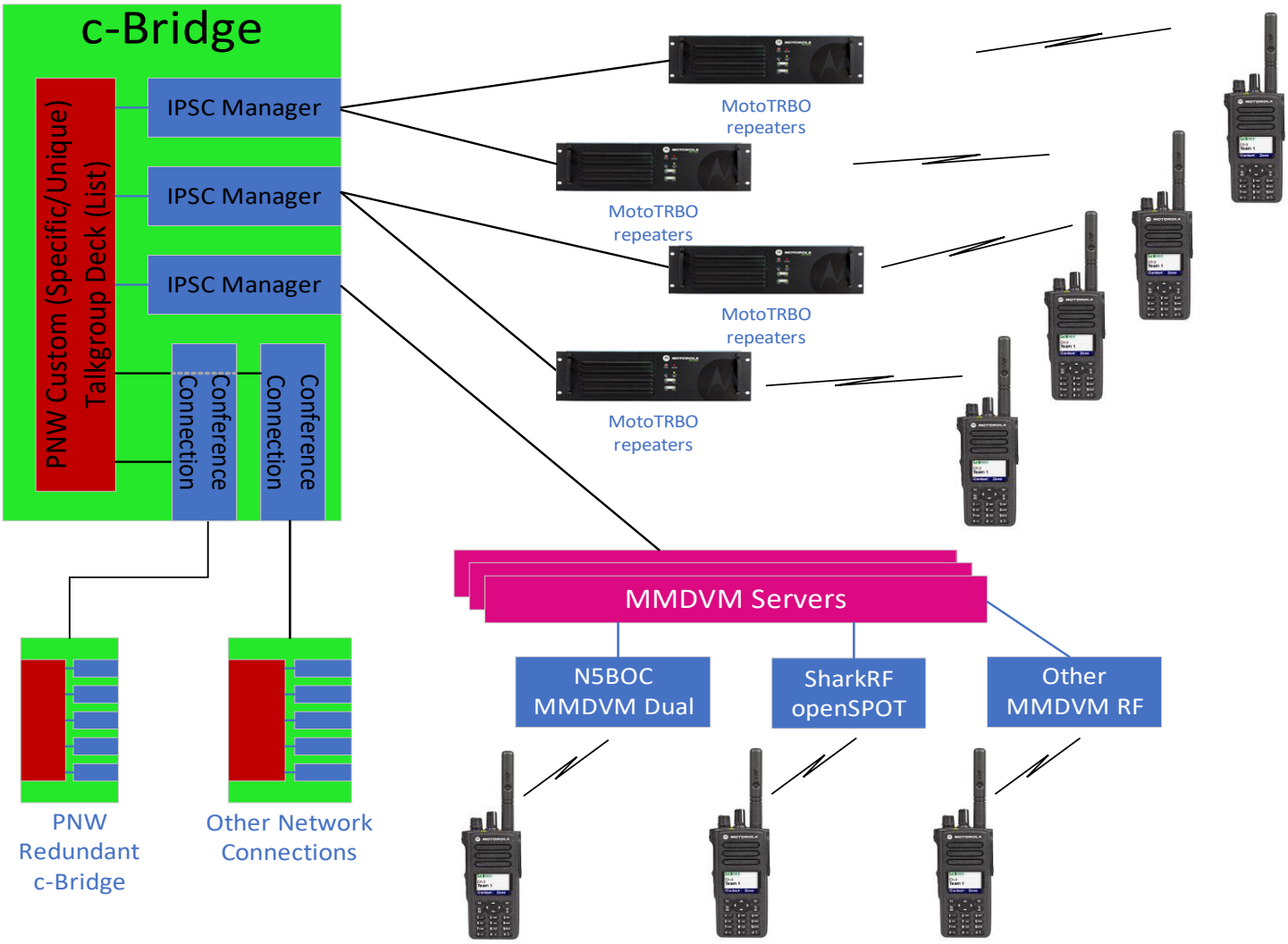
PNW DMR Network Overview



- The connection from the Repeater to the c-Bridge is a connection to one of many Managers on the same c-Bridge. Each repeater connects to one and only one Manager, on a UDP port with an authkey. It's not so much about the repeaters as it is what Talk Groups that the c-Bridge routes between Managers

- The c-Bridge programming defines what Talk Groups appear on each Manager, it is a matrix of sorts, a multi-dimensional intersection of many Talk Groups and Managers

- Repeater limits per IPSC network (be it c-Bridge or standalone network of repeaters) has a soft limit of 15 peers, 1 master and 2 RDAC's (remote data acquisition and control)

- At the repeater level, the c-Bridge has no control or influence. If 2 or more repeaters are on the same IPSC network, the c-Bridge has no control. It is only when the Talk Group from a repeater enters the c-Bridge, is there any magic. It is all based on the Talk Group. The all-powerful Talk Group on each Manager can be set uniquely for its availability, routing, on timer, off timer and control of the status of other Talk Groups on the same Manager or other Managers

- The Repeaters and their Talk Groups line-up as well as multiple repeaters on a single IPSC network. These groupings are based on very wide-ranging ideas, needs, planning, purpose and ownership of 1 or more repeaters

- The LOCAL Talk Group is unmanaged at the repeater level while another Talk Group into the c-Bridge is all powerful

- As we have about 9 different owners in 3 states, it is a very wide bridge. Oregon is very different from the rest of the network operation. Owners tend to want the same Talk Group's with the same timers on their repeaters, usually on the same Manager

- Location of the repeaters plays into which Talk Groups are available and their PTT/FT and timer settings. The I-5 Talk Group tends to appear on all repeaters that have I-5 travel corridor coverage, but it is up to the owners.

- For Rattlesnake VHF, Valley Camp UHF and Sun East VHF, they are on the same Manager as they are our primary I-90 travel corridor. Valley Camp UHF is there because they wanted to be on the Snoqualmie Manager for EmComm

- Cascades East is full time on the East side of the state but PTT on the west side if it is even available. That was created because WA 1 and WA 2 are full time on every WA repeater and their traffic is of less interest and we ended up wanting our own Talk Group that they did not normally use...unless they wanted to reach out to us

- An imperfect analogy:
    - The c-Bridge is a router, IPSC connection is a VLAN trunk, Talk Group is a VLAN on that trunk, at least in the sense that the packet is tagged with a VLAN-ID/Talk Group ID
    - Each Manager is a vSwitch that acts more like a hub
    - Each Manager has one arbitrarily defined master member, and the rest of the members are peers
    - The master simply publishes the peer list
    - Every member is responsible for sending copies of every packet to every other member on the Manager, the Manager does not repeat anything
    - The c-Bridge is only in the audio path for calls that route between multiple Managers
    - The repeaters connect to the vSwitch Manager, and their own programming configures "VLAN interfaces" for each Talk Group