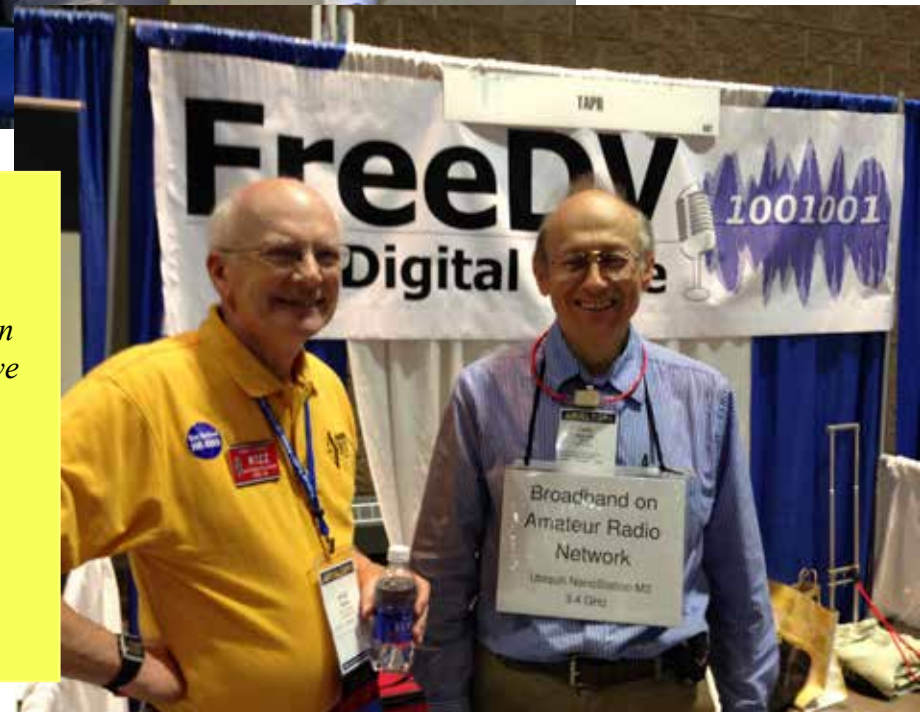*TAPR President Steve Bible, N7HPR, opened the TAPR Digital Forum at this year's Hamvention in Dayton, Ohio, which was attended by over 24,000 ham radio enthusiasts.*

ARRL CEO Dave Sumner, K1ZZ, had a lengthy visit at the TAPR booth during the ARRL Centennial Convention in Hartford, Conn. Here Dave discusses the finer points of Amateur Radio relaying with David Bern, W2LNX, who staffed our booth along with Mel Whitten, K0PFX, and your faithful PSR editor, WA1LOU.

TAPR is a community that provides leadership and resources to radio amateurs for the purpose of advancing the radio art.

2014 ARRL/TAPR DCC
(Digital Communications Conference)

The DCC is returning to Texas this year.

When: Friday, September 5th - Sunday, September 7th
Where: Austin Marriott South in Austin, TX

The DCC has two days of Technical forums on Friday & Saturday and a concurrent Introductory forum on Saturday. On Saturday night, the banquet will feature an interesting speaker and the Sunday morning Seminar will be a deep-dive into a technical topic.

Those who submit Technical Papers for inclusion in the annual DCC Proceedings will receive preference to present their papers at a forum, however, you can propose to present at a forum without submitting a technical paper.

There will be free tables in the demo room to demonstrate projects and vendors to demonstrate products.

We encourage those interested in attending the DCC to make your hotel reservations early to get special TAPR hotel rate.

Updated DCC information will be available on TAPR's website at: http://www.tapr.org/dcc

###

2014 ARRL/TAPR Digital Communications Conference

September 5-7 in Austin, Texas

Make your reservations now for three days of learning and enjoyment at the Austin Marriott South hotel. The Digital Communication Conference schedule includes forums, demonstrations, a Saturday evening banquet and an in-depth Sunday seminar.

This conference is for everyone with an interest in digital communications —beginner to expert.

Call Tucson Amateur Packet Radio at: 972-671-8277, or go online to www.tapr.org/dcc

DCC Sunday Seminar

Introduction to SoC FPGA Programming for Mixed Signal Systems

By Chris Testa, KD2BMH

Abstract

The latest generation of Field Programmable Gate Arrays (FPGAs) offer an unprecedented level of integration, combining a full ARM processor with standard peripherals like USB and Ethernet on the same die as customizable logic. These Systems-on-a-Chip (or SoC's) are available from all major FPGA vendors, and they allow the hobbyist to hack together a state-of-the-art embedded system with all of the bells and whistles of a modern smartphone, all with minimal effort.

In this seminar we'll cover the structure of these SoC FPGA's, from a high level discussion, down to the nitty gritty of designing and interfacing custom logic to meet your needs. We'll start with the basics like state machines, and end with integrating and processing real-world, mixed signals. The perfect setup to start you off on your next software radio or robotics project. This is not a vendor tool tutorial - all of the tools used are 100% Open Source. You'll go home with a set of working example projects that simulate the full concert of an embedded SoC FPGA, ready for your imagination to run wild.

Seminar Outline

* Introduction, overview of embedded systems programming and Systems on a Chip.
* The system bus and its functional model. State Machines.
* Testing and simulating a simple design with project1.
* Introduction to Mixed Signal processing and the DSP flowgraph.
* Testing and simulating a hierarchical design with project2.
* Making a DSP block, techniques for testing signal processing applications, explanation of project3

What do you need to bring

The computer labs are optional and will be held during the 30 minute breaks. If you would like to follow along, the best case scenario is to install Ubuntu or Debian on your laptop prior to coming to the seminar. Or we will provide you with a "1-line installer script" at the seminar for Ubuntu/Debian that can be adapted for this seminar.

###

2014 ARRL/TAPR DCC Papers

The following lists the contents of the published copy of the papers that will be distributed at the 2014 ARRL/TAPR DCC. Note that this represents the contents of the printed document and that the actual live presentation of papers at the DCC may vary from this list.

"High-Speed Wireless Networking in the UHF and Microwave Bands" by David Bern, W2LNX and Keith Elkin, KB3TCB

"Clarifying the Amateur Bell 202 Modem" by Kenneth W. Finnegan, W6KWF, and Bridget Benson, PhD

'The Stream Control Transmission Protocol (SCTP) and Its Potential for Amateur Radio" by Eduardo Gonzalez, Dr Stan McClellan and Dr Wuxu Peng

"Smoothed Symbol Transition Modulation Digital Signal Processing Algorithm" by Patrick Jungwirth

"SDR-based DATV-Express Exciter for Digital-ATV" by Ken Konechy, W6HHC

"A Radioteletype Over-Sampling Software Decoder for Amateur Radio" by Joseph J. Roby, Jr, KØJJR

"An HF Frequency-Division Multiplex (FDM) Modem" by Steven Sampson, K5OKC

"Modulation – Demodulation Software Radio" by Alex Schwarz, VE7DXW and Guy Roels, ON6MU

"The European HAMNET – A Large Scale High Speed Radio Network" by Jann Traschewski, DG8NGN

"Implementation of Basic Analog and Digital Modulation Schemes using a SDR Platform" by Jose M. Valencia and Omar H. Longoria

"A Software-Based Remote Receiver Solution" by Martin Ewing, AA6E

"Using GPS to Fine-Tune a Rubidium Frequency Standard" by Bill Kaune, W7IEQ

"A Two Meter APRS Beacon Transmitter" by Bob Simmons, WB6EYV

###
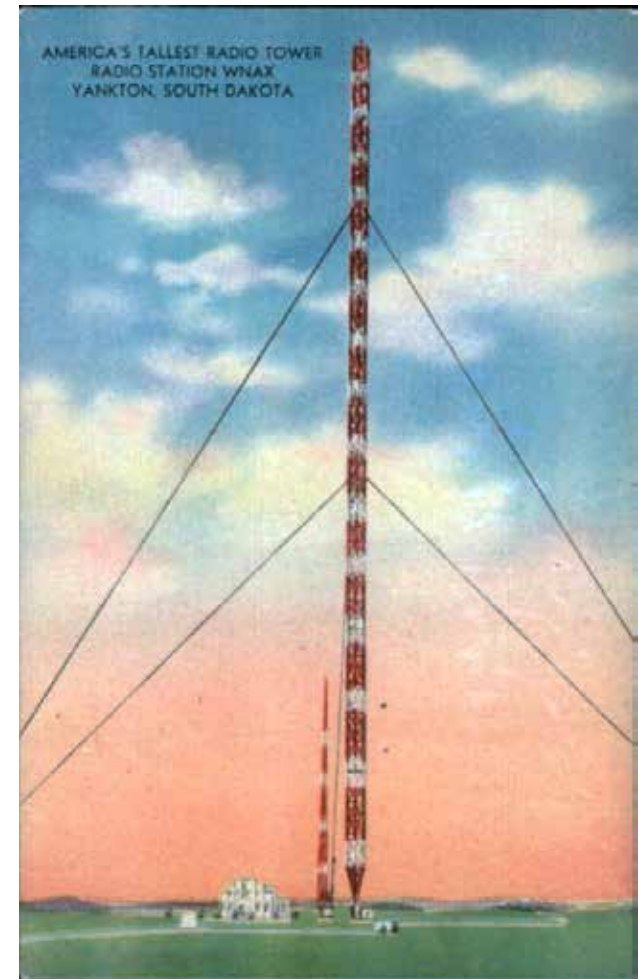
URONode: An Alternative Powerful Node for Linux and Pi

By Brian Rogers, N1URO n1uro@n1uro.ampr.org/n1uro@n1uro.#cct.ct.usa.noam

HISTORY

For many years I ran LinuxNode which was part of the Debian distro I had set up on my old 386dx/40 clone with 4MB ram, and 2GB hard drive. This old thing ran for almost 5 years just about flawlessly. It was my main packet server and it was linked on the old X1J-4 network we had here in New England. As versions kept upgrading however, the demands for a better CPU was required until I finally upgraded to a full IBM eServer x330 with dual scsi drives in a hot-swap raid1 array. Perhaps a bit overkill but did the trick fine. However in 2003, I wanted something to bring back some life into a dying user base. This was the birth of what's now known as URONode.

Rather than reinvent the wheel, as our network converted from X1J-4 to pc/FlexNet (DOS) we needed something to link FlexNet with NetRom. At first, I thought this may be Xnet as I was the original ham to translate the Xnet documentation to English and posted it on my website (which is still there at http://n1uro.ampr.org/xnet). Initial experiments were great except there were some diehards who claimed to have known Xnet and said it was flawed in regards to it's FlexNet routing. This was a false claim. Where I see it's flawed is in its INP3 protocol. (see Xnet documentation)

In doing research online I found there once was a FlexNode which an Italian coder migrated it into AWZNode. While this node was functional, it did have some security flaws in it. Also there were some customizations requested on our network for it to appear and act more like a pc/FlexNet node. This is where I got the idea to take the code and rewrite it.

FUNCTIONALITY:

As I was coding URONode, I decided to make it as fast of a node front-end for the end user, while allowing the sysop to add as many features/services to it as they wish. This can be done two ways; 1) Alias commands, and 2) ExtCmd which are external commands to the box. The difference between them is that the Alias commands are more like Hot-Key commands where the ExtCmd commands call out to the hard disk and launch whatever command the sysop wishes to give their packet community, for example the sysop may want to allow the user to launch lynx, they may do so and their guests can browse the web in text-only mode. The possibilities are endless!

Using the uronode.routes file, the sysop can add basic ax25 routing and alias them for their guests. Such are called Links. A links listing is called using the Links command and may look like:

```
AX25 Links:

Call        Alias       Description
N1URO-1     UVFLEX      N1URO FlexNet Hub
WA7V-2      PNW         Walla Walla WA7V
K1YON-2     EHTLD       NE Flex
```

Then the end user would connect using: C EHTLD to get to K1YON-2 from this node.

The power behind URONode, however, is it's "intelligent router". When a guest logs into a URONode and attempts to Connect to a Callsign-Ssid the node goes through a multi phase process. First it checks

it's FlexNet destination table (if flex is enabled) and if the remote is seen it will attempt the connect in that manner. If it's not found, then it checks its NetRom table and will try a NetRom connect. If then it's not found, then it will check it's MHeard table and if found will try to connect in a reverse path as to how that remote was able to connect in OR if that path was used previously it will attempt to connect out that same path. Even a digipeated path, if heard, will be tried.

IP functionality is not lost from it's original LinuxNode days. Standard dns lookups (Host command), Telnet, Ping, Finger are all still there. Of course,you need some sort of IP link to the URONode box in order for these functions to work. Of course, the sysop also may wish to allow incoming telnet to the node as well hooking it into the inetd or xinetd daemons.

The sysop has the flexibility to incorporate various texts into their URONode if they so choose. Such texts include an Information file (uronode.info), a message of the day file, and others that may be linked in via the ExtCmd command. Some other features included natively on the node besides standard NetRom user commands are a brief STatus command, Escape command (to break out of a connect), and an instant MSG command.

The MSG command allows guest A to send a brief text message ala instant message style to guest B. Such a message looks like:

```
*** Msg from n1uro:
Hello how are you?
*** End of msg.
```

and a system bell rings incase you're in another screen to alert you that you received an incoming message.

Online help is always available using the H <command> and the listing of commands including those added by the sysop are found with the "?" command. Such a display looks like:

```
UNIVLE:N1URO-5} Commands:

?, BBS, Bye, Connect, CONVers, DBase, Desti, DXcluster,
Escape, Finger FLex, Help, HOst, Info, INTerfaces, Links,
MAil, MBS, MHeard, MSg NEtstat, Nodes, NOS, PI, Ping,
Quit, RMS, Routes, SEssions, SMash Status, TCP, Telnet,
TIme, USCall, Users, Version, Who, WWCall, WX
```

Here we see UNIVLE node has a local BBS, Convers, a DataBase, DXcluster, eMAil, and more. It's almost impossible to draft a global commands listing because you have the option to customizing your command-set almost any way you wish. The node maintains the commands: 1) in Alphabetical order and 2) Shortcuts are in UPPER CASE lettering. This helps greatly when you have two commands which start with the same first letter in the above case DBase, Desti, and DXcluster can each be called with DB, D, DX accordingly however when using Help, the full command must be used. H D won't work. H Desti will work.

TECHNICAL:

The speed that URONode gets is that it's what I call a native thinnet client front-end to the native linux protocol stack. Unlike xNOS and other nodes for linux, URONode has no need to load a secondary

protocol stack on top of the existing linux protocols. Because of this, there's no internal 2-hop system for internal packets to take, they're directly pushed out the interfaces listed in the "ifconfig" command. This makes URONode lightning quick to the end user and sysop looking to get out on their local packet networks.

With the axdigi module originally written by Craig Small, VK2XLZ in 1995, and remodified by N1URO in 2013, crossport digipeating is now available. This digi system is dependant on the SSID of the OUTBOUND interface the user wishes to digi through. For example, if the user comes in on a sysop's -1 which is on the sysop's ax0 interface, and is trying to digi to a remote which is heard on the sysop's -3 which is on interface ax2, the user would issue a digi string such as C REMOTE-1 via SYSOP-3. Again, since this uses the native linux protocol stack, the digipeated frames are instant across the two interfaces.

The auto-router in URONode also makes it possible for the MHeard table to learn a digipeat path from another URONode neighbor. Here my URONode just saw a digipeated path to K1CRC-7 and learned it in its MHeard table:

```
c ax2 k1crc-7 n1uro-1 k1yon-2
link setup (ax2)...
*** connected to K1CRC-7
###CONNECTED TO WILD NODE K1CRC-7(K1CRC) CHANNEL A
ENTER COMMAND: B,C,J,N, or Help ?
```

Now, since the route was learned we can connect to K1CRC-7 without having to use such a long connect string:

```
c k1crc-7
link setup (ax2)...
*** connected to K1CRC-7
###CONNECTED TO WILD NODE K1CRC-7(K1CRC) CHANNEL A
ENTER COMMAND: B,C,J,N, or Help ?
```

Much of the code since I've taken over this project has been cleaned up and as many security holes patched as possible. There are some that still exist in other node software as of this writing which includes LinuxNode.

URONode, unlike any other node software for any platform that I'm aware of, has a 6-prompt system! This makes the node stand out and unique compared to the others. The schemas are quite simple yet may appear to be slightly complex. Here is the breakdown:

1 - inbound AX25/FlexNet:

If the end user connects to your node via ax25 or FlexNet, they will receive a prompt in the style of a pc/FlexNet node system. Example:

```
*** connected to N1URO-2
[URONode v2.1] - Welcome to N1URO-2
This copy of URONode is located in Unionville, Hartford
county, Connecticut.
[FN31ns] Type "?" for commands or H <command> for help.

=>
```

Here you see a software header, an automatic Welcome message, the MOTD file, and a Flex-type "=>" command prompt.

2 - inbound NetRom:

If the end user connects in via NetRom, there is no prompt displayed. Their host node or the last node they connect to prior to URONode will inform them that they're connected, however all commands are headered with a standardALIAS:CALL-SSID} type prompt as found in TheNet, X1J-4, etc. Example:

```
UNIVLE:N1URO-5} URONode v2.1
```

3 - inbound Telnet:

If the user is allowed to telnet into your node, they will get an initial telnet-style login with an identifier to the node and depending how the sysop configures the user's permissions may be prompted to enter in a password. They then are greeted with the MOTD file and a linux-style bash prompt, showing the directory you're in to be /uronode. Example:

```
Connected to 44.88.0.9.
Escape character is '^]'.
(n1uro.ampr.org:uronode) login: n1uro

[URONode v2.1]
Welcome n1uro to the n1uro.ampr.org packet shell.
```

```
This copy of URONode is located in Unionville, Hartford
county, Connecticut.
[FN31ns] Type "?" for commands or H <command> for help.


n1uro@n1uro.ampr.org:/uronode$
```

If the user is asked for a password:

```
Trying 44.88.0.9...
Connected to 44.88.0.9.
Escape character is '^]'.
(n1uro.ampr.org:uronode) login: n1uro
*** Password required! If you don't have a password please
email
<n1uro@n1uro.ampr.org> for a password you wish to use.
Password:
[URONode v2.1]
Welcome n1uro to the n1uro.ampr.org packet shell.
This copy of URONode is located in Unionville, Hartford
county, Connecticut.
[FN31ns] Type "?" for commands or H <command> for help.


n1uro@n1uro.ampr.org:/uronode$
```

As you see above, if the user does NOT have a password, they are instructed to e-mail the system operator and request one.

Now, I know that's only 3 prompts and I did say 6...

The sysop (by your request or globally preset) may flag your connection so that you receive ANSI colors to your prompts. Note: A user flagged as a BBS will NOT receive ANSI color.

User access is granted by the sysop in the uronode.perms file. Here, for example the sysop may require a password on all internet/telnet based logins OR if they so choose they may allow all amprnet (44.0.0.0/8) telnets accessible yet require all other networks to input a password. User access inbound and outbound even may be allowed or denied. Also, if a user is a remote BBS that requires an inbound connect to your node first, you may disable the Escape so that the BBS mail session won't get interrupted by an accidental ^T which may be found in some compressed mail packets.

As with most other linux packages, URONode has pretty good MAN pages to it. Most of the documentation you'll need may be found there.

SUMMARY

URONode, as mentioned above, is a user front-end to the native linux protocol stack, and is not designed to necessarily be a replacement for xNOS however with plug-ins and external programs available such as axMail and FBB, it can have the same features as xNOS. I also believe that URONode is the only remaining and currently actively developed/maintained node software for the native linux protocol stack. Ideas on features/modifications have come in from around the globe, and code has been supplied by Barry, K2MF (of MFNOS fame), Marius, YO2LOJ (ampr-ripd), and by Jaroslav OK2JRQ.

As of this writing, I'm in the process of putting the code on git, but for now you may find it at http://radio.linux.org.au, freecode, and my ftp server at ftp://n1uro.ampr.org/packet. An auto installer for Raspberry Pi and native Debian is also available on my website. Also as of this writing, URONode is in a legal process to have it included by RedHat for it's Fedora distro.

Happy Packeting and 73 de Brian, N1URO

###

In Speeding Communications . . .

NOTHING SERVES LIKE COPPER

THE AMERICAN BRASS COMPANY

Anaconda Copper & Brass

Directors Election

Three Director positions on the TAPR Board of Directors are now open for nomination and nominations may be submitted now.

TAPR Board members serve three-year terms and their responsibilities include:

1) Attendance at both board meetings each year. [One is held at the Dayton Hamvention in May, the other at the Digital Communications Conference (DCC) in September.]

2) Regular participation in the continuous board session, which is conducted over the Internet.

3) Active engagement in TAPR's management.

To place a person in nomination, please remember that he or she must be a member of TAPR. Also, confirm that the individual is willing to have his or her name placed in nomination. Send that person's name (or your own if you wish to nominate yourself), call sign, mailing address, e-mail address, phone number(s), and a biographical sketch (100 words maximum) via http://www.tapr.org/inforequest.php or to via snail mail postmarked by August 28 to P. O. Box 852754, Richardson, TX 75085-2754. If you submit a nomination via e-mail, we strongly encourage you to follow up by regular mail.

Nominations close after the call for nominations from the floor at the TAPR Membership Meeting at the DCC on September 6, 2014, and an online election will be held at http://www.tapr.org/tapr_elections.html from September 13 to 27, 2014.

The three Director positions that are up for election are currently held by Steve Bible, N7HPR, Stana Horzepa, WA1LOU, and Darryl Smith, VK2TDS.

###

TAPR Calendar

2014

Sep. 4 – Board of Director In-Person Meeting, Austin, TX

Sep. 5-7 – ARRL / TAPR Digital Communications Conference, Austin, TX

Oct. 15 – *PSR* Autumn issue deadline

Nov. 1 – *PSR* Autumn issue publication date

2015

Jan 15 – *PSR* Winter issue deadline

Feb 1 – *PSR* Winter issue publication date

Apr 15 – *PSR* Spring issue deadline

May 1 – *PSR* Spring issue publication date

May 14 – Board of Director In-Person Meeting, Dayton, OH

May 15-17 – Dayton Hamvention

May 15 – TAPR-AMSAT Annual Dinner, Dayton, OH

July 15 – *PSR* Summer issue deadline

Aug. 1 – *PSR* Summer issue publication date

###

TAPR is a community that provides leadership and resources to radio amateurs for the purpose of advancing the radio art.

Minutes of the TAPR Board of Director Meeting
Dayton, OH, May 15, 2014

Recorded by Stana Horzepa, WA1LOU, TAPR Secretary

Attendees:

Board Members:

John Ackermann, N8UR

Steve Bible, N7HPR

George Byrkit, K9TRV

Tom Holmes, N8ZM

Stana Horzepa, WA1LOU

Jeremy McDermond, NH6Z

Non-board members:

Skipp May, WV6F

Mike Ossmann

Tim Shepard, KD1KY

Chris Testa, KD2BMH

Live meeting was called to order by N7HPR at 6:22PM.

Mike Ossmann discussed the status of HackRF. N7HPR suggested that TAPR might provide boxes for HackRF.

N7HPR discussed the status of the DCC and says that it is doing very well – no bad news to report

Motion by NH6Z: Free admission to DCC for students.

Seconded by WA1LOU

Passed unanimously

It was decided that a discussion about inventory issues be put off until new firmware for Penelope is developed.

Motion by N7HPR: TAPR garage sale by the DCC

Seconded by K9TRV

Passed unanimously

N8ZM provided a brief treasurer's report.

NH6Z discussed the status of the membership growth project.

NH6Z announced that he is working on a new SDR project with Scotty Cowling, WA2DFI

K9TRV suggested that we promote receiving bequests from the ham radio community. WA1LOU will put a blurb regarding this in PSR.

N8UR discussed the status of Open Source Hardware. N8UR says our role is fading and he is for ways to converge the various Open Source Hardware licenses.

N8UR announced a new timing project: TNS BUF (time nut special buffer). He may use Kickstart to fund it.

WA1LOU volunteered to rip old DCC audiotapes to digital format as soon as the audio tape recorder is located and shipped to WA1LOU (along with the audio tapes).

Live meeting was adjourned at 8:57 PM.

###

TAPR Dayton Videos

Gary Pearce, KN4AQ, and the HamRadioNow crew visited the TAPR booth at Hamvention and produced a video of their visit which includes a talk with TAPR President Steve Bible, N7HPR, about the upcoming DCC, an interview with Michael Ossmann, inventor of the HackRF experimental SDR board, and a conversation with Chris Testa, KB2BMH, and Bruce Perens, K6BP, about the Whitebox and FreeDV projects.

Here is the link to that video:
http://arvideonews.com/hrn/HRN_Episode_0149.html

KB2BMH also discusses Whitebox in a video captured at QRP ARCI's "Four Days in May," which is the annual convention of the QRP Amateur Radio Club Internation that runs concurrently with Hamvention on the east side of Dayton.

Here is the link to that video:
http://www.ustream.tv/recorded/47587627

###

TAPR Hamvention Photos

TAPR is a community that provides leadership and resources to radio amateurs for the purpose of advancing the radio art.

TAPR at the ARRL Centennial Convention

I had a wonderful time talking myself hoarse at the TAPR booth at the ARRL Centennial Convention demonstrating a high-speed wireless network of two links. The two links were established using four Ubiquiti NanoStations M3 data radios all running at 6 dBm (4 mW) transmit power.

One link operated at 3400 MHz and the other link operated at 3450 MHz. In the photo, you can see jutting up above the FreeDV sign two Ubiquiti NanoStation M3 wireless networking radios configured as a network relay station. The two radios are interconnected with a network interconnect cable. I am wearing an example of a network interconnect cable.

The photo was taken just after I had explained to David Sumner, K1ZZ, the CEO of the ARRL, that the ARRL should go back to their roots and start calling themselves the American Radio Relay League again. --- *David Bern, W2LNX*

***

My thanks to TAPR and Stana for hosting FreeDV (yet, again!). We had many visitors with lot of interest in HF DV. --- *Mel Whitten, K0PFX*

***

I spent the day staffing our booth at the ARRL's Centennial Convention in Hartford. Mel Whitten, K0PFX, had a HF Digital Voice demo and David Bern, W2LNX, had a 3.4 GHz video relay demo. Their demos attracted a lot of attention to our booth throughout the day.

David invited ARRL President Kay Craigie, N3KN, and ARRL CEO Dave Sumner, K1ZZ, to our booth to see the demos. Dave Sumner spent a good amount of time at the booth talking with David Bern.

I think our presence at the Convention was a

TAPR is a community that provides leadership and resources to radio amateurs for the purpose of advancing the radio art.

Bits of TAPR

good thing. I heard that they had 3200 attendees pre-registered; dunno how many actually showed up, but the convention hall was very busy all day. I was surprised that there were so many people from all over the USA as well as the world present. At the banquet, they asked the crowd of about 900 diners how many were from outside New England and at least half raised their hands.

The venue was excellent. A modern (about 5-years-old) convention center connected to a new hotel right off the Interstate.

Although there were some familiar faces, in general, this was not the same crowd that goes to Dayton and it was nice to hear people say that they were TAPR members and/or they had purchased our products and/or thought we did a good job.

I saw a lot of old friends and acquaintances I have not seen in decades. I was in awe how old they had gotten!

Overall, the convention was very impressive. One of the best I ever attended.

I want to thank Mel and David for doing a great job setting up our booth on Thursday. Due to a family emergency, I could not get to Hartford to help with the set-up, so I really appreciate what they did. --- *Stana Horzepa, WA1LOU*

###

The cover story of the May-June issue of *QEX* is a revealing article about HPSDR written by Scotty Cowling, WA2DFI, TAPR's prime mover and shaker behind HPSDR. TAPR is prominently featured in the article. Congrats to Scotty for the fine piece and for his continuing evangelizing of HPSDR.

★ ★ ★

Congratulations to to TAPR member Warren C. Pratt, NR0V, for receiving the 2014 ARRL Technical Innovation Award. Pratt was cited for his research leading to the development of PureSignal, "an adaptive baseband pre-distortion algorithm used to improve the linearity of amplifiers and reduce intermodulation distortion products emitted by software-defined transmitters."

★ ★ ★

Please keep TAPR in mind, when you are making bequests or contributions. TAPR is a 501(c)(3) not-for-profit scientific research and devleopment corporation and all bequests and contributions to TAPR are tax-deductible to the extent allowed by US tax laws.

###

TAPR is a community that provides leadership and resources to radio amateurs for the purpose of advancing the radio art.

2014 ARRL/TAPR Digital Communications Conference

September 5-7 in Austin, Texas

Make your reservations now for three days of learning and enjoyment at the Austin Marriott South hotel. The Digital Communication Conference schedule includes forums, demonstrations, a Saturday evening banquet and an in-depth Sunday seminar.

This conference is for everyone with an interest in digital communications—beginner to expert.

Call Tucson Amateur Packet Radio at: **972-671-8277**, or go online to **www.tapr.org/dcc**

Golden Packet Claimed!

By Bob Bruninga, WB4APR

After six annual attempts, several dozen hams completed a 2000 mile ad-hoc packet link along the Appalachian Trail from Maine to Georgia and are ready to claim the Golden Packet award. The award was proposed in the early 1980's by AMRAD, the early pioneers of AX.25 packet in the US to recognize the first cross-county packet. But this idea was soon forgotten as long-haul VHF RF links fell out of use when HF, then wormholes, and then internet links began to appear. By 1995 the APRS-IS (Internet System pioneered by Steve Dimse and the Sproul brothers) could link every RF packet on the planet via the nearest IGate. By 2004 with over 20,000 users on the saturated national 144.39 MHz frequency, the RF packet paths were reduced to 2 hops or less to cover the local area with the remainder captured into the APRS-IS for worldwide distribution.

But, to demonstrate long haul emergency ad-hoc use of APRS communication, in 2009, this Golden-Packet group began an annual event on the 3rd weekend in July to attempt an end-to-end 14 hop communication link from Maine to Georgia on a dedicated frequency (not the congested 144.39 MHz). Besides, after being ignored at Field Day for nearly 2 decades, APRS was looking for a new challenge and our own day in the field.

Each year there was always one break in the chain (me included!), and certainly plenty of thunderstorms somewhere along the route. But on 20 July 2014, the stars aligned and Tim, KA1YBS climbed to the top of the 5267' Mt. Katahdin in Maine with his APRS HT and was able to exchange APRS packets with N4AZR, Glenn parked on a fire road on Springer Mountain in Georgia via 14 other temporary APRS stations on mountain tops the full length of the Appalachian Trail.
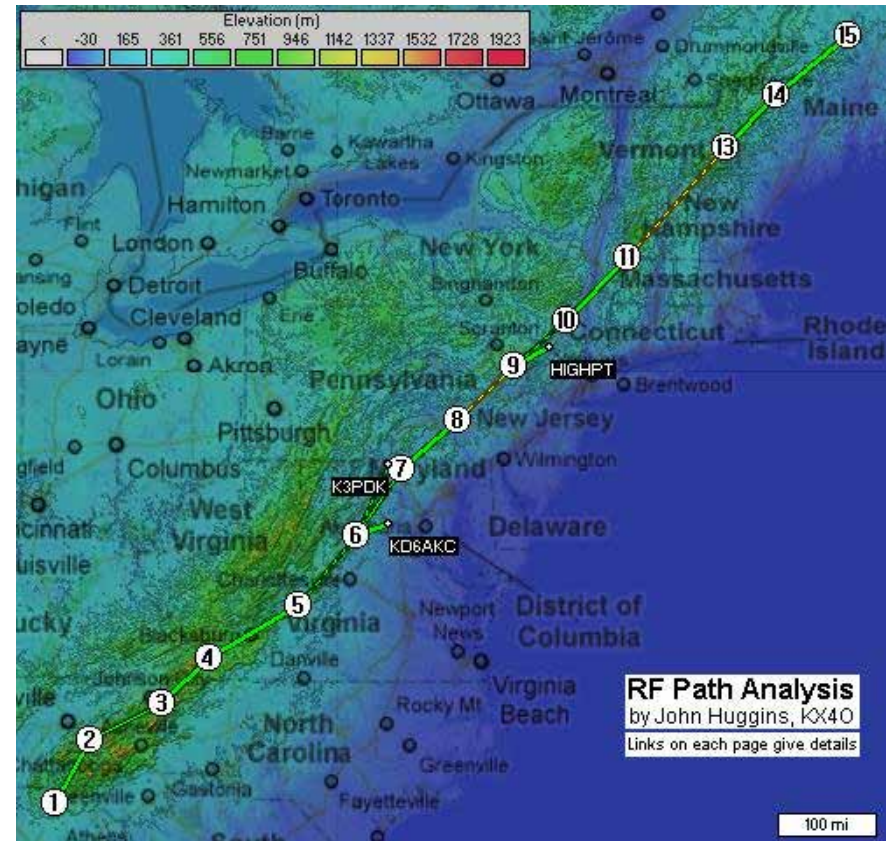
See details of the whole event: http://aprs.org/at-golden-packet.html

There is no reason other areas of the country cannot also do this APRS field event along their own local long distance trails (The Continental Divide, Pacific Coast Trail, Lewis and Clark trails or any of the other 50,000 miles of linear trails in the US.)

###

Write Here!

PSR is looking for a few good writers, particularly ham radio operators working on the digital side of our hobby, who would like to write about their activities and have them published here in PSR.

You don't have to be Hiram Percy Maxim to contribute to PSR and you don't have to use Microsoft Word to compose your thoughts.

The PSR editorial staff can handle just about any text and graphic format, so don't be afraid to submit whatever you have to wa1lou@tapr.org. The deadline for the next issue of PSR is October 15, so write early and write often.

If PSR publishes your contribution, you will receive an extension to your TAPR membership or if you are not a member, you will receive a TAPR membership.

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On the Net

By Mark Thompson, WB9QZB

Facebook

As you may know, TAPR has a Facebook page, www.facebook.com/TAPRDigitalHam.

However, I also created a TAPR Facebook Group, www.facebook.com/groups/TAPRDigital/.

If you have a Facebook account, "Like" the TAPR Facebook page and join the TAPR Facebook Group.

If you join the group click on the Events link and indicate you're Going to the events.

On Twitter, Too

Access the TAPR Twitter account at www.twitter.com/taprdigital.

Also on YouTube

TAPR now has its own channel on YouTube: the TAPR Digital Videos Channel: www.youtube.com/user/TAPRDigitalVideo.

At this time, there are a slew of videos on our channel including many from the TAPR-ARRL Digital Communications Conference (DCC) that you may view at no cost, so have at it!

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TAPR is a community that provides leadership and resources to radio amateurs for the purpose of advancing the radio art.

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Twitter www.twitter.com/taprdigital

TAPR Office Hours: Monday to Friday, 9 AM to 5 PM Central Time

Submission Guidelines

TAPR is always interested in receiving information and articles for publication. If you have an idea for an article you would like to see, or you or someone you know is doing something that would interest TAPR, please contact the editor (wa1lou@tapr. org) so that your work can be shared with the Amateur Radio community. If you feel uncomfortable or otherwise unable to write an article yourself, please contact the editor for assistance. Preferred format for articles is plain ASCII text (OpenOffice or *Microsoft Word* is acceptable). Preferred graphic formats are PS/EPS/TIFF (diagrams, black and white photographs), or TIFF/JPEG/GIF (color photographs). Please submit graphics at a minimum of 300 DPI.

Production / Distribution

PSR is exported as Adobe Acrobat and distributed electronically at www.tapr.org

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TAPR is a not–for–profit scientific research and development corporation [Section 501(c)(3) of the US tax code]. Contributions are deductible to the extent allowed by US tax laws. TAPR is chartered in the State of Arizona for the purpose of designing and developing new systems for digital radio communication in the Amateur Radio Service, and for disseminating information required, during, and obtained from such research.

PSR Advertising Rates

Full Page Ad for 1 issue: $100, 4 issues: $350
Half Page Ad for 1 issue: $75, 4 issues: $250
Quarter Page Ad for 1 issue: $50, 4 issues: $175

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Membership Application

TAPR

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Phone 972–671–TAPR (8277), Monday–Friday, 9AM–5PM Central Time

E-mail taproffice@tapr.org   URL http://www.tapr.org

Join or renew online at https://secure.tapr.org/np/clients/tapr/login.jsp

Benefits of a TAPR Membership:
- *Subscription to the quarterly PSR*
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