



AICEC Briefing Document Scanning on the AWIN System

The Scanning Function on a Motorola radio is defined as “the ability to listen to multiple talkgroups at the same time.” Although scanning is an available function of the AWIN system, the AICEC discourages its use. This is due to system limitations as described below.

The effects of scanning on a trunked system are somewhat complex. First, the relationship between a radio and a system site must be understood. There are a few steps that occur every time a radio is switched on:

1. The user turns the radio on by twisting a knob, pushing a button, turning a key, or some other action.
2. The radio sends a very short burst of information to the system, effectively announcing its availability and which talkgroup the radio wants the system to make available.
3. The system decides if this is an authorized radio, and then makes the requested talkgroup available on that site.
4. The user may then hear that particular talkgroup without further intervention. This process is called ‘affiliation’.

A typical AWIN site consists of 5 channels: 4 talkpaths and 1 control channel. The control channel directs the radio to one of the 4 specific talkpaths to monitor in order to hear the requested talkgroup. This occurs with every transmission on that talkgroup.

Scanning takes this process to a whole different level. When using the scanner functionality, the radio informs the site which talkgroup it would like to hear on a primary basis. Secondary talkgroups are heard only if there is a radio affiliated to that site with that talkgroup. Remember there are only 4 talkpaths at a typical site. If another radio affiliates and has a different talkgroup request from the first, the system has the potential to become quite busy. This is important especially if the second user is ‘dragging’ the talkgroup. If a user has a conventional channel in the scan list, then the radio will unaffiliate from the trunked system to monitor that channel and then affiliate again (see above) to monitor the trunked system. ***These conditions will result in some missed transmissions by one or more of the radios without the user’s awareness that anything has been missed.***

Multiply this issue by the number of users typically affiliated to a site, and it is easier to fathom why the scanning results on a trunked system are not what the user expected. This leads to a perceived unreliability of the system, while in fact the system is working as designed.