In prior studies the electronic scanning capabilities of the National Weather Radar Testbed (NWRT) Phased-Array Radar (PAR) have shown the benefits of faster scan updates in the detection of various types of severe weather. Scan update times benefited from sector scanning, and additional time savings were achieved by limiting scanning within the sector to regions of active weather. However, scanning did not focus on individual storms. As forecasters tend to focus their attention on the most intense storms during operations, it may be beneficial to provide focused scanning with higher update frequency on those storms. However, to detect both new storms and provide information for other applications, such as rainfall estimation, less frequent scanning of less active regions would still be required.

New scanning techniques have been developed for the NWRT PAR to support three main objectives: detection, identification, and tracking. The detection of new echoes is performed using a special ~7.5 second surveillance scan, scheduled to run once every ~2 minutes. In between surveillance scans, regions of active weather are scanned using a typical VCP. A cluster identification algorithm, that used a watershed technique to define objects in the reflectivity field, is used to identify storms in the active regions. More focused scanning of the sector encompassing a selected storm can be scheduled. The amount of time devoted to focused scanning is controlled by the operator. This determines the frequency of scanning in the regions outside the storm sector. This spring, data collected from several severe weather events in central Oklahoma are presented to illustrate these new capabilities along with the storm evolution information provided by them.