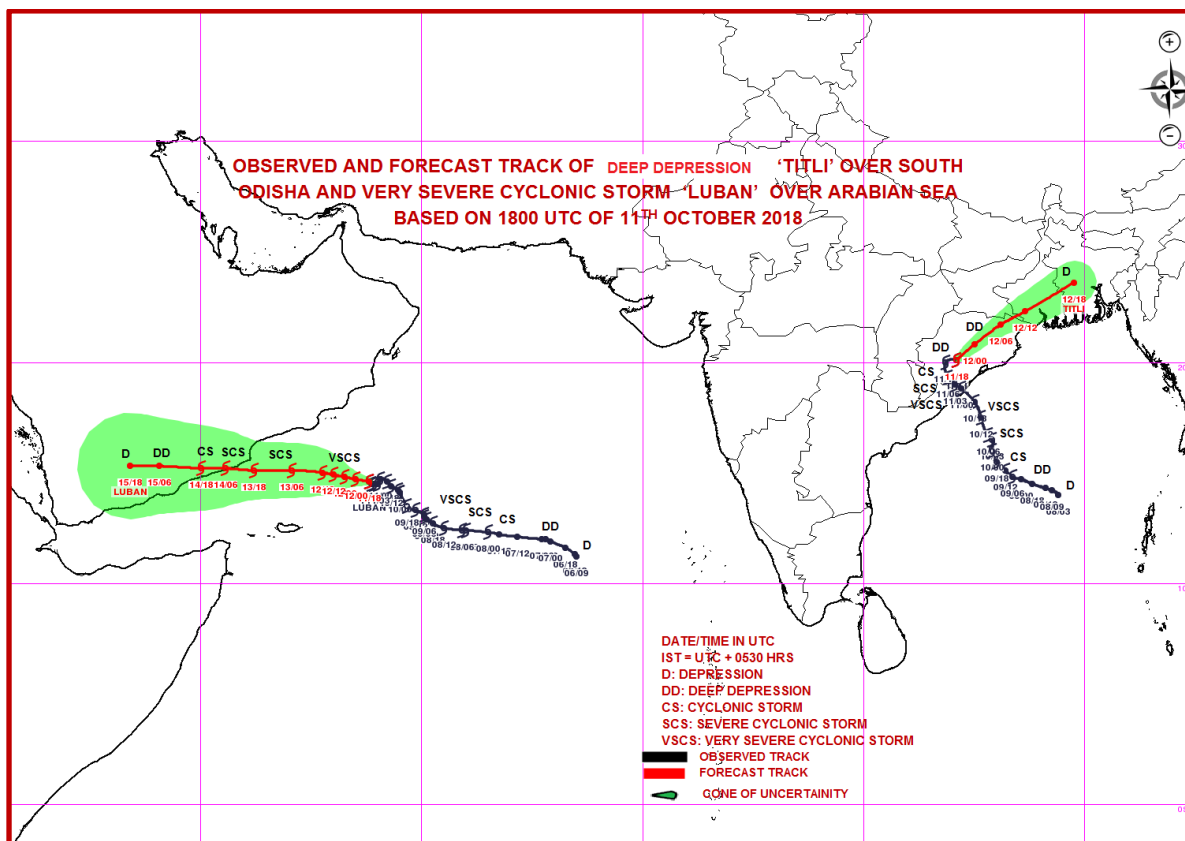
11-10-2018/21:00 GMT
12-10-2018/02:30 IST



IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 33

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 33 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0400 UTC OF 12.10.2018 BASED ON 0000 UTC OF 12.10.2018.

(A) VERY SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN MOVED SLIGHTLY NORTHWESTWARDS DURING PAST SIX HOURS WITH A SPEED 02 KMPH AND LAY CENTERED AT 0000 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.7°N AND LONGITUDE 57.6°E, ABOUT 450 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 460 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN) AND 610 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN & ADJOINING SOUTH OMAN COASTS NEAR 15 DEGREE NORTH AROUND NOON OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM. FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/0000	14.7/57.6	120-130 gusting to 145	Very Severe Cyclonic Storm
12.10.18/0600	14.8/57.2	110-120 gusting to 135	Severe Cyclonic Storm
12.10.18/1200	14.9/56.8	110-120 gusting to 135	Severe Cyclonic Storm
12.10.18/1800	14.9/55.9	110-120 gusting to 135	Severe Cyclonic Storm
13.10.18/0000	14.9/55.2	110-120 gusting to 135	Severe Cyclonic Storm
13.10.18/1200	15.0/54.1	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/0000	15.1/52.3	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/1200	15.3/50.6	80-90 gusting to 100	Cyclonic Storm
15.10.18/0000	15.5/48.9	50-60 gusting to 70	Deep Depression

AS PER THE SATELLITE IMAGERY BASED ON 0000 UTC OF TODAY, THE 12TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS C.I T3.5/ci 4.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.5°N & 18.0°N AND BETWEEN LONGITUDE 54.5°E & 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 72°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 980 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 65 KNOTS. STATE OF SEA IS PHENOMENAL AROUND THE SYSTEM CENTRE.

B) DEEP DEPRESSION OVER ODISHA

THE DEEP DEPRESSION OVER ODISHA MOVED EAST-NORTHEASTWARDS DURING PAST 06 HOURS WITH SPEED 08 KMPH AND LAY CENTRED AT 0000 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER ODISHA NEAR LATITUDE 20.4°N AND LONGITUDE 84.6°E, ABOUT 30 KM NORTH-EAST OF PHULBANI (42966) AND 70 KM SOUTHWEST OF ANGUL (42969). IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TOWARDS GANGETIC WEST BENGAL AND WEAKEN INTO A DEPRESSION DURING NEXT 12 HOURS.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/0000	20.4/84.6	50-60 gusting to 70	Deep Depression
12.10.18/0600	20.7/85.1	50-60 gusting to 70	Deep Depression
12.10.18/1200	21.0/85.6	45-55 gusting to 65	Depression
12.10.18/18000	21.4/86.3	40-50 gusting to 60	Depression
13.10.18/0000	21.9/87.0	35-45 gusting to 55	Depression
13.10.18/1200	23.0/88.6	25-35 gusting to 45	Well Marked Low

AS PER LATEST SATELLITE IMAGERY BASED ON 0000 UTC OF TODAY, THE 12TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER ODISHA AND NEIGHBORHOOD AND NORTH BAY TO THE NORTH OF 19.5 DEG. N. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

REMARKS:

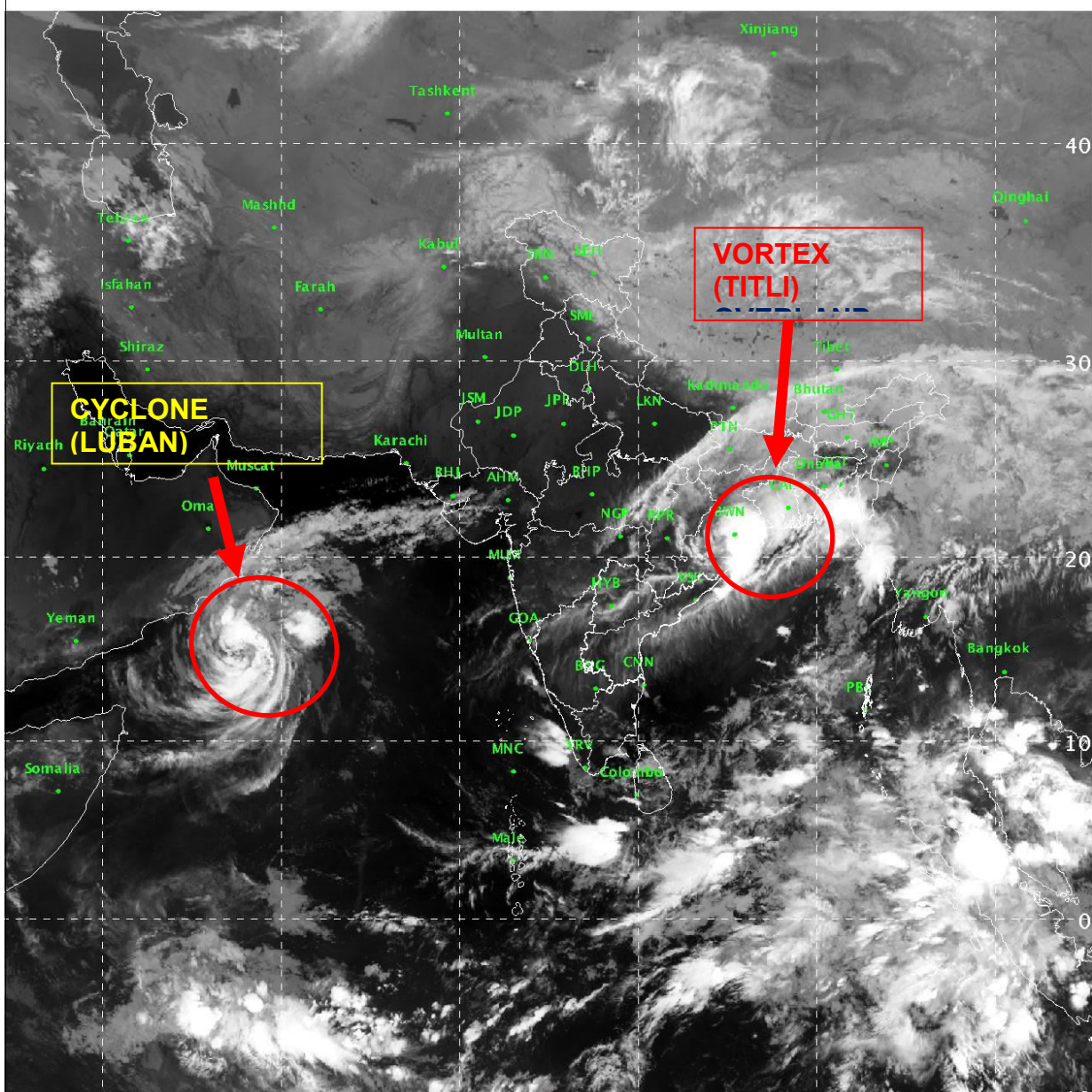
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS SLIGHT DISORGANISATION AND HENCE SLIGHT WEAKENING IS EXPECTED DURING NEXT 12 HRS. THERE IS ALSO COLD AND DRY AIR INCURSION OVER THE GULF OF ADEN. HENCE, AS THE SYSTEM MOVES WEST-NORTHWESTWARDS, IT MAY WEAKEN INTO A SEVERE CYCLONIC STORM WITH WIND SPEED OF 55 KNOTS AT THE TIME OF LANDFALL. WEAKENING WILL BE SLOW DUE TO FAVOURABLE WIND SHEAR AND HIGHER SST OVER GULF OF ADEN AND ADJOINING AREAS. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17° N.

CONSIDERING **DEEP DEPRESSION OVER ODISHA**, THE LOW LEVEL RELATIVE VORTICITY DECREASED AND IS ABOUT 150 X10⁻⁵ SEC⁻¹ TO SOUTH OF THE SYSTEM CENTER. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵ SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS INCREASING TO THE EAST AND TO THE NORTHEAST OF THE SYSTEM. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM AND LAND INTERACTION. HOWEVER, IT IS LIKELY TO MAINTAIN INTENSITY OF DEPRESSION DURING NEXT 24 HRS DUE TO MOISTURE INCURSION FROM THE SEA AND FAVOURABLE WIND SHEAR. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM.

(D. R PATTANAIK)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

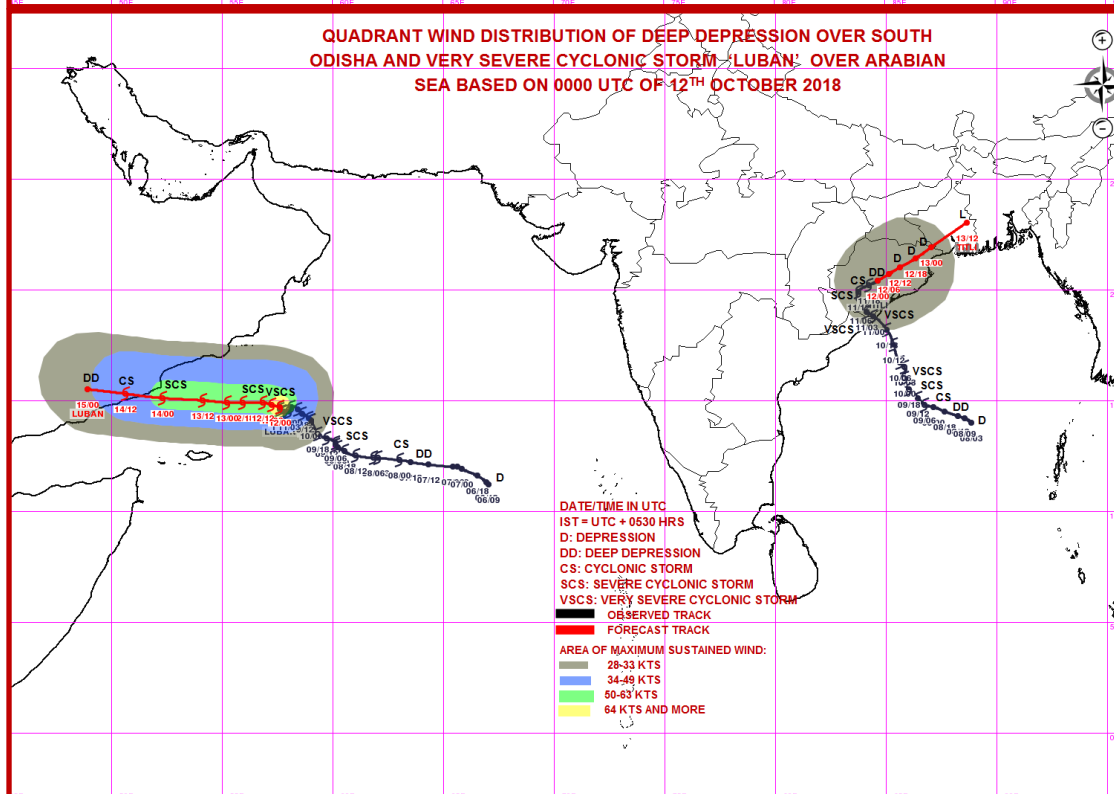
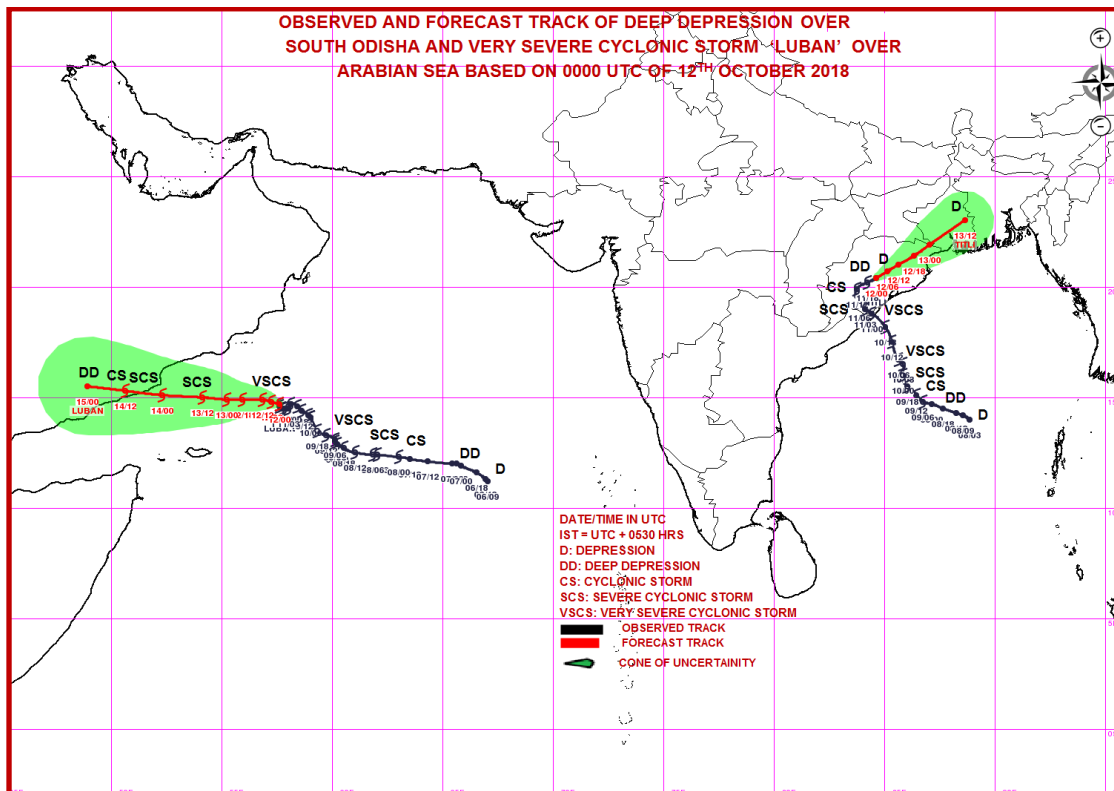
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 34

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 34 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0600 UTC OF 12.10.2018 BASED ON 0300 UTC OF 12.10.2018.

(A) SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE VERY SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN MOVED SLIGHTLY WESTWARDS DURING PAST SIX HOURS WITH A SPEED 04 KMPH, WEAKENED INTO A SEVERE CYCLONIC STORM AND LAY CENTERED AT 0300 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.7°N AND LONGITUDE 57.4°E, ABOUT 454 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 440 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN) AND 590 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN) AND 860 KM EAST RIYAN (MUKALA) (41443). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (MUKALA) (41443) AND AL-GHAIDAH (41398) (YEMEN) CLOSE TO 15 DEGREE NORTH DURING 0600-0900 UTC OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM. FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/0300	14.7/57.4	110-120 gusting to 135	Very Severe Cyclonic Storm
12.10.18/0600	14.8/57.2	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1200	14.9/56.8	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1800	14.9/55.9	110-120 gusting to 135	Severe Cyclonic Storm
13.10.18/0000	14.9/55.2	110-120 gusting to 135	Severe Cyclonic Storm
13.10.18/1200	15.0/54.1	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/0000	15.1/52.3	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/1200	15.3/50.6	90-100 gusting to 110	Severe Cyclonic Storm
15.10.18/0000	15.5/49.1	60-70 gusting to 80	Cyclonic Storm
15.10.18/1200	15.7/47.2	35-45 gusting to 55	Depression

AS PER THE SATELLITE IMAGERY BASED ON 0300 UTC OF TODAY, THE 12TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS T3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.5°N & 18.0°N AND BETWEEN LONGITUDE 55.5°E & 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 80°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 984 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 60 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

B) DEEP DEPRESSION OVER ODISHA

THE DEEP DEPRESSION OVER ODISHA MOVED EAST-NORTHEASTWARDS DURING PAST 06 HOURS WITH SPEED 13 KMPH AND LAY CENTRED AT 0300 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER ODISHA NEAR LATITUDE 20.6°N AND LONGITUDE 84.9°E, 30 KM SOUTHWEST OF ANGUL (42969). IT IS VERY LIKELY TO MOVE NORTHEASTWARDS TOWARDS GANGETIC WEST BENGAL AND WEAKEN INTO A DEPRESSION DURING NEXT 6 HOURS.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/0300	20.6/84.9	50-60 gusting to 70	Deep Depression
12.10.18/0600	20.7/85.1	50-60 gusting to 70	Deep Depression
12.10.18/1200	21.0/85.6	45-55 gusting to 65	Depression
12.10.18/18000	21.4/86.3	40-50 gusting to 60	Depression
13.10.18/0000	21.9/87.0	35-45 gusting to 55	Depression
13.10.18/1200	23.0/88.6	25-35 gusting to 45	Well Marked Low

AS PER LATEST SATELLITE IMAGERY BASED ON 0000 UTC OF TODAY, THE 12TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH AND COASTAL ODISHA, NORTH BAY OF BENGAL, GANGETIC WEST BENGAL, SOUTH BANGLADESH, MIZORAM, TRIPURA AND ADJOINING MYANMAR. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 30 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS SLIGHT DISORGANISATION AND HENCE SLIGHT WEAKENING IS EXPECTED DURING NEXT 12 HRS. THERE IS ALSO COLD AND DRY AIR INCURSION OVER THE GULF OF ADEN. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULD OF ADEN AND LOW VERTICAL WIND SHEAR WIND SHEAR.

CONSIDERING **DEEP DEPRESSION OVER ODISHA**, THE LOW LEVEL RELATIVE VORTICITY DECREASED AND IS ABOUT 150 X10⁻⁵SEC⁻¹ TO SOUTH OF THE SYSTEM CENTER. THE LOWER LEVEL CONVERGENCE IS ABOUT 10-20 X10⁻⁵ SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 10 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS HIGH ELSEWHERE. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM, MODERATE TO HIGH WIND SHEAR AND LAND INTERACTION. HOWEVER, IT IS LIKELY TO MAINTAIN INTENSITY OF DEPRESSION DURING NEXT 24 HRS DUE TO MOISTURE INCURSION FROM THE SEA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM.

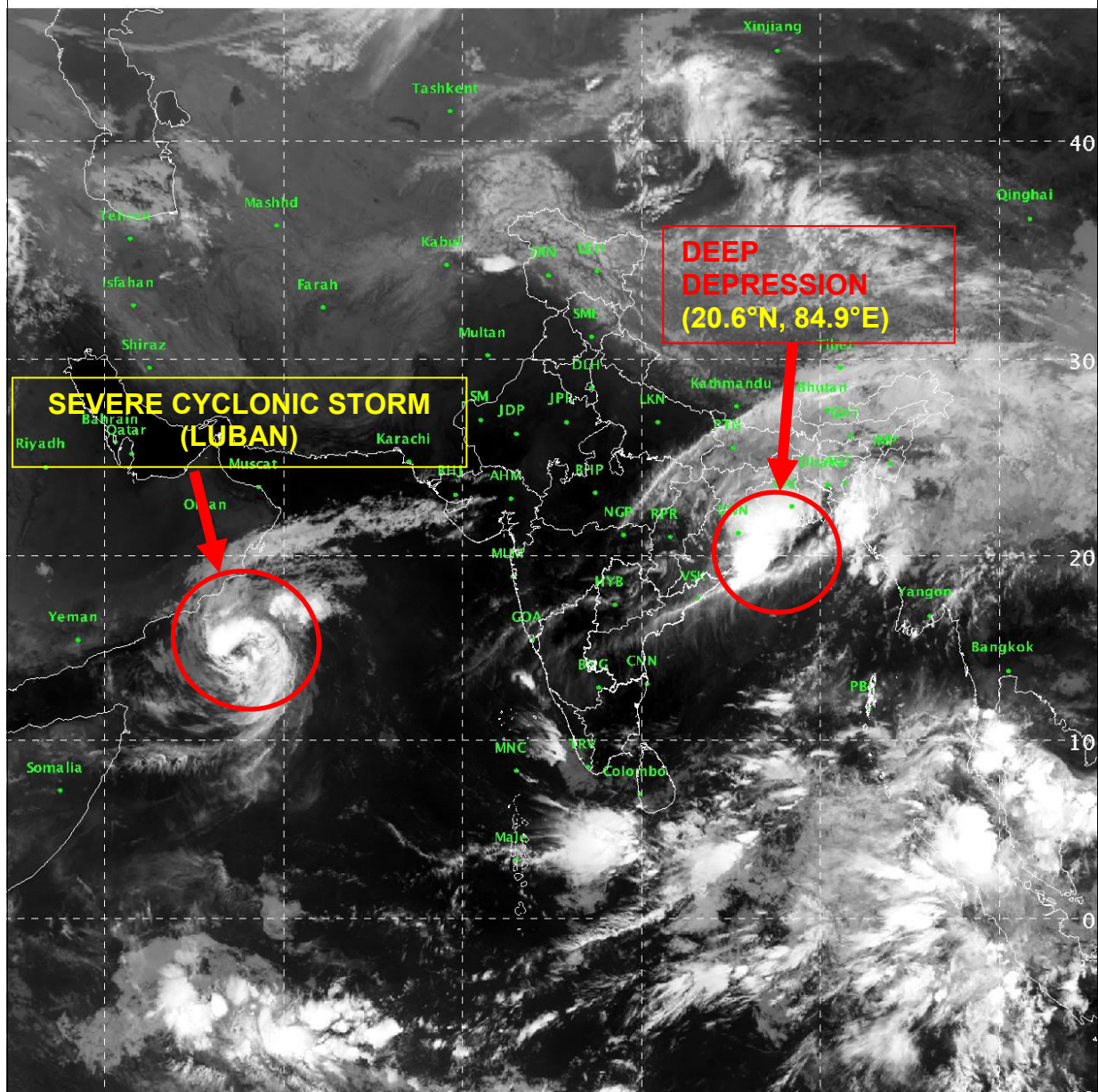
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT :INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator (LINEAR STRETCH: 1.0%)

12-10-2018/03:00 GMT
12-10-2018/08:30 IST



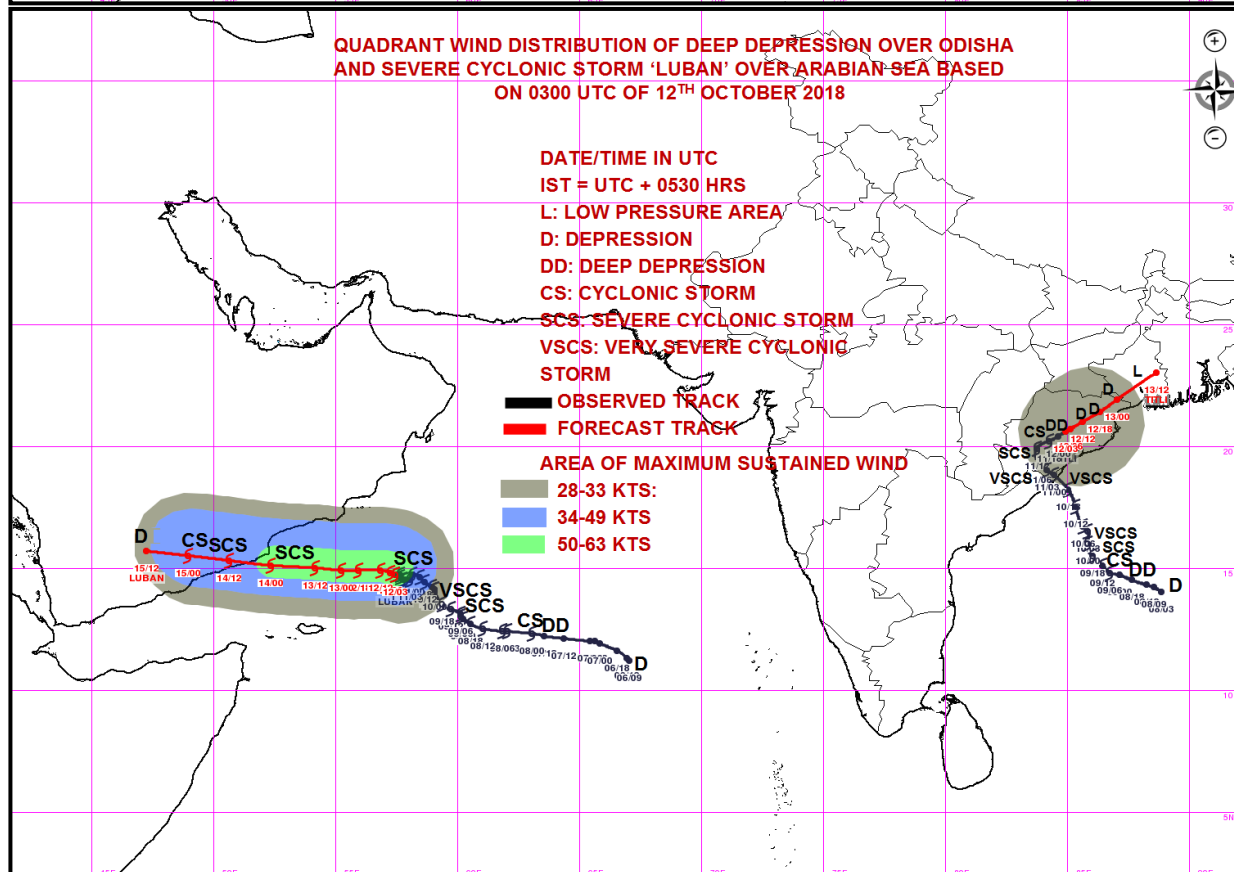
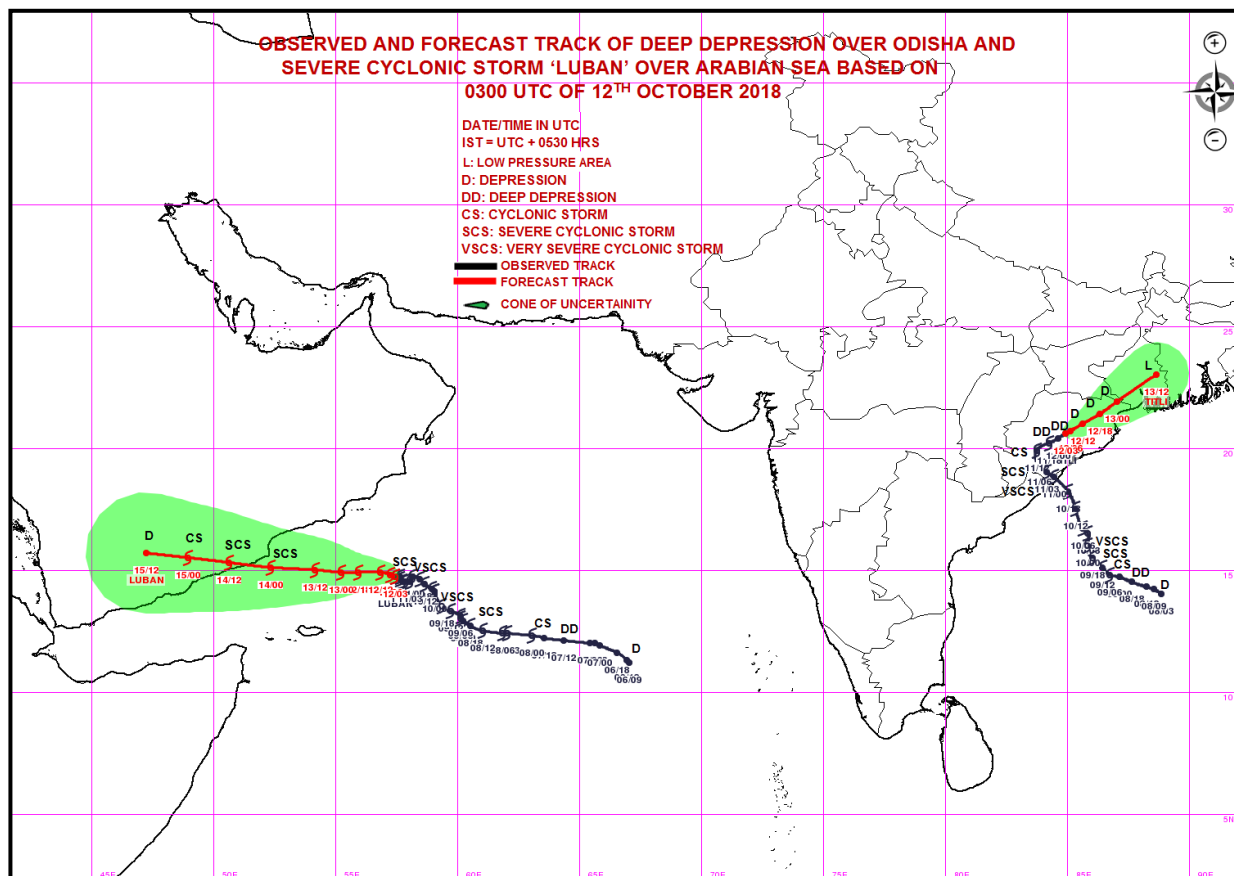
518

889

IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 35

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 35 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0900 UTC OF 12.10.2018 BASED ON 0600 UTC OF 12.10.2018.

(A) SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN MOVED FURTHER WESTWARDS DURING PAST SIX HOURS WITH A SPEED 05 KMPH, AND LAY CENTERED AT 0600 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.7°N AND LONGITUDE 57.3°E, ABOUT 430 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 430 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN) AND 580 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN) AND 850 KM EAST RIYAN (MUKALA) (41443). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (MUKALA) (41443) AND AL-GHAIDAH (41398) (YEMEN) CLOSE TO 15 DEGREE NORTH DURING 0600-0900 UTC OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM. FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/0600	14.7/57.3	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1200	14.8/56.8	100-110 gusting to 125	Severe Cyclonic Storm
12.10.18/1800	14.8/55.9	110-120 gusting to 135	Severe Cyclonic Storm
13.10.18/0000	14.9/55.2	110-120 gusting to 135	Severe Cyclonic Storm
13.10.18/0600	14.9/54.8	110-120 gusting to 135	Severe Cyclonic Storm
13.10.18/1800	15.0/53.2	110-120 gusting to 135	Severe Cyclonic Storm
14.10.18/0600	15.2/51.5	100-110 gusting to 125	Severe Cyclonic Storm
14.10.18/1800	15.4/49.9	90-100 gusting to 115	Severe Cyclonic Storm
15.10.18/0600	15.6/48.2	50-60 gusting to 70	Deep Depression
15.10.18/1800	15.8/46.5	35-45 gusting to 55	Depression

AS PER THE SATELLITE IMAGERY BASED ON 0600 UTC OF TODAY, THE 12TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 12°N & 18.0°N AND BETWEEN LONGITUDE 55.5°E & 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 80°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 986 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 55 GUSTING TO 65 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

B) DEEP DEPRESSION OVER ODISHA

THE DEEP DEPRESSION OVER ODISHA MOVED NORTHEASTWARDS DURING PAST 06 HOURS WITH SPEED 11 KMPH AND LAY CENTRED AT 0600 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER ODISHA NEAR LATITUDE 20.8°N AND LONGITUDE 85.1°E, 100 KM SOUTHWEST OF KEONJHARGARH (42891). IT

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

IS VERY LIKELY TO CONTINUE TO MOVE NORTHEASTWARDS TOWARDS GANGETIC WEST BENGAL AND WEAKEN INTO A DEPRESSION DURING NEXT 3 HOURS AND INTO A WELL MARKED LOW PRESSURE AREA DURING SUBSEQUENT 24 HOURS.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/0600	20.8/85.1	50-60 gusting to 70	Deep Depression
12.10.18/1200	21.0/85.6	45-55 gusting to 65	Depression
12.10.18/1800	21.4/86.3	40-50 gusting to 60	Depression
13.10.18/0000	21.9/87.0	35-45 gusting to 55	Depression
13.10.18/1200	23.0/88.6	25-35 gusting to 45	Well Marked Low

AS PER LATEST SATELLITE IMAGERY BASED ON 0600 UTC OF TODAY, THE 12TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH AND COASTAL ODISHA, NORTH BAY OF BENGAL, GANGETIC WEST BENGAL, SOUTH BANGLADESH, MIZORAM, TRIPURA AND ADJOINING MYANMAR. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS SLIGHT DISORGANISATION AND HENCE SLIGHT WEAKENING IS EXPECTED DURING NEXT 12 HRS. THERE IS ALSO COLD AND DRY AIR INCURSION OVER THE GULF OF ADEN. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR WIND SHEAR.

CONSIDERING **DEEP DEPRESSION OVER ODISHA**, THE LOW LEVEL RELATIVE VORTICITY DECREASED AND IS ABOUT 150 X10⁻⁵SEC⁻¹ TO SOUTH OF THE SYSTEM CENTER. THE LOWER LEVEL CONVERGENCE IS ABOUT 10-20 X10⁻⁵ SEC⁻¹ TO THE SOUTHWEST OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 10 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS HIGH ELSEWHERE. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM, MODERATE TO HIGH WIND SHEAR AND LAND INTERACTION. HOWEVER, IT IS LIKELY TO MAINTAIN INTENSITY OF DEPRESSION DURING NEXT 24 HRS DUE TO MOISTURE INCURSION FROM THE SEA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM.

(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

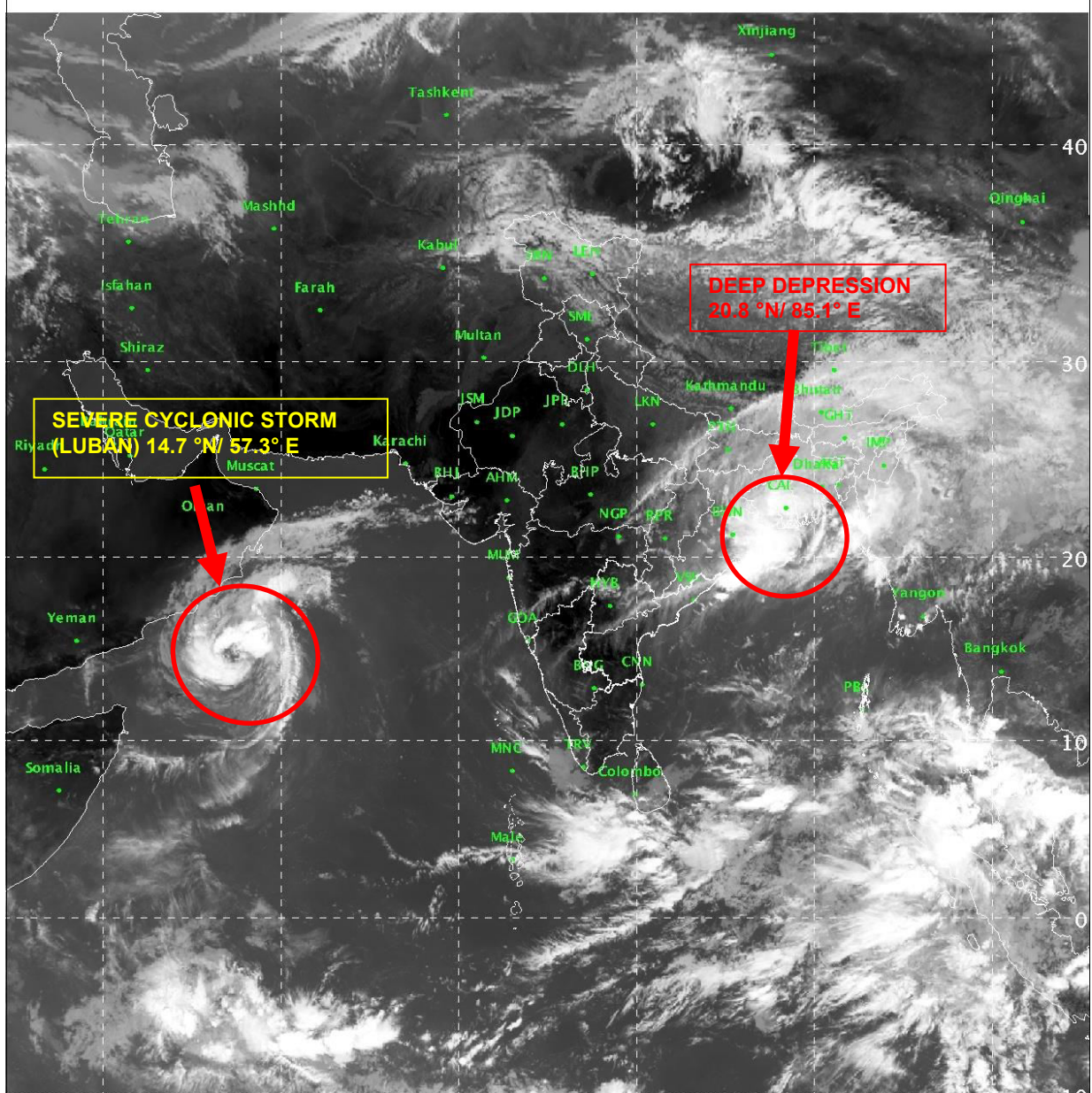
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IMG_TIR1 10.8 um

L1C Mercator (LINEAR STRETCH: 1.0%)

12-10-2018/06:00 GMT

12-10-2018/11:30 IST



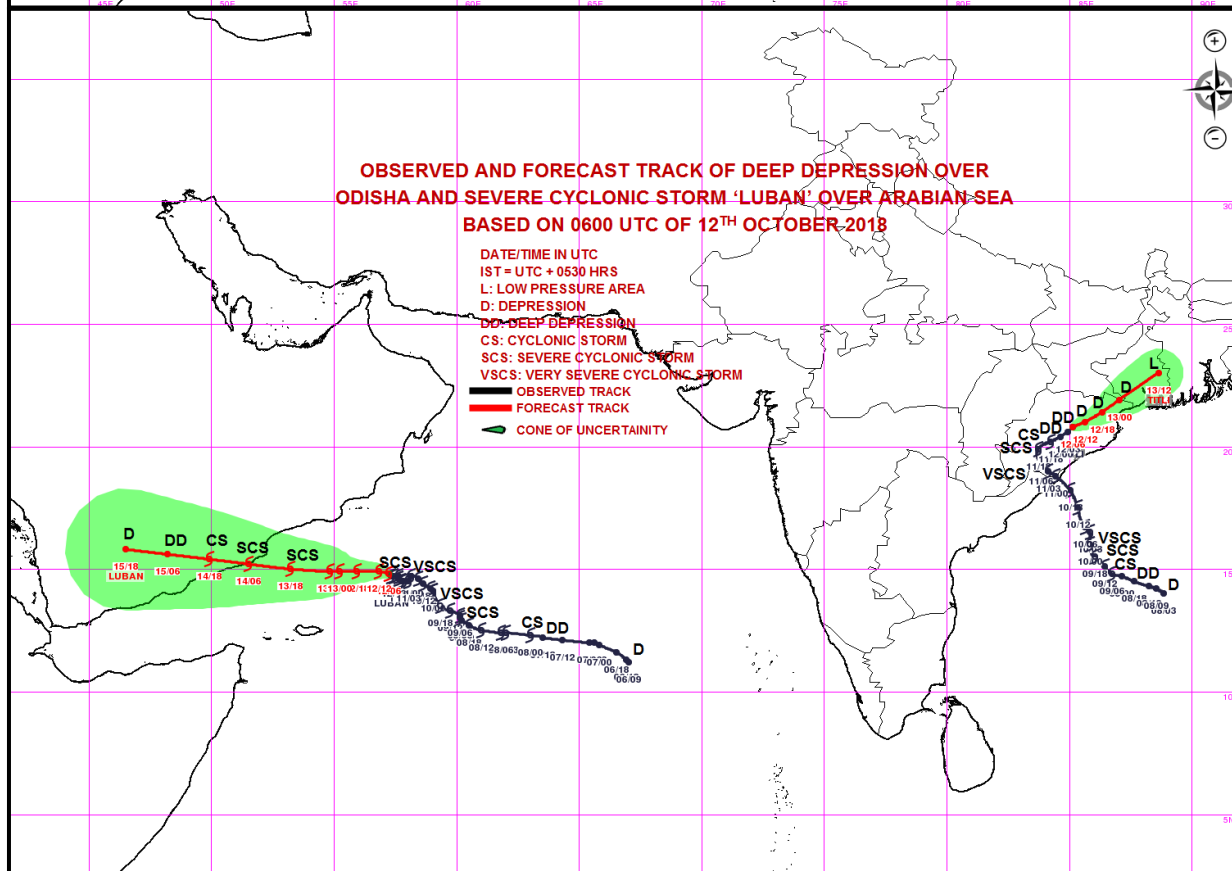
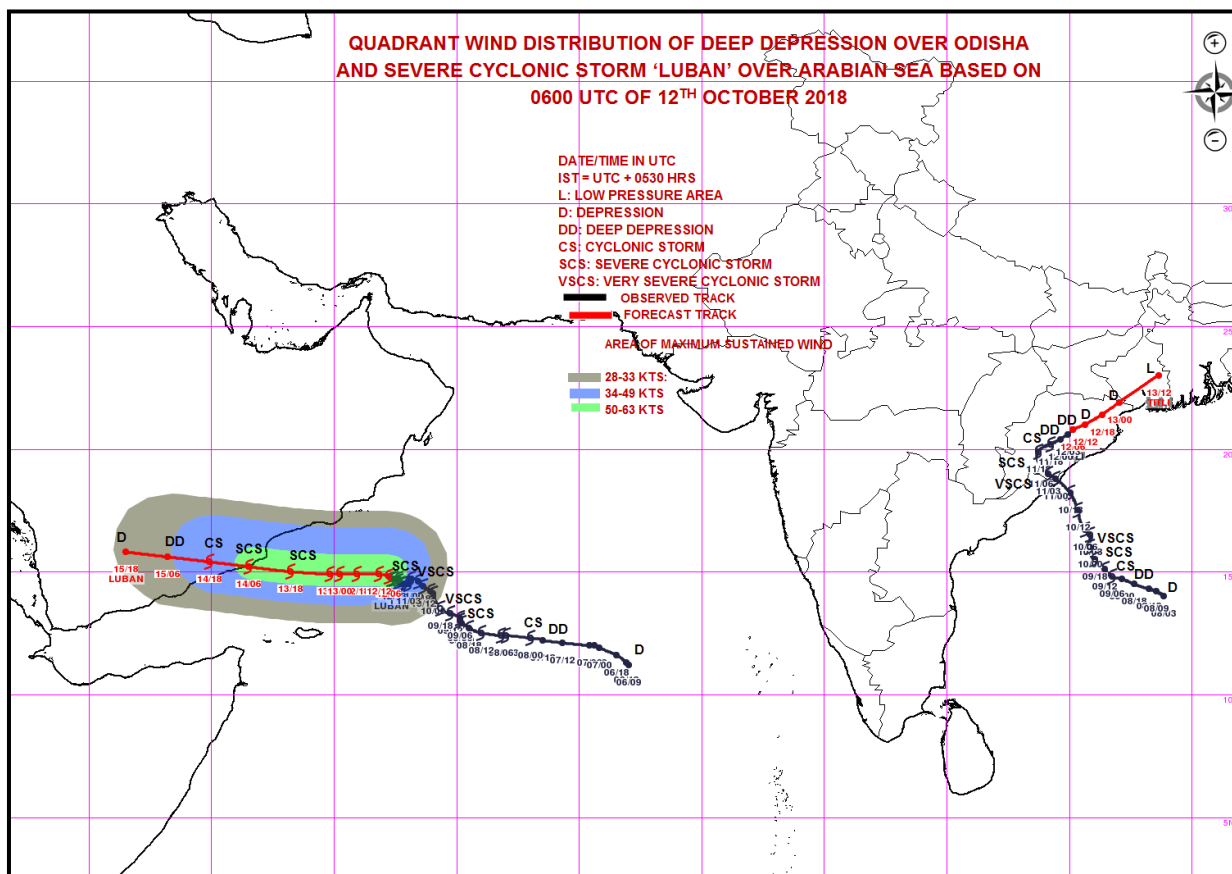
413

884

IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 36

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 36 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1200 UTC OF 12.10.2018 BASED ON 0900 UTC OF 12.10.2018.

(A) SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED FURTHER WESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 04 KMPH AND LAY CENTERED AT 1430 HRS IST OF TODAY, THE 12TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.7°N AND LONGITUDE 57.2°E, ABOUT 430 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 420 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN), 570 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN) (41398) AND 850 KM EAST OF RIYAN (MUKALLA) (41443). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (MUKALLA) AND AL-GHAIDAH (YEMEN), CLOSE TO 15°N DURING NOON/AFTERNOON OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
12.10.18/0900	14.7/57.2	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
12.10.18/1200	14.8/57.0	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
12.10.18/1800	14.8/55.9	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
13.10.18/0000	14.9/55.2	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
13.10.18/0600	14.9/54.8	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
13.10.18/1800	15.0/53.2	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
14.10.18/0600	15.2/51.5	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
14.10.18/1800	15.4/49.9	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
15.10.18/0600	15.6/48.2	50-60 GUSTING TO 70	DEEP DEPRESSION
15.10.18/1800	15.8/46.5	35-45 GUSTING TO 55	DEPRESSION

AS PER THE SATELLITE IMAGERY BASED ON 0900 UTC OF TODAY, THE 12TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 12°N & 18.0°N AND BETWEEN LONGITUDE 55.5°E & 61.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 80°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 986 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 55 GUSTING TO 65 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

B) DEEP DEPRESSION OVER ODISHA WEAKENED INTO A DEPRESSION:

THE DEEP DEPRESSION OVER ODISHA MOVED EAST-NORTHEASTWARDS IN PAST SIX HOURS WITH A SPEED OF 12 KMPH, WEAKENED INTO A DEPRESSION AND LAY CENTRED AT 0900 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER ODISHA NEAR LATITUDE 20.9°N AND LONGITUDE 85.5°E ABOUT 80 KM SOUTH OF KEONJHARGARH (42891). IT IS VERY LIKELY TO CONTINUE TO MOVE NORTHEASTWARDS AND WEAKEN INTO A WELL MARKED LOW PRESSURE AREA DURING NEXT 18 HOURS.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
12.10.18/0900	20.9/85.5	45-55 GUSTING TO 65	DEPRESSION
12.10.18/1200	21.0/86.0	45-55 GUSTING TO 65	DEPRESSION
12.10.18/1800	21.4/86.7	40-50 GUSTING TO 60	DEPRESSION
13.10.18/0000	21.9/87.4	35-45 GUSTING TO 55	DEPRESSION
13.10.18/1200	23.0/88.9	25-35 GUSTING TO 45	WELL MARKED LOW

AS PER LATEST SATELLITE IMAGERY BASED ON 0900 UTC OF TODAY, THE 12TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER ODISHA AND NEIGHBOURHOOD BETWEEN LATITUDE 19.0N TO 22.5N AND LONG 82.5E TO 87.0E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 15 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ TO THE NORTHEAST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS SLIGHT DISORGANISATION AND HENCE SLIGHT WEAKENING IS EXPECTED CONTINUE DURING NEXT 12 HRS. THERE IS ALSO COLD AND DRY AIR INCURSION OVER THE GULF OF ADEN. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR.

CONSIDERING **DEEP DEPRESSION OVER ODISHA**, THE LOW LEVEL RELATIVE VORTICITY DECREASED AND IS ABOUT 100 X10⁻⁵ SEC⁻¹ OVER THE SYSTEM AREA. THE LOWER LEVEL CONVERGENCE IS ABOUT 10-15 X10⁻⁵ SEC⁻¹ TO THE SOUTH OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS HIGH ELSEWHERE. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM, MODERATE TO HIGH WIND SHEAR AND LAND INTERACTION. HOWEVER, IT IS LIKELY TO MAINTAIN INTENSITY OF DEPRESSION DURING NEXT 18 HRS DUE TO MOISTURE INCURSION FROM THE SEA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM.

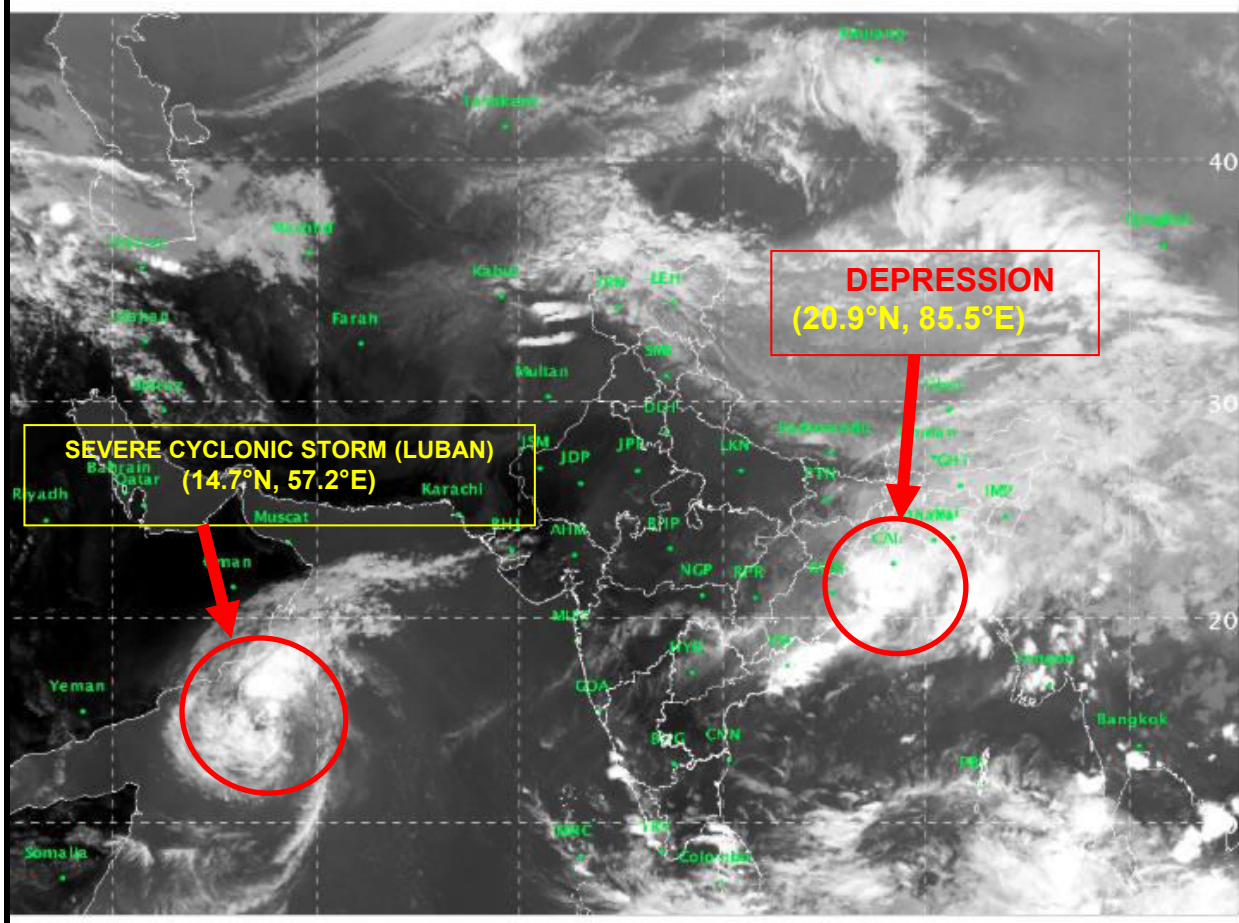
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

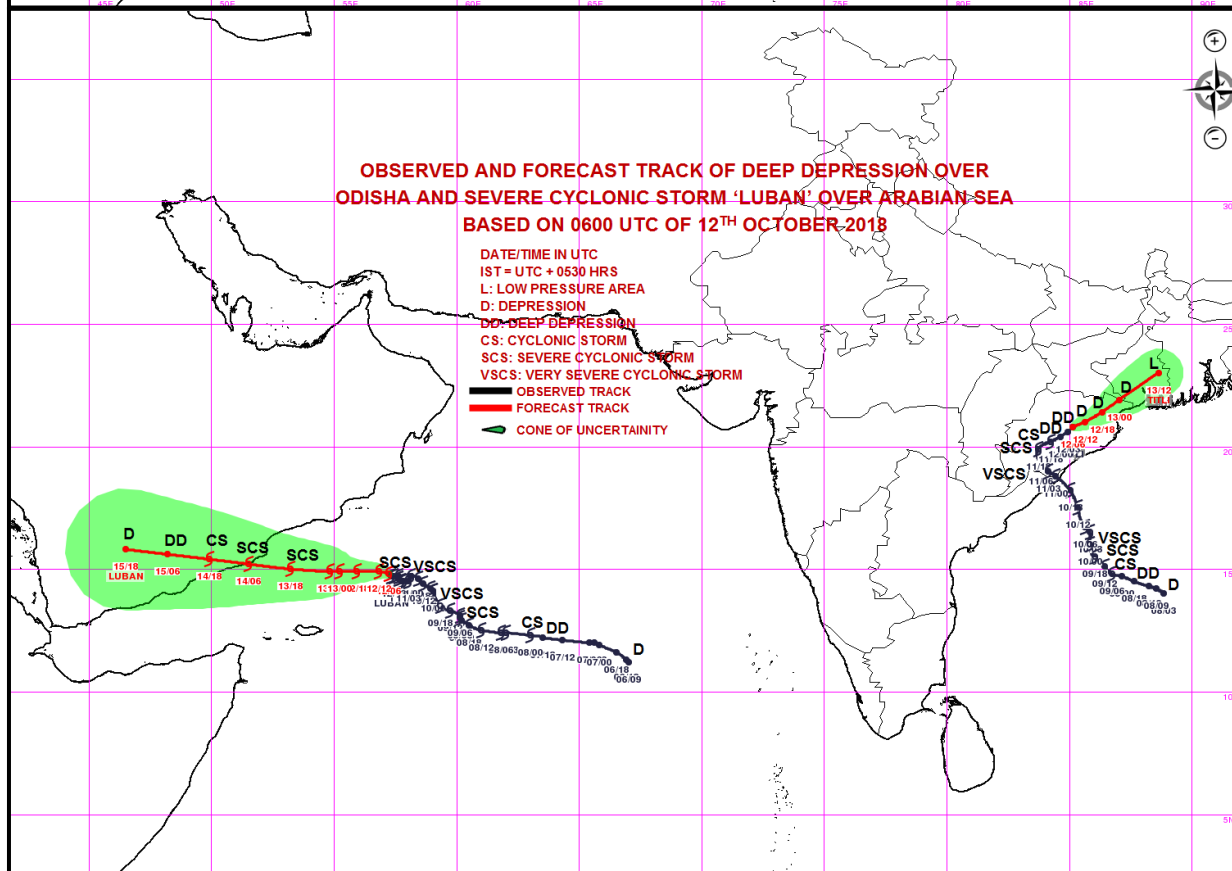
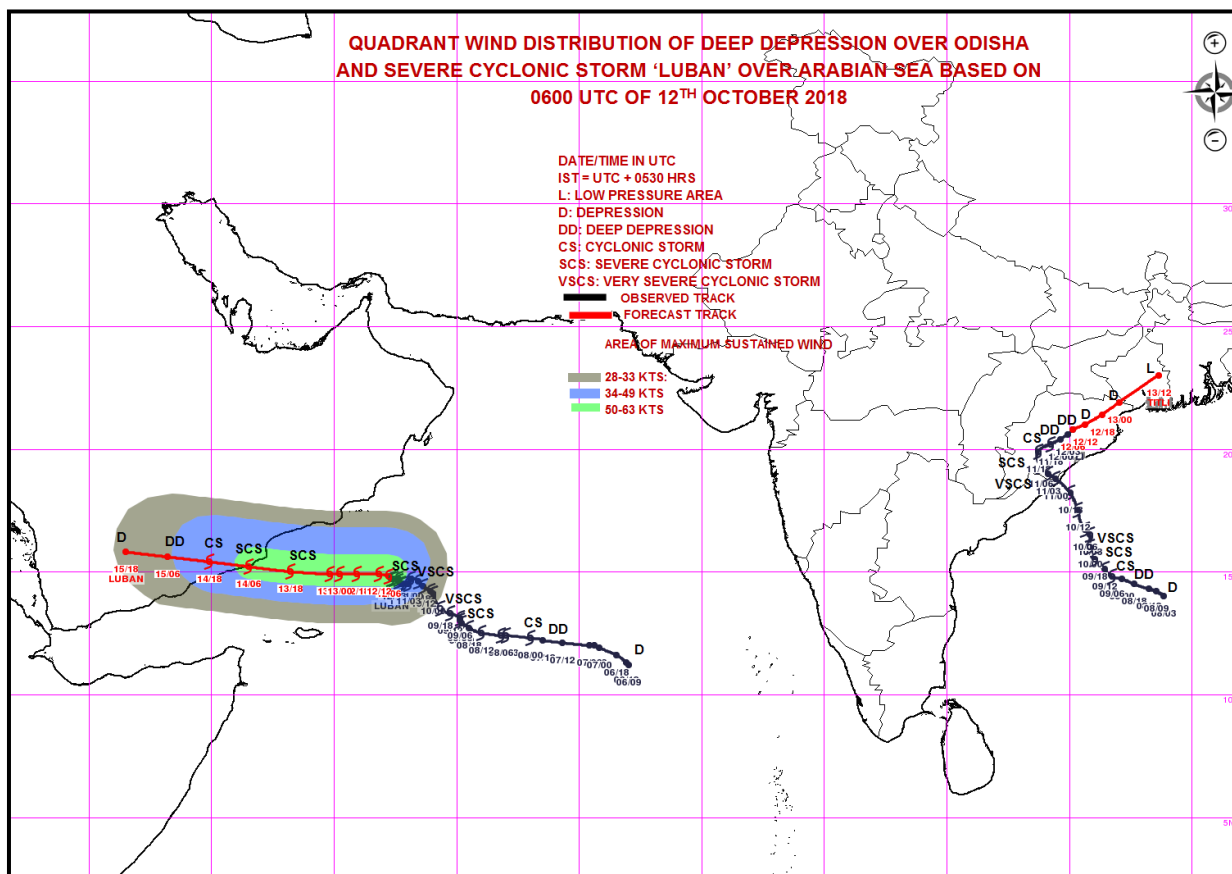
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L1C Mercator (LINEAR STRETCH: 1.0%)

12-10-2018/11:00 GMT
12-10-2018/16:30 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 37

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 36 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 12.10.2018 BASED ON 1200 UTC OF 12.10.2018.

(A) SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED FURTHER WESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 04 KMPH AND LAY CENTERED AT 1200 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.7°N AND LONGITUDE 57.1°E, ABOUT 410 KM EAST-SOUTHEAST OF SALALAH (41316) (OMAN), 410 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN), 550 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN) (41398) AND 840 KM EAST OF RIYAN (MUKALLA) (41443). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (MUKALLA) AND AL-GHAIDAH (YEMEN), CLOSE TO 15°N DURING 0600-0900UTC OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE
FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
12.10.18/1200	14.7/57.1	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
12.10.18/1800	14.8/55.9	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
13.10.18/0000	14.9/55.2	80-90 GUSTING TO 105	SEVERE CYCLONIC STORM
13.10.18/0600	14.9/54.8	90-100 GUSTING TO 115	SEVERE CYCLONIC STORM
13.10.18/1200	15.0/54.0	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
14.10.18/0000	15.0/52.1	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
14.10.18/1200	15.0/50.2	80-90 GUSTING TO 105	CYCLONIC STORM
15.10.18/0000	14.9/48.4	50-60 GUSTING TO 70	DEEP DEPRESSION
15.10.18/1200	14.7/46.8	35-45 GUSTING TO 55	DEPRESSION

AS PER THE SATELLITE IMAGERY BASED ON 1200 UTC OF TODAY, THE 12TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS T3.0/ C.I 3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11°N & 19.0°N AND BETWEEN LONGITUDE 52.5°E & 60.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 70°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 988 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 50 GUSTING TO 60 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDELL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

B) DEPRESSION OVER ODISHA:

THE DEEP DEPRESSION OVER ODISHA MOVED EAST-NORTHEASTWARDS DURING PAST SIX HOURS WITH A SPEED OF 17 KMPH, WEAKENED INTO A DEPRESSION AND LAY CENTRED AT 1200 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER ODISHA NEAR LATITUDE 21.2°N AND LONGITUDE 86.0°E ABOUT 70 KM SOUTH OF KEONJHARGARH (42891). IT IS VERY LIKELY TO CONTINUE TO MOVE EAST NORTHEASTWARDS. IT IS LIKELY TO MAINTAIN ITS INTENSITY AS A DEPRESSION FOR THE NEXT 12 HOURS AND WEAKEN THEREAFTER INTO A WELL MARKED LOW PRESSURE AREA

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
12.10.18/1200	21.2/86.0	45-55 GUSTING TO 65	DEPRESSION
12.10.18/1800	21.7/86.9	40-50 GUSTING TO 60	DEPRESSION
13.10.18/0000	22.2/87.8	40-50 GUSTING TO 60	DEPRESSION
13.10.18/0600	22.7/88.7	35-45 GUSTING TO 55	DEPRESSION
13.10.18/1200	23.2/89.6	25-35 GUSTING TO 45	WELL MARKED LOW

AS PER LATEST SATELLITE IMAGERY BASED ON 1200 UTC OF TODAY, THE 12TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHEAST ODISHA, GANGETIC WEST BENGAL AND NW BAY OF BENGAL. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 80°C.

REMARKS:

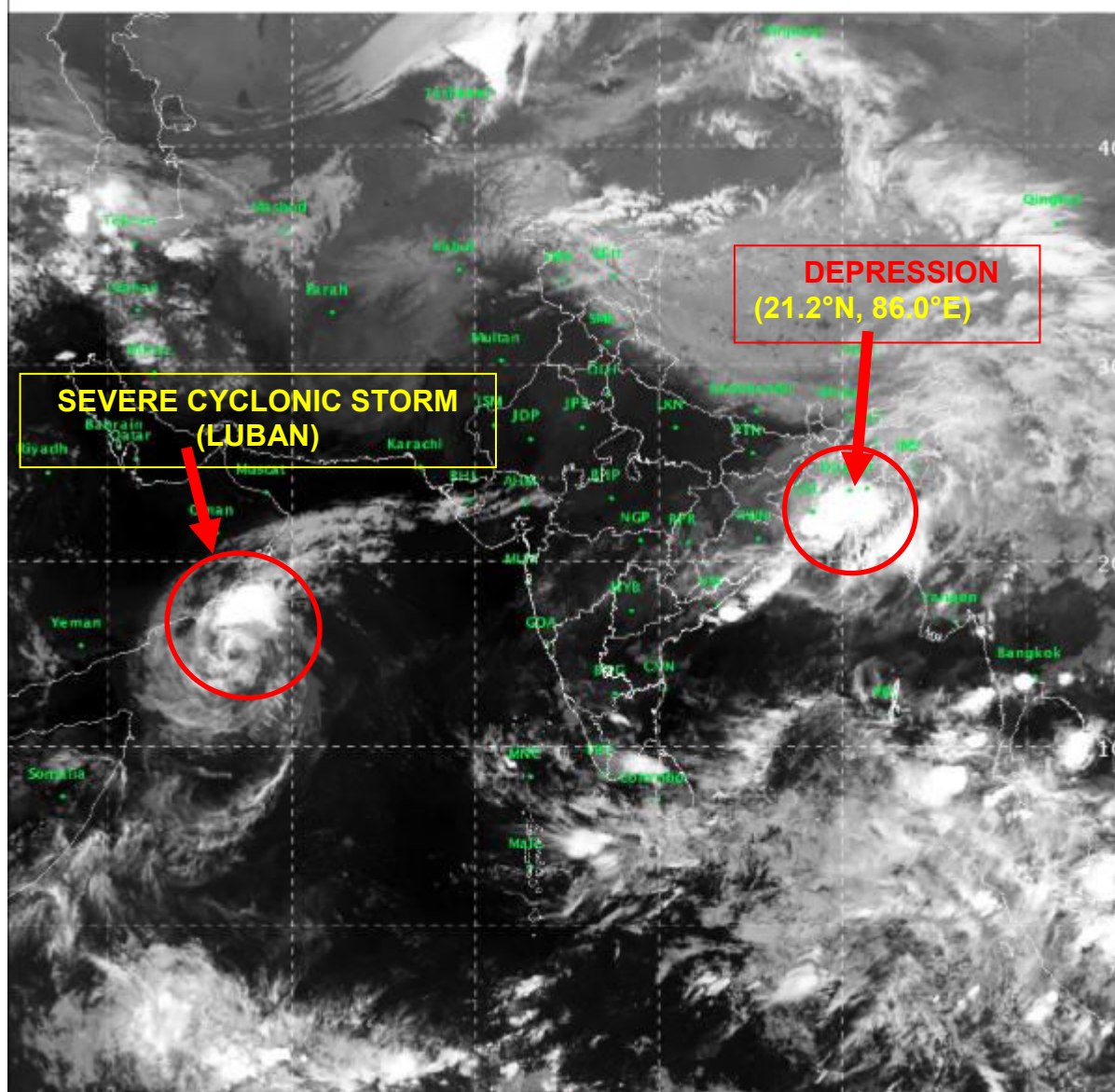
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 25 X10⁻⁵ SEC⁻¹ AROUND AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ THE SYSTEM CENTRE THE VERTICAL. WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS SLIGHT DISORGANISATION AND HENCE SLIGHT WEAKENING IS EXPECTED CONTINUE DURING NEXT 12 HRS. THERE IS ALSO COLD AND DRY AIR INCURSION OVER THE GULF OF ADEN. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR WIND SHEAR.

CONSIDERING **DEPRESSION OVER ODISHA**, THE LOW LEVEL RELATIVE VORTICITY IS ABOUT 100 X10⁻⁵ SEC⁻¹ OVER THE SYSTEM AREA. THE LOWER LEVEL CONVERGENCE INCREASED AND IS ABOUT 20-30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ TO THE EAST THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS HIGH ELSEWHERE. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM, MODERATE TO HIGH WIND SHEAR AND LAND INTERACTION. HOWEVER, IT IS LIKELY TO MAINTAIN INTENSITY OF DEPRESSION DURING NEXT12 HRS DUE TO MOISTURE INCURSION FROM THE SEA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM.

(V. R. DURAI)
SCIENTIST-E, RSMC, NEW DELHI

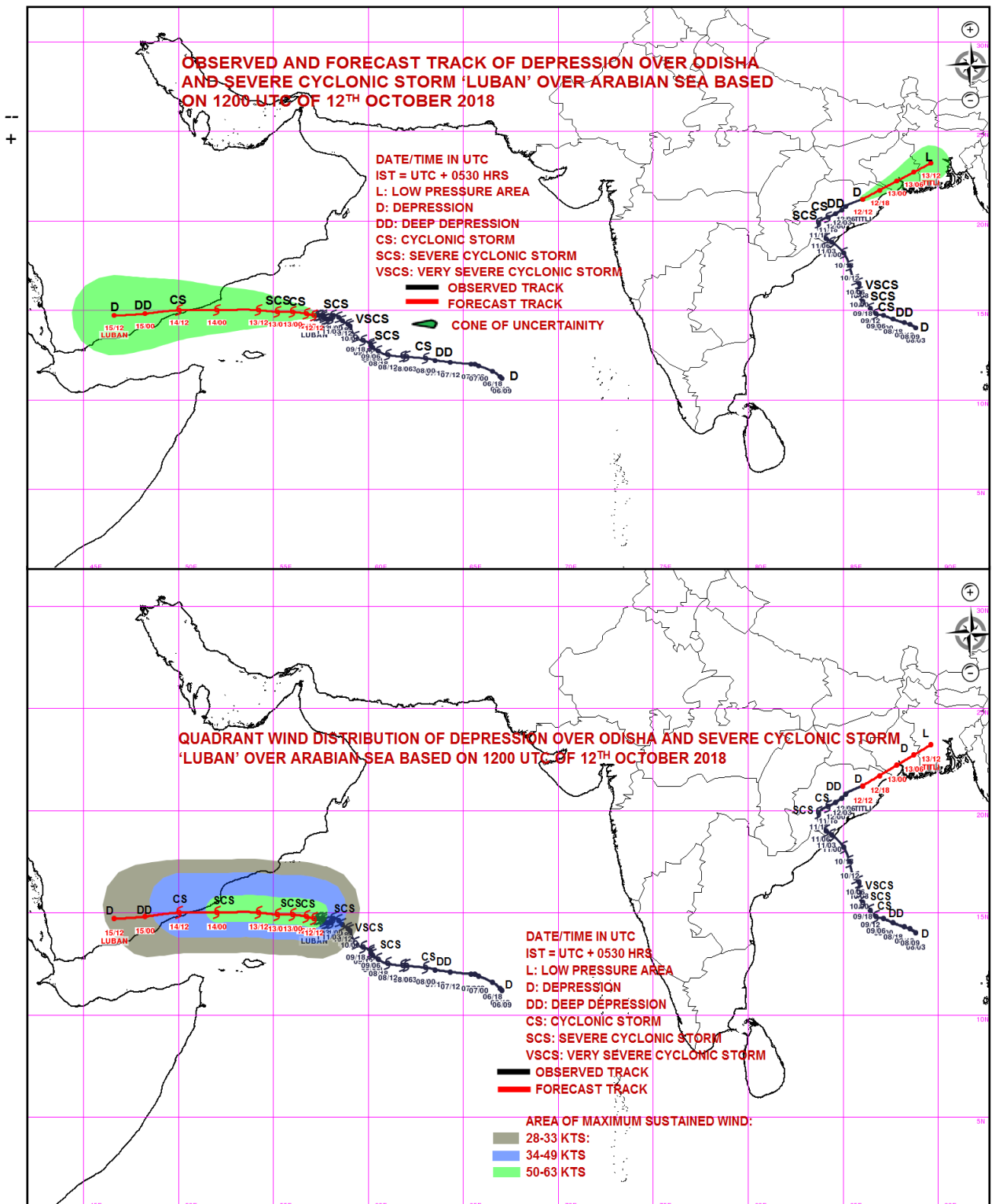
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 38

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 38 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1800 UTC OF 12.10.2018 BASED ON 1500 UTC OF 12.10.2018.

(A) SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED FURTHER WESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 05 KMPH AND LAY CENTERED AT 1500 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.7°N AND LONGITUDE 56.9°E, ABOUT 390 KM EAST-SOUTHEAST OF SALALAH (OMAN), 390 KM, EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN), 530 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN) AND 820 KM EAST OF RIYAN (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (MUKALLA) AND AL-GHAIDAH (YEMEN), CLOSE TO 15°N DURING NOON/AFTERNOON OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/1500	14.7/56.9	90-100 gusting to 115	Severe Cyclonic Storm
12.10.18/1800	14.8/56.7	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/0000	14.9/56.0	80-90 gusting to 105	Cyclonic Storm
13.10.18/0600	14.9/55.2	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/1200	15.0/54.2	100-110 gusting to 120	Severe Cyclonic Storm
14.10.18/0000	15.0/52.0	100-110 gusting to 120	Severe Cyclonic Storm
14.10.18/1200	15.0/50.0	80-90 gusting to 100	Cyclonic Storm
15.10.18/0000	14.9/48.2	50-60 gusting to 70	Deep Depression
15.10.18/1200	14.7/46.6	35-45 gusting to 55	Depression

AS PER THE SATELLITE IMAGERY BASED ON 1500 UTC OF TODAY, THE 12TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS T3.0/ C.I 3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11°N & 19.0°N AND BETWEEN LONGITUDE 52.5°E & 60.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 70°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 988 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 50 GUSTING TO 60 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

B) DEPRESSION OVER ODISHA:

THE DEPRESSION OVER ODISHA MOVED EAST-NORTHEASTWARDS DURING PAST SIX HOURS WITH A SPEED OF 09 KMPH AND LAY CENTRED AT 1500 UTC OF TODAY, THE 12TH OCTOBER 2018 OVER ODISHA NEAR LATITUDE 21.4°N AND LONGITUDE 86.5°E ABOUT 100 KM EAST-SOUTHEAST OF KEONJHARGARH. IT IS VERY LIKELY TO CONTINUE TO MOVE EAST-NORTHEASTWARDS AND MAINTAIN ITS INTENSITY AS A DEPRESSION FOR NEXT 09 HOURS AND WEAKEN THEREAFTER INTO A WELL MARKED LOW PRESSURE AREA.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/1500	21.4/86.5	45-55 gusting to 65	Depression
12.10.18/1800	21.7/86.9	40-50 gusting to 60	Depression
13.10.18/0000	22.2/87.8	40-50 gusting to 60	Depression
13.10.18/0600	22.7/88.7	35-45 gusting to 55	Depression
13.10.18/1200	23.2/89.6	25-35 gusting to 45	Well marked low pressure area

AS PER LATEST SATELLITE IMAGERY BASED ON 1500 UTC OF TODAY, THE 12TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHEAST ODISHA, GANGETIC WEST BENGAL AND NW BAY OF BENGAL. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 25 X10⁻⁵SEC⁻¹ AROUND AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ THE SYSTEM CENTRE THE VERTICAL. WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS SLIGHT DISORGANISATION AND HENCE SLIGHT WEAKENING IS EXPECTED CONTINUE DURING NEXT 12 HRS. THERE IS ALSO COLD AND DRY AIR INCURSION OVER THE GULF OF ADEN. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR WIND SHEAR.

CONSIDERING **DEPRESSION OVER ODISHA**, THE LOW LEVEL RELATIVE VORTICITY IS ABOUT 100 X10⁻⁵ SEC⁻¹ OVER THE SYSTEM AREA. THE LOWER LEVEL CONVERGENCE INCREASED AND IS ABOUT 20-30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ TO THE EAST THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS HIGH ELSEWHERE. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM, MODERATE TO HIGH WIND SHEAR AND LAND INTERACTION. HOWEVER, IT IS LIKELY TO MAINTAIN INTENSITY OF DEPRESSION DURING NEXT12 HRS DUE TO MOISTURE INCURSION FROM THE SEA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM.

(V. R. DURAI)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

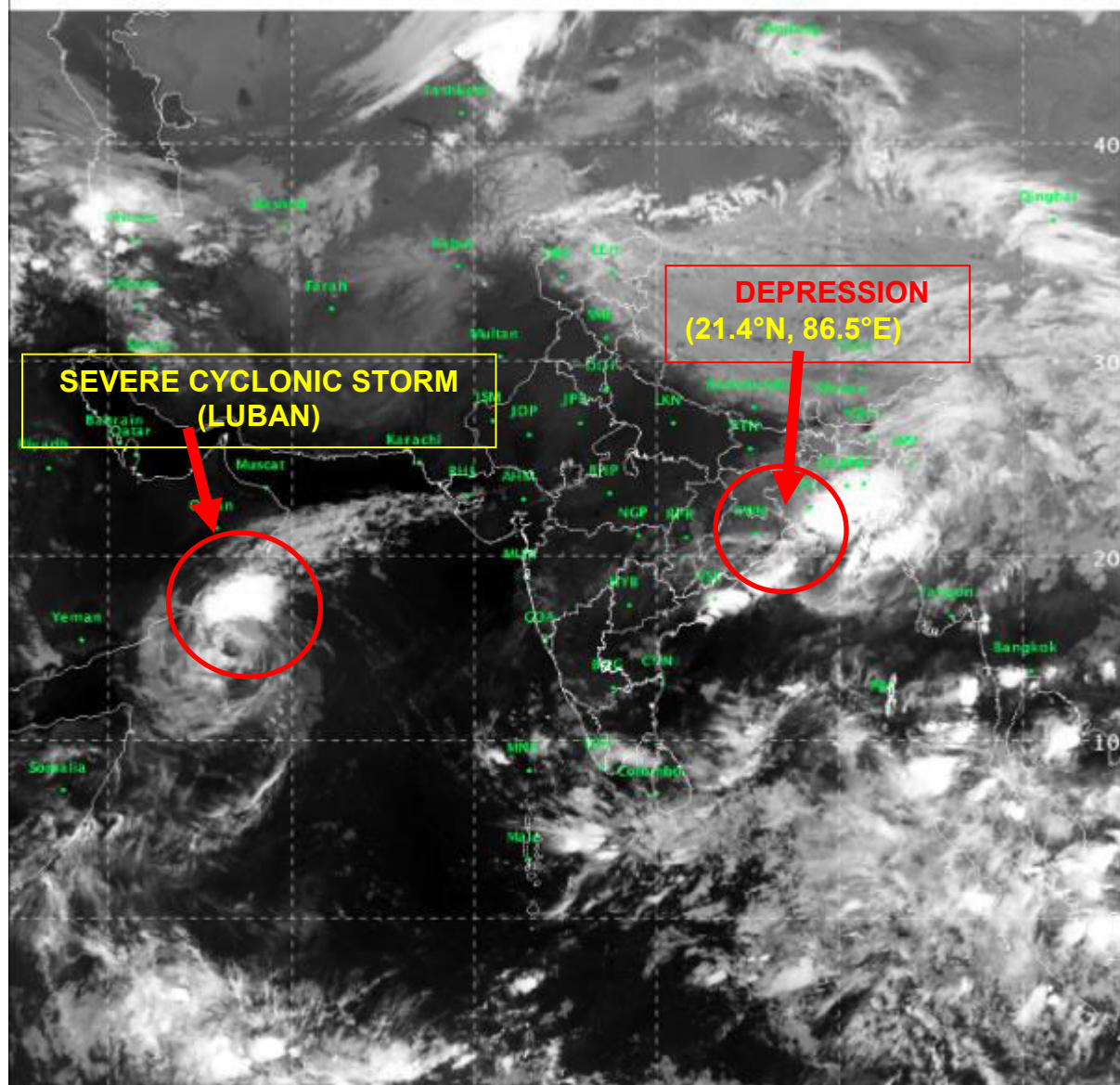
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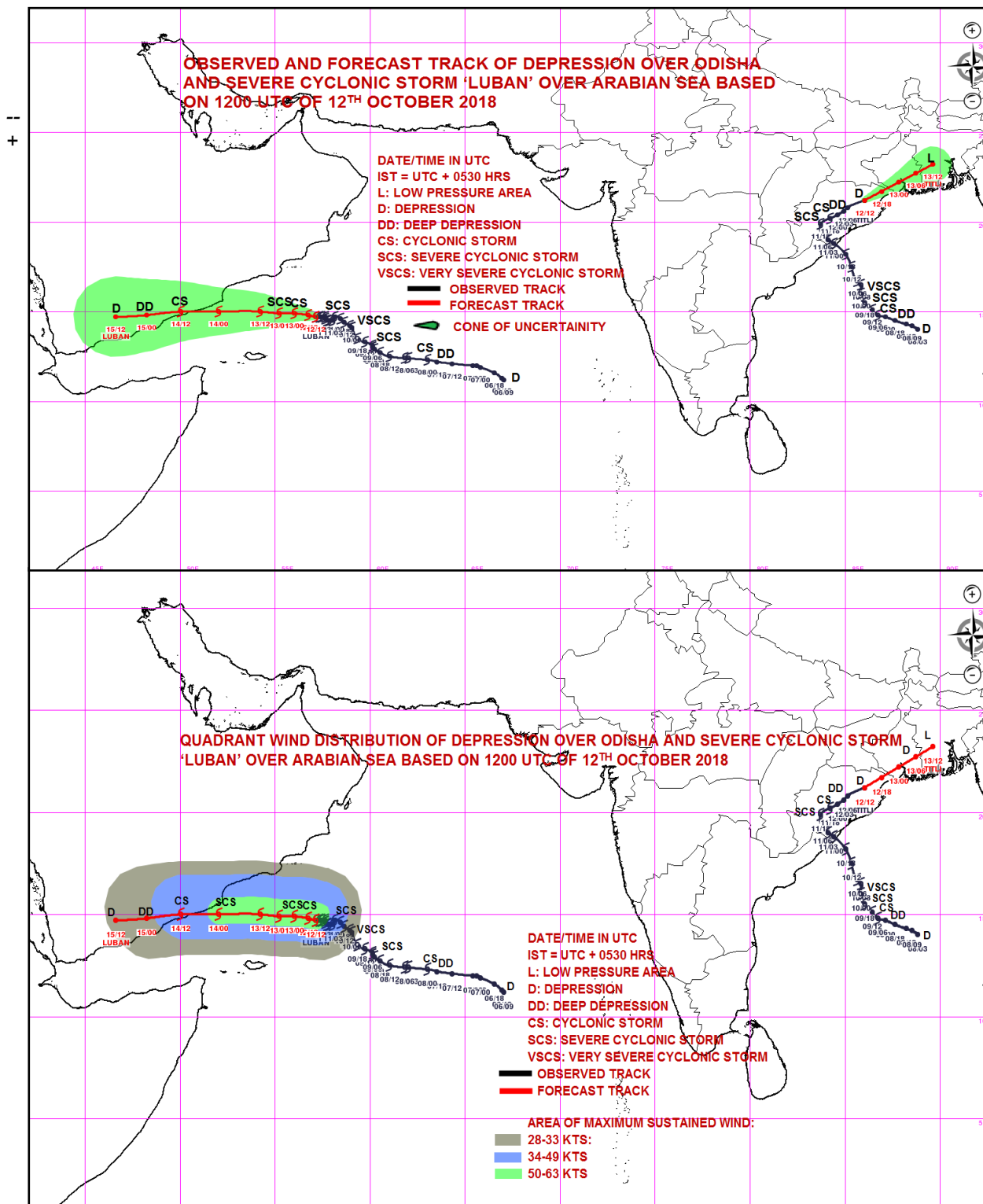
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PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 39

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 39 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2100 UTC OF 12.10.2018 BASED ON 1800 UTC OF 12.10.2018.

(A) SEVERE CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE SEVERE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED FURTHER WEST-NORTHWESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 09 KMPH AND WEAKENED INTO A CYCLONIC STORM AND LAY CENTERED AT 1800 UTC OF 12TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.8°N AND LONGITUDE 56.6°E, ABOUT 360 KM EAST-SOUTHEAST OF SALALAH (OMAN), 370 KM, EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN), 500 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN) AND 790 KM EAST-NORTHEAST OF RIYAN (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (MUKALLA) AND AL-GHAIDAH (YEMEN), CLOSE TO 15°N DURING NOON/AFTERNOON OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/1800	14.8/56.6	80-90 gusting to 100	Cyclonic Storm
13.10.18/0000	14.9/56.0	80-90 gusting to 115	Cyclonic Storm
13.10.18/0600	14.9/55.2	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/1200	15.0/54.2	100-110 gusting to 120	Severe Cyclonic Storm
13.10.18/1800	15.0/53.1	105-115 gusting to 125	Severe Cyclonic Storm
14.10.18/0600	15.0/51.5	90-100 gusting to 110	Severe Cyclonic Storm
14.10.18/1800	14.9/49.1	60-70 gusting to 80	Cyclonic Storm
15.10.18/0600	14.8/47.4	40-50 gusting to 60	Depression

AS PER THE SATELLITE IMAGERY BASED ON 1800 UTC OF TODAY, THE 12TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS T3.0/ C.I 3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11°N & 19.0°N AND BETWEEN LONGITUDE 52.0°E & 60.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 81°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 988 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 50 GUSTING TO 60 KNOTS. STATE OF SEA IS VERY HIGH AROUND THE SYSTEM CENTRE.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

B) DEPRESSION OVER NORTH ODISHA AND ADJOINING WEST BENGAL:

THE DEPRESSION OVER ODISHA MOVED EAST-NORTHEASTWARDS DURING PAST SIX HOURS WITH A SPEED OF 17 KMPH AND LAY CENTRED 1800 UTC OF 12TH OCTOBER 2018 OVER NORTH ODISHA AND ADJOINING WEST BENGAL NEAR LATITUDE 21.8°N AND LONGITUDE 87.1°E ABOUT 50 KM WEST-NORTHWEST OF DIGHA. IT IS VERY LIKELY TO CONTINUE TO MOVE EAST-NORTHEASTWARDS AND WEAKEN INTO A WELL MARKED LOW PRESSURE AREA DURING NEXT 12 HOURS.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/1800	21.8/87.1	40-50 gusting to 60	Depression
13.10.18/0000	22.5/88.1	40-50 gusting to 60	Depression
13.10.18/0600	23.3/89.3	25-35 gusting to 45	Well marked low pressure area

AS PER LATEST SATELLITE IMAGERY BASED ON 1800 UTC OF TODAY, THE 12TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHEAST ODISHA, GANGETIC WEST BENGAL AND NW BAY OF BENGAL. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

REMARKS:

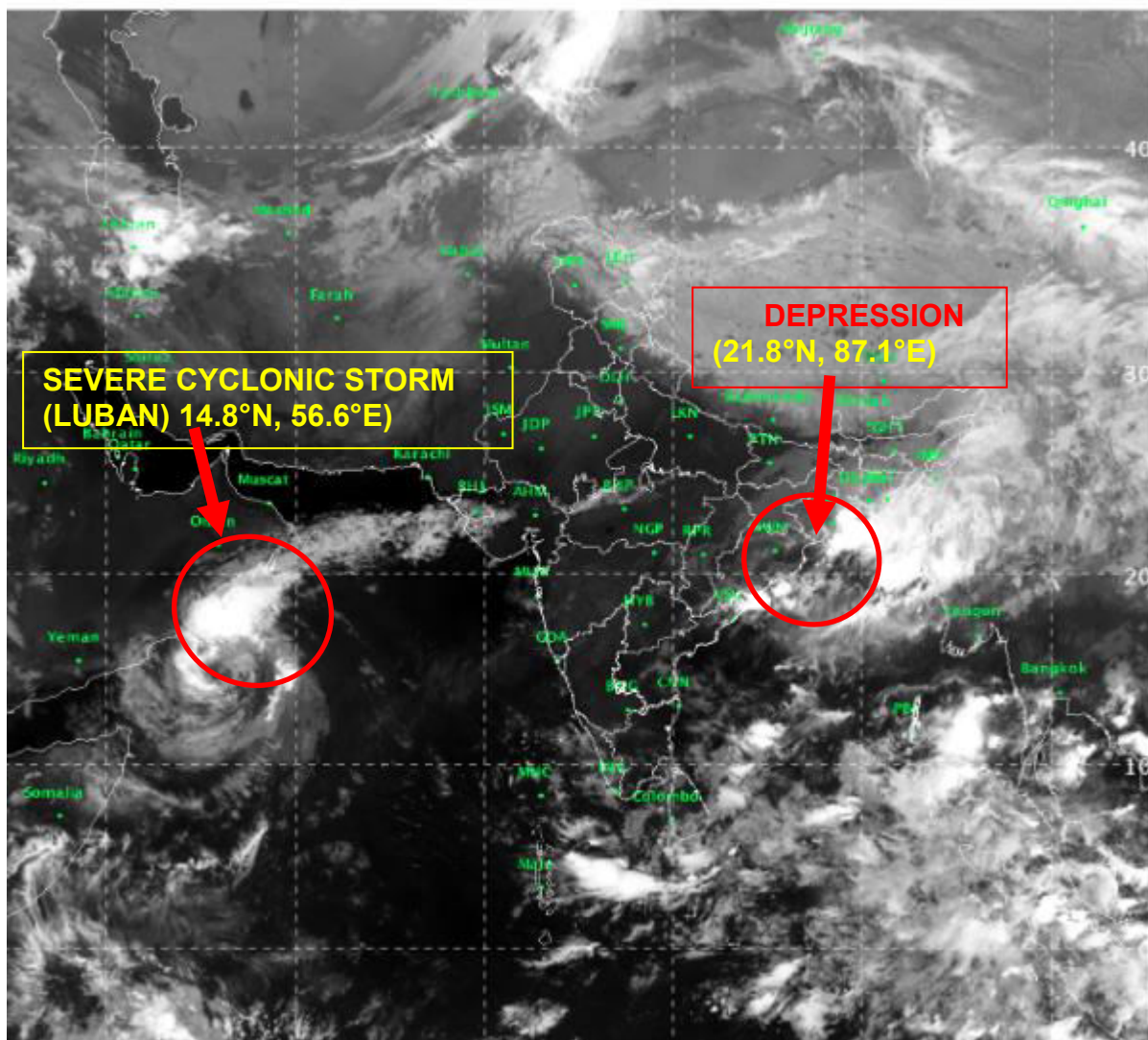
CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 25 X10⁻⁵SEC⁻¹ AROUND AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ THE SYSTEM CENTRE THE VERTICAL. WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS SLIGHT DISORGANISATION AND HENCE SLIGHT WEAKENING IS EXPECTED CONTINUE DURING NEXT 12 HRS. THERE IS ALSO COLD AND DRY AIR INCURSION OVER THE GULF OF ADEN. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR WIND SHEAR.

CONSIDERING **DEPRESSION OVER ODISHA**, THE LOW LEVEL RELATIVE VORTICITY IS ABOUT 100 X10⁻⁵ SEC⁻¹ OVER THE SYSTEM AREA. THE LOWER LEVEL CONVERGENCE INCREASED AND IS ABOUT 20-30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ TO THE EAST THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS HIGH ELSEWHERE. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM, MODERATE TO HIGH WIND SHEAR AND LAND INTERACTION. HOWEVER, IT IS LIKELY TO MAINTAIN INTENSITY OF DEPRESSION DURING NEXT 06 HRS DUE TO MOISTURE INCURSION FROM THE SEA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM.

(V. R. DURAI)
SCIENTIST-E, RSMC, NEW DELHI

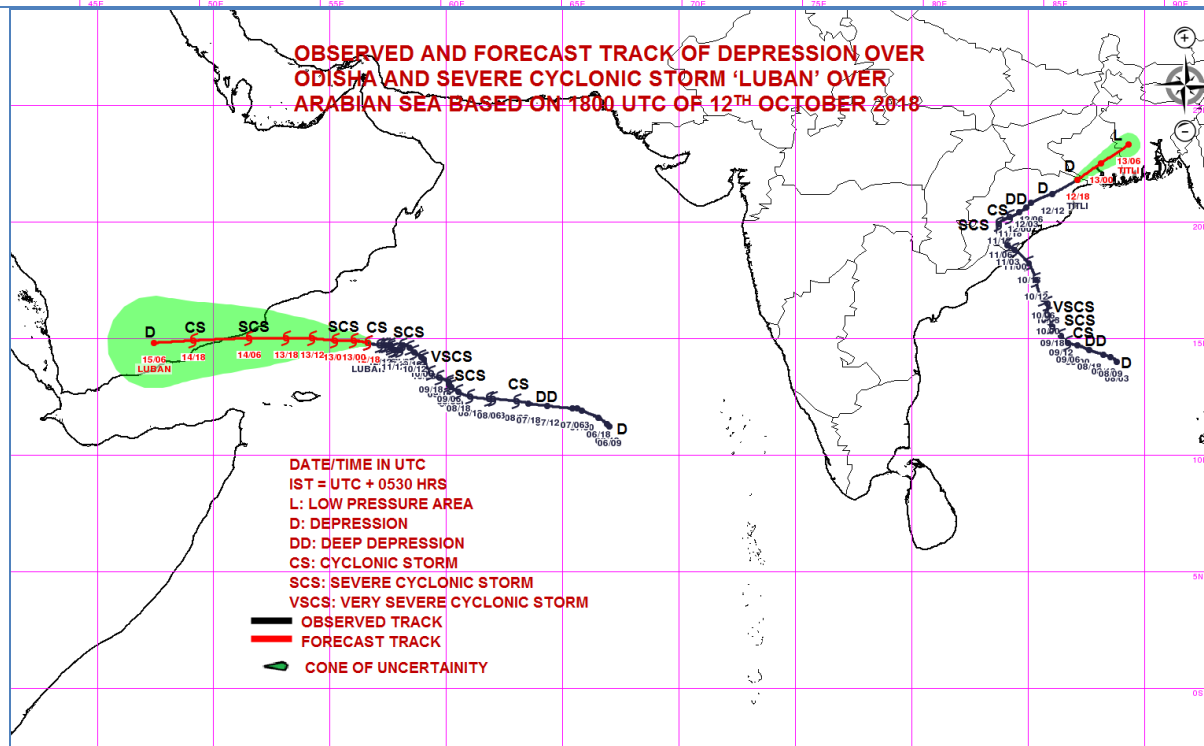
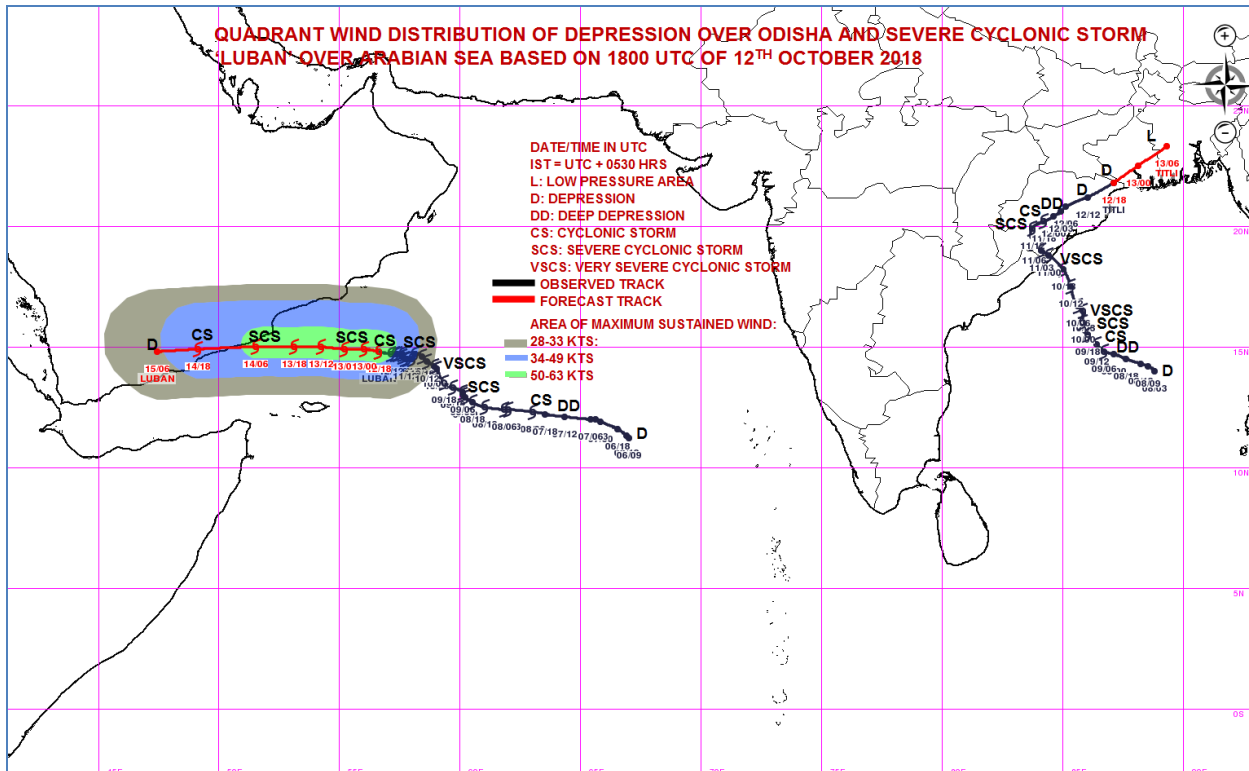
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 40

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 40 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0100 UTC OF 13.10.2018 BASED ON 2100 UTC OF 12.10.2018.

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED FURTHER WEST-NORTHWESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 11 KMPH AND LAY CENTERED AT 2100 UTC OF 12TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.8°N AND LONGITUDE 56.3°E, ABOUT 340 KM EAST-SOUTHEAST OF SALALAH (OMAN), 350 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN), 470 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN) AND 760 KM EAST-NORTHEAST OF RIYAN (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (MUKALLA) AND AL-GHAIDAH (YEMEN), CLOSE TO 15°N DURING NOON/AFTERNOON OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/2100	14.8/56.3	80-90 gusting to 100	Cyclonic Storm
13.10.18/0000	14.9/56.0	80-90 gusting to 115	Cyclonic Storm
13.10.18/0600	14.9/55.2	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/1200	15.0/54.2	100-110 gusting to 120	Severe Cyclonic Storm
13.10.18/1800	15.0/53.1	105-115 gusting to 125	Severe Cyclonic Storm
14.10.18/0600	15.0/51.5	90-100 gusting to 110	Severe Cyclonic Storm
14.10.18/1800	14.9/49.1	60-70 gusting to 80	Cyclonic Storm
15.10.18/0600	14.8/47.4	40-50 gusting to 60	Depression

AS PER THE SATELLITE IMAGERY BASED ON 2100 UTC OF 12TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 12°N & 20.0°N AND BETWEEN LONGITUDE 53.5°E & 60.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 82°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 988 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

B) DEPRESSION OVER NORTH ODISHA AND ADJOINING WEST BENGAL:

THE DEPRESSION OVER ODISHA MOVED EAST-NORTHEASTWARDS DURING PAST SIX HOURS WITH A SPEED OF 23 KMPH AND LAY CENTRED AT 2100 UTC OF 12TH OCTOBER 2018 OVER NORTH ODISHA AND ADJOINING WEST BENGAL NEAR LATITUDE 22.3°N AND LONGITUDE 87.5°E ABOUT 70 KM NORTH OF DIGHA. IT IS VERY LIKELY TO CONTINUE TO MOVE EAST-NORTHEASTWARDS AND WEAKEN INTO A WELL MARKED LOW PRESSURE AREA DURING NEXT 12 HOURS.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/2100	22.3/87.5	40-50 gusting to 60	Depression
13.10.18/0000	22.5/88.1	40-50 gusting to 60	Depression
13.10.18/0600	23.3/89.3	25-35 gusting to 45	Well marked low pressure area

AS PER LATEST SATELLITE IMAGERY BASED ON 2100 UTC OF 12TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHEAST ODISHA, GANGETIC WEST BENGAL AND NW BAY OF BENGAL. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 86°C.

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 25 X10⁻⁵SEC⁻¹ AROUND AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ THE SYSTEM CENTRE THE VERTICAL. WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS SLIGHT DISORGANISATION AND HENCE SLIGHT WEAKENING IS EXPECTED CONTINUE DURING NEXT 12 HRS. THERE IS ALSO COLD AND DRY AIR INCURSION OVER THE GULF OF ADEN. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR WIND SHEAR.

CONSIDERING **DEPRESSION OVER ODISHA**, THE LOW LEVEL RELATIVE VORTICITY IS ABOUT 100 X10⁻⁵ SEC⁻¹ OVER THE SYSTEM AREA. THE LOWER LEVEL CONVERGENCE INCREASED AND IS ABOUT 20-30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ TO THE EAST THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS HIGH ELSEWHERE. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM, MODERATE TO HIGH WIND SHEAR AND LAND INTERACTION. HOWEVER, IT IS LIKELY TO MAINTAIN INTENSITY OF DEPRESSION DURING NEXT 06 HRS DUE TO MOISTURE INCURSION FROM THE SEA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM.

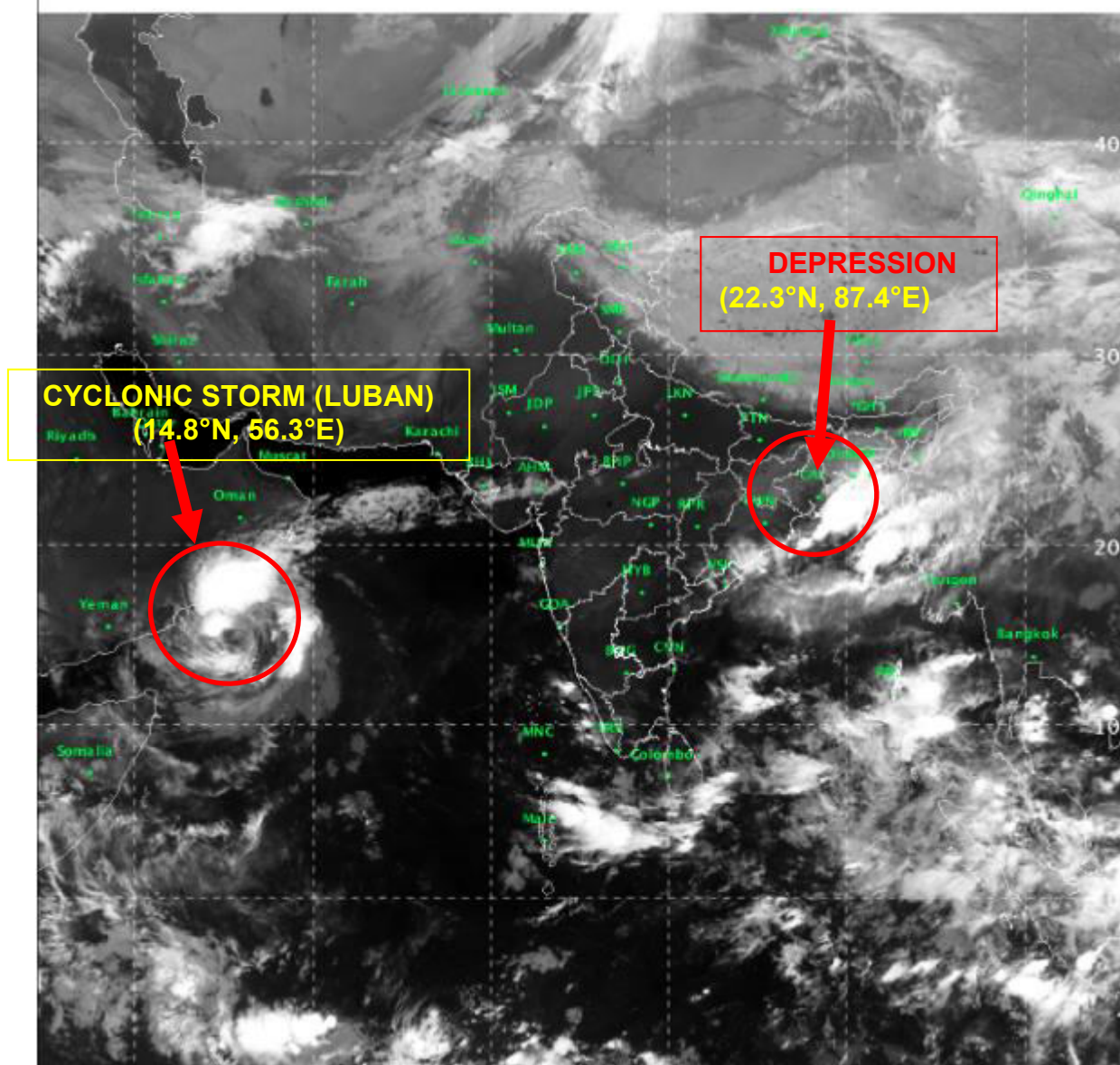
(V. R. DURAI)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

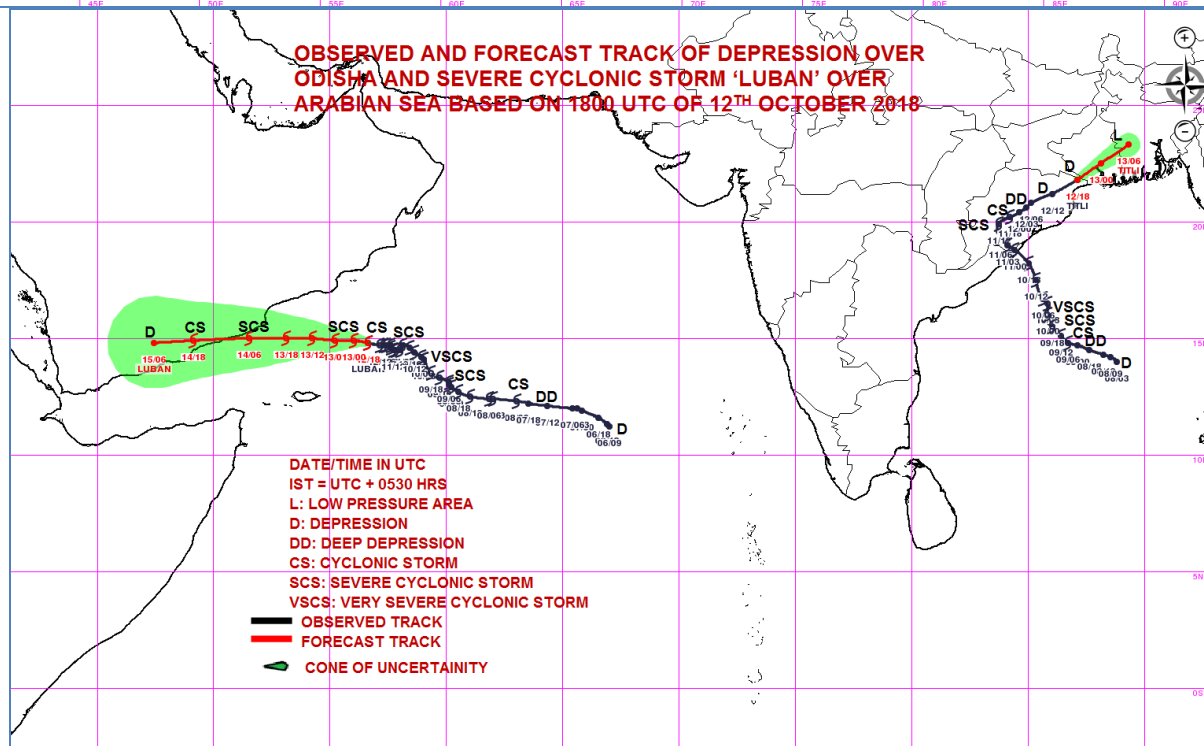
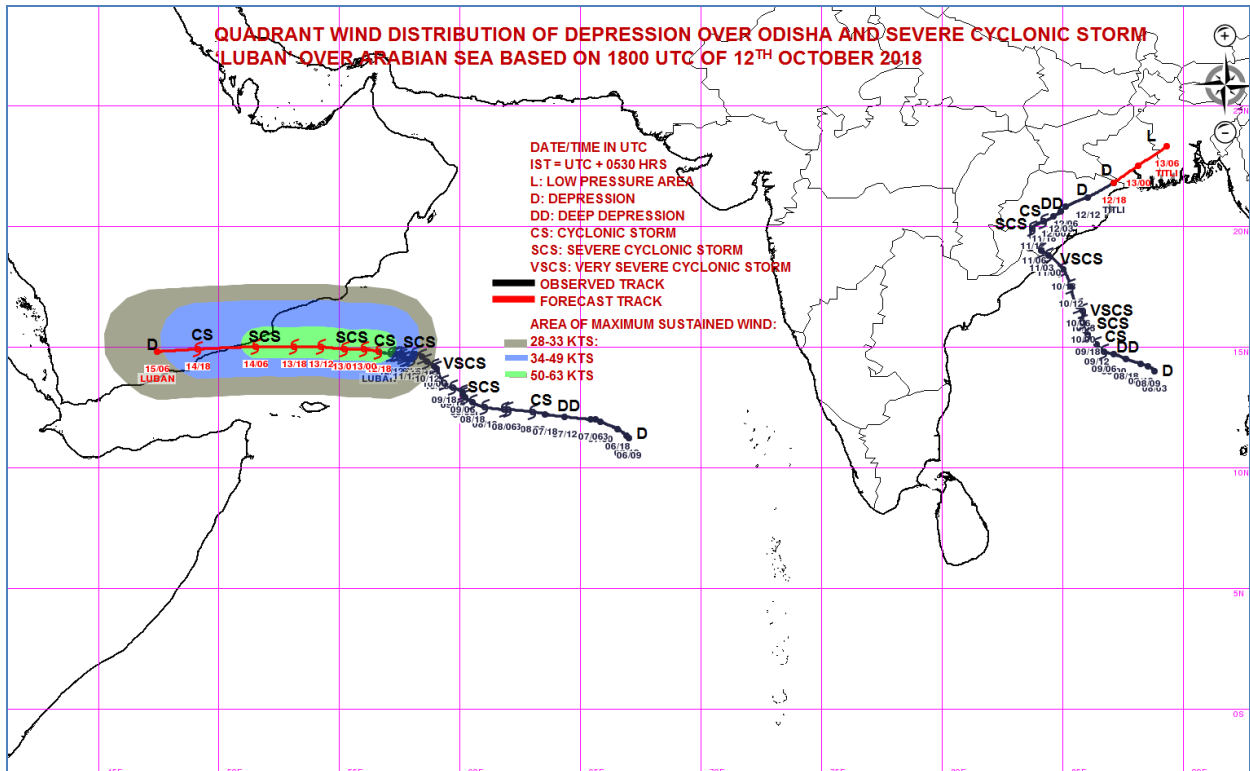
SAT :INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator (LINEAR STRETCH: 1.0%)

13-10-2018/00:00 GMT
13-10-2018/05:30 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 40

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 40 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0100 UTC OF 13.10.2018 BASED ON 2100 UTC OF 12.10.2018.

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED FURTHER WEST-NORTHWESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 11 KMPH AND LAY CENTERED AT 2100 UTC OF 12TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.8°N AND LONGITUDE 56.3°E, ABOUT 340 KM EAST-SOUTHEAST OF SALALAH (OMAN), 350 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN), 470 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN) AND 760 KM EAST-NORTHEAST OF RIYAN (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (MUKALLA) AND AL-GHAIDAH (YEMEN), CLOSE TO 15°N DURING NOON/AFTERNOON OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/2100	14.8/56.3	80-90 gusting to 100	Cyclonic Storm
13.10.18/0000	14.9/56.0	80-90 gusting to 115	Cyclonic Storm
13.10.18/0600	14.9/55.2	90-100 gusting to 115	Severe Cyclonic Storm
13.10.18/1200	15.0/54.2	100-110 gusting to 120	Severe Cyclonic Storm
13.10.18/1800	15.0/53.1	105-115 gusting to 125	Severe Cyclonic Storm
14.10.18/0600	15.0/51.5	90-100 gusting to 110	Severe Cyclonic Storm
14.10.18/1800	14.9/49.1	60-70 gusting to 80	Cyclonic Storm
15.10.18/0600	14.8/47.4	40-50 gusting to 60	Depression

AS PER THE SATELLITE IMAGERY BASED ON 2100 UTC OF 12TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 12°N & 20.0°N AND BETWEEN LONGITUDE 53.5°E & 60.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 82°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 988 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

B) DEPRESSION OVER NORTH ODISHA AND ADJOINING WEST BENGAL:

THE DEPRESSION OVER ODISHA MOVED EAST-NORTHEASTWARDS DURING PAST SIX HOURS WITH A SPEED OF 23 KMPH AND LAY CENTRED AT 2100 UTC OF 12TH OCTOBER 2018 OVER NORTH ODISHA AND ADJOINING WEST BENGAL NEAR LATITUDE 22.3°N AND LONGITUDE 87.5°E ABOUT 70 KM NORTH OF DIGHA. IT IS VERY LIKELY TO CONTINUE TO MOVE EAST-NORTHEASTWARDS AND WEAKEN INTO A WELL MARKED LOW PRESSURE AREA DURING NEXT 12 HOURS.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
12.10.18/2100	22.3/87.5	40-50 gusting to 60	Depression
13.10.18/0000	22.5/88.1	40-50 gusting to 60	Depression
13.10.18/0600	23.3/89.3	25-35 gusting to 45	Well marked low pressure area

AS PER LATEST SATELLITE IMAGERY BASED ON 2100 UTC OF 12TH OCTOBER, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHEAST ODISHA, GANGETIC WEST BENGAL AND NW BAY OF BENGAL. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 86°C.

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29°C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0° N AND TO THE WEST OF 60.0°E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 250 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 25 X10⁻⁵SEC⁻¹ AROUND AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ THE SYSTEM CENTRE THE VERTICAL. WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS SLIGHT DISORGANISATION AND HENCE SLIGHT WEAKENING IS EXPECTED CONTINUE DURING NEXT 12 HRS. THERE IS ALSO COLD AND DRY AIR INCURSION OVER THE GULF OF ADEN. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR WIND SHEAR.

CONSIDERING **DEPRESSION OVER ODISHA**, THE LOW LEVEL RELATIVE VORTICITY IS ABOUT 100 X10⁻⁵ SEC⁻¹ OVER THE SYSTEM AREA. THE LOWER LEVEL CONVERGENCE INCREASED AND IS ABOUT 20-30 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE AND IS ABOUT 20 X 10⁻⁵ SEC⁻¹ TO THE EAST THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA AND IS HIGH ELSEWHERE. AS THE SYSTEM IS OVER LAND, IT WILL CONTINUE TO WEAKEN DUE TO COLD AND DRY AIR ADVECTION TO THE CORE OF THE SYSTEM, MODERATE TO HIGH WIND SHEAR AND LAND INTERACTION. HOWEVER, IT IS LIKELY TO MAINTAIN INTENSITY OF DEPRESSION DURING NEXT 06 HRS DUE TO MOISTURE INCURSION FROM THE SEA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18° N. THE MIDDLE AND UPPER TROPOSPHERIC WINDS ARE SOUTHWESTERLY INDICATING NORTHEASTWARD MOVEMENT OF THE SYSTEM.

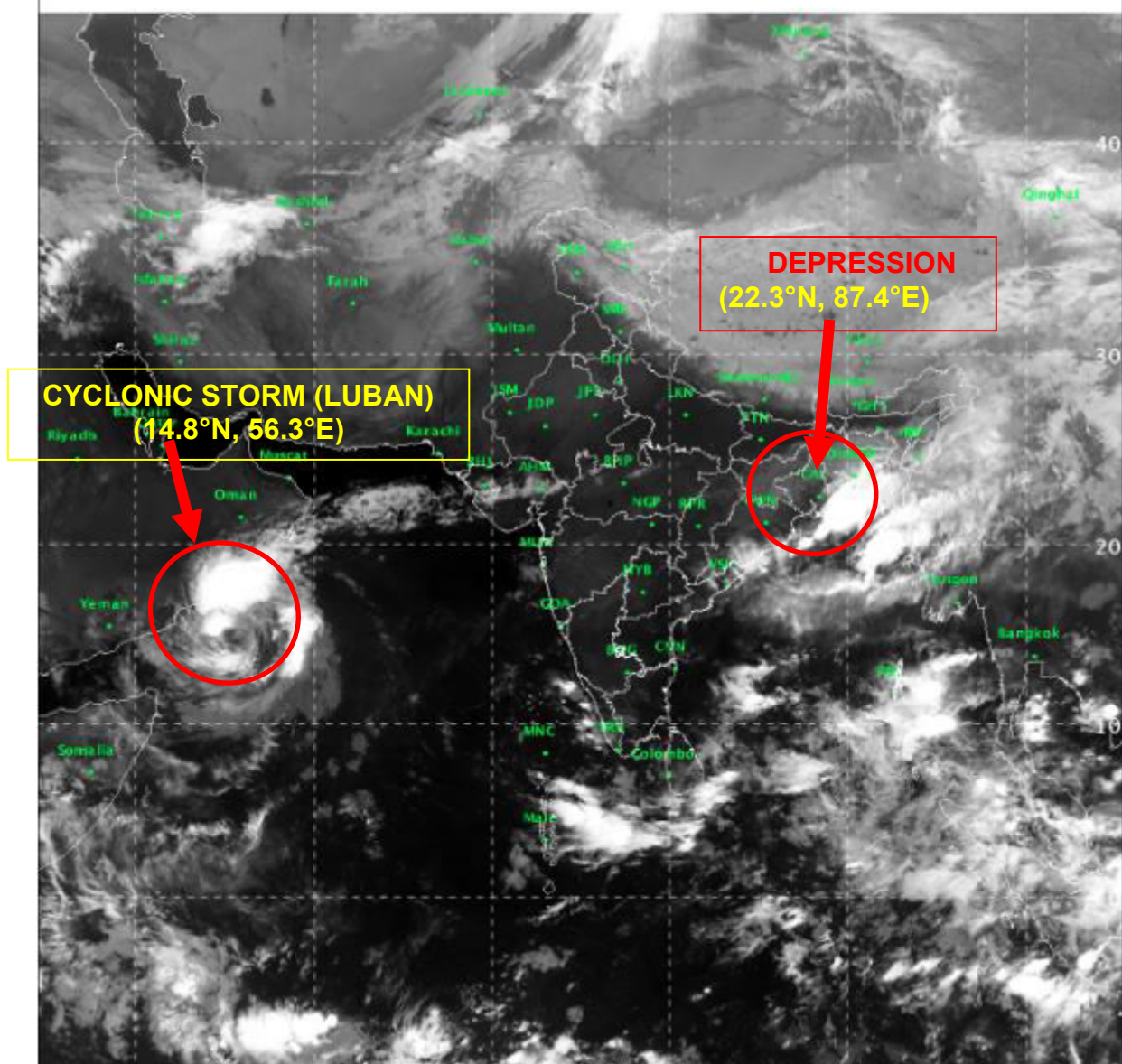
(V. R. DURAI)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

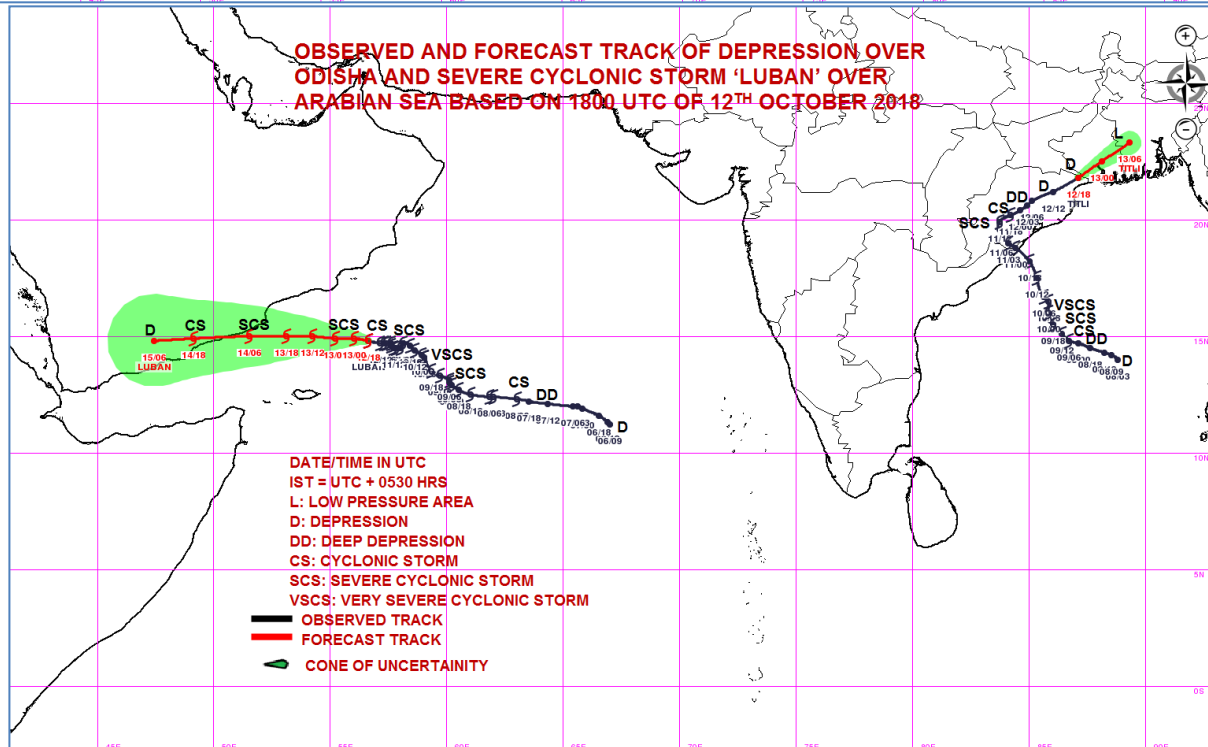
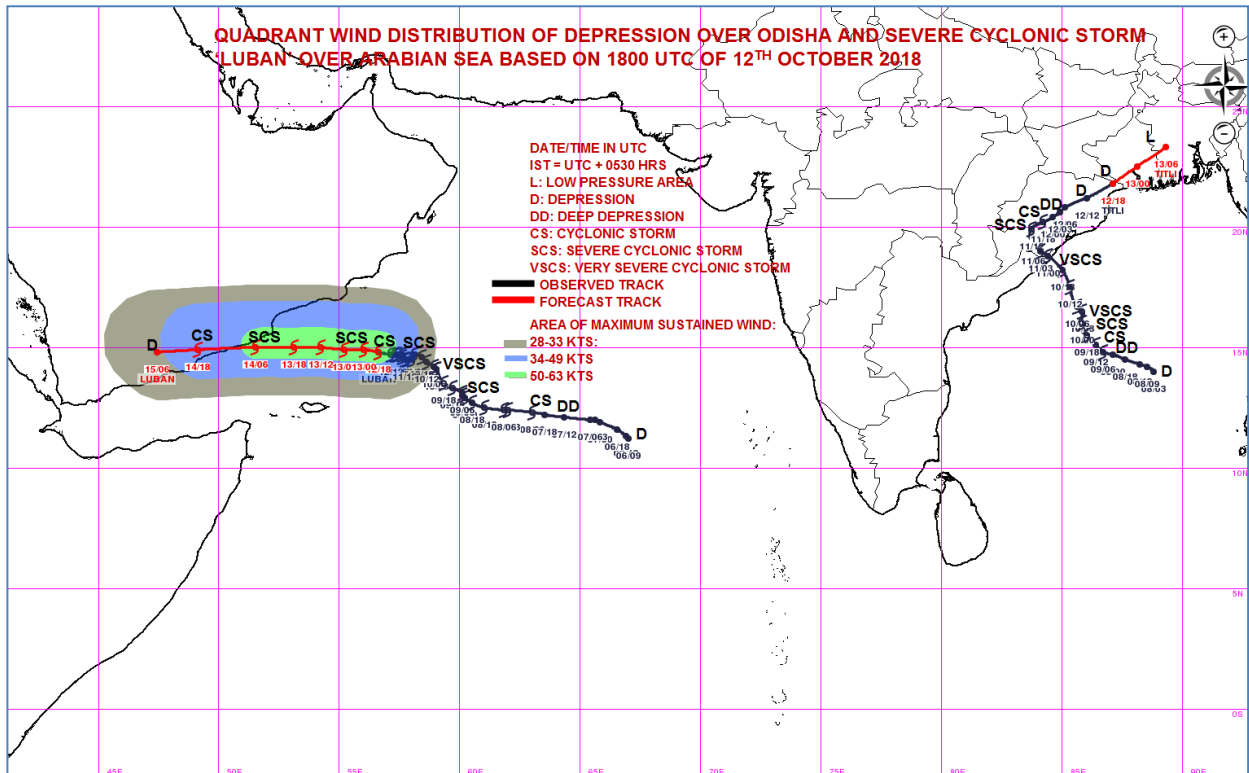
SAT :INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator (LINEAR STRETCH: 1.0%)

13-10-2018/00:00 GMT
13-10-2018/05:30 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 41

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 41 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0400 UTC OF 13.10.2018 BASED ON 0000 UTC OF 13.10.2018.

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 110KMPH AND LAY CENTERED AT 0000 UTC OF TODAY, THE 13TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.8°N AND LONGITUDE 56.0°E, ABOUT 340 KM EAST-SOUTHEAST OF SALALAH (OMAN), 350 KM EAST-NORTHEAST OF SOCOTRA ISLANDS (YEMEN), 440 KM EAST-SOUTHEAST OF AL-GHAIDAH (YEMEN) AND 720 KM EAST-NORTHEAST OF RIYAN (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (MUKALLA) AND AL-GHAIDAH (YEMEN), CLOSE TO 15°N DURING NOON/AFTERNOON OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
13.10.18/0000	14.8/56.0	75-85 gusting to 95	Cyclonic Storm
13.10.18/0600	14.9/55.2	70-80 gusting to 90	Cyclonic Storm
13.10.18/1200	15.0/54.2	75-85 gusting to 95	Cyclonic Storm
13.10.18/1800	15.0/53.2	80-90 gusting to 100	Cyclonic Storm
14.10.18/0000	15.0/52.0	90-100 gusting to 110	Severe Cyclonic Storm
14.10.18/1200	15.0/49.6	80-90 gusting to 100	Cyclonic Storm
15.10.18/0000	15.2/47.2	45-55 gusting to 60	Depression

AS PER THE SATELLITE IMAGERY BASED ON 0000 UTC OF 13TH OCTOBER 2018. THE INTENSITY OF THE SYSTEM IS T2.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 12°N & 20.0°N AND BETWEEN LONGITUDE 53.5°E & 60.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 87°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 992 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

B) DEPRESSION OVER GANGETIC WEST BENGAL AND NEIGHBOURHOOD WEAKENED INTO A WELL MARKED LOW PRESSURE AREA

THE DEPRESSION OVER GANGETIC WEST BENGAL AND NEIGHBOURHOOD WEAKENED INTO A WELL MARKED LOW PRESSURE AREA AT 0000 UTC OF TODAY, THE 13TH OCTOBER 2018.

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND TO THE WEST OF 60.0⁰E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 200 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AROUND AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 10 X10⁻⁵ SEC⁻¹ THE SYSTEM CENTRE THE VERTICAL. WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS DISORGANISATION AND HENCE WEAKENING THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR.

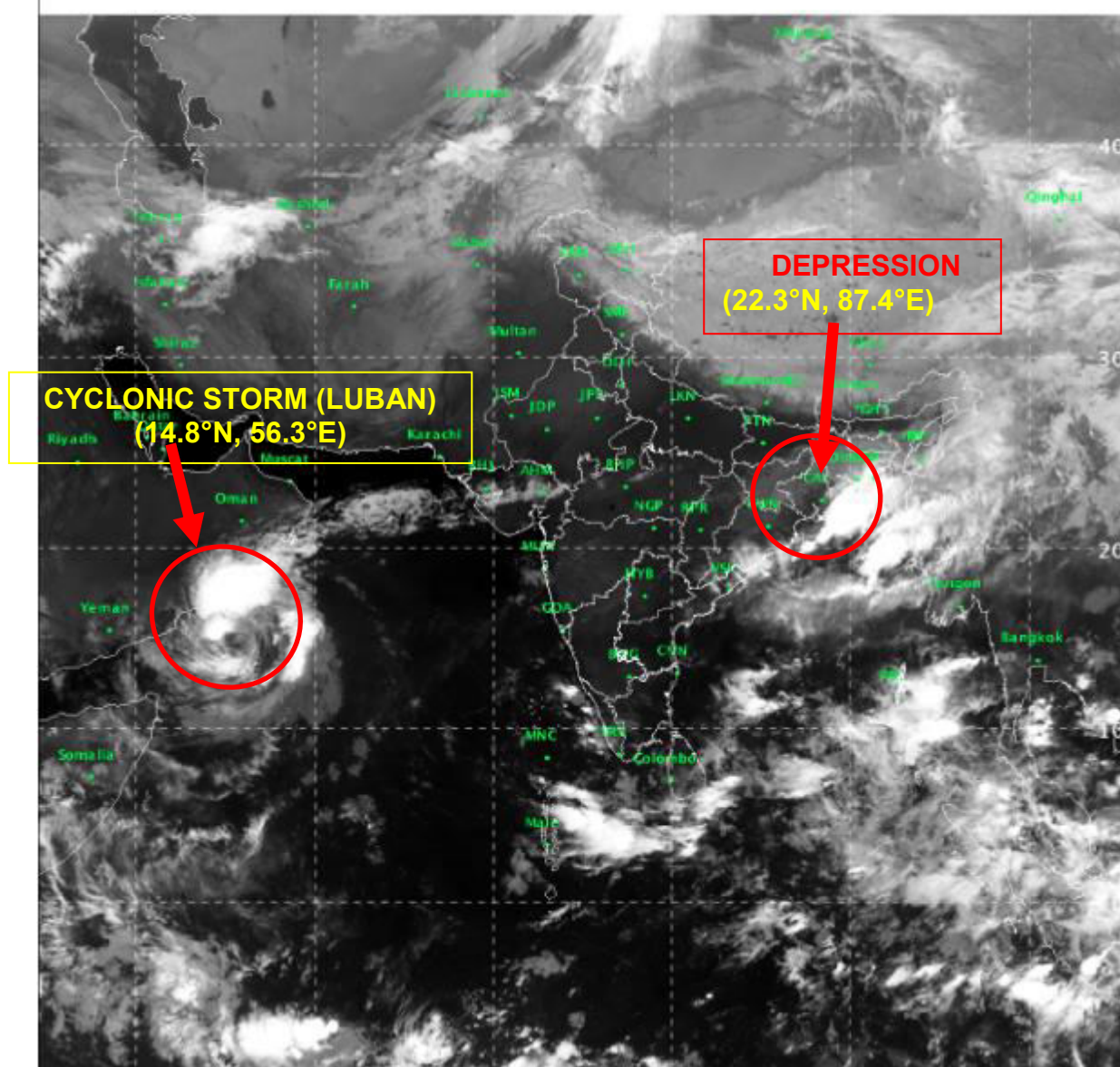
(V. R. DURAI)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

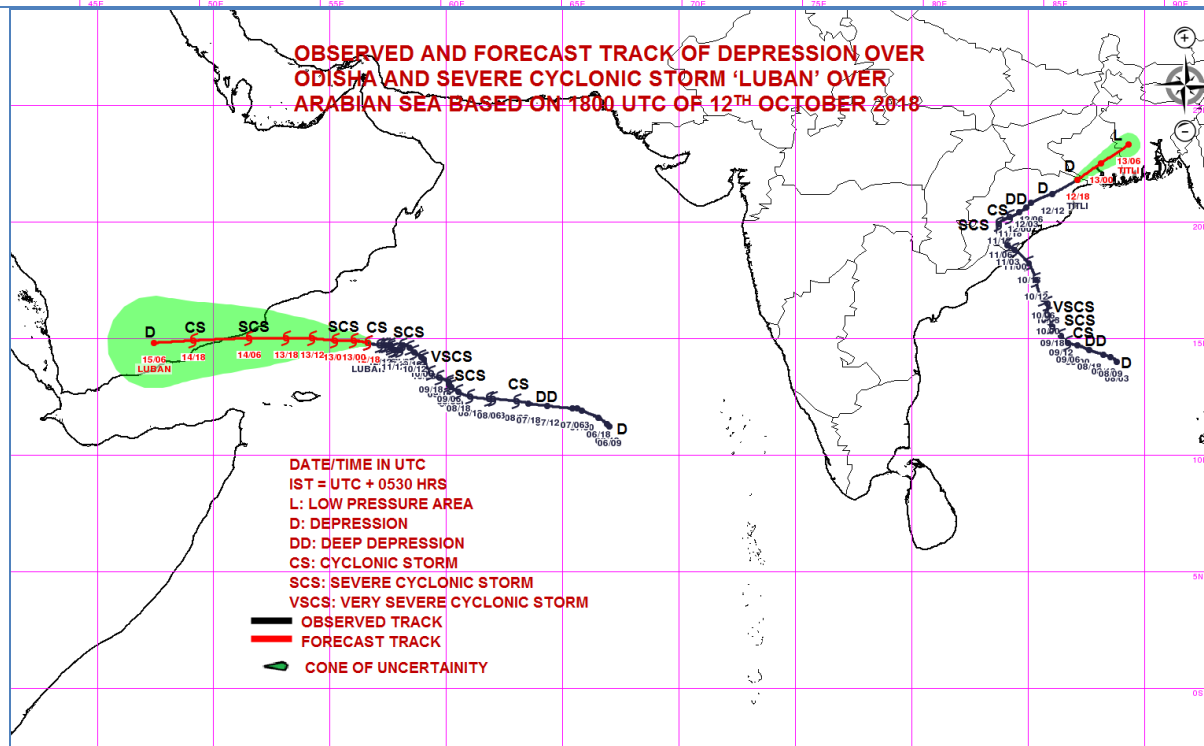
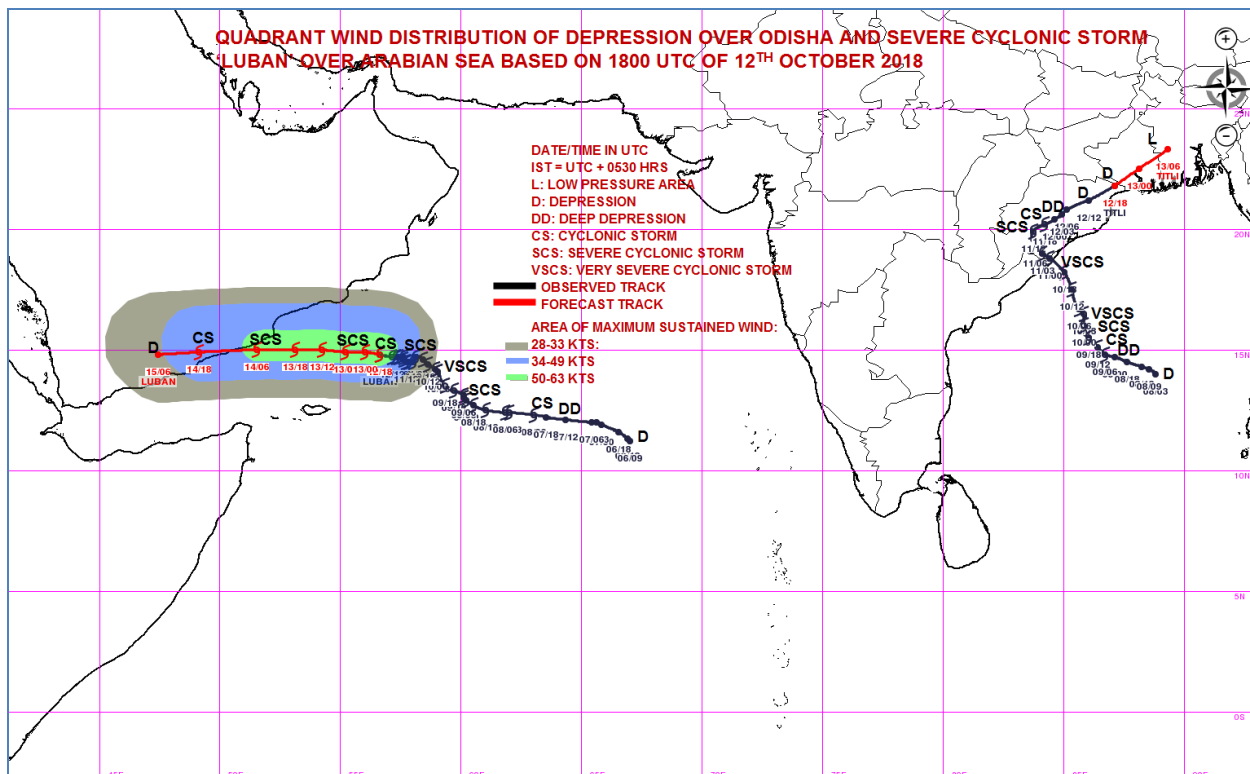
SAT :INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator (LINEAR STRETCH: 1.0%)

13-10-2018/00:00 GMT
13-10-2018/05:30 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 42

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 42 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0600 UTC OF 13.10.2018 BASED ON 0300 UTC OF 13.10.2018.

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 12 KMPH AND LAY CENTERED AT 0300 UTC OF TODAY, THE 13TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.8°N AND LONGITUDE 55.6°E, ABOUT 290 KM SOUTH-SOUTHEAST OF SALALAH (41316) (OMAN), 300 KM NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN), 400 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN) AND 680 KM EAST-NORTHEAST OF RIYAN (41443) (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (41443) (MUKALLA) AND AL-GHAIDAH (41398) (YEMEN), CLOSE TO 15°N DURING 0600-0900 UTC OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
13.10.18/0300	14.8/55.6	70-80 GUSTING TO 90	CYCLONIC STORM
13.10.18/0600	14.9/55.2	70-80 GUSTING TO 90	CYCLONIC STORM
13.10.18/1200	15.0/54.2	75-85 GUSTING TO 95	CYCLONIC STORM
13.10.18/1800	15.0/53.2	80-90 GUSTING TO 100	CYCLONIC STORM
14.10.18/0000	15.0/52.0	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
14.10.18/1200	15.0/49.6	80-90 GUSTING TO 100	CYCLONIC STORM
15.10.18/0000	15.2/47.2	45-55 GUSTING TO 65	DEPRESSION

AS PER THE SATELLITE IMAGERY BASED ON 0300 UTC OF 13TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 12.5°N & 20.0°N AND BETWEEN LONGITUDE 53.5°E & 60.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 75°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN AND ADJOINING YEMEN COAST. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND TO THE WEST OF 60.0⁰E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 200 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 10 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS AND REACHING OUTER PERIPHERY OF SOUTHERN SECTOR OF THE SYSTEM. AS A RESULT THE SYSTEM SHOWS DISORGANISATION AND HENCE WEAKENING. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR.

B) WELL MARKED LOW PRESSURE AREA OVER GANGETIC WEST BENGAL AND NEIGHBOURHOOD WEAKENED INTO A LOW PRESSURE AREA:

THE WELL MARKED LOW PRESSURE AREA OVER GANGETIC WEST BENGAL AND NEIGHBOURHOOD WEAKENED INTO A LOW PRESSURE AREA OVER GANGETIC WEST BENGAL AND ADJOINING BANGLADESH AND NORTH BAY OF BENGAL AT 0300 UTC OF TODAY, THE 13TH OCTOBER 2018.

THIS IS THE LAST BULLETIN FOR THIS SYSTEM.

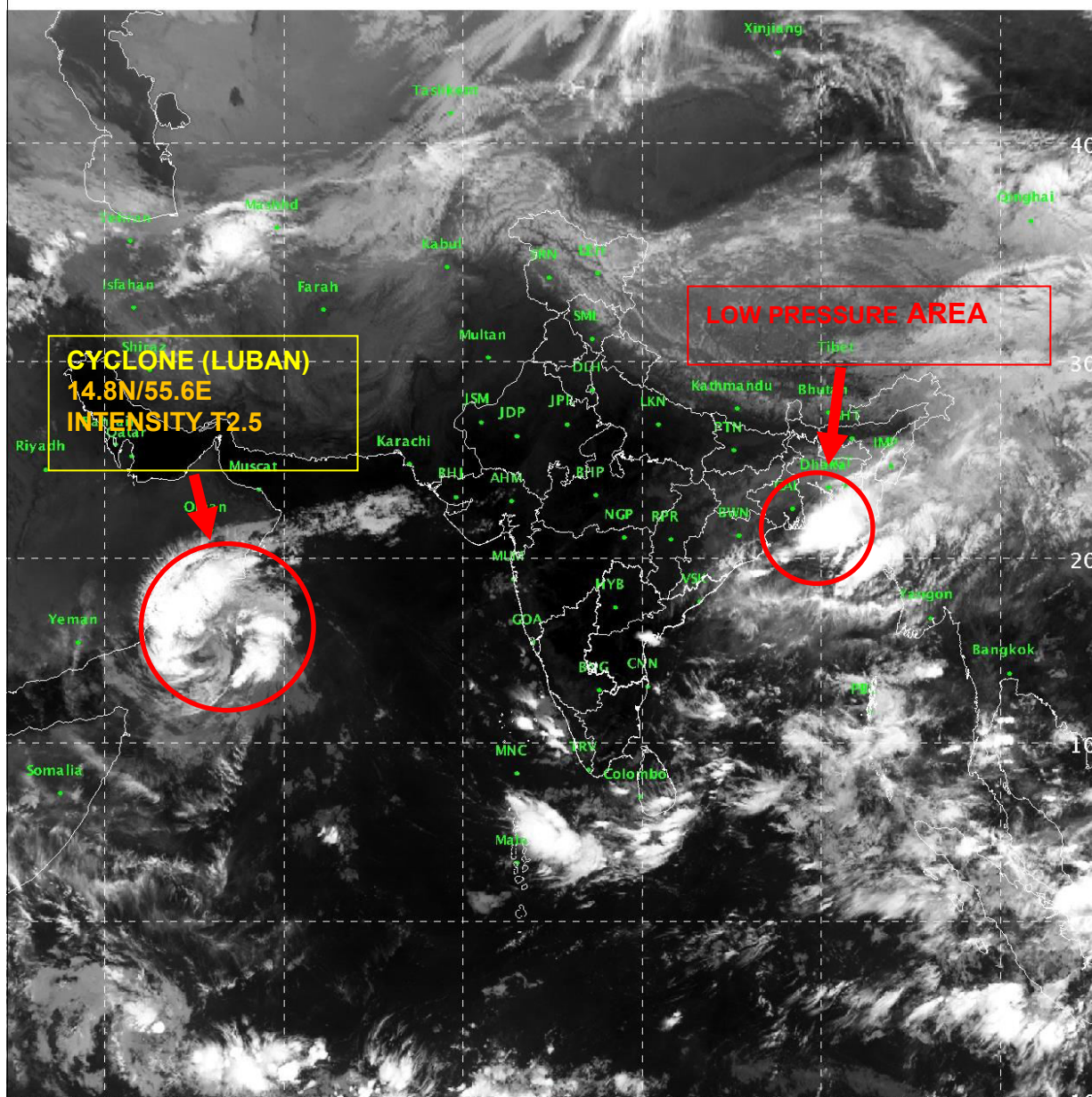
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT :INSAT-3D IMG
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L1C Mercator (LINEAR STRETCH: 1.0%)

13-10-2018/03:00 GMT
13-10-2018/08:30 IST



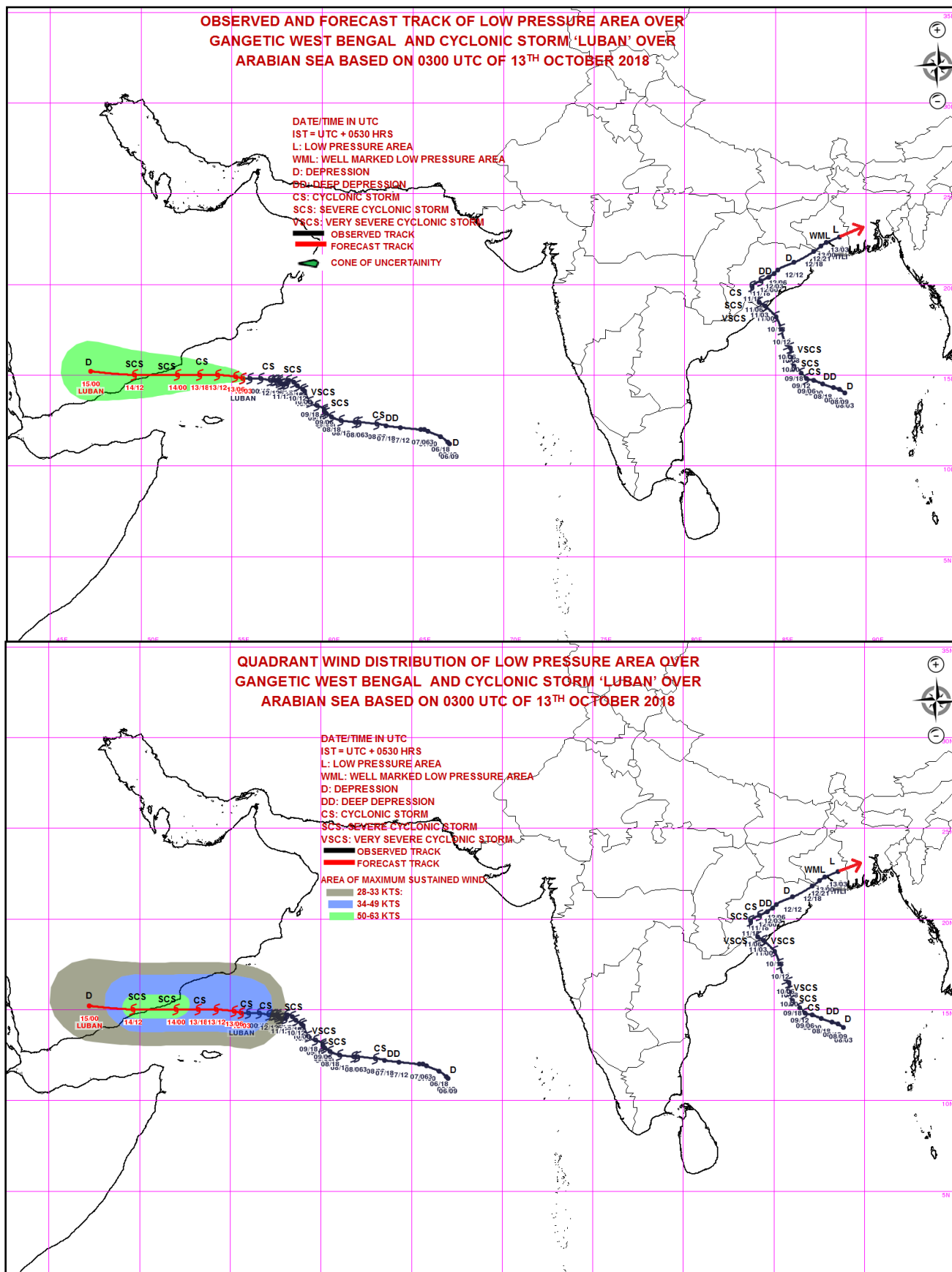
516

877

IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 43

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 43 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0900 UTC OF 13.10.2018 BASED ON 0600 UTC OF 13.10.2018.

(A) CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED NEARLY WESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 14 KMPH AND LAY CENTERED AT 1130 HRS IST OF TODAY, THE 13TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.9°N AND LONGITUDE 55.2°E, ABOUT 260 KM SOUTH-SOUTHEAST OF SALALAH (41316) (OMAN), 280 KM NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN), 350 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN) AND 640 KM EAST-NORTHEAST OF RIYAN (41443) (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (41443) (MUKALLA) AND AL-GHAIDAH (41398) (YEMEN), CLOSE TO 15°N 0600-0900 UTC OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
13.10.18/0600	14.9/55.2	80-90 GUSTING TO 100	CYCLONIC STORM
13.10.18/1200	15.0/54.2	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
13.10.18/1800	15.0/53.2	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
14.10.18/0000	15.0/52.0	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
14.10.18/0600	15.0/50.8	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
14.10.18/1800	15.1/48.4	70-80 GUSTING TO 90	CYCLONIC STORM
15.10.18/0000	15.2/46.0	40-50 GUSTING TO 60	DEPRESSION

AS PER THE SATELLITE IMAGERY BASED ON 0600 UTC OF 13TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 12.5°N & 20.0°N AND BETWEEN LONGITUDE 51°E & 60.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 72°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN AND ADJOINING YEMEN COAST. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND TO THE WEST OF 60.0⁰E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 200 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR.

(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

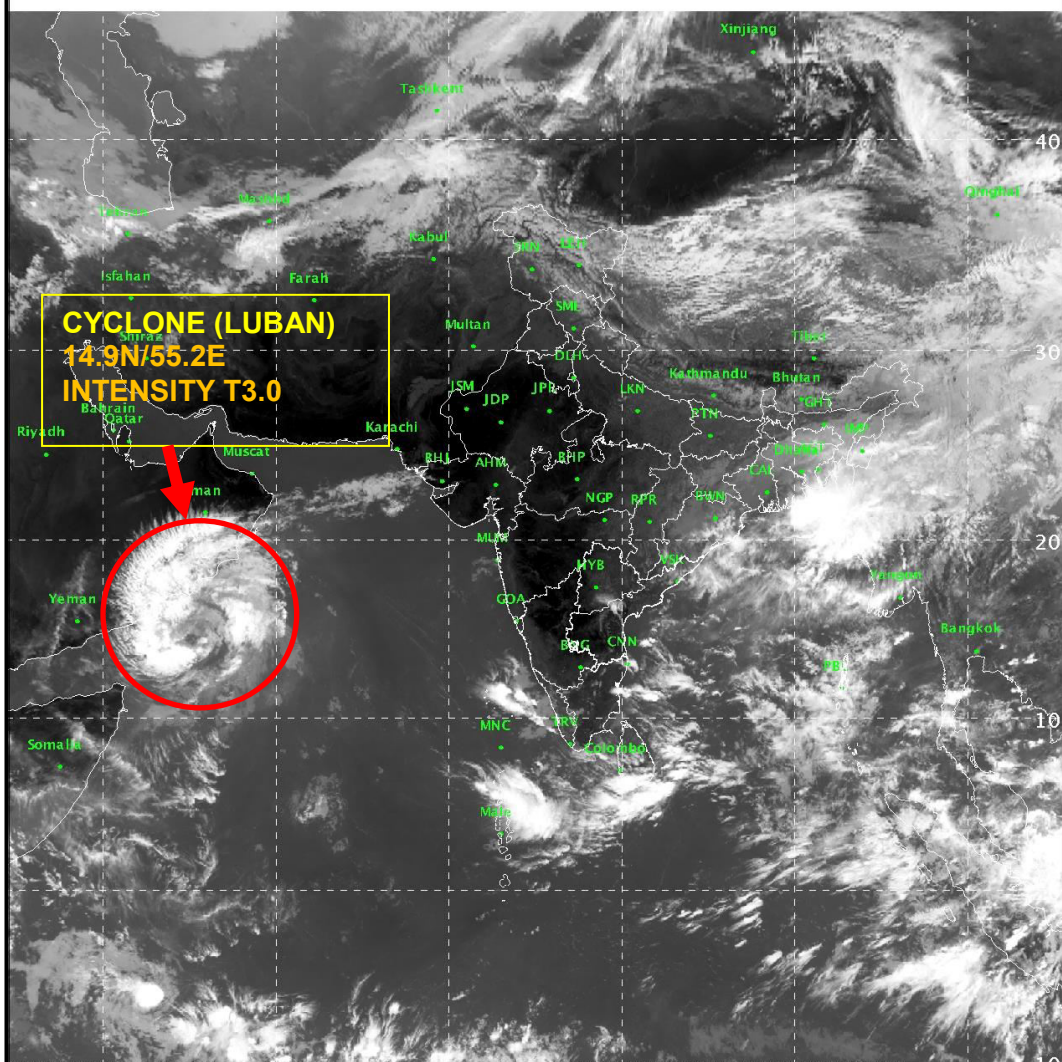
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IMG_TIR1 10.8 um

L1C Mercator (LINEAR STRETCH: 1.0%)

13-10-2018/06:00 GMT

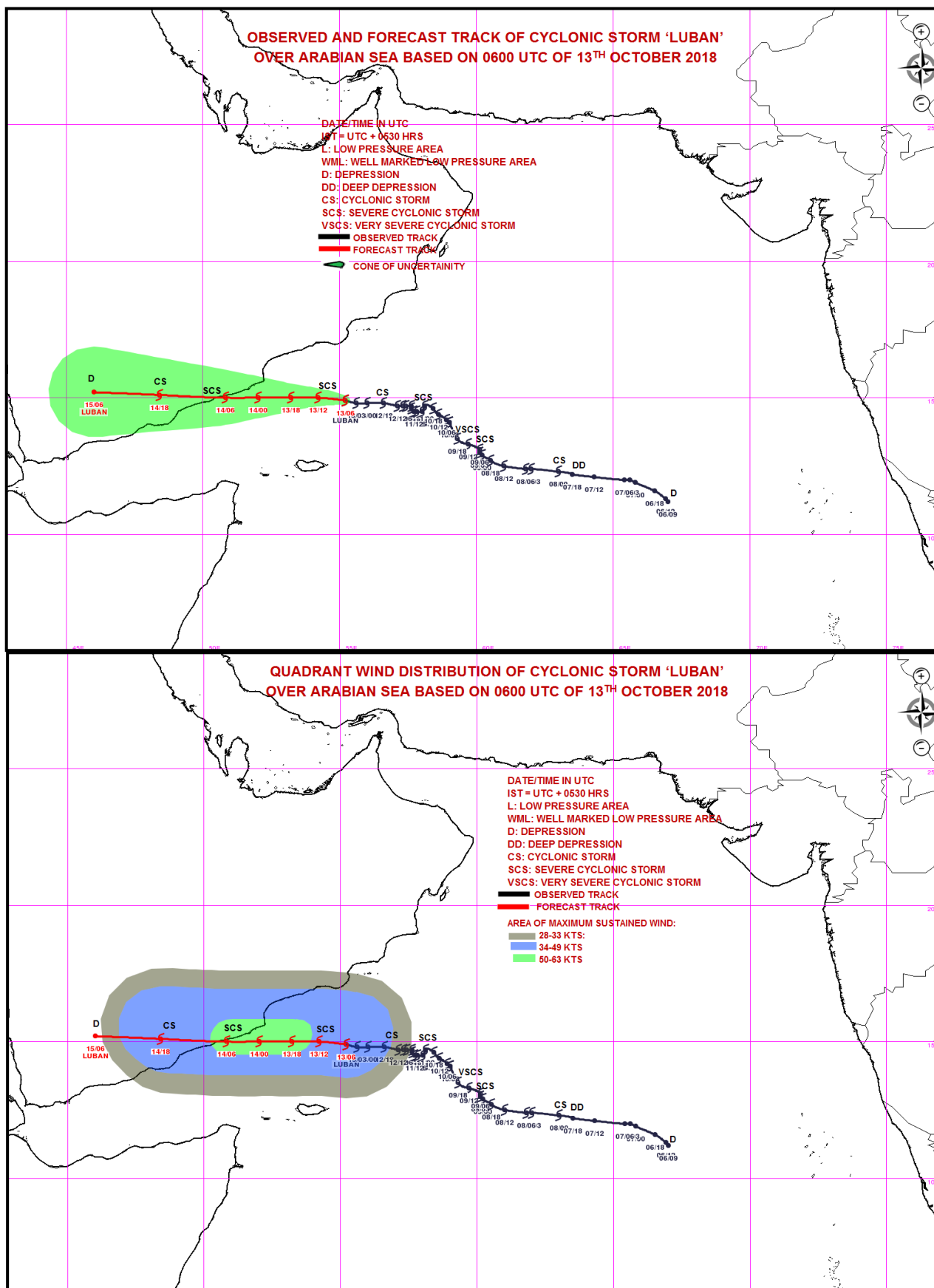
13-10-2018/11:30 IST



IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 44

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 44 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 1100 UTC OF 13.10.2018 BASED ON 0900 UTC OF 13.10.2018.

CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA (AS) MOVED NEARLY WESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 14 KMPH AND LAY CENTERED AT 0900 UTC OF TODAY, THE 13TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.9°N AND LONGITUDE 54.8°E, ABOUT 250 KM SOUTH-SOUTHEAST OF SALALAH (41316) (OMAN), 270 KM NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN), 320 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN) AND 600 KM EAST-NORTHEAST OF RIYAN (41443) (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (41443) (MUKALLA) AND AL-GHAIDAH (41398) (YEMEN), CLOSE TO 15°N DURING 0600-0900 UTC OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
13.10.18/0900	14.9/54.8	80-90 GUSTING TO 100	CYCLONIC STORM
13.10.18/1200	15.0/54.2	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
13.10.18/1800	15.0/53.2	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
14.10.18/0000	15.0/52.0	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
14.10.18/0600	15.0/50.8	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
14.10.18/1800	15.1/48.4	70-80 GUSTING TO 90	CYCLONIC STORM
15.10.18/0000	15.2/46.0	40-50 GUSTING TO 60	DEPRESSION

AS PER THE SATELLITE IMAGERY BASED ON 0900 UTC OF 13TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 12.5°N & 20.0°N AND BETWEEN LONGITUDE 51°E & 60.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 72°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN AND ADJOINING YEMEN COAST. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND TO THE WEST OF 60.0⁰E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 200 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 13TH AND 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR.

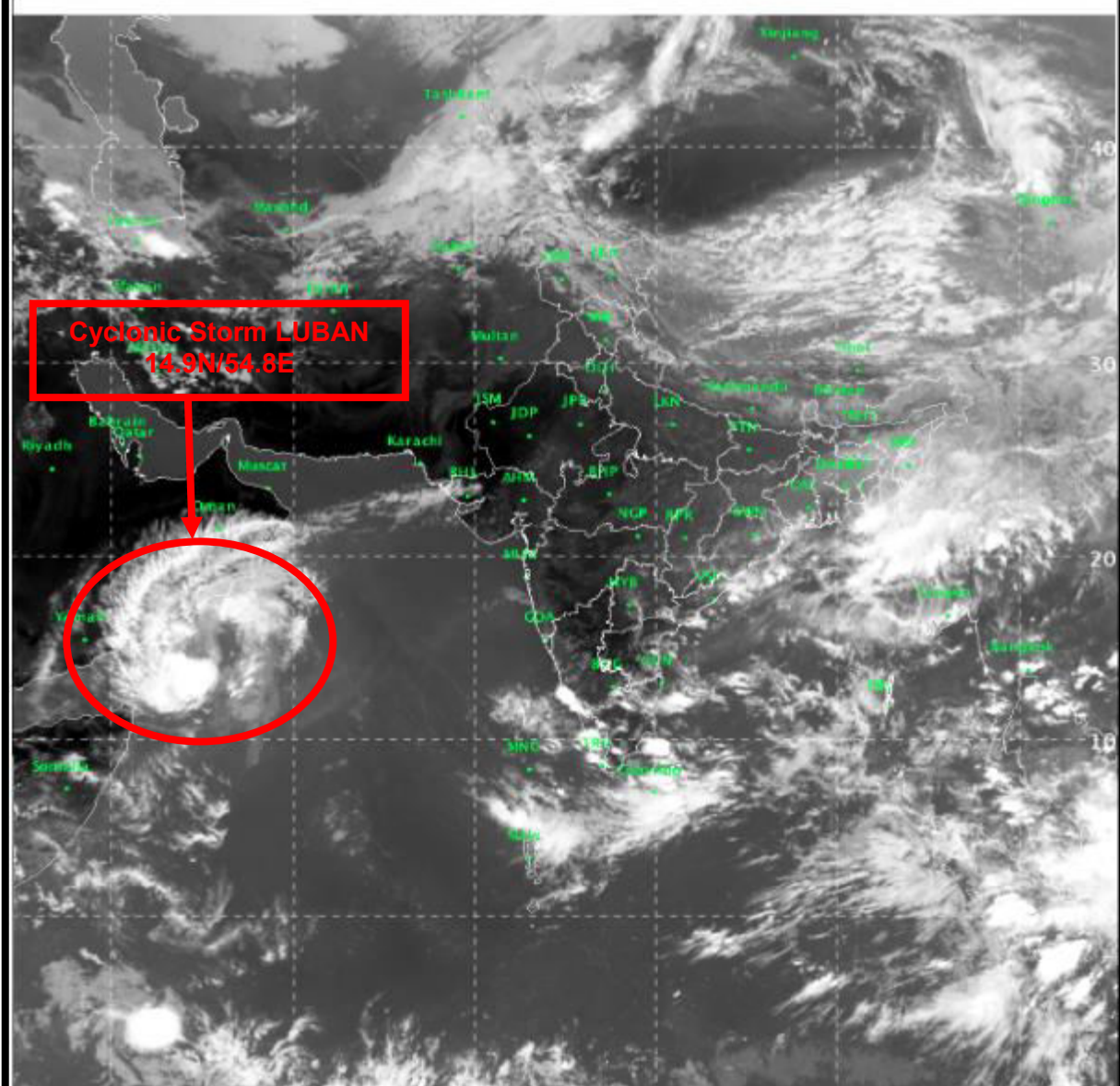
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

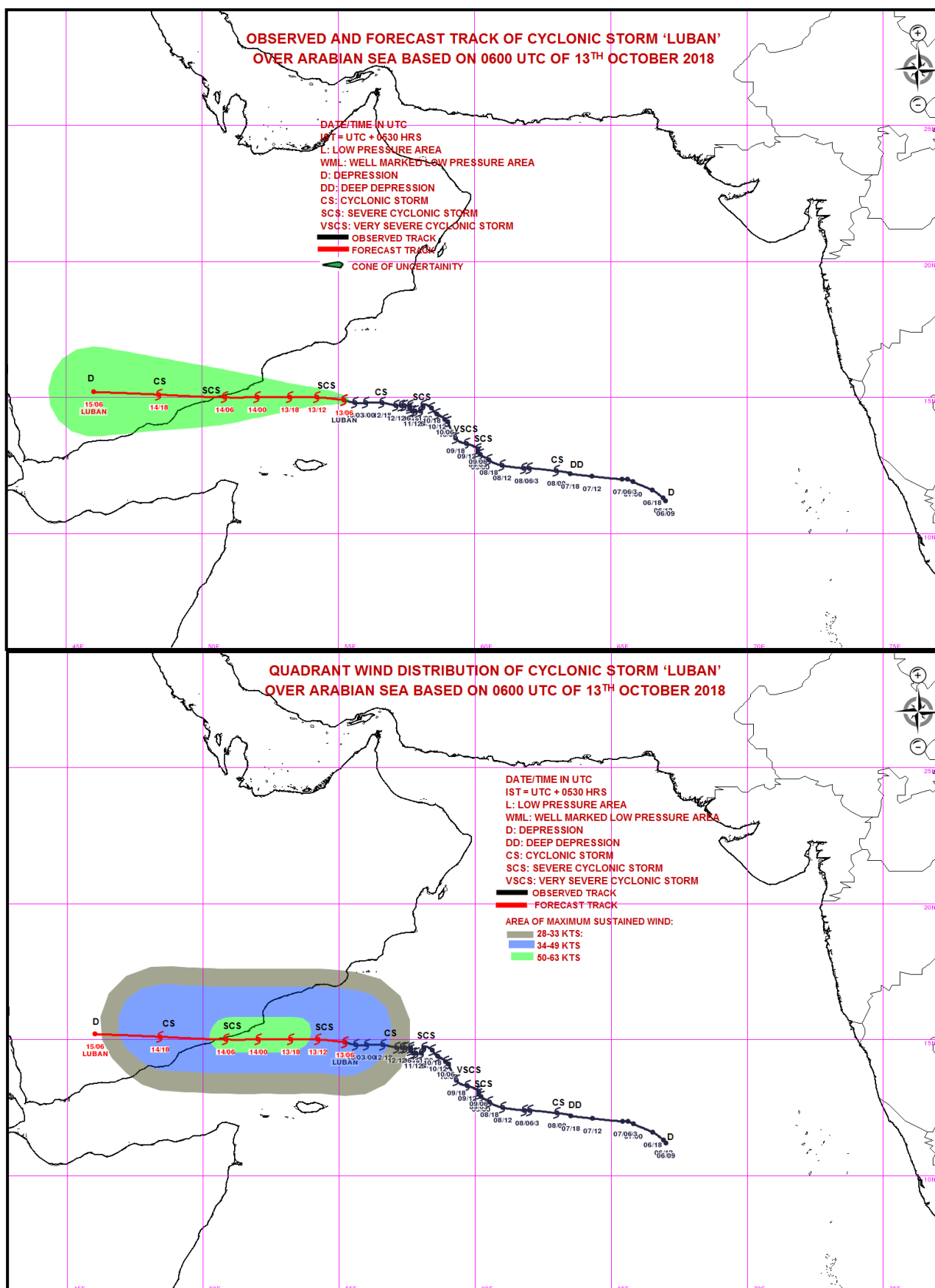
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IMG_TIR1 10.8 um
LIC Mercator (LINEAR STRETCH: 1.0%)

13-10-2018/09:30 GMT
13-10-2018/15:00 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 45

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 45 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 1500 UTC OF 13.10.2018 BASED ON 1200 UTC OF 13.10.2018.

CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 14 KMPH AND LAY CENTERED AT 1200 UTC OF TODAY, THE 13TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.9°N AND LONGITUDE 54.4°E, ABOUT 240 KM SOUTH-SOUTHEAST OF SALALAH (41316) (OMAN), 260 KM NORTHEAST OF SOCOTRA ISLANDS (41494) (YEMEN), 280 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN) AND 550 KM EAST-NORTHEAST OF RIYAN (41443) (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (41443) (MUKALLA) AND AL-GHAIDAH (41398) (YEMEN), CLOSE TO 15°N BETWEEN 0600-0900 UTC OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
13.10.18/1200	14.9/54.4	80-90 gusting to 100	Cyclonic Storm
13.10.18/1800	15.0/53.5	85-95 gusting to 110	Cyclonic Storm
14.10.18/0000	15.1/52.4	90-100 gusting to 115	Severe Cyclonic Storm
14.10.18/0600	15.2/51.4	90-100 gusting to 115	Severe Cyclonic Storm
14.10.18/1200	15.3/50.2	70-80 gusting to 90	Cyclonic Storm
15.10.18/0000	15.7/48.7	40-50 gusting to 60	Depression

AS PER THE SATELLITE IMAGERY BASED ON 1200 UTC OF 13TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 11.5°N & 20.0°N AND BETWEEN LONGITUDE 50°E & 58.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 80°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN AND ADJOINING YEMEN COAST. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND TO THE WEST OF 60.0⁰E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 200 X10⁻⁵SEC⁻¹ TO THE SOUTH OF THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ TO SOUTH OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR.

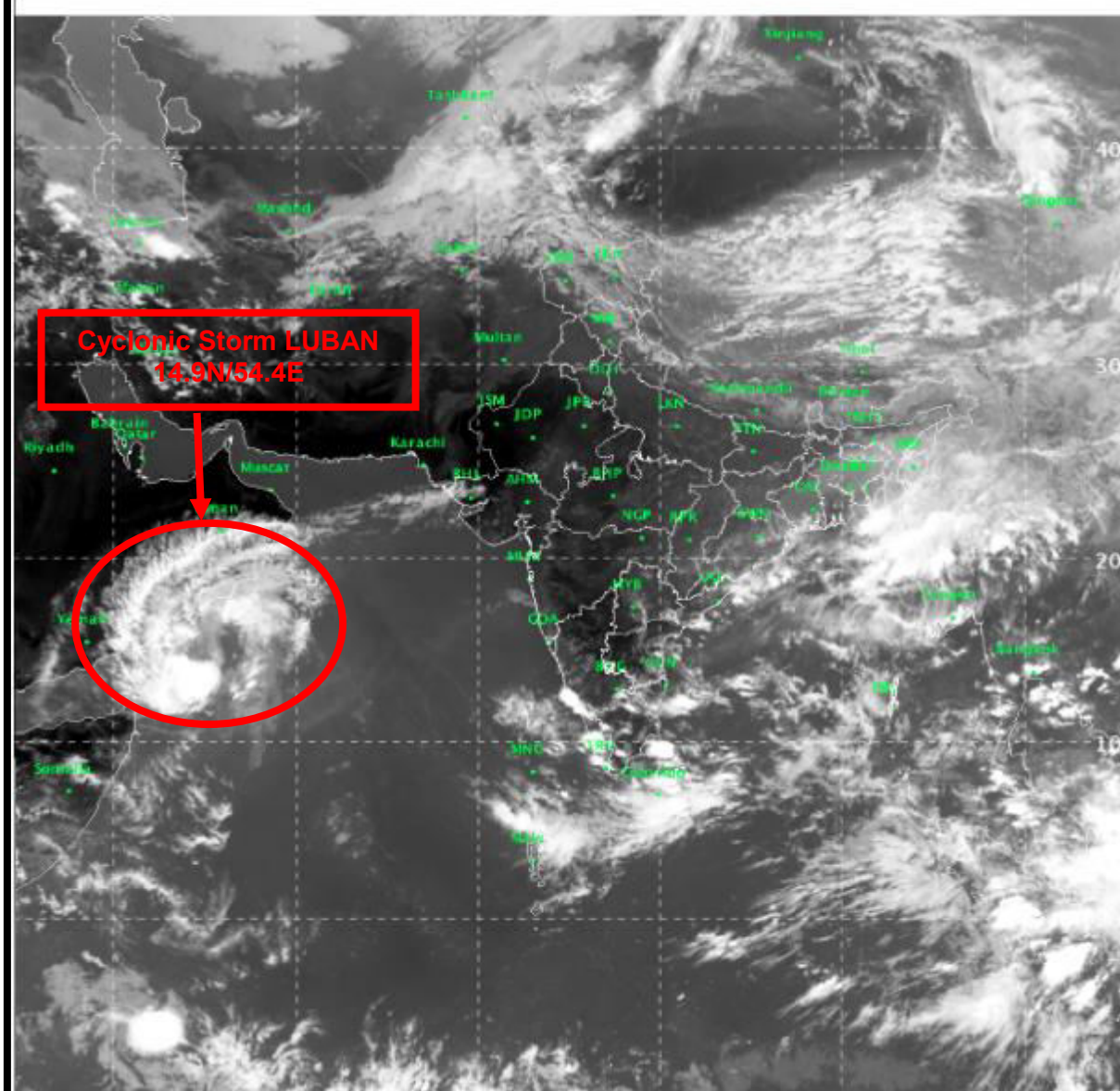
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

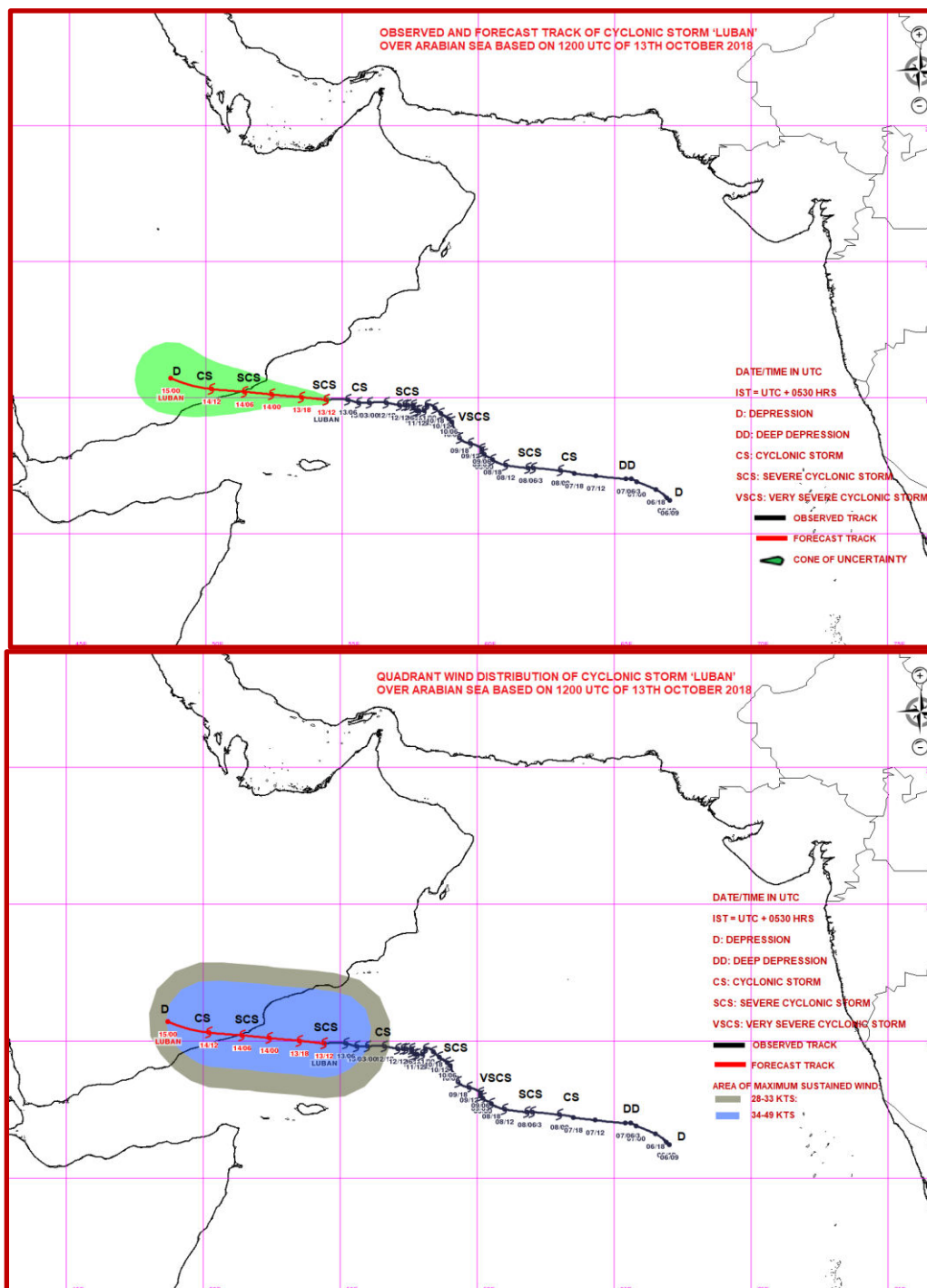
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

13-10-2018/09:30 GMT

13-10-2018/15:00 IST



NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 46

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 46 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 1730 UTC OF 13.10.2018 BASED ON 1500 UTC OF 13.10.2018.

CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 14 KMPH AND LAY CENTERED AT 1500 UTC OF TODAY, THE 13TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 14.9°N AND LONGITUDE 54.0°E, ABOUT 230 KM SOUTH OF SALALAH (41316) (OMAN), 250 KM NORTH OF SOCOTRA ISLANDS (41494) (YEMEN), 240 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN) AND 510 KM EAST-NORTHEAST OF RIYAN (41443) (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (41443) (MUKALLA) AND AL-GHAIDAH (41398) (YEMEN), CLOSE TO 15°N BETWEEN 0600-0900 UTC OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
13.10.18/1500	14.9/54.0	80-90 gusting to 100	Cyclonic Storm
13.10.18/1800	15.0/53.5	85-95 gusting to 110	Cyclonic Storm
14.10.18/0000	15.1/52.4	90-100 gusting to 115	Severe Cyclonic Storm
14.10.18/0600	15.2/51.4	90-100 gusting to 115	Severe Cyclonic Storm
14.10.18/1200	15.3/50.2	70-80 gusting to 90	Cyclonic Storm
15.10.18/0000	15.7/48.7	40-50 gusting to 60	Depression

AS PER THE SATELLITE IMAGERY BASED ON 1500 UTC OF 13TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.5/CI 3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.0°N & 20.0°N AND BETWEEN LONGITUDE 50.0°E & 58.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN AND ADJOINING YEMEN COAST. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND TO THE WEST OF 60.0⁰E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 200 X10⁻⁵SEC⁻¹ TO THE SOUTH OF THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ TO SOUTH OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR.

(D. R. PATTANAİK)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

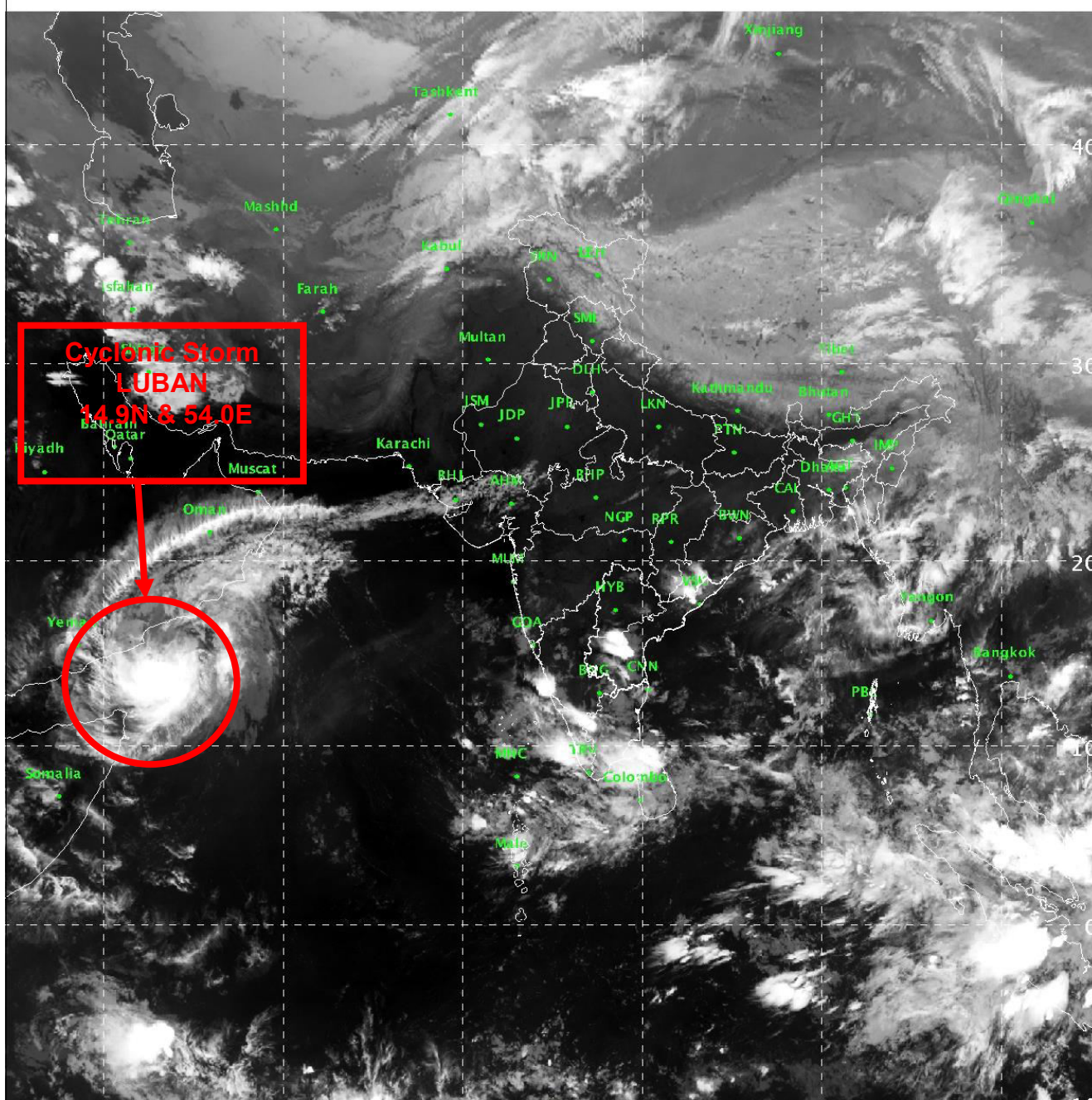
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IMG_TIR1 10.8 um

L1C Mercator (LINEAR STRETCH: 1.0%)

13-10-2018/15:00 GMT

13-10-2018/20:30 IST



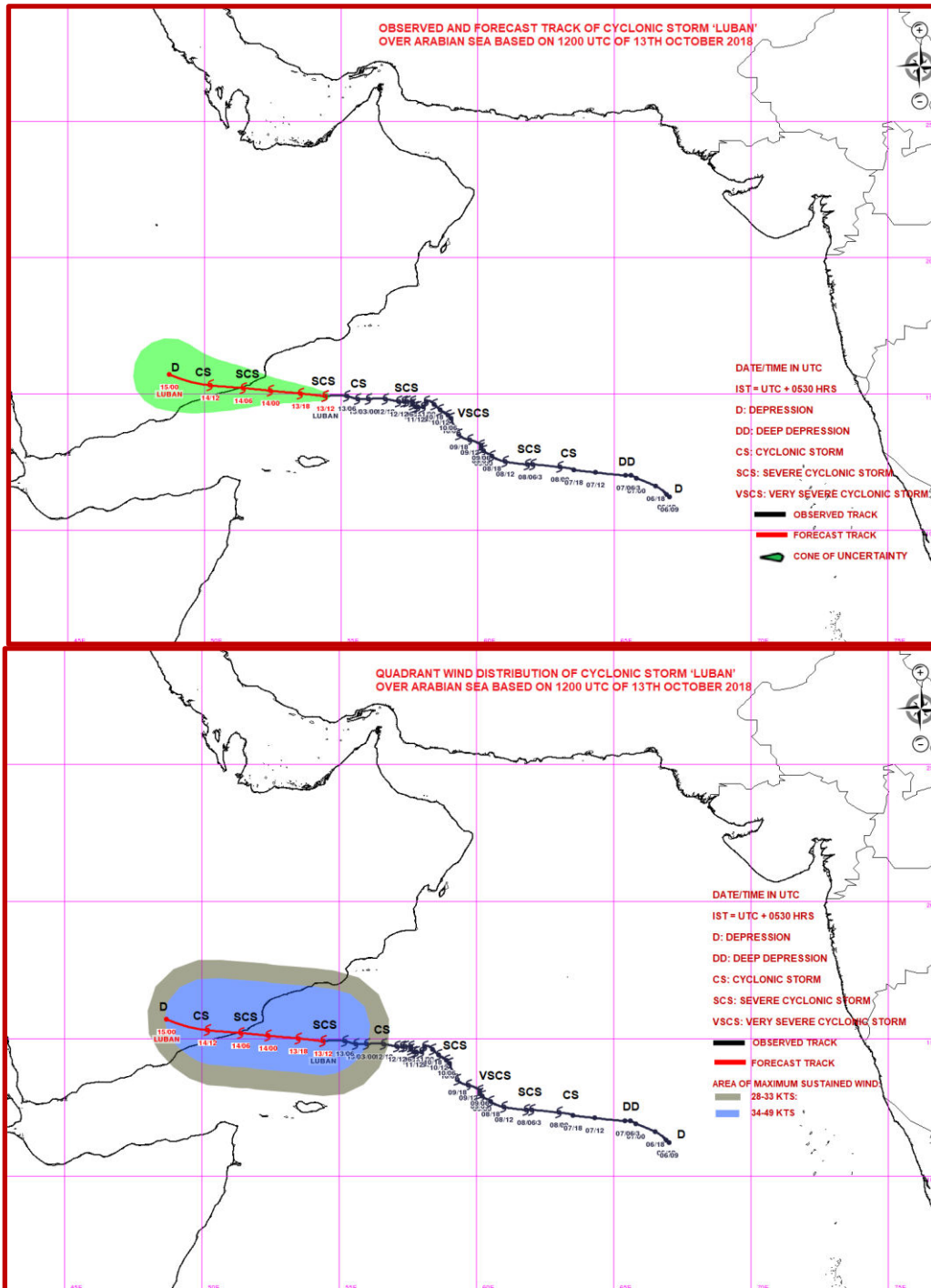
521

884

IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 47

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 47 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 2000 UTC OF 13.10.2018 BASED ON 1800 UTC OF 13.10.2018.

CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WEST-NORTHWEST DURING PAST 06 HOURS WITH A SPEED OF 12 KMPH AND LAY CENTERED AT 1800 UTC OF 13TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 15.0°N AND LONGITUDE 53.7°E, ABOUT 220 KM SOUTH-SOUTHWEST OF SALALAH (41316) (OMAN), 260 KM NORTH OF SOCOTRA ISLANDS (41494) (YEMEN), 210 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN) AND 480 KM EAST-NORTHEAST OF RIYAN (41443) (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (41443) (MUKALLA) AND AL-GHAIDAH (41398) (YEMEN), CLOSE TO 15°N BETWEEN 0600-0900 UTC OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
13.10.18/1800	15.0/53.7	85-95 gusting to 110	Cyclonic Storm
14.10.18/0000	15.1/52.5	90-100 gusting to 115	Severe Cyclonic Storm
14.10.18/0600	15.2/51.4	90-100 gusting to 115	Severe Cyclonic Storm
14.10.18/1200	15.3/50.2	70-80 gusting to 90	Cyclonic Storm
14.10.18/1800	15.5/49.3	50-60 gusting to 70	Deep Depression
15.10.18/0600	15.7/48.1	35-45 gusting to 55	Depression

AS PER THE SATELLITE IMAGERY BASED ON 1800 UTC OF 13TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.5/CI 3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.5°N & 18.0°N AND BETWEEN LONGITUDE 50.0°E & 58.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN AND ADJOINING YEMEN COAST. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND TO THE WEST OF 60.0⁰E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 200 X10⁻⁵SEC⁻¹ TO THE SOUTH OF THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ TO SOUTH OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR.

(D. R. PATTANAIAK)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

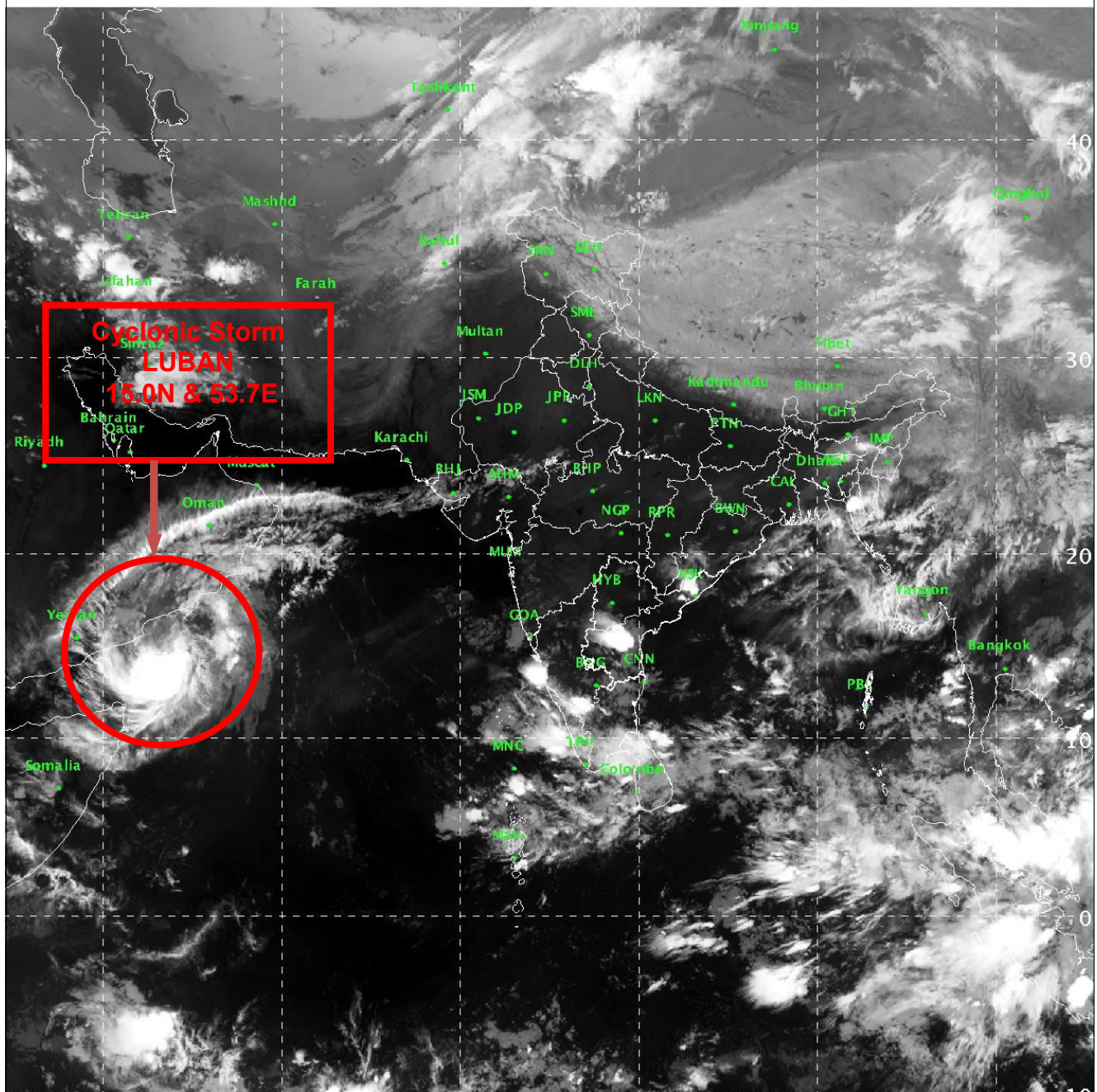
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L1C Mercator (LINEAR STRETCH: 1.0%)

13-10-2018/16:30 GMT

13-10-2018/22:00 IST



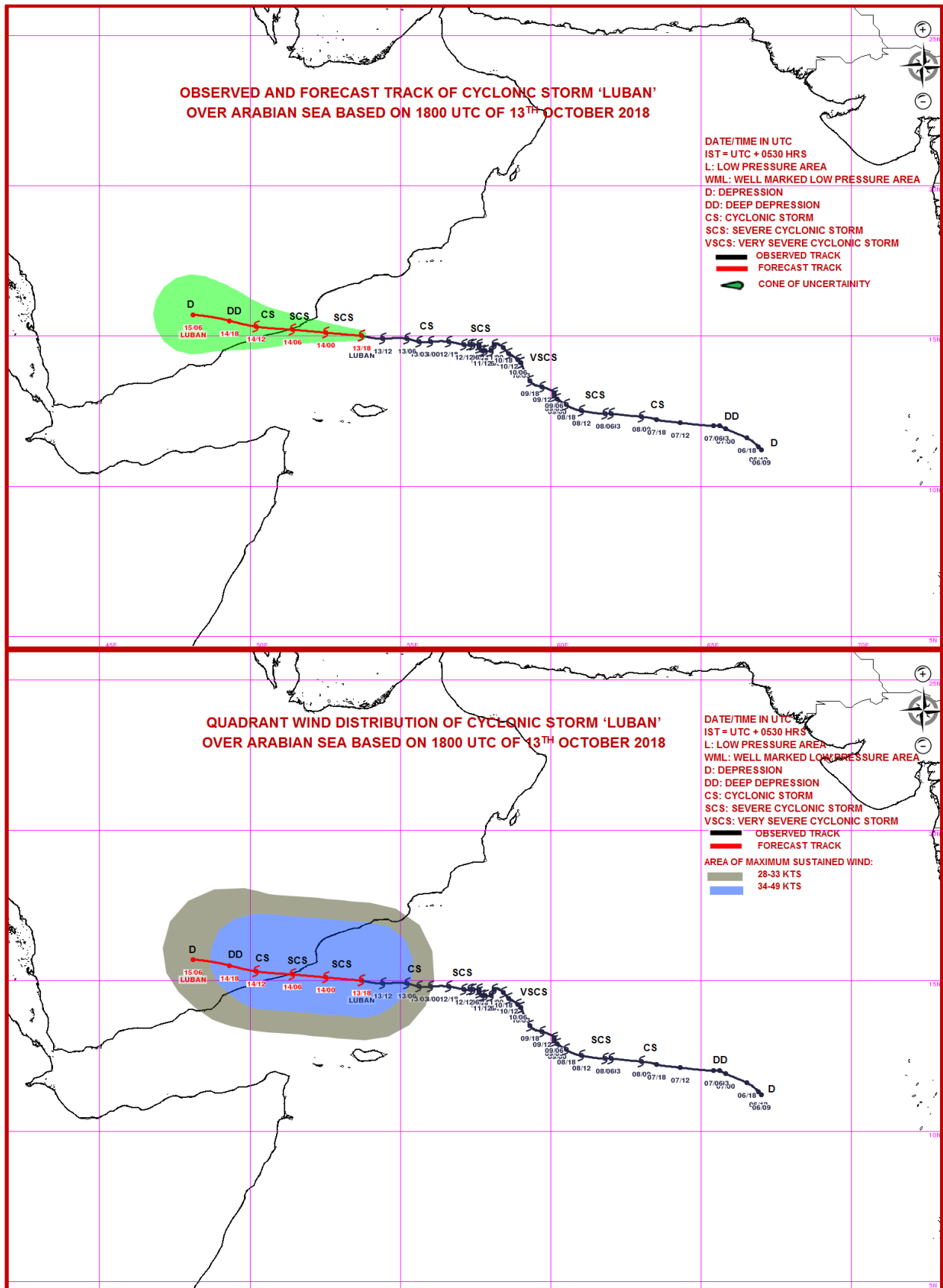
534

886

IMD/Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 48

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 48 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 2330 UTC OF 13.10.2018 BASED ON 21 UTC OF 13.10.2018.

CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WEST-NORTHWEST DURING PAST 06 HOURS WITH A SPEED OF 13 KMPH AND LAY CENTERED AT 2100 UTC OF 13TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 15.1°N AND LONGITUDE 53.3°E, ABOUT 230 KM SOUTH-SOUTHWEST OF SALALAH (41316) (OMAN), 280 KM NORTH-NORTHWEST OF SOCOTRA ISLANDS (41494) (YEMEN), 160 KM EAST-SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN) AND 430 KM EAST-NORTHEAST OF RIYAN (41443) (MUKALLA). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST BETWEEN RIYAN (41443) (MUKALLA) AND AL-GHAIDAH (41398) (YEMEN), CLOSE TO 15°N BETWEEN 0600-0900 UTC OF 14TH OCTOBER 2018 AS A SEVERE CYCLONIC STORM.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
13.10.18/2100	15.1/53.3	85-95 gusting to 110	Cyclonic Storm
14.10.18/0000	15.1/52.5	90-100 gusting to 115	Severe Cyclonic Storm
14.10.18/0600	15.2/51.4	90-100 gusting to 115	Severe Cyclonic Storm
14.10.18/1200	15.3/50.2	70-80 gusting to 90	Cyclonic Storm
14.10.18/1800	15.5/49.3	50-60 gusting to 70	Deep Depression
15.10.18/0600	15.7/48.1	35-45 gusting to 55	Depression

AS PER THE SATELLITE IMAGERY BASED ON 2100 UTC OF 13TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.5/CI 3.0. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.5°N & 18.0°N AND BETWEEN LONGITUDE 50.0°E & 58.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 86°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE SEA SURFACE TEMPERATURE (SST) IS 29-31⁰C OVER SOUTHEAST AND EASTCENTRAL AS. IT IS AROUND 26-29⁰C OVER WESTCENTRAL AND SOUTHWEST AS. THE SST IS DECREASING SLIGHTLY TOWARDS OMAN COAST. HOWEVER IT IS INCREASING TOWARDS GULF OF ADEN AND ADJOINING YEMEN COAST. TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 60-80 KJ/CM² OVER SOUTHEAST AND ADJOINING EASTCENTRAL AS. IT IS LESS THAN 50 KJ/CM² TO THE NORTH OF 17.0⁰ N AND TO THE WEST OF 60.0⁰E. THE LOW LEVEL RELATIVE VORTICITY IS AROUND 200 X10⁻⁵SEC⁻¹ TO THE SOUTH OF THE SYSTEM CENTRE. THE VORTICITY ZONE IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 20 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER 20 X10⁻⁵ SEC⁻¹ TO SOUTH OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. THE ANIMATION OF TOTAL PRECIPITABLE WATER IMAGERIES INDICATE A REALTIVE REDUCTION IN THE WARM AND MOIST AIR ADVECTION TO THE CORE OF THE SYSTEM AND THERE IS COLD AND DRY AIR ADVECTION NEAR OMAN AND YEMEN COASTS. THERE IS POSSIBILITY OF SLIGHT INTENSIFICATION ON 14TH BEFORE LANDFALL AS THE SYSTEM WOULD EXPERIENCE AGAIN HIGHER SST OVER GULF OF ADEN AND LOW VERTICAL WIND SHEAR.

(D. R. PATTANAIAK)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

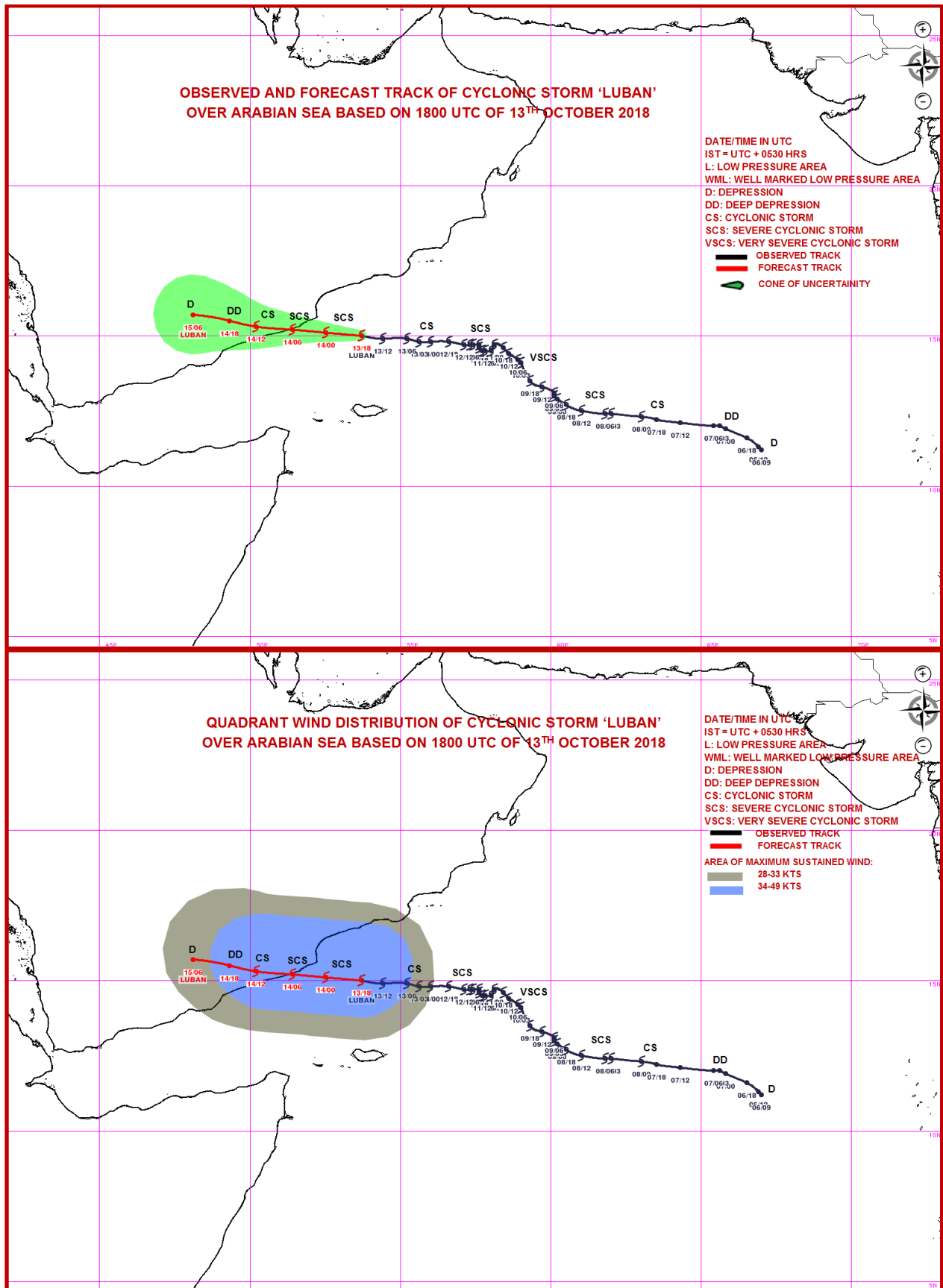
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

14-10-2018/02:00 IST



893

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 49

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 49 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0300 UTC OF 14.10.2018 BASED ON 0000 UTC OF 14.10.2018.

CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED WEST-NORTHWEST DURING PAST 06 HOURS WITH A SPEED OF 17 KMPH AND LAY CENTERED AT 0000 UTC OF 14TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 15.3°N AND LONGITUDE 52.8°E, ABOUT 110 KM SOUTHEAST OF AL-GHAIDAH (41398) (YEMEN) AND 230 KM SOUTH-SOUTHWEST OF SALALAH (41316) (OMAN). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST NEAR 15.6°N (SOUTH OF AL-GHAIDAH), AROUND 0600 UTC OF TODAY, THE 14TH OCTOBER 2018.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
14.10.18/0000	15.3/52.8	70-80 gusting to 90	Cyclonic Storm
14.10.18/0600	15.6/52.0	65-75 gusting to 85	Cyclonic Storm
14.10.18/1200	15.9/51.3	50-60 gusting to 70	Deep Depression
14.10.18/1800	16.2/50.7	35-45 gusting to 55	Depression
15.10.18/0000	16.5/50.1	20-30 gusting to 40	Low

AS PER THE SATELLITE IMAGERY BASED ON 0000 UTC OF 14TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.0°N & 18.0°N AND BETWEEN LONGITUDE 50.0°E & 56.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 85°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 997 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 0.5 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE LOW LEVEL RELATIVE VORTICITY IS AROUND $200 \times 10^{-5} \text{SEC}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT $20 \times 10^{-5} \text{SEC}^{-1}$ AROUND THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER $30 \times 10^{-5} \text{SEC}^{-1}$ TO SOUTH OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE. THE SYSTEM IS INTERACTING WITH LAND SURFACE. IT WILL WEAKEN RAPIDLY AFTER THE LAND FALL DUE TO LAND INTERACTION AND COLD AND DRY AIR INCLUSION FROM THE WEST.

(D. R. PATTANAİK)
SCIENTIST-E, RSMC, NEW DELHI



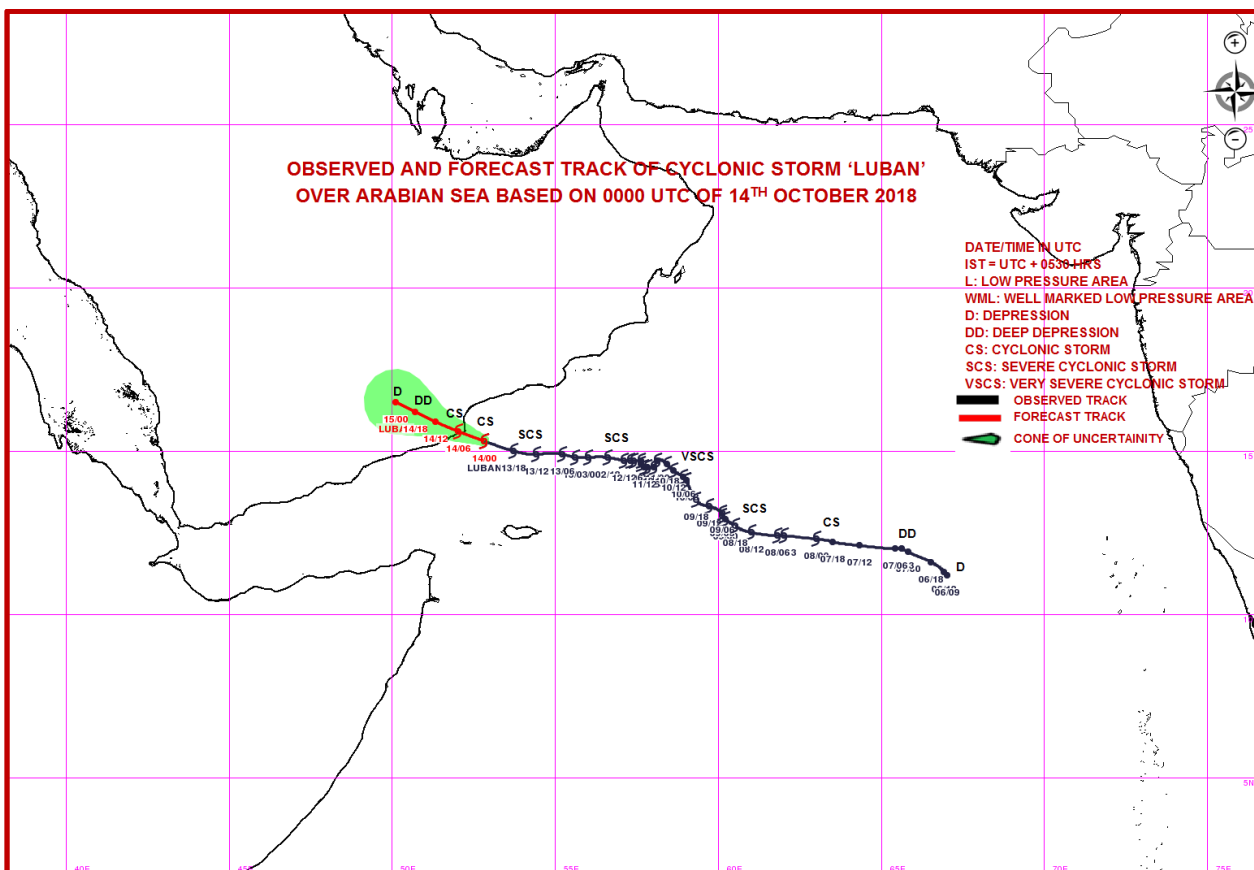
14-10-2018/05:30 IST



886

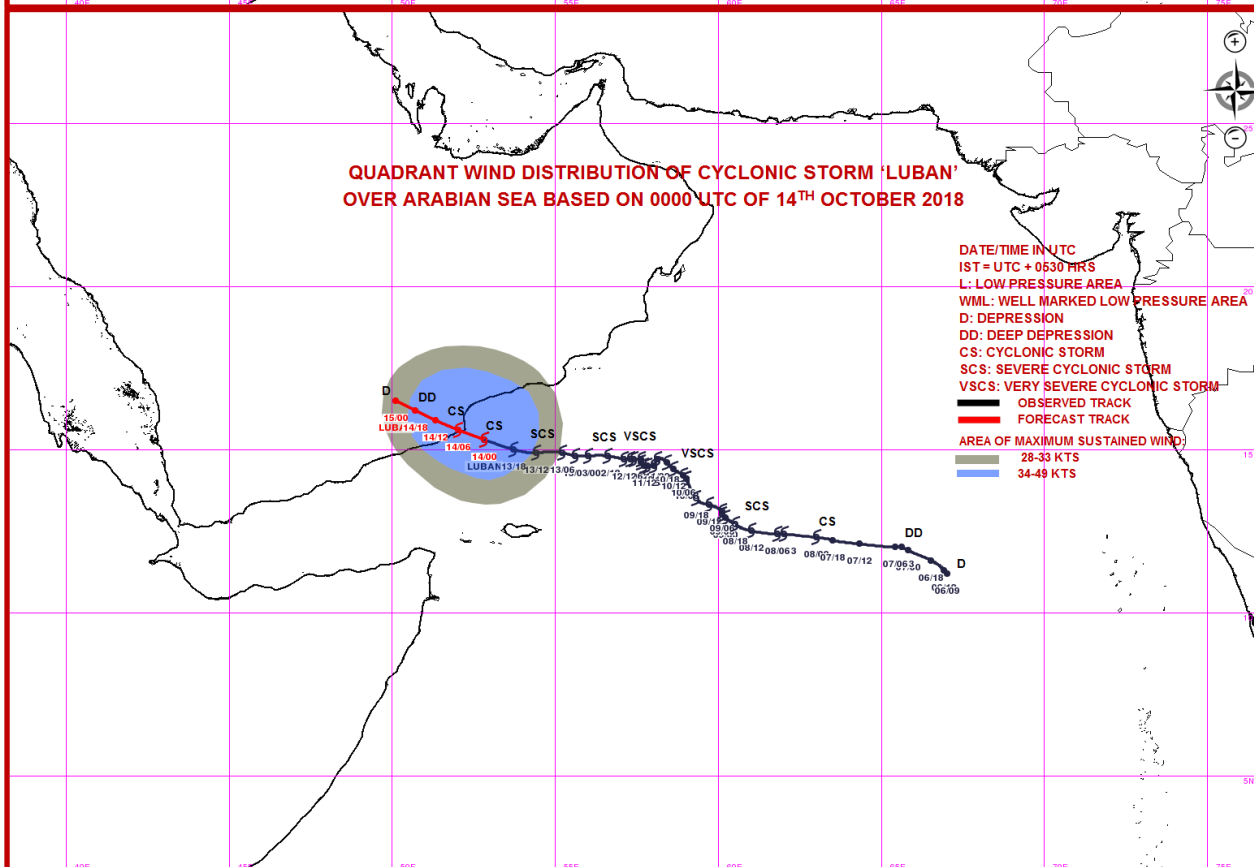
**OBSERVED AND FORECAST TRACK OF CYCLONIC STORM 'LUBAN'
OVER ARABIAN SEA BASED ON 0000 UTC OF 14TH OCTOBER 2018**

DATE/TIME IN UTC
IST = UTC + 0530 HRS
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION
DD: DEEP DEPRESSION
CS: CYCLONIC STORM
SCS: SEVERE CYCLONIC STORM
VSCS: VERY SEVERE CYCLONIC STORM
— OBSERVED TRACK
— FORECAST TRACK
CONE OF UNCERTAINTY



**QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM 'LUBAN'
OVER ARABIAN SEA BASED ON 0000 UTC OF 14TH OCTOBER 2018**

DATE/TIME IN UTC
IST = UTC + 0530 HRS
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION
DD: DEEP DEPRESSION
CS: CYCLONIC STORM
SCS: SEVERE CYCLONIC STORM
VSCS: VERY SEVERE CYCLONIC STORM
— OBSERVED TRACK
— FORECAST TRACK
AREA OF MAXIMUM SUSTAINED WIND:
28-33 KTS
34-49 KTS





REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 50

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 50 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0500 UTC OF 14.10.2018 BASED ON 0300 UTC OF 14.10.2018.

CYCLONIC STORM, 'LUBAN' OVER WESTCENTRAL ARABIAN SEA:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED FURTHER WEST-NORTHWESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 17 KMPH AND LAY CENTERED AT 0300 UTC OF TODAY, THE 14TH OCTOBER 2018 OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 15.6°N AND LONGITUDE 52.5°E, ABOUT 70 KM SOUTHEAST OF AL-GHAIDAH (41398) AND 230 KM SOUTH-SOUTHWEST OF SALALAH (41316). IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS YEMEN COAST NEAR AL-GHAIDAH, AROUND NOON OF 14TH OCTOBER 2018.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION LAT. °N/ LONG. °E	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
14.10.18/0300	15.6/52.5	70-80 GUSTING TO 90	CYCLONIC STORM
14.10.18/0600	15.9/52.2	65-75 GUSTING TO 85	CYCLONIC STORM
14.10.18/1200	16.4/51.5	50-60 GUSTING TO 70	DEEP DEPRESSION
14.10.18/1800	16.9/50.7	35-45 GUSTING TO 55	DEPRESSION

AS PER THE SATELLITE IMAGERY BASED ON 0300 UTC OF 14TH OCTOBER 2018, THE INTENSITY OF THE SYSTEM IS T2.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.0°N & 18.0°N AND BETWEEN LONGITUDE 48.5°E & 55.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 80°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 997 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF ABOUT 0.5 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW-LYING AREAS OF YEMEN COAST TO THE RIGHT OF THE CYCLONE TRACK AT THE TIME OF LANDFALL.

REMARKS:

CONSIDERING THE ENVIRONMENTAL CONDITIONS OVER ARABIAN SEA (AS), THE LOW LEVEL RELATIVE VORTICITY IS AROUND $150 \times 10^{-5} \text{SEC}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTRE AND IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT $30 \times 10^{-5} \text{SEC}^{-1}$ TO THE SOUTHEAST OF SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS OF THE ORDER $30 \times 10^{-5} \text{SEC}^{-1}$ TO SOUTHEAST OF THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW (05-10 KT) AROUND THE SYSTEM CENTRE AND ALONG THE EXPECTED TRACK. THE SYSTEM IS INTERACTING WITH LAND SURFACE. IT WILL WEAKEN RAPIDLY AFTER THE LAND FALL DUE TO LAND INTERACTION AND COLD AND DRY AIR INCLUSION FROM THE WEST.

(NARESH KUMAR)
SCIENTIST-E, RSMC, NEW DELHI

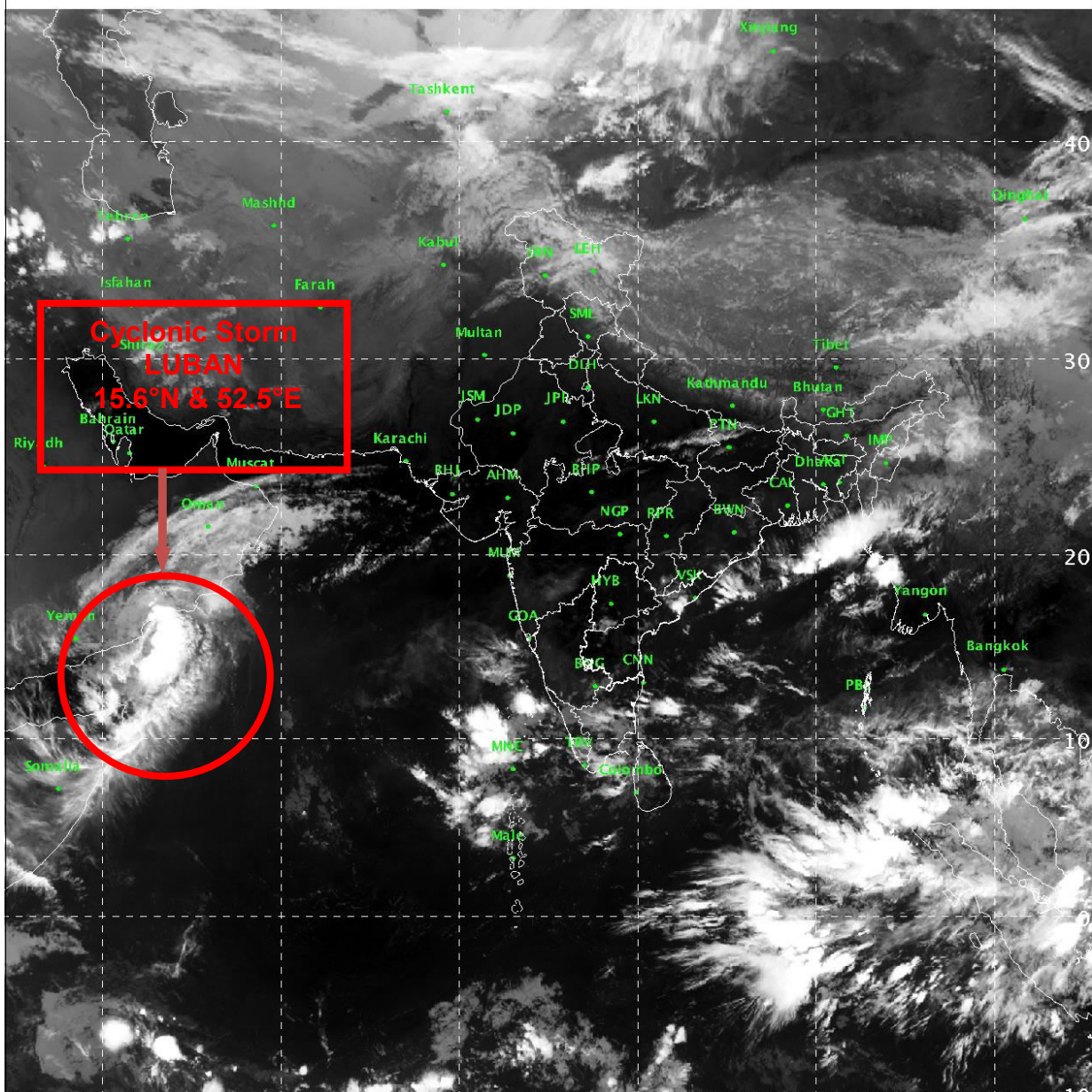
SAT :INSAT-3D IMG

IMG_TIR1 10.8 um

L1C Mercator (LINEAR STRETCH: 1.0%)

14-10-2018/03:00 GMT

14-10-2018/08:30 IST

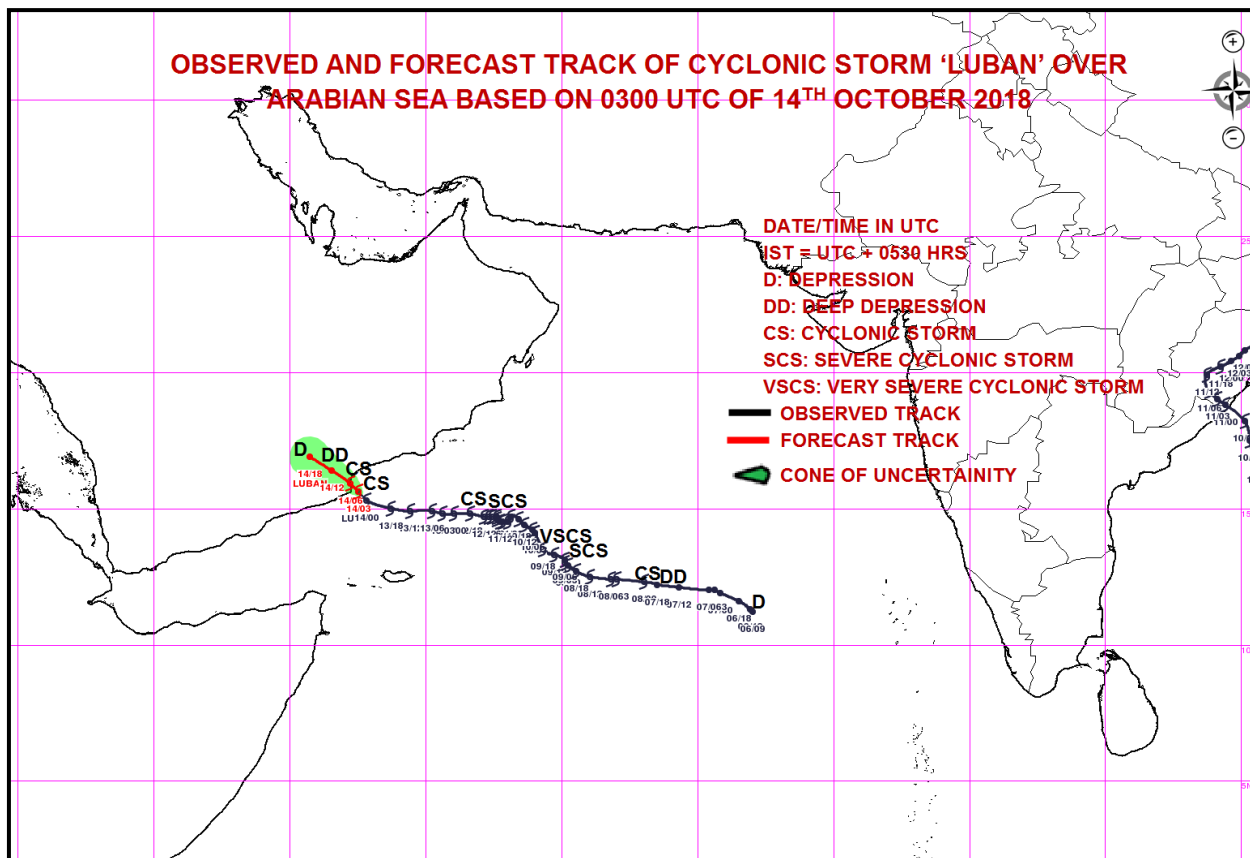


520

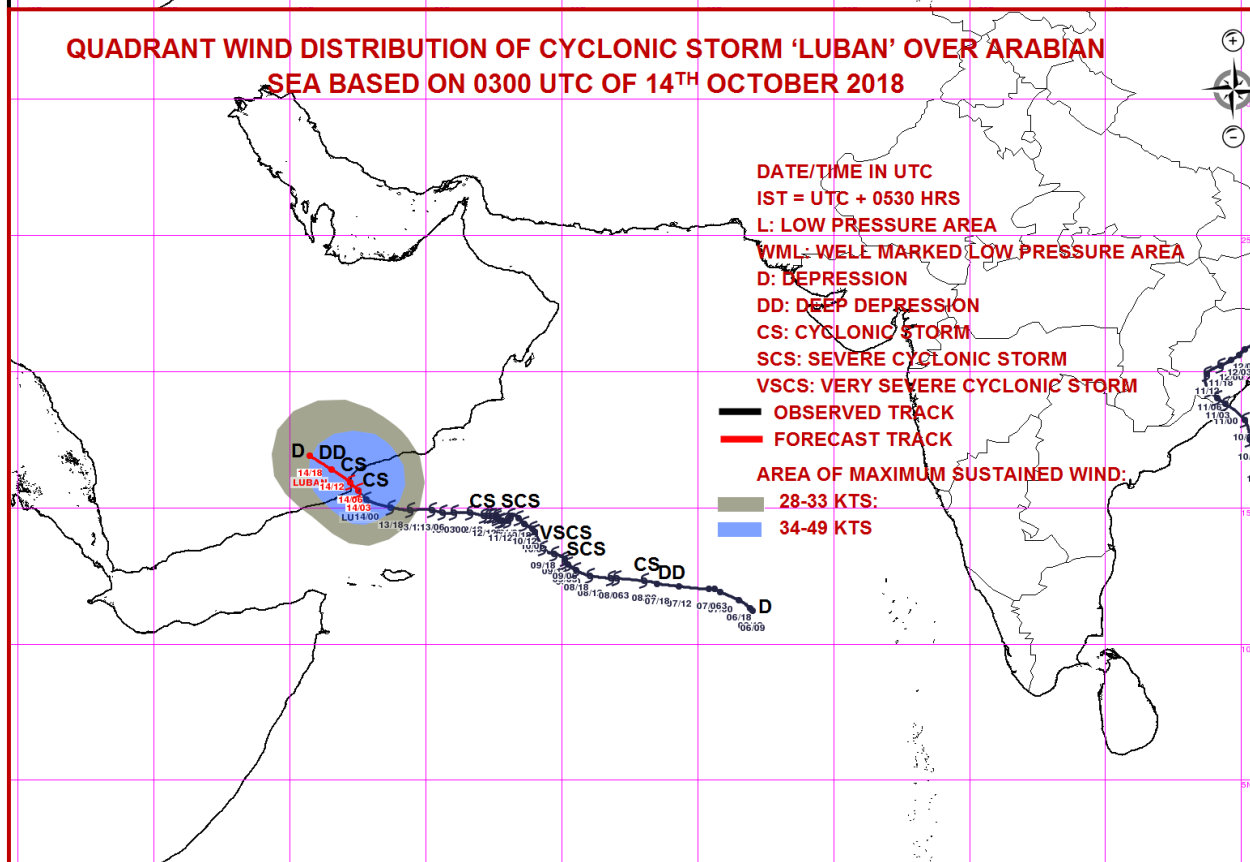
878

IMD/Delhi

OBSERVED AND FORECAST TRACK OF CYCLONIC STORM 'LUBAN' OVER ARABIAN SEA BASED ON 0300 UTC OF 14TH OCTOBER 2018



QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM 'LUBAN' OVER ARABIAN SEA BASED ON 0300 UTC OF 14TH OCTOBER 2018





REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 51

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)

STORM WARNING CENTRE, BANGKOK (THAILAND)

STORM WARNING CENTRE, COLOMBO (SRILANKA)

STORM WARNING CENTRE, DHAKA (BANGLADESH)

STORM WARNING CENTRE, KARACHI (PAKISTAN)

METEOROLOGICAL OFFICE, MALE (MALDIVES)

OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)

YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)

PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)

IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 51 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0800 UTC OF 14.10.2018 BASED ON 0600 UTC OF 14.10.2018.

CYCLONIC STORM, 'LUBAN' CROSSED YEMEN COAST:

THE CYCLONIC STORM 'LUBAN' OVER WESTCENTRAL ARABIAN SEA MOVED FURTHER WEST-NORTHWESTWARDS DURING PAST 06 HOURS WITH A SPEED OF 17 KMPH AND CROSSED YEMEN COAST NEAR LATITUDE 15.8°N AND LONGITUDE 52.2°E, ABOUT 30 KM SOUTH OF AL-GHAIDAH (41398) DURING 0530- 0600 UTC WITH AN ESTIMATED SUSTAINED MAXIMUM WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH. IT LAY CENTRED AT 0600 UTC OF TODAY, THE 14TH OCTOBER 2018 OVER COASTAL YEMEN NEAR LATITUDE 15.9°N AND LONGITUDE 52.1°E, ABOUT 20 KM SOUTH OF AL-GHAIDAH (41398). IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND WEAKEN INTO A DEEP DEPRESSION DURING NEXT 6 HOURS.

FORECAST TRACK & INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
14.10.18/0600	15.9/52.1	65-75 GUSTING TO 85	CYCLONIC STORM
14.10.18/1200	16.4/51.5	50-60 GUSTING TO 70	DEEP DEPRESSION
14.10.18/1800	16.9/50.8	35-45 GUSTING TO 55	DEPRESSION

AS PER THE SATELLITE IMAGERY BASED ON 0600 UTC OF 14TH OCTOBER 2018, BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AREA BETWEEN LATITUDE 10.0°N & 18.5°N AND BETWEEN LONGITUDE 50°E & 55°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 77°C. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA.

REMARKS:

THE SYSTEM WILL WEAKEN RAPIDLY DUE TO LAND INTERACTION AND COLD AND DRY AIR INCURSION FROM THE WEST.

(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

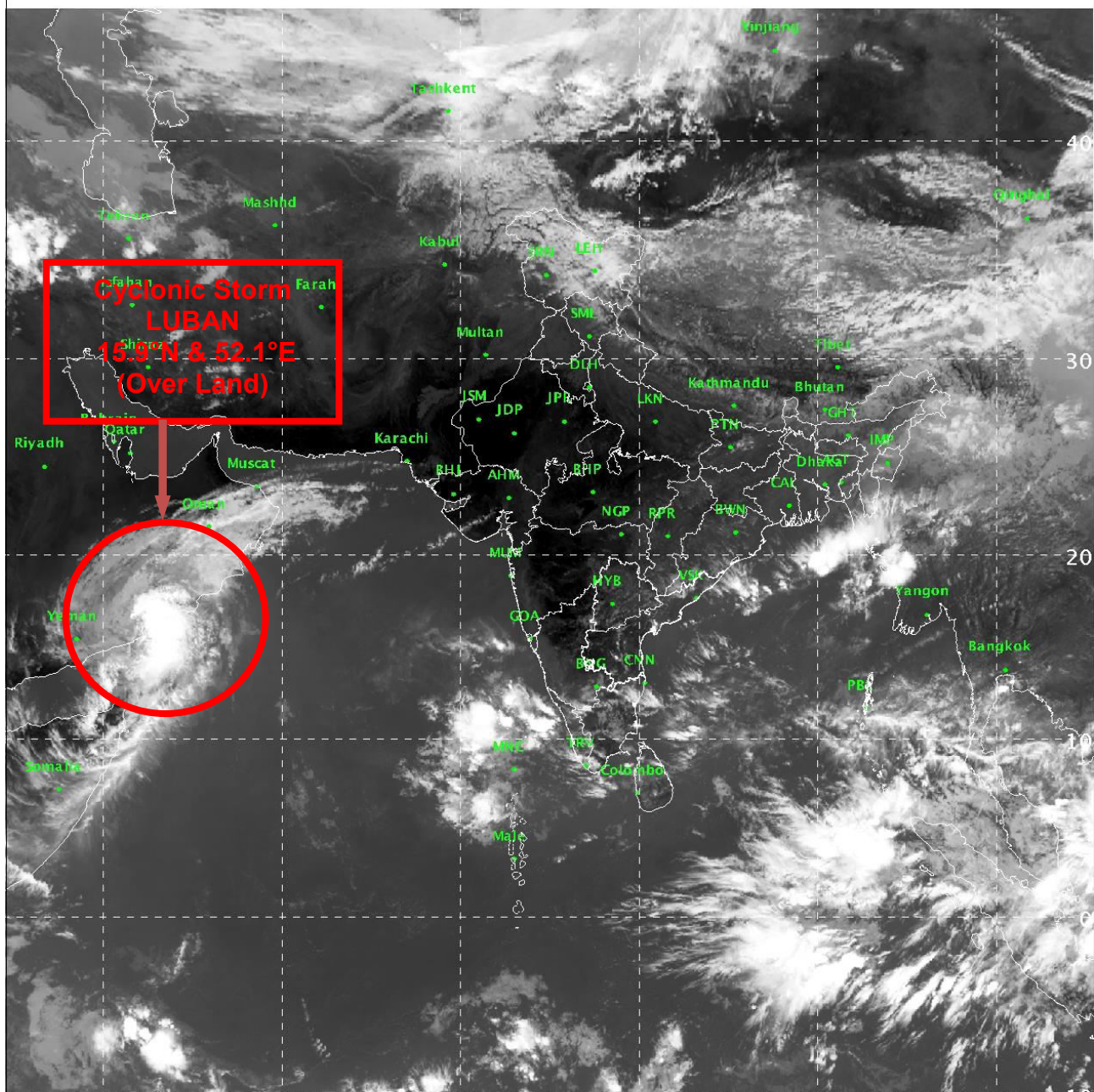
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14-10-2018/06:00 GMT

IMG_TIR1 10.8 um

14-10-2018/11:30 IST

L1C Mercator (LINEAR STRETCH: 1.0%)



416

873

IMD/Delhi

OBSERVED AND FORECAST TRACK OF CYCLONIC STORM 'LUBAN' OVER ARABIAN SEA BASED ON 0600 UTC OF 14TH OCTOBER 2018



DATE/TIME IN UTC
 IST = UTC + 0530 HRS
 D: DEPRESSION
 DD: DEEP DEPRESSION
 CS: CYCLONIC STORM
 SCS: SEVERE CYCLONIC STORM
 VSCS: VERY SEVERE CYCLONIC STORM
 — OBSERVED TRACK
 — FORECAST TRACK
 CONE OF UNCERTAINTY

