



International Amateur Radio Union Region 1

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Information Paper

Digital Voice (DV) is part of Amateur Radio Service since JARL presented a documentation for a D-STAR protocol and ICOM took that paper and implement this modulation into new ICOM D-STAR-mobiles and handhelds and later on into home base amateur radios.

In Austria, we register about 30 - 40% of our members frequently using DV within their hobby. The main feature to use DV in our hobby is to build networks and bring repeater-sites together. So OeVSV-members start with this DV-networks early 2009 first using the ready to go ICOM DV-repeaters and ICOM DV-controllers.

The DV-network where growing very fast hole over the world but the ICOM hardware was very expensive so many radio amateurs spent a lot of time to create own DV-controller-hardware to use surplus FM-mobiles to build DV-repeaters without commercial hardware in use.

Another group of radio amateurs developed a new DV-network software because ICOM DV-network software was restricted to use common servers with large restrictions. This was very useful because we spread the information on building DV-networks to our community. The other we became different software-implementations not working together. After a while of lively discussion 3 major software developments became the basis for the D-STAR DV-network over all regions worldwide.

Since about 2010/11 we got new DV modulations on the amateur radio desk. APCO P25, DMR and later on System Fusion (C4FM). Many radio amateurs with good experience got from DV-network development for D-STAR took their basic developments and wrote new DVR-network server-software for this new radio modulations.

To my knowledge, we run about 10 - 25 (or more) known software solutions worldwide to use DMR within DV-networks. Each solution run with good performance and ideas for radio amateurs using these different networks but only very small “bridges” let them talk together.

What we need is a software-protocol where we can connect existing solution together and create a knowledge base for further developments and more experiments.

We know about DV-protocols created from developers like G4KLX, DL5DI, DG1HT, N0MJS and many more working long time on DV-software solutions.

My experience (OE1KBC) and the discussion with members of OeVSV and our international

contacts starts the idea to create a DV-protocol to define the border between existing solutions and bring this information (DV-BGP) to the IARU Region 1 VHF-manager-handbook.

What to define?

The DV-Border-Gateway-Protocol (DV-BGP) include three parts:

- Content of my DV-network (always on basis to offer not to ask for)
- Reachable in my DV-network (callsigns, repeater-sites, regions and groups)
- Definition of the DV-audio- and DV-message-stream

DV-BGP will include the actually used DV-modulations and let room for future use so we can build bridges between different DV-modulation-types and include new experiments.

DV-BGP has to bring the different types to a common denominator and build the basis for conversation to none voice networks like APRS to exchange messages and geo-coordinates too.

What are the steps to collect and create the information for the VHF-manager-handbook?

We create a IARU Region 1 DV-working-group to generate a proposal and present this recommendation on the IARU Region 1 homepage and invite DV-network developers to read this and response to the IARU Region 1 DV-working-group. We to create examples in open-source to help new experimenters to easy entry.

Why IARU Region 1 is needed?

Our experience with developers is: they keep their “baby” running and forget to open the “playground” for others doing the same.

IARU Region 1 can recommend DV-BGP as common language to ensure interoperability of voice networks. This is also vital for emergency networks.

IARU Region 1 hereby creates the basis for large steps to the future of DV.