SeattleDMR Bridge Design and Talkgroup Update

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Topics

SeattleDMR.org

    An idea, a collaboration, a bridge, a set of repeaters

Bridge Design

Talkgroups Supported

Role of Link Talkgroups

SeattleDMR.org - an idea

A DMR network to meet the needs of the Seattle Metro area.

We want to support experimentation, local community, and needs of EMCOMM teams.

Why not join PNW-Digital's DMR Network?

We realized PNW-Digital has great network but it didn't meet all our needs:
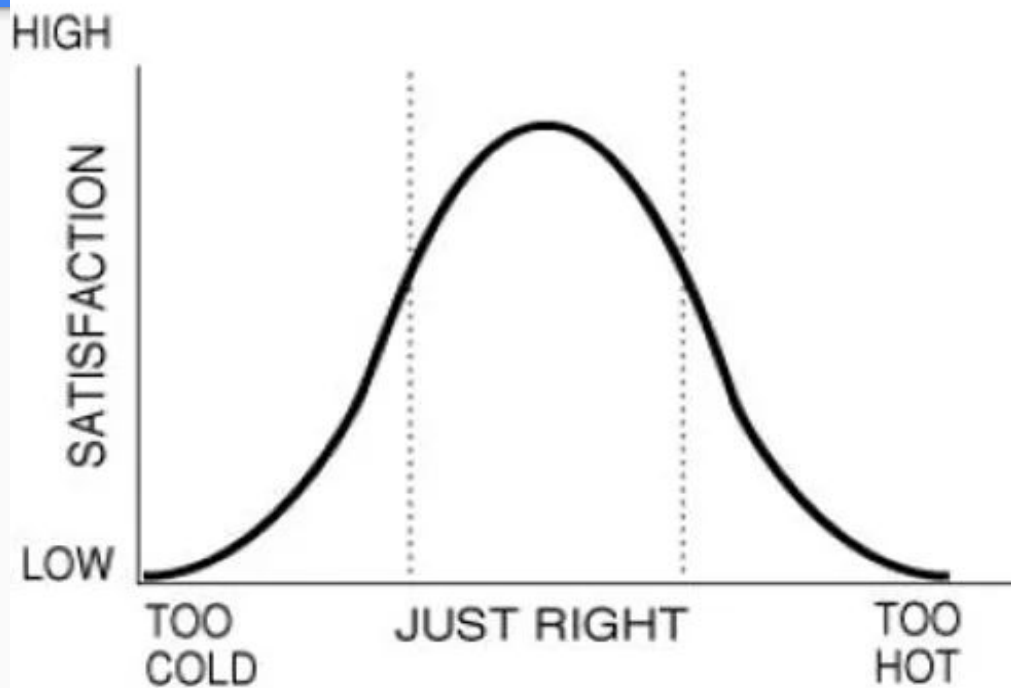
- It's centrally managed with somewhat inflexible policies
- Their focus is on the region and state, and wide area coverage repeaters
- We needed more localized talkgroups (e.g. Seattle, King County)
- We wanted to build and operate our own bridge using hardened sites
- We needed control to experiment and control traffic during incidents

Why not join the Brandmeister network?

Brandmeister is also a great network and really flexible, but also didn't meet our needs:

- It's very decentralized with no control over how users use repeaters
- Seemingly designed for hotspot users
- Establishing local talkgroups required regular use / traffic to justify
- *and the same control issues as PNW-Digital*

SeattleDMR.org - a collaboration

- Puget Sound Repeater Group
- West Seattle Amateur Radio Club
- Seattle ACS

… and we are open to other repeater operators to join as well.

SeattleDMR.org - a DMR bridge

Bridges are the key to making DMR networking so useful.

We operate our own DMR bridge currently hosted at Capitol Park.

- Built on an open source software stack (more later), running on a Raspberry Pi.
- The bridge is networked to both PNW-Digital and Brandmeister.
- We support our our local talkgroups (e.g. Seattle[1,2], King County)

SeattleDMR.org - a network of repeaters

Name	Tx Freq	Color code	Description
Capitol Park	440.775	CC2	PSRG (psrg.org/dmr)
Lake Forest Park	441.025	CC2	Seattle ACS
Westcrest	440.975	CC2	WSARC (w7aw.org/echolink-irlp)
Future East Side			
Future Olympic foothills			

All repeaters use a standard offset of +5.000 MHz. All repeaters are networked with HamWAN

Supported Talkgroups

Name	ID/Slot	Bridging information
Audio Test	9999 / TS2	bridged to PNW
BayNet	31075 / TS2	bridged to BM
King County	333153 / TS2	bridged local
Link 1	8801 / TS1	dynamically bridged
Link 2	8802 / TS2	dynamically bridged
Link 3	8803 / TS1	dynamically bridged
Link 4	8804 / TS2	dynamically bridged
Link 5	8805 / TS1	dynamically bridged
Link 6	8806 / TS2	dynamically bridged

Talkgroup	ID/Slot	Bridging information
Local 1	3181 / TS1	Local to repeater
Local 2	3166 / TS2	Local to repeater
Parrot	9998 / TS1	bridged to PNW
PNWR	31771 / TS2	bridged to BM
Puget Sound	31532 / TS2	bridged to BM
Seattle 1	803153 / TS1	bridged local
Seattle 2	813153 / TS2	bridged local
TAC 313	313 / TS2	bridged to BM
Washington 1	3153 / TS1	bridged to PNW
Washington 2	103153 / TS2	bridged to PNW

Legend:

SeattleDMR Only	Timeslot 1	Timeslot 2

Link talkgroups

Talkgroups from the "Local network" (unshared) TG pool (88xx)

Talkgroups from other networks are mapped to Link N by the bridge

PNW Digital   HBLink3   SeattleDMR
Cascades East 1 (3191/TS1) ← Bridge → Link 2 (8802/TS2)
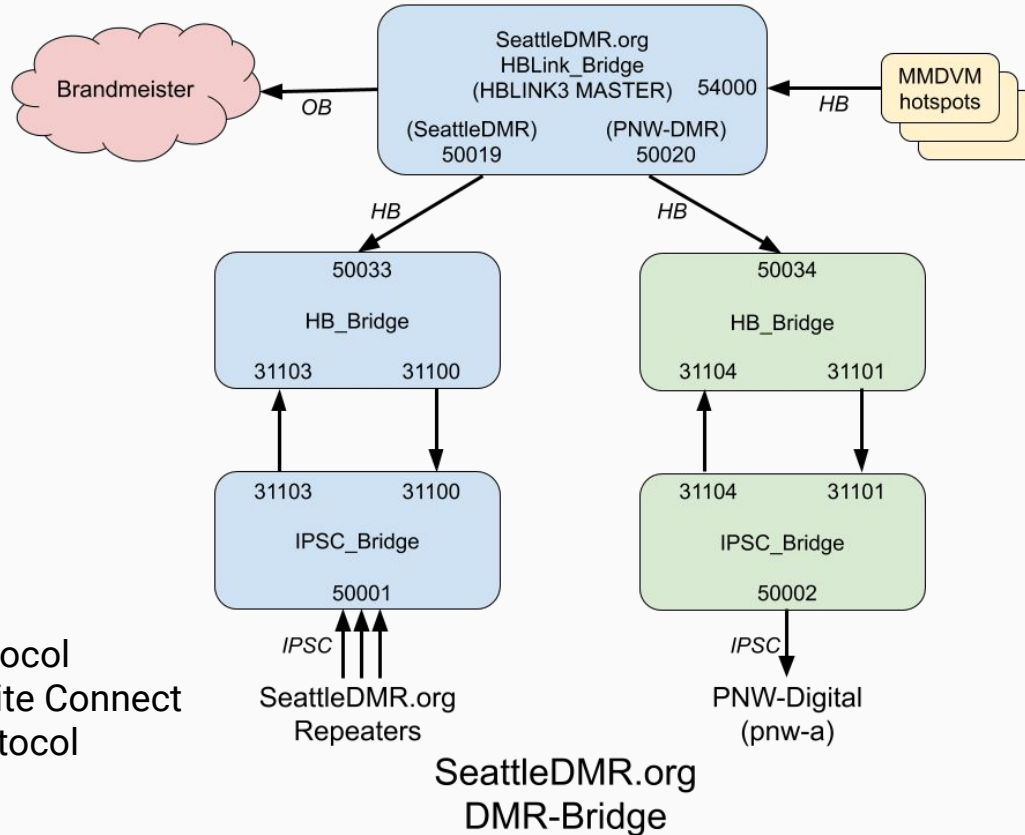
Built on open-source software

dmrlink + hblink
- IPCS_bridge, HB_bridge - they operate as a pair
- Link IPSC entities to Homebrew Repeater protocol components

hblink3 - the core bridging software

Bridge Architecture

Legend:
HB - Homebrew Protocol
IPSC - Motorola IP Site Connect
OB - Openbridge Protocol

Building Codeplugs

K7ABD's Anytone Config Builder

https://www.k7abd.net/anytone-config-builder/config-builder.php

PNW Digital Code Plugs subgroup on groups.io
https://dmr.groups.io/g/PNW-CPS-Programming-Codeplugs/topics

Contact Manager by N0GSG
http://n0gsg.com/contact-manager/

… And your CPS software

Resources and Q&A

SeattleDMR.org - the website
- Repeater information
- Codeplugs for Anytone and CS-800D
- Codeplug building instructions and input files
- Design doc for the SeattleDMR.org bridge

Groups.io/dvswitch
github.com/dvswitch and github.com/n0mjs710