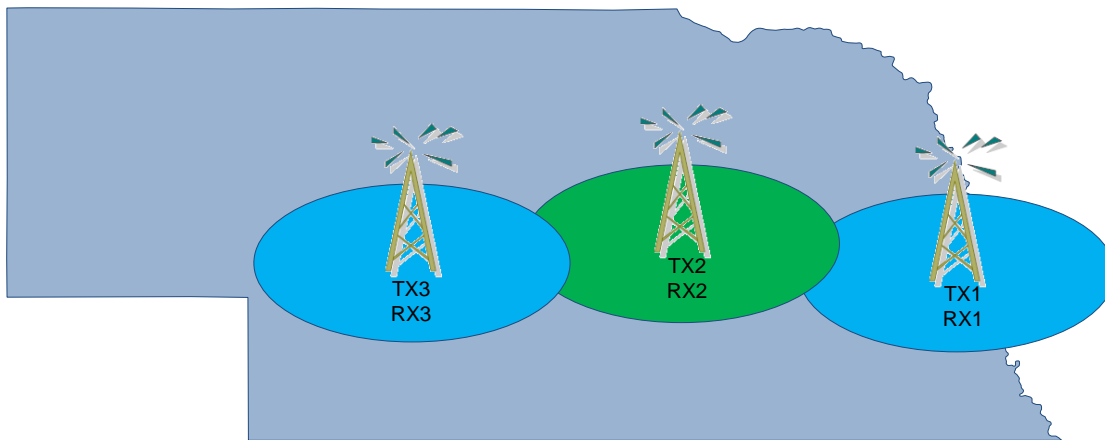# Vote Scan Overview

KNG Series radios offer vote scan operation to facilitate operation on wide area conventional radio systems. The vote scan feature provides a form of roaming for conventional channels. If a conventional channel is programmed as a vote scan channel, the subscriber radio automatically scans all of the channels in the programmed vote scan list for the best signal. This allows the subscriber radio to select an acceptable repeater for communication.

In a conventional voting system, the repeaters in the system rebroadcast transmissions simultaneously on different frequencies. The subscriber radio uses the scan feature to select the strongest or clearest signal. This feature is called Vote Scan. Subscriber radios use the Received Signal Strength Indication (RSSI) to determine which receive channel to select. In a Vote Scan System, the repeaters receive frequencies can be the same for each site, or they can be different (Transmit Steering).

Vote Scan example. In this example, three repeater sites are in use. Each site provides radio coverage for a geographic region utilizing a different transmit / receive frequency pair. The repeater sites are networked together such that transmit audio is interconnected and broadcasting the same information, though on separate frequencies. This is sometimes referred to as multicasting. Subscriber radios scan the repeater transmit frequencies to determine the best transmitter site. Standard (non-voted) conventional scanning would result in the radio selecting the first channel in the list for use. Since the repeater talk-out range is generally greater than the subscriber talk in range, conventional scanning does not always result in the optimal channel for the subscriber to operate on. In vote scan operation, each channel is further qualified by measuring the received signal strength of each repeater at the subscriber radio. The radio then votes among received sites, selecting either the best signal or the first signal that exceeds a preprogrammed threshold.

Vote scan can operate in two different modes, fast and full scan:

 In fast mode, the subscriber sets the received signal strength indicator (RSSI) threshold in programming software. Once an channel with RSSI is found that is of greater or equal value than the threshold, vote-scan stops and the current selected repeater is used. **In full scan mode**, all of the channels programmed in the vote scan list are surveyed continuously. The highest RSSI value determines which repeater is used at any given time.

Use of vote-scan does not preclude inclusion of non-voted channels in the scan. KNG series radios support both vote and conventional scan channels in the same scan list.