HAMCATION 2017 The Florida Statewide Amateur Radio Network "SARnet" Forum February 11, 2017 **Presented by** Randy Pierce (AG4UU), Brian Kopp (KC5LPA), Joe Poerschke (WB4HIS), **David Krauss (NX4Y)**

- Presentation Outline
 - What is SARnet?
 - SARnet Website and Maps
 - Newest Editions:
 - Photos removed from presentation for security reasons
 - NX4Y's P25 SARnet Nodes
 - SARnet and EMCOM
 - Current Status and The Future
 - Discussion

- What is SARnet?
 - A network of connected local UHF repeaters
 - Currently 30 repeaters in the network
 - The network uses dedicated bandwidth
 - The network does not touch the internet
 - The network is made up of hardened microwave and fiber sites with automatic backup generators
 - The network is provided by the FDOT
 - Why is the FDOT helping hams?...It is the other way around.
 - The FDOT is using SARnet as a live-traffic test bed to investigate Radio over IP technologies

SARnet Network Simplified Diagram



Website: <u>www.sarnetfl.com</u>

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SARNET	HOME HOW IT WORKS SYSTEM MAPS SYSTEM STATUS FAQ CONTACT US

SARnet: Statewide Amateur Radio Networking in Florida

PLEASE BE ADVISED:

Unauthorized use of SARnet by persons who are not licensed by the United States (US) federal government to operate amateur radio equipment is a direct violation of US federal law under Title 47, Part 97, of the US Code of Federal Regulations.

IN ADDITION, under Florida Statute 877.27, unauthorized use of SARnet resulting in interference to authorized users is illegal and considered a third degree felony, punishable by up to 5 years in jail and up to a \$5,000 fine. If found guilty of a felony in the state of Florida you will lose your right to vote, sit on a jury, hold public office, and own a gun.

Check the system status page for system updates!! Last update: January 27, 2017

WHAT IS SARNET?

The Statewide Amateur Radio Network (SARnet) is a network of linked UHF voice repeaters that serves the State of Florida. The repeaters are operated by their local trustees and the network that connects them together does not interfere with the local use of the repeaters. These UHF repeaters were specifically chosen in part because the voice traffic on them is light. This helps ensure that long conversations and rag-chews are rare on SARnet since any SARnet traffic brings up ALL of the repeaters on the network.

The key to what makes SARnet work so well is that this network uses dedicated bandwidth that is separate from the internet. Statewide connectivity is achieved without the use of any commercial telecommunications services. SARnet does not use the internet, cellular telephones, or land lines.

WHY WAS SARNET STARTED?

The state of Florida Department of Transportation is continually investigating new IP technologies for use in improving its own voice radio network and to meet its mandate to provide interoperable communications with other state agencies and public safety entities. Instead of using their live voice radio network as an ongoing test bed for these new IP technologies, the FDOT has partnered with the amateur radio community to use their radio systems throughout the state as part of a test bed to support the FDOT's research. The benefit for the FDOT is that they gain valuable knowledge about how to install, operate,

Website: <u>www.sarnetfl.com</u>

To see the SARnet Maps



Radio Networking in Florida

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Statewide Amateur Radio Network "SARNet" Constructed Sites as of January 27, 2017 YOU MUST BE A FEDERALLY LICENSED AMATEUR RADIO OPERATOR WITH A CALLSIGN TO USE SARnet Chattahoochee Lake City Chipley Madison FX1 444.900 MHz FB2 444.750 MHz FB2 444.975 MHz Tallahassee FB2 444.300 MHz Live Oak Tone 100 Hz Tone 94.8 Hz Tone 110.9 Hz FX1 442.100 MHz Tone 94.8 Hz FB2 443.700 Tone 110.9 Hz Yulee Tone 94.8 Hz FB2 442.900 MHz scambia Jackso Santa Fasa Tone 127.3 Hz Walton Washington - Wadsd Jacksonville effers FX1 444.200 MHz Calhoun Pon Duv Baker Tone 127.3 Hz Milton BÆB Suwan Wakulla St. Augustine FB2 444.725 MHz perty Panama City FB2 442,800 MHz nion Tone 100 Hz Lafayette Bradford Crestview FB2 444.175 MHz Tone 127.3 Hz Perry **Ormond Beach** Gilchris FB2 444.9 MHz Tone 100 Hz 3 FB2 TBD MHz Alachua Putnam FB2 444.975 MHz Tone 100 Hz Dixie Flagle SEOC Tone TBD Hz Tone 103.5 Hz FB2 443.500 MHz Levy Gainesville Clermont Apalachicola Tone 94.8 Hz FX1 444,925 MHz FX1 TBD MHz FB2 444.4MHz Tone TBD Hz Orlando Tone 123.0 Hz Tone 94.8 Hz Ð Brooksville FB2 444.075 MHz PLEASE BE ADVISED: Ocala FB2 TBD MHZ eminole Tone 103.5 FB2 444.025 MHz Tone TBD Hznando Unauthorized use of SARnet by persons Cocoa Tone 123.0 Hz Lakeland Orange who are not licensed by the United States FB2 444.650 MHz FX1 442.275 MHz Tone 107.2 Hz (US) federal government to operate Pasco Tone 82.5 Hz Osceola Tampa Sebastian amateur radio equipment is a direct FB2 442.850 MHz borough Bre FB2 444.375 MHz violation of US federal law under Title 47, Tone 146.2 Hz Polk Tone 107.2 Hz Indian River Part 97, of the US Code of Federal Skyway Bridge Stuart FB2 442.250 MHz Regulations. anatee Hardee Okeechobee FB2 444.15 MHz Tone 146.2 Hz De Soto Highlands St. Tone 107.2 Hz Sarasota IN ADDITION, under Florida Statute 877.27, Martin Palm Beach FB2 444,800 MHz Sarasota FX1 443.975 MHz unauthorized use of SARnet resulting in Tone 100.0 Hz Glades Tone 110.9 Hz rlotte interference to authorized users is illegal Ft. Myers Ft. Lauderdale and considered a third degree felony, FB2 444.225 MHz Hendry Palm Beart B2 442.850 MHz Lee Tone 136.5 Hz punishable by up to 5 years in jail and up to Tone 110.9 Hz a \$5,000 fine. If found guilty of a felony in Naples the state of Florida you will lose your right to Collier Andytown FB2 444,950 MHz FB2 442.825 MHz vote, sit on a jury, hold public office, and Tone 103.5 Hz Tone 110.9 Hz own a gun. Da Miami Islamorada LEGEND FX1 444.6 MHz FB2 442.850 MHz Green Tower/Text = Constructed SARnet site Tone 167.9 Hz Tone 114.8 Hz Black Tower/Text = Proposed site or site under construction FB2 = Network interface is direct to repeater Sugarloaf Florida Citv FB2 TBD MHz FX1 = Network interface is to an RF control station associated FB2 442.050 MHz Tone TBD Hz Tone 114.8 Hz with the indicated repeater



NX4Y P25 SARnet Sites

NX4Y P25 SARnet Repeater Sites



- SARnet and EMCOM
 - State EOC has access to SARnet
 - Duval County EOC coordinates quarterly net
 - Schedule is on SARnet website
- Current Status and the Future
 - See the status page on the website for status
 - We are still building out the network ~ 7 sites left
 - FDOT continues to use SARnet for testing
 - Eventual transfer of custodianship to the EM community is possible
- Discussion?