NCSSAR Radio Log software – Kenwood FleetSync interface details

TMG 11-24-16

FleetSync is Kenwood's method for sending digital data on analog radios. Each individual radio is identified by a Fleet number and a FleetSync Device ID. All NCSSAR radios have the same Fleet number.

An overview of the interface, from radiolog_overview.pdf, slides 9 and 10:

- Kenwood FleetSync interface
  - Incoming FleetSync message opens a New Entry Dialog
  - Works with up to 2 connected mobile radios
  - Automatic USB port scanning – no options to set
  - Default Callsign lookup table
  - Easy interface to change Callsigns on incoming message
  - No outgoing FleetSync features in this version: this is not a full FleetSync command interface console
- GPS-enabled microphone interface – incoming coordinates are:
  - Recorded in the radio log
  - Forwarded on the network as SARSoft locators
  - (not available 11-23-16) Convertible between NAD27 CONUS and WGS84
  - (not available 11-23-16) Convertible between UTM, D.dº, Dº M.m', Dº M' S.s"

The mobile (base station) radio decodes incoming FleetSync data sent over the air, and outputs it on the RS232-like 25-pin DSUB interface on the back of the radio itself. From there, a 25-pin to 9-pin cable, and a 9-pin to standard USB adapter bring the signal in to a simple USB hub and then to any USB port on the dispatch computer, where the signal is recognized as standard COM port traffic. The radio log program listens for and processes that traffic, which can contain CID (Caller ID) data, GPS data, or both:

CID data

- Sent at beginning of transmission (BOT) and again at end of transmission (EOT)
- Radiolog uses a lookup table to associate the device ID with a callsign. This lookup table is changed during the operation using the Change Callsign Dialog.
- Radiolog opens a New Entry Dialog with the appropriate callsign, if appropriate based on the hold-time and continue-time concepts spelled out in radiolog_overview.pdf slides 11 and 12.

GPS data

- Sent at EOT, if the sending radio is a properly programmed Kenwood FleetSync-enabled radio and has a GPS receiver (microphone or puck) attached
- Radiolog converts the incoming WGS84 degrees-and-decimal-minutes coordinates to WGS84 UTM (the only available option as of 11-23-16), adds the coordinates as a note on the new entry (and any associated clue report), and sends a SARSoft locator as an HTTP GET request on the current network, which shows up on the SARSoft map almost immediately.
  (Note that SARSoft listens for FleetSync data on COM ports of the same computer without the need for GET requests. The GET requests allow the dispatch computer to be different from the computer running SARSoft, which is the case for NCSSAR. Any COM port traffic-forwarder application could perform the same function.)