

OBRA Education Series

<http://www.obraobx.com>

Ham Refresher Class

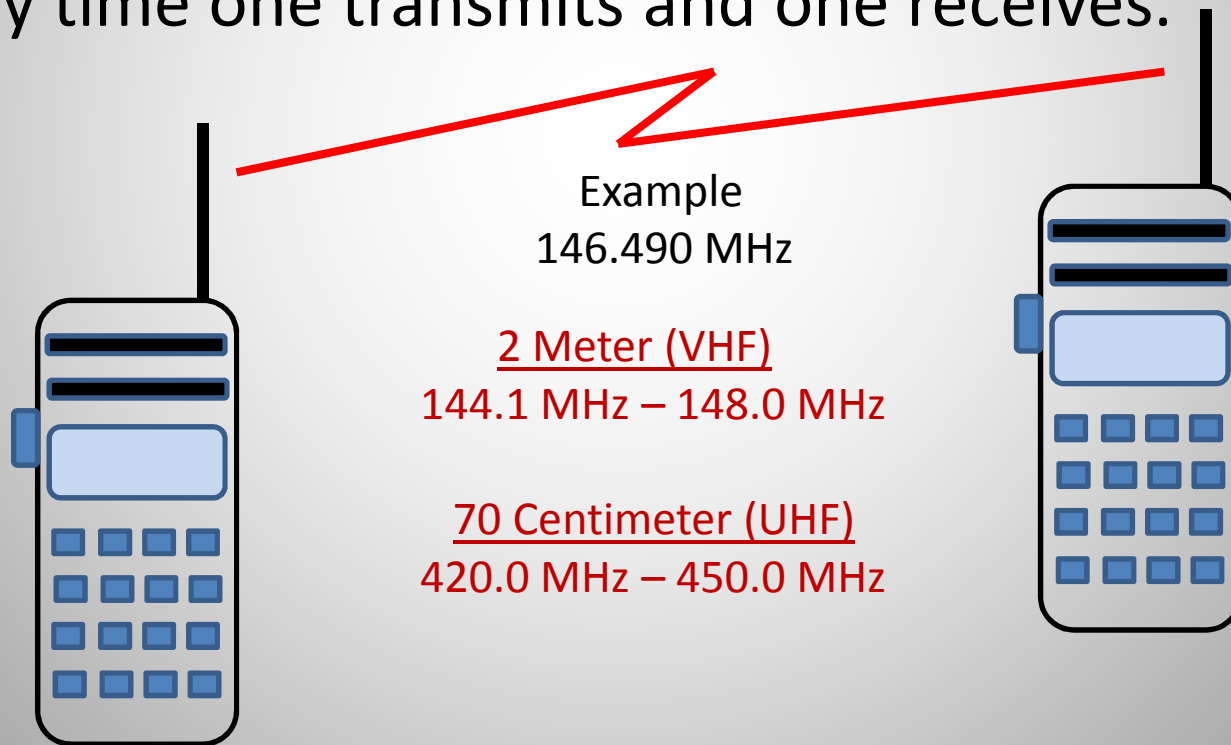
What Will Be Covered

- Radio Basics
- Repeater Review
- Linked Repeaters and their Use
- OBRA Net
- OBRA Events
- Programming Your Radio
- Introduction to DMR (Digital Mobile Radio)

Hand Held Radios

Simplex Operation (Half Duplex)

- Each radio transmits and receives on the same frequency.
- At any time one transmits and one receives.

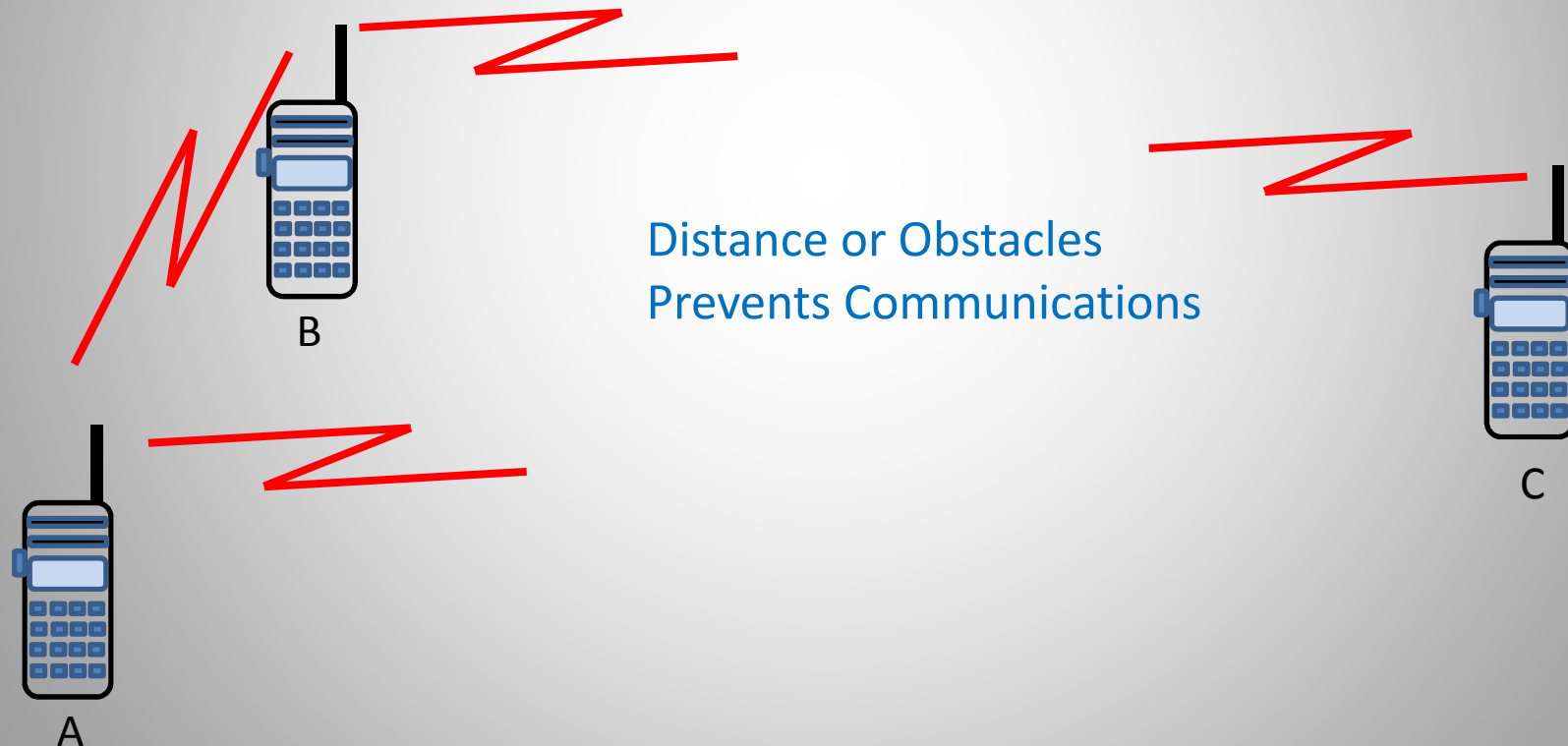


Radio Protocol

- To announce yourself:
 - Say your call sign followed by “monitoring”
- To call another station:
 - Say the stations call sign followed by yours
- Repeat your call sign every 10 min. and at the end of your transmission.
- Example
 - KW4ZL Monitoring
 - N4ACT KW4ZL
 - KW4ZL Clear

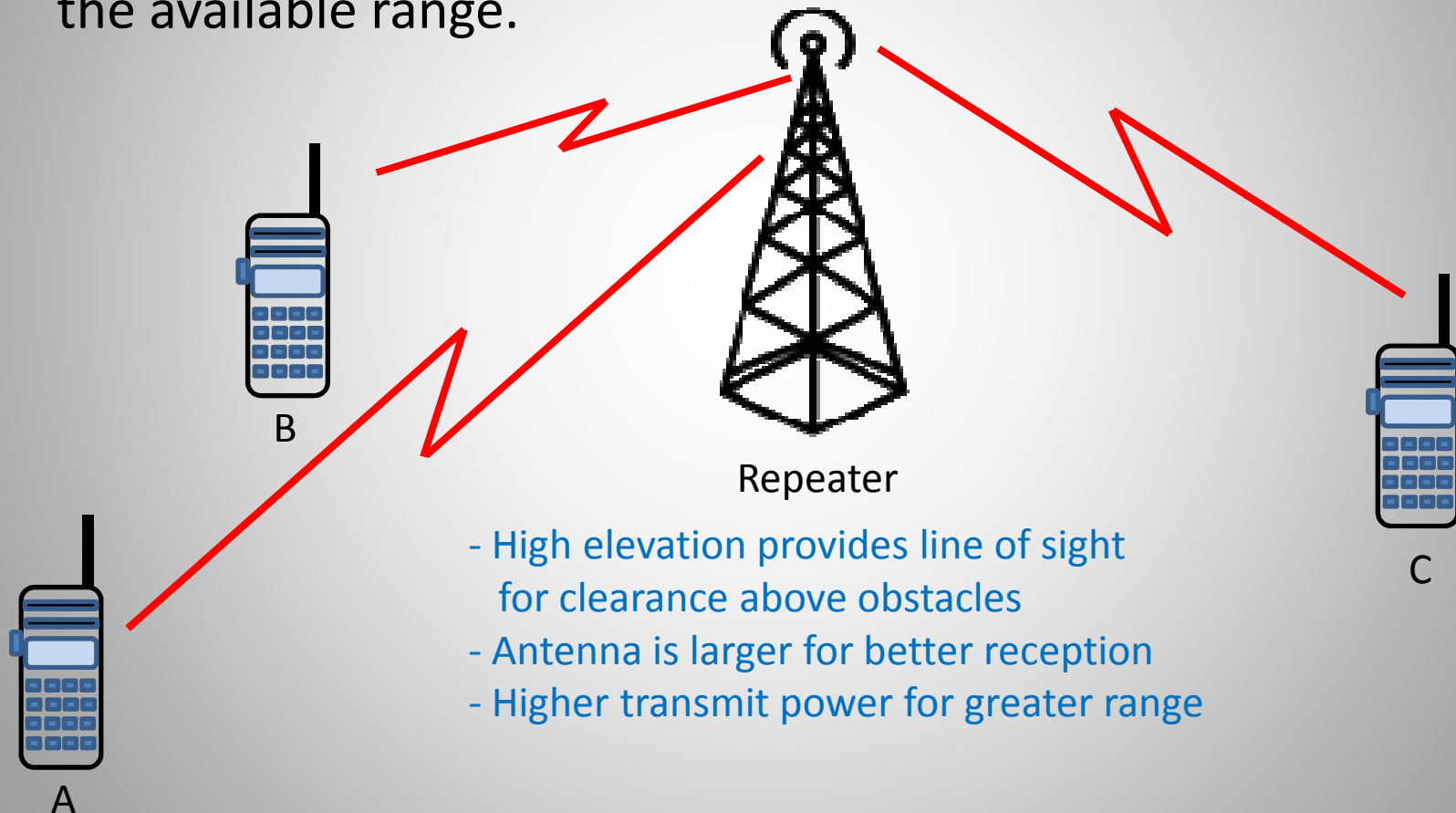
Repeater Review

- A & B can talk, but A & B can't talk to C
- C can't talk to A or B.



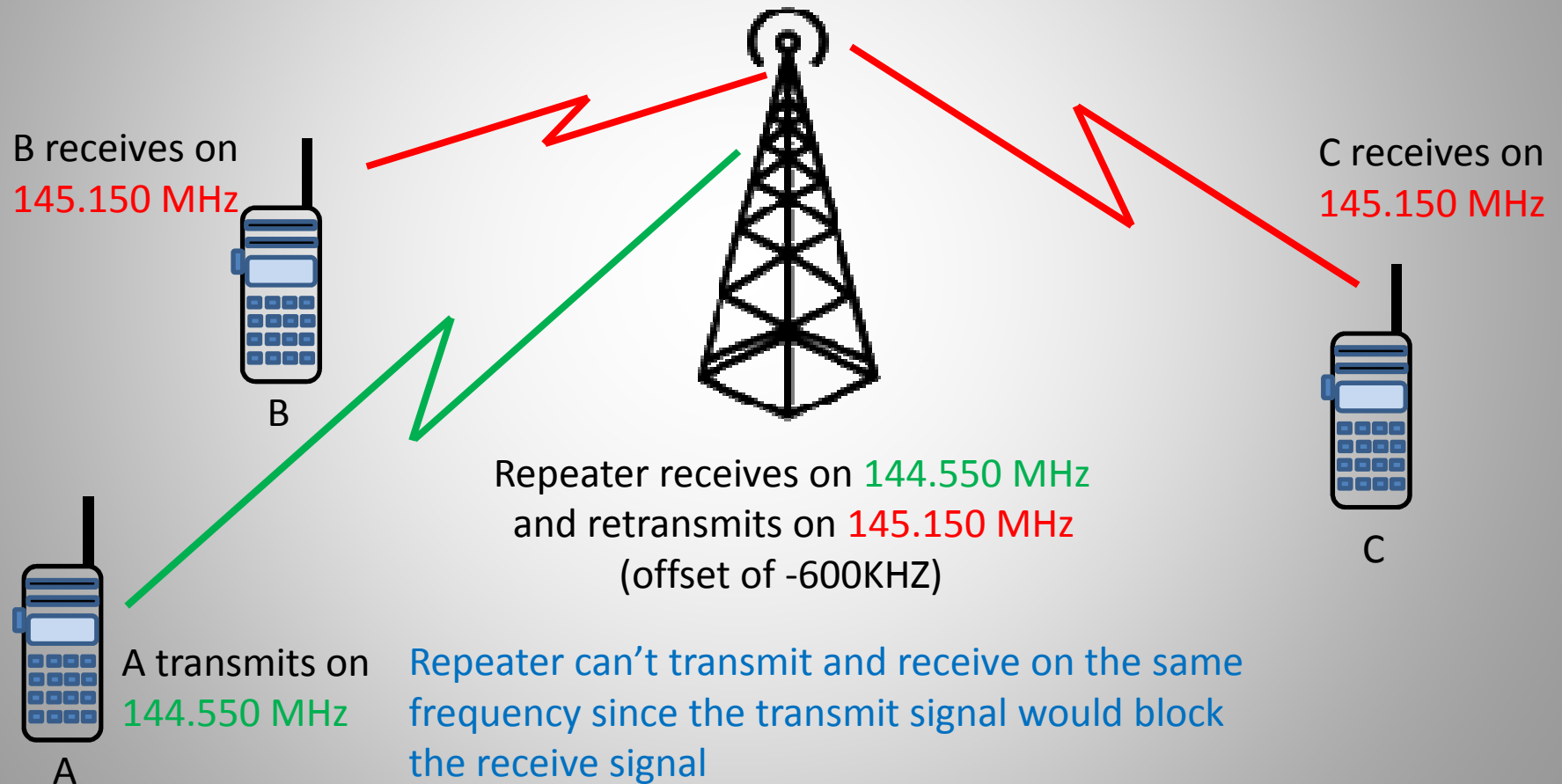
Repeater Review

- Adding a repeater solves the problem and greatly improves the available range.



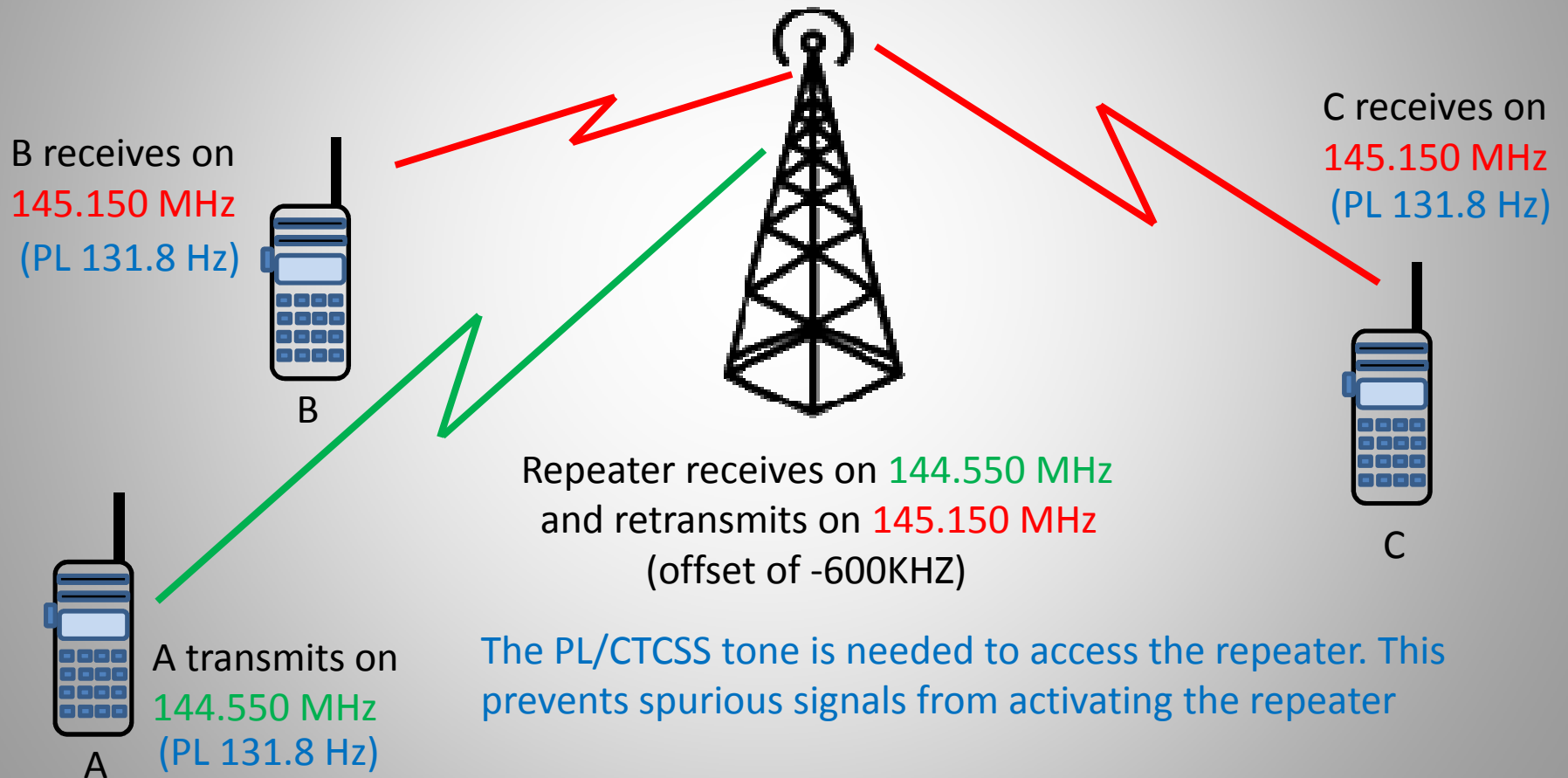
Repeater Review

- Repeaters need to use frequency offsets.



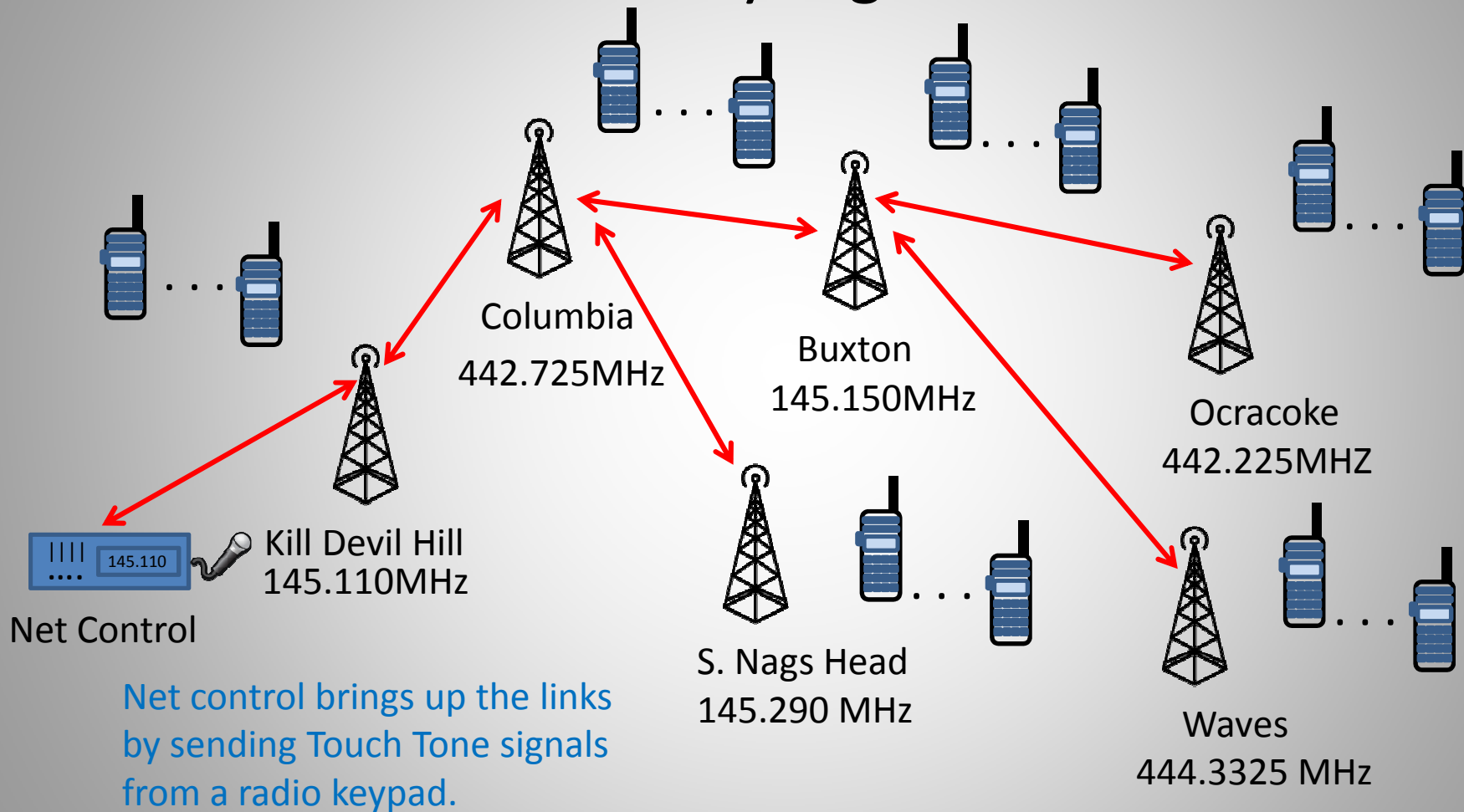
Repeater Review

- Repeaters Also Need a PL Tone



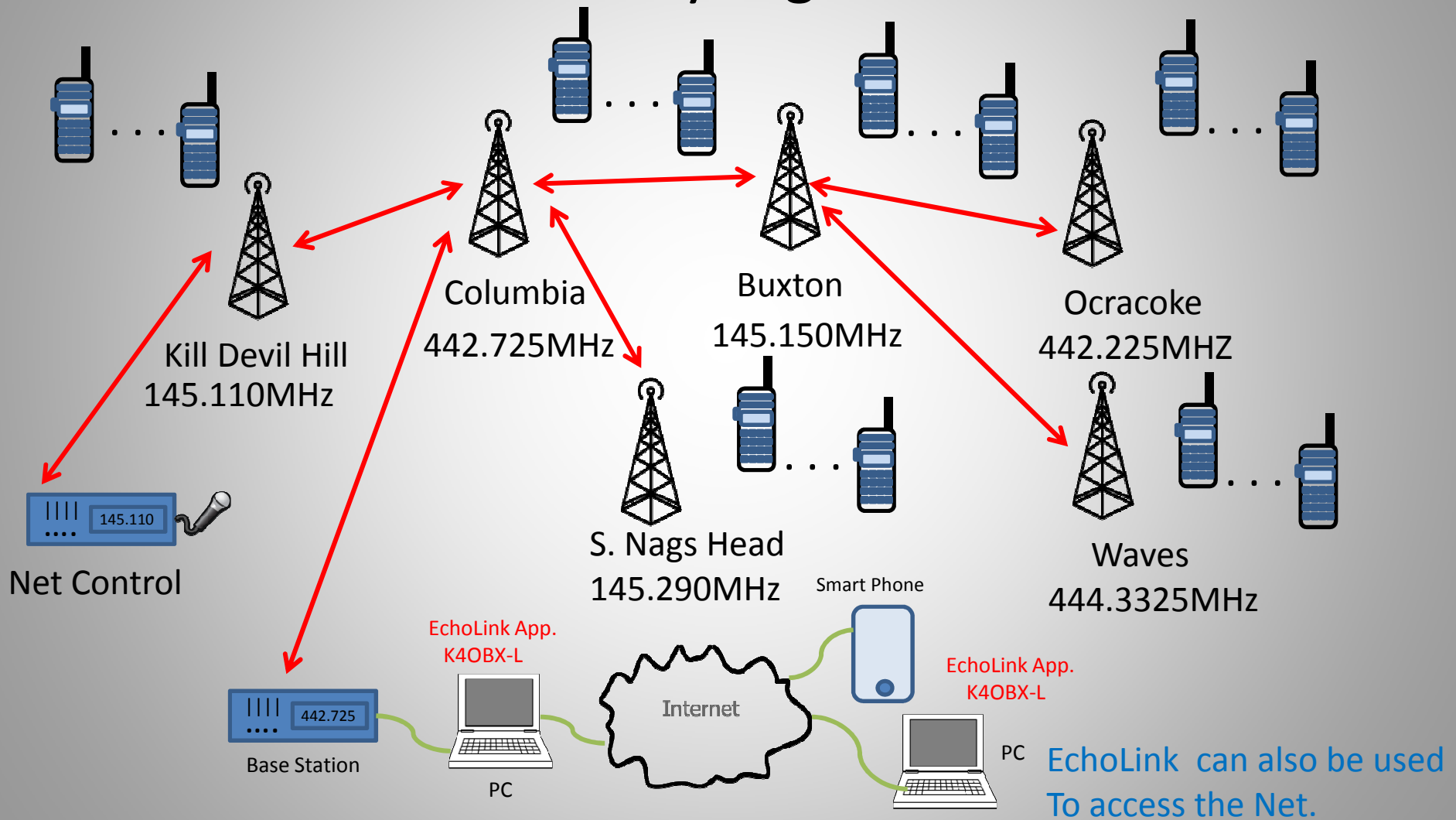
OBRA Linked Repeaters

Thursday Night Net



OBRA Linked Repeaters

Thursday Night Net



OBRA Linked Repeaters Thursday Night Net

The purpose of the net is to promote fellowship among the amateur radio operators of the Outer Banks and to help us develop our communication skills. It provides us with an opportunity to test our equipment that may be used during an emergency event. Check-ins from all amateurs are welcome and encouraged.

OBRA Net Procedures

- Net control brings up links (7:55 PM Thursdays)
- Then announces the net (8:00 PM)
- Asks for emergency traffic or announcements
- Calls for stations to Check In (South to North)
- Stations respond with
 - Net control call sign, their call sign, name, location and desire to be “in-and-out” or stick around.
- Net control logs stations and checks for any check-ins missed
- Then opens informal discussion for those who stuck around
- Net Control closes the net and brings down the links

OBRA Event Procedures

- One Ham is event control:
 - Coordinates with event organizers to provide logistics and safety support
 - Assigns time and location information to ham participants
 - Provide event specific activities requiring monitoring
 - Usually provides APRS info with a follow vehicle which can be viewed on a smart phone.

OBRA Event Procedures

- Ham participants:
 - Arrive on station at time assigned
 - Check in with event control
 - Advise control when event activities occur
 - Stay on station until released by event control

OBRA Event Procedures

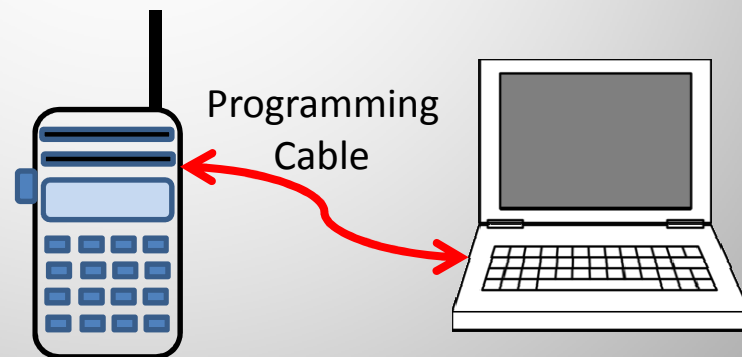
- Event communications procedures:
 - Standard call signs:
 - N4ACT, KW4ZL is on site at 158 and 3rd street
 - KW4ZL, N4ACT acknowledges.
 - Tactical call signs:
 - Use of letter sequences to indicate locations of event stations
 - **Race Control** this is **OBRA 5**, KW4ZL on site
 - After last transmission sign off with your call sign

OBRA Event Procedures (continued)

- Event communications procedures:
 - Emergency Situation
 - Break, Break, Race Control this is OBRA 5, I need an EMS unit at 158 and 3rd Street for BIB # 34 who is down and injured.
 - All other stations stay off the air until race control finishes with the emergency.

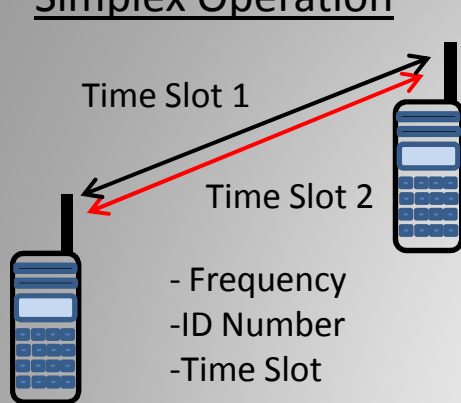
Setting Up Your Radio

- For each channel
 - Simplex = Frequency
 - Repeater = Frequency, Offset, PL Tone
- Can be done from radio key pad (hard) or from a PC program (preferred)



DMR Basic Structure

Simplex Operation



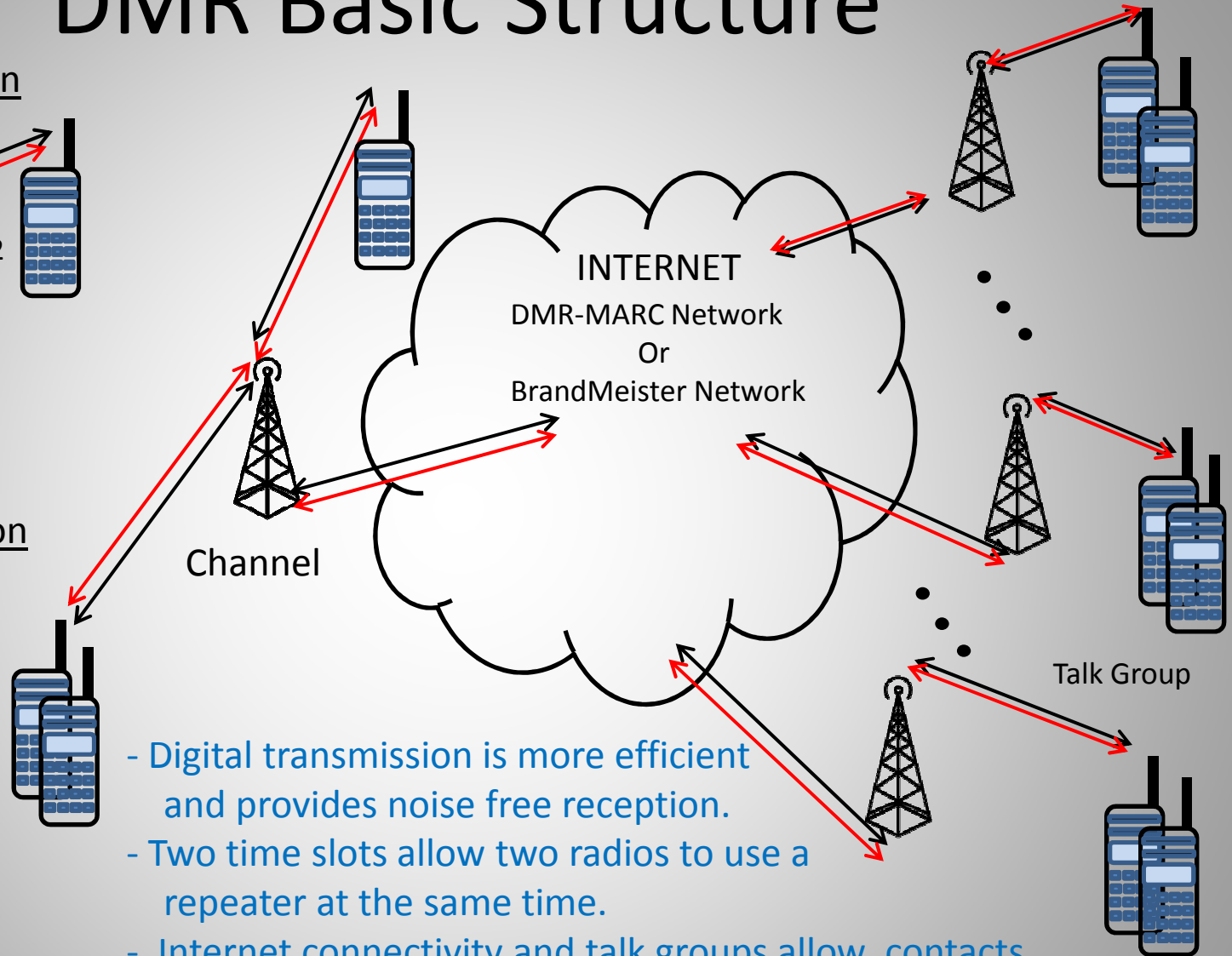
Repeater Operation

Channel

- Frequency/Offset
- Color Code
- Talk Group
- Time Slot

Zone

- Group of Channels

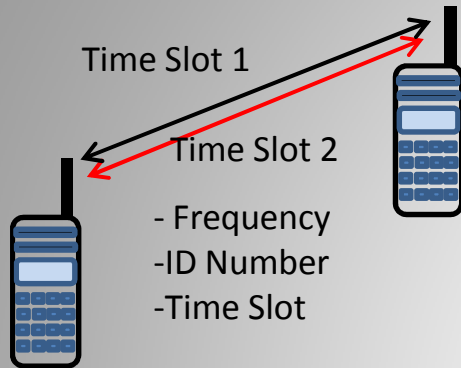


- Digital transmission is more efficient and provides noise free reception.
- Two time slots allow two radios to use a repeater at the same time.
- Internet connectivity and talk groups allow contacts to be directed to specific groups of participants.

DMR Basic Structure

With Hot Spot

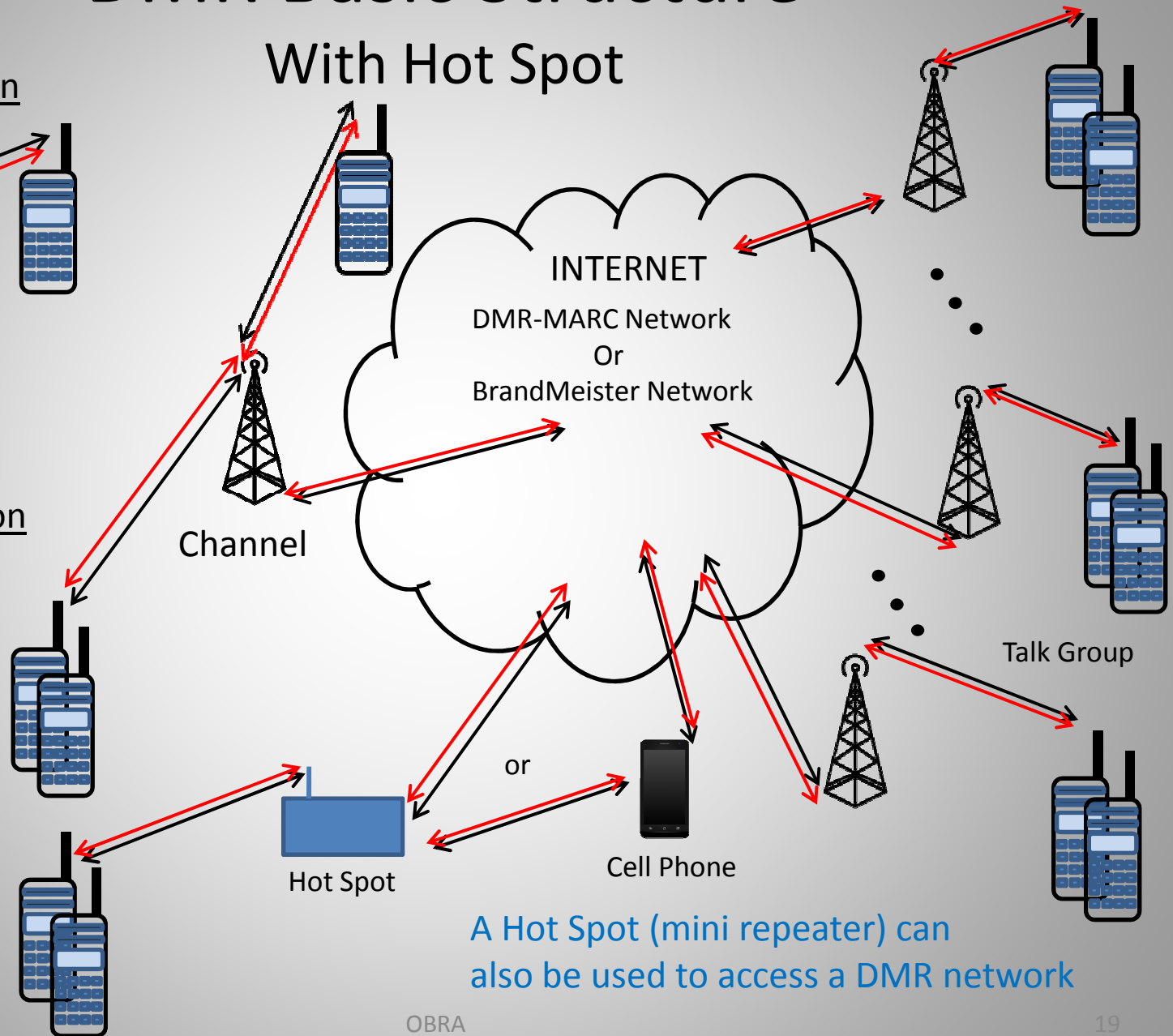
Simplex Operation



Repeater Operation

- Channel
- Frequency/Offset
 - Color Code
 - Talk Group
 - Time Slot

- Zone
- Group of Channels



A Hot Spot (mini repeater) can also be used to access a DMR network

OBRA Repeaters

