DV4Server:

A stable, economical and scalable interconnection of different digital voice networks

AG0X/DG1HT
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1. basic architecture of a reflector system
   1.1 currently used reflector systems in amateur radio
2. interconnection of different reflector systems
   2.1 basic setup, network initiated
   2.2. complex setup, user initiated
   2.3. connection at the point of access (PoA)
3. Proposed Solution
   3.1 Point of Access devices
   2.1.1 DV4mini
   2.1.2 DV4Server – concept
   2.1.2.1 physical structure
   2.1.2.2 software structure
   2.1.2.3 implementation
   2.1.2.4 common user interface
3. Conclusion
1. Basic architecture of a reflector system

UR = REF014CL
RPT1 = WW6BAY B
RPT2 = WW6BAY G
MY = W6ABC

Slide courtesy George Zafiropoulos KJ6VU
1. Basic architecture of a reflector system

- What defines a reflector system? (not the air interface)
  1. Network protocol
  2. Codec(s) used
  3. Authentication
  4. Routing
  5. Features as GPS and texting
1.1 currently used reflector systems in amateur radio

and many more: XREF, P25, NXDN, dPMR.....
1.1 currently used reflector systems in amateur radio

Challenge:

- All these reflector systems are incompatible one way or the other
- Many of these reflector systems have different authentication
- Many of these reflector systems have different admin groups
- The admins may or may not talk to each other

- Users however want to have freedom to roam these reflector systems as they please
- They do not communicate their actions with the admins

- A perfect recipe for disaster!
2. Interconnection of different reflector systems

- How can we talk between reflector systems?
  - Shared rooms
  - Connected rooms between reflectors
  - Access different reflectors from an end point
2.1 basic setup, network initiated

shared room
2.2. complex setup, user initiated

- Link A: HRI-200
  - Inner loop 100ms
  - Connect...
  - Connect...
  - Connect...
  - Reset 2-3 min
  - IP lockout

- Link B: Brandmeister
  - Transcode

- Link C: C4FM
  - Outer loop 1000ms
  - Link D: DMR
  - Transcode

- Link E: C4FM

- FCS002
2.3. connection at the point of access (PoA)
3. Proposed Solution

- How can we overcome this dilemma?
3.1 Point of Access devices

- DVAP
- DV Dongle
- SharkRF
- DV4mini
- DV4home
  - Etc.
2.1.2 DV4Server – hardware
2.1.2 DV4Server – Software

DV4OS

- G4KLX
- Protocol drivers
- Internal Multi Protocol Reflector System 8 rooms
- AllStar
- Web Server
2.1.2.3 implementation

Reflector systems

- D-Plus
- DMR-Plus
- Fusion
- DCS
- NXDN

Repeater site

CCS7

FM local

ID-RP2C
ID-RP2D
ID-RP2V
On ircDDB (G4KLX):

*30C = REF030C
D1C = DCS001C

So we would need a system for the reflector code + reflector number + reflector room

This is not defined yet
3. conclusion

- A PoA based system allows all users to get into all rooms
  - (main request)
- is independent from the access device type
- saves a lot of hardware cost
- has a common user interface for the admin
- has a common user interface for the hams using their radios
- does not create loops
- New technologies can be added remotely via software
- does not require ongoing coordination between admins
Discussion