

## DLOC Topic 1, WES Exercise #9: SCAN Table Attribute Descriptions

Table #1: SCAN Storm Cell Table

| Attribute ID | Attribute Description  |
|--------------|--|
| ident        | Storm cell ID  |
| azm          | Current azimuthal position (in degrees) of the storm centroid from the RDA                                     |
| rng          | Current range (in nautical miles) of the storm centroid from the RDA   |
| tvS          | TVS algorithm detection identifier (NONE, TVS, or ETVS)  |
| mdaSR        | MDA algorithm strength rank classification (N/A or integer between 1-25; anything over 10 is very significant) |
| posh         | WSR-88D-based algorithm probability of severe hail (%)   |
| poh          | WSR-88D-based algorithm probability of hail (%)  |
| hSize        | WSR-88D-based algorithm maximum expected hail size (in inches)   |
| vil          | WSR-88D Cell-based VIL (in kg/m <sup>2</sup> )   |
| dbz          | Maximum reflectivity (in dBZ) associated with the storm centroid   |
| dbzHt        | The height of the maximum reflectivity (in kft) associated with the storm centroid                             |
| top          | Storm top (in kft) associated with the storm centroid  |
| dir          | Past direction (in degrees) of movement for the storm centroid   |
| spd          | Past speed (in kts) of movement for the storm centroid   |
| polh         | SCAN-based algorithm probability of large hail (%)   |
| svrwx        | SCAN-based algorithm probability of severe weather (%)   |
| hvyPr        | SCAN-based algorithm probability of heavy precipitation (%)  |
| pPos         | Amount of positive positive lightning strikes (%)  |
| cgRate       | Cloud-to-ground lightning rate (in detections/min)   |
| cape         | LAPS-based convective available potential energy (in J/kg) for the storm-centroid location                     |
| sreh         | LAPS-based storm relative helicity (in m <sup>2</sup> /s <sup>2</sup> ) for the storm-centroid location        |
| county       | County & state where the storm centroid is located   |

Table #2: SCAN Mesocyclone Table

| Attribute ID | Attribute Description  |
|--------------|--|
| strmID       | Storm cell ID  |
| ident        | MDA feature ID   |
| azm          | Current azimuthal position (in degrees) of the storm centroid from the RDA                                     |
| rng          | Current range (in nautical miles) of the storm centroid from the RDA   |
| mdaSR        | MDA algorithm strength rank classification (N/A or integer between 1-25; anything over 10 is very significant) |
| llVr         | Low level rotation velocity (in kts)   |
| llgtg        | Low level gate-to-gate velocity (in kts)   |
| base         | Height (in kft) of the mesocyclone base  |
| depth        | Depth (in kft) of the mesocyclone  |
| relDep       | Relative depth of the mesocyclone through the entire storm (%)   |
| maxVr        | Maximum rotational velocity (in kts)   |
| htMxVr       | Height of the maximum rotation velocity (in kft)   |
| tvS          | TVS algorithm detection identifier (NONE, TVS, or ETVS)  |
| dir          | Past direction (in degrees) of movement of the mesocyclone   |
| spd          | Past speed (in kts) of movement of the mesocyclone   |
| msi          | Mean strength index  |
| county       | County & state where the mesocyclone is located  |

Table #3: SCAN TVS Table

| Attribute ID | Attribute Description  |
|--------------|--|
| strmID       | Storm cell ID  |
| ident        | MDA feature ID   |
| type         | Feature type (TVS or ETVS)   |
| azm          | Current azimuthal position (in degrees) of the storm centroid from the RDA |
| rng          | Current range (in nautical miles) of the storm centroid from the RDA       |
| avgDv        | Average $\Delta$ velocity (in kts)   |
| llDv         | Low-level $\Delta$ velocity (in kts)                                       |
| maxDv        | Maximum $\Delta$ velocity (in kts)   |
| mxDvHt       | Height of the maximum $\Delta$ velocity (in kft)                           |
| base         | Height of the TVS base (in kft)  |
| depth        | Depth of the TVS (in kft)  |
| top          | Top of the TVS (in kft)  |
| shear        | Maximum shear value (in $\text{ms}^{-1}/\text{km}$ )                       |
| shrHt        | Height of the maximum shear value (in kft)                                 |
| county       | County & state where the TVS is located                                    |

Table #4: SCAN DMD Table

| Attribute ID | Attribute Description  |
|--------------|--|
| ident        | Circulation ID   |
| azm          | Current azimuthal position (in degrees) of the circulation from the RDA        |
| rng          | Current range (in nautical miles) of the circulation from the RDA              |
| stRank       | Circulation strength rank  |
| class        | Circulation type   |
| msi          | Mean strength index  |
| tvS          | TVS algorithm detection identifier (NONE, TVS, or ETVS)                        |
| elev0        | Indicates whether or not the feature is detected on the lowest elevation angle |
| base         | Height of the base of the circulation (in kft ARL)                             |
| depth        | Depth of the cirucation (in kft ARL)   |
| relDep       | Dept of the circulation relative to the depth of the storm (%)                 |
| llDiam       | Low-level (0-2 km AGL) circulation diameter (in nautical miles)                |
| llVr         | Low-level (0-2 km AGL) circulation rotational velocity (in kts)                |
| maxVr        | Maximum rotational velocity (in kts)   |
| htMxVr       | Height of the circulation's maximum rotational velocity (in kft ARL)           |
| llShr        | Low-level (0-2 km AGL) shear ( $\times 10^{-3} \text{ s}^{-1}$ )               |
| llgtg        | Low-level (0-2 km AGL) gate-to-gate shear (in kts)                             |
| llConv       | Low-level (0-2 km AGL) convergence ( $\times 10^{-3} \text{ s}^{-1}$ )         |
| mlConv       | Midlevel (2-4 km AGL) convergence ( $\times 10^{-3} \text{ s}^{-1}$ )          |
| dir          | Past direction (in degrees) of movement for the circulation                    |
| spd          | Past speed (in m/s) of movement for the circulation                            |
| strmId       | Storm cell ID  |
| county       | County & state where the mesocyclone is located                                |