Rochester Amateur Radio Association, Inc.

D-star, DMR, Fusion, Which is right for you?

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Mike Moore KC2NM
Steve Verzulli KA1CNF

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Introduction

- The purpose of this workshop is to describe these 3 most common modes, discuss how and why they are different, and demonstrate each on the air.
- DSTAR
- DMR
- System Fusion (YSF)

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DSTAR

- Digital Smart Technologies for Amateur Radio
- Of the 3 modes we are going to discuss, D-Star is the oldest. It was created by the Japan Amateur Radio League (JARL) and is an open standard. It is important to note that is was created for Amateur Radio.
- D-STAR standard was published in 2001
- Icom radios appeared 2004

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DMR

- Digital Smart Technologies for Amateur Radio
- Digital Mobile Radio is sometimes you will hear it referred to as MOTOTRBO. MOTOTRBO is the motorola implementation of the DMR protocol. It was created for commercial radio use and much of the amateur use now uses the Brandmeister network
- DMR tiers I and II were first published in 2005

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System Fusion (YSF)

- Fusion is the newest digital radio mode. It was designed by Yaesu for amateur use and is not an open standard.
- Yaesu is the only manufacturer of radios for this mode.

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Vocoders

Each of the 3 modes employs a separate encoding scheme which processes the digital audio from the A/D converter in the radio. They are not compatible. We will discuss the differences and listen to each mode on an analog radio. is the only manufacturer of radios for this mode.

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Connection Method

Each of the 3 modes employs one or more separate connection methods for internet linking. For the most part they are not compatible. But there are ways to bridge these modes for connection method and vocoder.

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Dedicated Repeaters

There are stand-alone repeaters, linked repeaters, and reflectors which link repeaters.

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Multimode Repeaters and Hotspots

These devices provide access to the internet, downstream from the vocoder, and will pass the radio data stream over the internet to a repeater, hotspot, or reflector. There are also Vocoder devices which allow connection using a computer.

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Radio Programming

Because of the complexity of the connection methods there is extensive programming needed for the radios. From the DMR world, the term "codeplug" has arisen. This refers to the complex data file needed to program the radios.

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Rochester Usage

We will present a summary of local use of the three digital modes.

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