PACKET STATUS REGISTER

™

President's Corner

It has been a very busy year for TAPR.

2007 saw the production of the first two boards in the HPSDR project – Ozy and Janus. These serve as high-performance replacements for the sound-card if one has an SDR-1000, or are the first phase of an entirely new system based on the Atlas back-plane.

The production of these boards marked a departure from the old TAPR model. These boards were moderately complex and were sold as bare-boards or as fully assembled and tested (which were far and away the majority of cases). In order to fund a project of this magnitude, we took pre-payments, and together with a generous loan from AMSAT to support the project (which

has been paid back in full), we were able to deliver the boards on time, and at projected (and lower than expected) cost. Much of the pricing success is due to the hard work of Scotty WA2DFI and his watchful partner Nona. Nona shopped for pricing deals – definitely not for the faint of heart.

September found us in Hartford for the DCC. There were a record number of papers and presenters present, and old friendships were rekindled. We had great support from the ARRL staff that also helped us with registration. Plans are already underway for the 2008 DCC in Chicago.

We are in fast and furious mode again in anticipation of the Dayton Hamvention. Steve and Scotty are working with the HPSDR project leaders in bringing several more boards to production, and the plans are to have some

ready for Dayton. Watch the web page (www. tapr.org) for more details.

Some, if not all, of these will be produced with the same pre-payment model used for Ozy and Janus. Any profit realized from board production in this series is rolled back in to R&D and production so as to keep costs down. The HPSDR series of projects is far and away the most expensive thing we have ever done. As such, we are striving to keep costs down with high volume parts procurement (thanks again Nona) and careful parts selection (thank you project leaders). Fortunately, what would be the most expensive part of this project is the R&D, and all of this time is donated.

We have some of the brightest and most innovative folks on the planet involved in this. When I say "the planet," I mean that, as this project is distributed across the globe and linked

through the Internet with e-mail and on-line meetings.

Make your plans now to join us at the TAPR booth at Dayton. We have a full forum booked – current plans call for a Friday morning meeting. And plans also continue for our Second Annual joint banquet with AMSAT, with details to follow.

As always, I welcome your e-mail with comments and suggestions.

73,

Dave, VE3GYQ/W8

Spencerville, OH

Mail to: ve3gyq@tapr.org

###

HPSDR Project Status

BY SCOTT COWLING, WA2DFI, AND JOHN KOSTER, W9DDD

Mercury Direct Sampling Receiver Board: Alpha version in progress. Schematic complete. Layout starts Feb. 19th. Look for the first alpha unit at at Dayton.

Alex RF Bandpass Filter Board Set: Second alpha build funded by TAPR and in progress. Look for alpha 2 demos of both RX/HPF and TX/LPF boards at Dayton.

Penelope Digital Up Conversion 1/2W Transmitter Board: Alpha testing complete. Production in progress. TAPR is now taking orders for delivery by May 15th.

Don't forget:

Atlas Backplane: TAPR has kits in stock and ready for shipment.

Janus A/D D/A Board: TAPR has assembled and tested boards in stock and ready for shipment.

Ozy USB Interface Board: TAPR has assembled and tested boards in stock and ready for shipment.

Pinocchio Extender Board: TAPR has kits in stock and ready for shipment.

At this time, TAPR would like to recognize and thank the HPSDR developers:

Penelope

Phil Harman, VK6APH

Lyle Johnson, KK7P

Janus

Bill Tracey, KD5TFD

Phil Harman, VK6APH

Lyle Johnson, KK7P

Ozy

Phil Covington, N8VB

Phil Harman, VK6APH

Bill Tracey, KD5TFD

Atlas

Phil Covington, N8VB

###

Minutes of TAPR Board of Directors Meeting

September 27, 2007, Windsor Locks, CT

Steve Bible called the meeting to order at 9:28 AM.

The following Board members and officers were present: John Ackermann, Steve Bible, Scott Cowling, Tom Holmes, Stan Horzepa, John Koster

1) CERTIFICATION OF THE BOARD OF DIRECTORS ELECTION.

There were no valid write-in candidates for the Board of Directors, so the nominated candidates were elected: John Ackermann, David Toth, Bill Vodall

2) ELECTION PROCESS

There was a discussion on how to improve our election process. After the discussion, Stan Horzepa made the following motion:

Call for nominations in the pre-DCC issue of PSR.

At the annual membership meeting during the DCC, call for nominations from the floor and close nominations at the end of the meeting.

Hold the election for a two-week period starting the Saturday following the DCC.

Scott Cowling seconded the motion and the motion carried with all voting aye, no nays.

3) ELECTION OF OFFICERS

John Koster moved to re-elect current officers (David Toth, President; Steve Bible, Vice President; Tom Holmes, Treasurer; Stan Horzepa, Secretary). Scott Cowling seconded the motion and the motion carried with all voting aye, no nays.

4) TREASURER'S REPORT

Tom Holmes presented the treasurer's report.

Through June 2007, there was $205k income, $196k expenses, $8k net income (compared to $6k net income through June 2006).

Stan Horzepa moved to accept the treasurer's report. Scott Cowling seconded the motion and the motion carried with all voting aye, no nays.

A discussion on expenses followed. After the discussion, it was decided to announce at the annual meeting the amount of money (approximately $10k) that TAPR invested into the community for the advancement of amateur radio during the past year.

5) OFFICE REPORT

John Koster presented the office report. Membership is currently 1052. We are past break-even point regarding the sale of HPSDR items. Lyle Johnson's project boards are selling at a variable rate.

Shipping has evolved due to rate increases, however, using the free boxes from the Postal Service provides a savings. We are saving $10 per month using a cell phone vs. a desk phone for office communications.

In light of increased volume of sales, there was a discussion of raising the rent for our office space, specifically, the discussion dealt with how to adjust rent in a fair manner. A variety of suggestions were presented and John Koster will present them to the landlord.

The publications inventory is dwindling. A discussion ensued about what to reprint and it was decided to reprint Wireless Digital Comm: Design and Theory.

A discussion about printing on demand followed and Stan Horzepa is going to look into printing on demand and Google Books, then report back to the Board about what options are available.

John Ackermann offered his book, Networking Without Wires: Radio Based TCP/IP, for publication by TAPR. Stan Horzepa will edit it and prepare it for publication.

Stan Horzepa moved to accept the office report. Scott Cowling seconded the motion and the motion carried with all voting aye, no nays.

The meeting broke for lunch at 12 PM and continued at 1 PM.

5) VOLUNTEER DEVELOPMENT PLAN

There was a general discussion about getting more volunteers. Suggestions included spreading out the workload for maintaining the TAPR web site, expand the tapr_vol.html page on the site, seek volunteers via QEX, and update our advertisement, which appears in various publications. Scott Cowling volunteered to update the ad.

6) OHL REPORT

John Ackermann reported that the approval process is complete. The license was published but there was very little media coverage and it was met with "underwhelming enthusiasm." It was concluded that the license needs some more publicity.

7) HPSDR REPORT

Scott Cowling reported that Ozy and Janus are done and that there were no problems that we have had to deal with it. Scott also reported that Penelope is going well and that the board will be resized to be same size as Ozy and Janus.

Scott Cowling reported that 150 Ozy and Janus boards are in inventory. A discussion ensued on how to sell inventory. A suggestion was made to create awareness that the boards are still available.

John Ackermann suggested that we need an enclosure for the HPSDR boards. A discussion followed about the available options, e.g., have a manufacturer build an enclosure according to our design, deign brackets to mount the boards in a PC enclosure.

Scott Cowling suggested that we need someone to write a sound card driver.

There was a discussion about how to handle production of Penelope and it was agreed to use same model for new boards as old boards, i.e., pre-order, pre-pay, etc.

8) OTHER PROJECT DEVELOPMENT

John Ackermann reported that TADD-1s are sold out (x100) and that 50 more will be ordered.

John Ackermann may develop (by the next Dayton Hamvention) a second board with a super regulator for the new TADD-11.

A discussion followed about possibly kitting other folks' timing projects.

Steve Bible reported that the SuitSat transponder may be used as an SDR project that can be used for equipping ground stations.

9) DAYTON HAMVENTION REPORT

There was a discussion about moving our booth to a different location, possibly near the AMSAT booth or next to Bruce Perens' proposed Open Source booth.

There was a discussion about the banquet: will it be with AMSAT at the Air Force Museum, with AMSAT at another location, or on our own at the airport hotel or another location. John Ackermann will contact AMSAT to get their take on the matter.

10) OTHER OLD BUSINESS

None

11) NEW BUSINESS

New business was discussed with old business above.

The meeting adjourned at 3:45 PM and will continue online.

Respectfully submitted,

Stan Horzepa, WA1LOU, Secretary

###

DCC 2008 Plans

BY STEVE BIBLE, N7HPR

The TAPR-ARRL DCC 2008 is a go for September 26 - 28, 2008!

Phil Harman, VK6APH, will present "Software Radio Through the Looking-Glass" as the 2008 DCC Sunday Seminar. Phil is one of the main men in the HPSDR project and his seminar should be a must-see for anyone interested in SDR .

The hotel is the

Holiday Inn Hotel Elk Grove Village

1000 Busse Road

Elk Grove Village, IL 60007

Phone: (847) 437-6010

www.hielkgrove.com

The hotel is near O'Hare airport and they have an airport shuttle. The room rate is $89 per night.

A big thanks to Mark Thomson, WB9QZB, and Kermit Carlson, W9XA, for scouting the hotel. (The same hotel is also host to the W9DXCC conference.)

NUE-PSK

BY GEORGE HERON, N2APB, AND MILT CRAM, W8NUE

The design team of Milt Cram, W8NUE and George Heron, N2APB presented a new, handheld, battery-operated modem for PSK31 communications (and other digital modes) at the 2007 ARRL/TAPR Digital Communications Conference. The "NUE-PSK Digital Modem" does not require the use of a PC and will work with any SSB transceiver to finally allow PSK31 to be easily done in the field ... "portable PSK".

See the NUE-PSK web page (www.amqrp.org/kits/nue-psk) on the AmQRP web site for overview, details, photos and more. Also available there for the download is an overview article, the slides used to present at the conference, and a movie file showing the modem in action.

The team is also using Yahoo Groups to provide for online discussion with the designers and those interested in the project. Go to http://groups.yahoo.com/ and select "NUE-PSK" ... it's free and easy to sign up.

The American QRP Club is currently working to kit up the NUE-PSK modem and will soon have it available for ordering. See the note at the bottom of the web page to sign up for kit availability news.

###

Beam Steering in Combat

Or How to Use Software Radio and an Array of Short Verticals in a 160 Meter Contest

BY VIC KEAN, K1LT

This past weekend, I used a new secret weapon in the 12th Stew Perry Topband Distance Challenge Warm-Up Event. This secret weapon consists of 8 short verticals, 4 Softrock v6 receivers, and a Delta 1010LT sound card plus computer running my Phasor module, DttSP and SDR-Shell. The verticals were configured as a 4 element broadside array of end-fire arrayed verticals. See http://k1lt.com.

Since the phased array must be used with a computer to form an entire receiving system, I had to integrate this new technology with a traditional contest station. I did this by routing the audio from the computer/radio/antenna system to the left channel of my headphones and the audio from the main station to the right channel. Since I didn't have time to build a real SO2R (single-op, 2 radio) control box, I used a Ramsey 25B stereo FM transmitter and a Radio Shack Stereo FM Headset receiver. This headset has separate level controls for each ear (for balance) besides an overall volume control (nominally, the volume control). Thus I could use the audio control on the IC765 for "traditional" (Beverage antennas and a triple conversion receiver) audio, and either KDE's kmix

audio level pop-up control or the left earpiece level control on the headset to control "high technology" (phased array and software radio) audio.

I set up my station a few hours before the first expected signals. The contest is already on-going at this point, but nobody bothers with ground-wave contacts in this event. As I putter about the shack, I can monitor the waterfall display provided by SDR-Shell for signals. Since my monitor is 1600 pixels wide, I can see about 36 kHz of spectrum at a time, which is plenty for most 160 meter contests. (It would not be enough for the ARRL 160 or the CQ WW 160 contests, which occupy most of the bottom 60-80 kHz of the band.) (SDR-Shell must use 2 pixels per FFT bin.) I guess I should buy a 1920 pixel monitor before then :-)

The first problem becomes immediately apparent when I call the first station: the software radio provides the monitor of my transmitter, since its always receiving, but the audio is delayed by 0.021 (2048/96000) seconds, which is enough to make sending via the paddle difficult. I thought about quickly hacking the antenna phasing module to block the audio in the presence of a signal stronger

than -40 dBm, but the thought of hacking software during a contest was a bit too much like work. Also, blocking the audio in the phasing module would likely add severe clicks and would disable the waterfall display. The waterfall is useful in that I can see where I'm transmitting in relation to the signal I was just receiving.

Several solutions suggest themselves: mute the audio in DttSP using the push-to-talk signal from the transmitter, or even better, use an additional pair of ADC channels to sample the transmitted signal and subtract it from the received signal. Alternately, separate processing could delay the audio from the traditional radio by 21 milliseconds, although this would not provide for the monitoring of one's own sending, even though is does cure the weird echoing sound when listening to the same signal through both ears.

In years past, I've used SDR-Shell and DttSP to monitor the 160 meter band during a contest. Although there are almost always too many signals visible at one time to tell if one of them is new, there are a couple of uses for the waterfall display. First, a pile-up is usually an indicator of an

interesting station, and a pile-up is plainly visible. Second, holes stand out, which makes finding a new run frequency much easier than tuning the band. However, my own transmitter usually paints the entire display white with the distortion products from overload. Therefore, one has to stop transmitting for a while to make use of the display.

With the phased array, I noticed that I can steer the array for a nice compromise between listening in the direction of Europe, and attenuating my own transmitted signal. Of course, the transmit antenna is much too close to the array for a proper null. But by steering the array a mere 6 degrees north of the ideal European bearing, I could reduce the apparent strength of my own transmitter from -40 dBm to -48 dBm, which is enough to reduce the extent of the waterfall "white-washing" to about 25 kHz and allow me to see some other signals despite my own transmitter.

Thus is born the idea of subtracting the transmitted signal from each of the array receivers. This trick requires another pair of ADCs phase (word) locked to the existing 8 ADCs (by using another Delta 1010) and the same software that I'm already trying to use to "calibrate" the phased array.

So this is an area of future experimentation.

The second problem became apparent when numerous weaker European stations were calling: not enough (any) knobs! When trying to copy a barely audible weak CW signal, this operator tweaks the incremental tuning, the pass-band shape, and the antenna direction to try an find the best copy. Often, these settings change during the course of a difficult QSO as propagation changes (fading). So, a mouse or keyboard based user interface does not make for rapid tweaking. Maybe we can find a bank of rotary encoders that can be interrogated via a USB port, and interface that to SDR-Shell. Also, I think I shall update the phasing module to allow "push-button tuning" to select a number of preset beam headings, perhaps by mapping the edge keys of the numeric keypad as if they were a compose rose. I use the same tactic to select from a set of 12 Beverage antenna direction using a telephone style keypad.

Also, I might have to add a personal modification to SDR-Shell to disable the escape key. (The function of the escape key is nominally completely correct, except for my own silly situation). My station has two IBM model M keyboards side by

side, the left keyboard for the Linux machine that runs DttSP and the rest, and the right keyboard for the Windows machine that runs the NA logging program. When the rate gets slow, I get up and wander around while the CQ machine runs. When someone finally calls, I rush back to the keyboard and bang the escape key to stop the transmitter. Several times during the contest, I hit the wrong escape key, which shuts down a receiver when I most want to receive! There is nothing like real user tests to find these kinds of issues :-)

During the first two thirds of the contest, when signals may be arriving from Europe, I kept the phased array focused on Europe, and used the Beverages to aim west. That way, I could take calls from either coast without having to hunt through all the Beverages as I have in the past. I still need to check the southern Beverages for calls from Florida and Texas, but that is still better than the old way. In previous contests after each CQ, I would switch through 4 or 5 Beverages to make sure I didn't miss a weak signal. During the hours from 0400-0600Z, which have the most European contacts, I kept both the phased array and the Beverages focused on Europe. Although I could usually hear a European

caller on both antennas, the copy was nearly always better on the phased array. The phased array seemed to have a slightly better SNR although its very difficult to make critical quality judgments while trying to copy a weak signal. Note that NEC modeling suggests the phased array should be about 3 dB better than my best European Beverage.

C52C in The Gambia, Africa, was on-the-air during the contest, although he was not participating. I did note that the phased array could distinguish him from the Europeans in that his bearing seemed to be about 20 degrees to the south of the Europeans. Also, I worked several Scandinavians, and they seemed to be about 10 degrees north of the typical European bearings. Note that I have the phasing module set up to change direction in 10 degree steps by default, and in 1 degree steps with extra key presses. Also note that propagation often smears the apparent bearing of many stations outside of North America, so take these observations with several grains of salt. But the results seem promising.

After sunrise in Ireland, I took a nap and came back around 0930Z to begin listening for Oceania and Japan. However, I was severely drained of motivation by that point, and also the propagation did not seem to be there, so I did not gain much

insight about the phased array performance to the west. DX to the west from my location has always been difficult for several reasons, including geography, local topography, and personal chronometry (I have a hard time being awake very early). So, I didn't listen for long, and I may have missed DX and certainly missed the opportunity to evaluate the phased array to the west. My quick perception is that the array was noisy.

Finally, I need to record the output of the 4 Softrock v6's, so that I can analyze this stuff after the contest. For example, I could go back and figure out why I think I heard ZS0X in grid square JO99, when ZS is a South African prefix, and JO99 is in the Baltic Sea. (Maybe the call was 7S0X, although I swear I heard "Z" and not "7".) Or, I could figure out why TI7H came in from the south, even though he gave me a stateside grid square. I suspect there are JACK plug-ins that could do multi-channel recording, and if not, such a capability would be fairly simple to add to my Phasor module.

The bottom line is that the phased array works, even though I have not finished optimizing it, nor have I a decent way of calibrating it.

###

Write Early and Write Often

Packet Status Register (*PSR*) is looking for a few good writers, particulary ham radio operators working on the digital side of our hobby, who would like to publicize their activities here.

You don't have to be Shakespeare 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*, the Dayton Hamvention issue, is March 31, so write early and write often.

###

FDMDV

Frequency Division Multiplex Digital Voice… Taking DV on HF a step closer to replacing analog voice

BY MEL WHITTEN, K0PFX

Based on an idea and modem code from Peter, G3PLX, a new digital voice software program has been recently developed by Cesco, HB9TLK using FDM and no Forward Error Correction (FEC). This modem is in sharp contrast to DRM (Digital Radio Monidale) based decoders (WinDRM and DRMDV) that rely on various FEC transmit modes, interleaving and a high count of lower powered carriers.

FDMDV uses only 14 Quadrature Phase Shift Keying (QPSK) "high power" 50 baud carriers (75 kHz spacing) and one slow speed 2X power Binary Phase Shift (BPSK) carrier. The center BPSK carrier provides frame indication and sync data for a fast Auto-tune function with one click of the mouse. The spectrum bandwidth (BW) has been reduced to just 1.1 kHz versus the 2.4 kHz needed for the ham DRM modes. The combined 14 FDM carriers provide a 1450bps data rate; just right for the 1400bps low
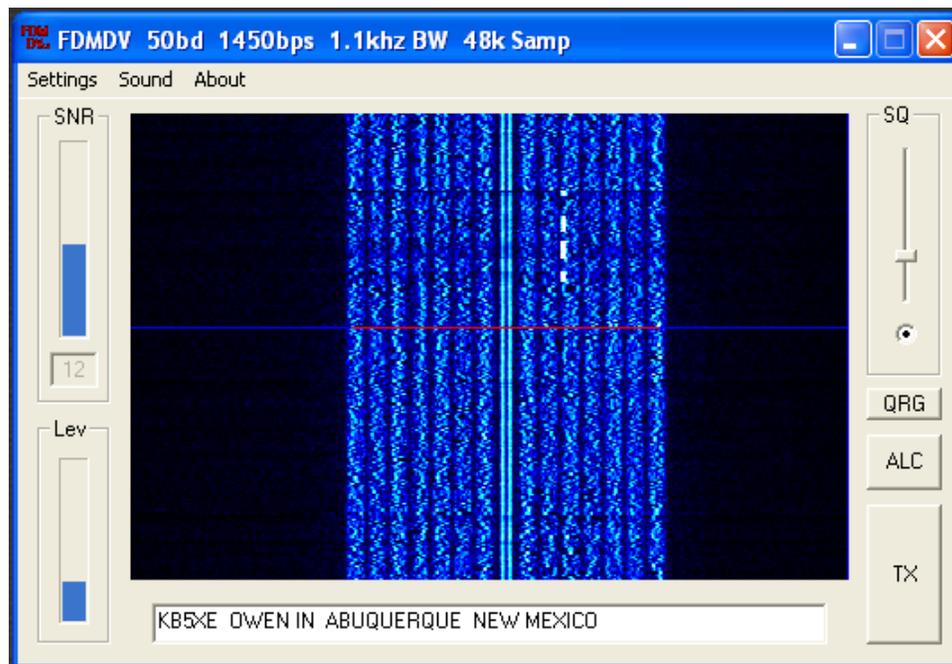
bit but high performance CODEC borrowed from DRMDV.

A variable Squelch function opens up to help decode in weak signal and deep fading conditions. Tolerance to SSB "splatter" and dead carriers is quite good. To improve the average power and

reduce the peaks, Peter's idea for transmit ALC was implemented by Cesco to help improve SNR in challenging weak signals with multipath as found between the US and Europe. With no FEC and fast frame indication, sync is instant; click on the TX button and start talking. Fast exchanges are possible with only a slight delay between TX to RX. Automatic Frequency Control (AFC) keeps the RX sync'd to the TX frequency. Currently, both 12k and 48k sound card sample rates are available.

Set up for DV is made simple, just add a USB headset with your existing digital mode (typical PSK31) connections, set the audio levels with the mixer controls and your ready. Find the docs, software and info for weekend 20m DV nets at www.n1su.com

If you have not tried DV yet, as Paul, W4RI, would say, "…the time is now."

###

Click Once

Tutorial for Off Line Visual Studio Applications

By John Blowsky, KB2SCS

If you have no idea what a Click Once deployment is then I suggest you go to the following URL:

http://msdn2.microsoft.com/en-us/library/t71a733d(VS.80).aspx

There you will learn what Click Once Deployment is all about. This tutorial instead will guide you though step by step on how to deploy your project using Click Once..

In order to do the above we need a project to deploy.
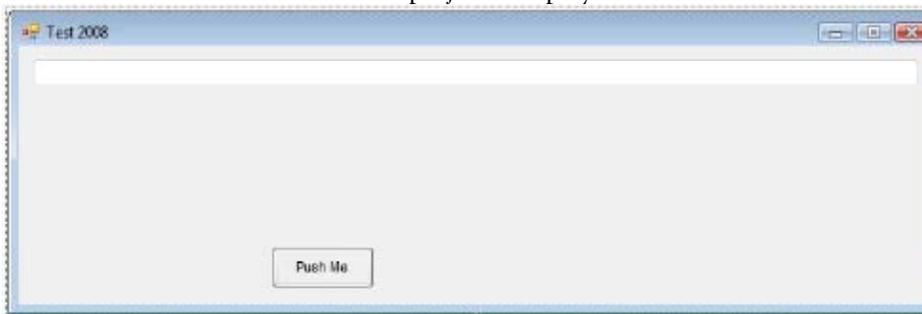
The above project is a simple program that does two things.

1. It gives us a way of demonstrating how to deploy using Click Once.

2. It shows where with some added code your programs data files are stored.

Here is the code for the above project.

```
Option Strict Off

Option Explicit On

Friend Class Test2008Frm

    Inherits System.Windows.Forms.Form

    Private Sub PushMeCmd_Click(ByVal eventSender As System.
Object, ByVal eventArgs As System.EventArgs) Handles PushMeCmd.
Click

        DisplayTxt.Text = ""

        DisplayTxt.Text = "Hello World"

        'The above code is just to have the program do
something.

    End Sub

    Private Sub Test2008Frm_Load(ByVal sender As Object, ByVal
e As System.EventArgs) Handles Me.Load

        Dim FilePath As String

        FilePath = Application.LocalUserAppDataPath 'FilePath
once the project is 'Published will hold the path to where the
Data directory is. More about this later

        DisplayTxt.Text = FilePath ' So you can see the path
to the data directory

        My.Computer.FileSystem.CreateDirectory(FilePath & "\
INBOX") 'An example of 'how to create a directory through
program exaqution

    End Sub

 End Class
```

Start Visual Basic 200x (x being 5 or 8) and create a new windows project.

Add a Text box to Form1 and name it DisplayTxt.

Add a Command button and name it PushMeCmd.

From the above screen shot you can see that the Text property of the PushMeCmd button is "Push Me"

When you run this program inside the Visual Basic IDE you will see that the DisplayTxt Text box holds the following text.

C:\Users\JB-PC\AppData\Local\None\None\1.0.2887.31057

What you see in your text box will most likely be different.

The above is the path to the click once data directory. The data directory is the directory where the projects data files are stored. Files such as: Reports, text files. Any file that the project creates while running can be stored in the data directory. You add code to your project so that any file that your project creates that you want to be migrated at the time of the next update to your project should be stored in the data directory.

```
    Dim FilePath As String
        FilePath = Application.LocalUserAppDataPath 'FilePath
once the project is 'Published will hold the path to where the
Data directory is. More about this later
        DisplayTxt.Text = FilePath ' So you can see the path
to the data directory
        My.Computer.FileSystem.CreateDirectory(FilePath & "\
INBOX") 'An example of 'how to create a directory through
program exaquition
```

Click Once automatically creates this data directory. So since our project has not

yet been published then the above path is to a directory that the IDE created so that we can run our project and test out our project inside the IDE without having to publish it first.

Once we are satisfied with our project and we then publish it then Click Once will create the data directory. It does not matter if our project uses the data directory or not. Click Once creates it anyway.

Click Once is a huge departure from the old Setup.exe way of installing programs.

You can still use Windows Installer to install your projects but then you run the risk of "DLL Hell"

What is "DLL Hell"?

DLL Hell is what happens when you install your program and your program uses a newer version of a dll and therefore installs this newer version dll. Unfortunately some other application already installed on the PC needs the older version of the dll to run.

Click Once greatest feature is that every project is installed in its own directory. All the files, Dll's included that are needed by your project are stored in this one directory. Each project on the PC is isolated from every other project. When Click Once Deployment is used no registry values are changed or added. In fact you can un-install Click Once projects by simply deleting the directory.

Click Once next greatest feature is that when a user installs a newer version of your project onto his PC Click Once automatically copies the files it finds in the data directory to the new data directory that it creates for your updated project.

Note Projects of the same name do not overwrite the earlier version of the projects.

Updated projects are instead installed to their own separate directory. This is so that if during the installation process something goes wrong and the new version of the project does not work correctly the user can go to add remove programs and then restore their old version.

Before we get to the step by step instructions lets publish our project using the default parameters of Click Once. By the way the once in Click Once refers to the users experience when installing your project using Click Once.

Steps to publish our project using the default Click Once Parameters. Click on the Build/Publish menu item. That is all there is to it. If you use the defaults as we are doing here.
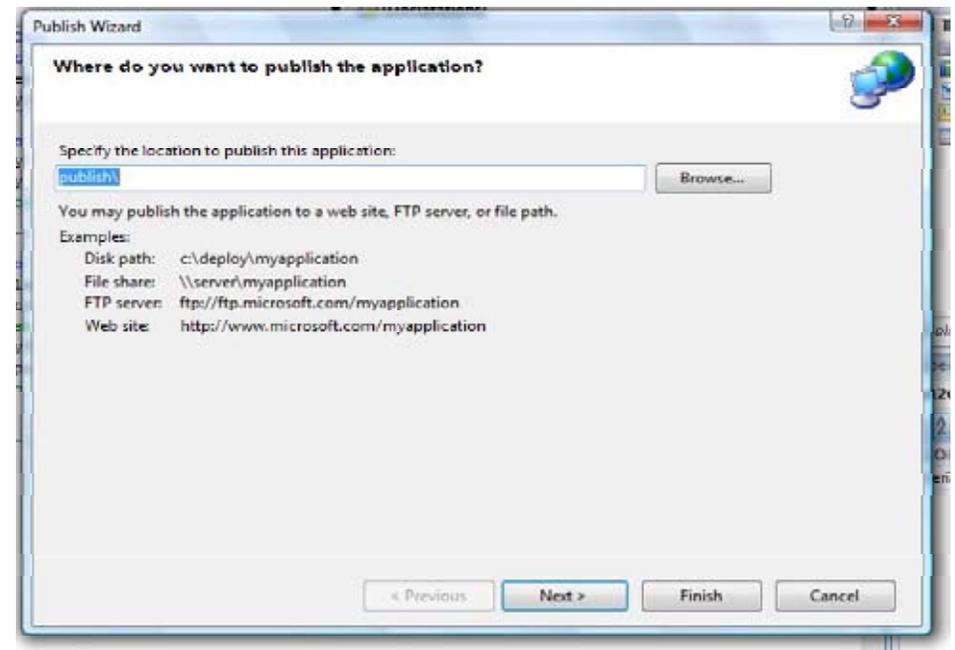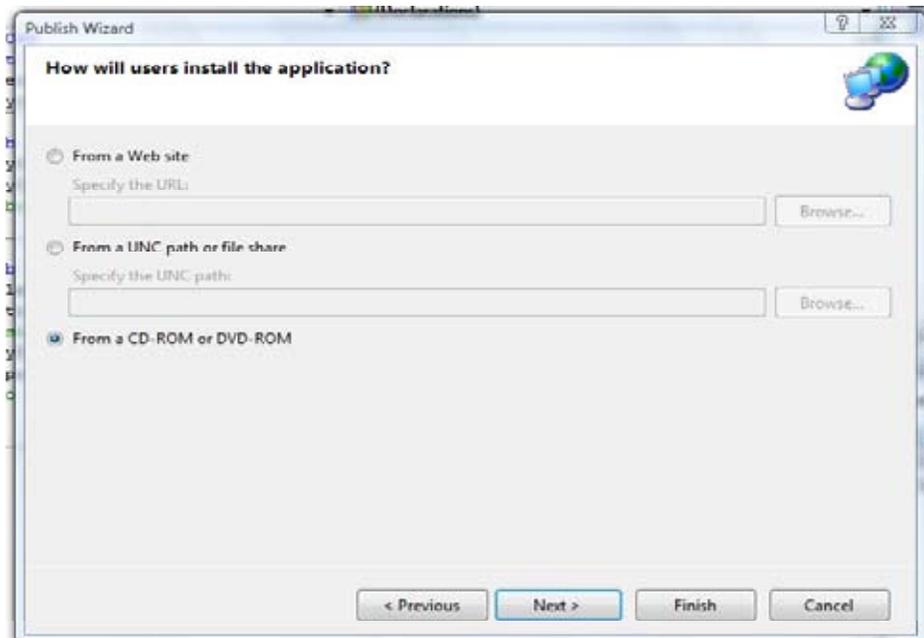
From a CD-ROM or DVD-ROM is correct. All this means is that we are not going to be deploying from a web site or a File share. What this really means is that we can take our Click Once Setup files and then compress them into a zip file that can be stored in any media that the zip file will fit on. It could be a hyper link down load from a web site. It could be that we take the Zip file and burn it onto a CD.
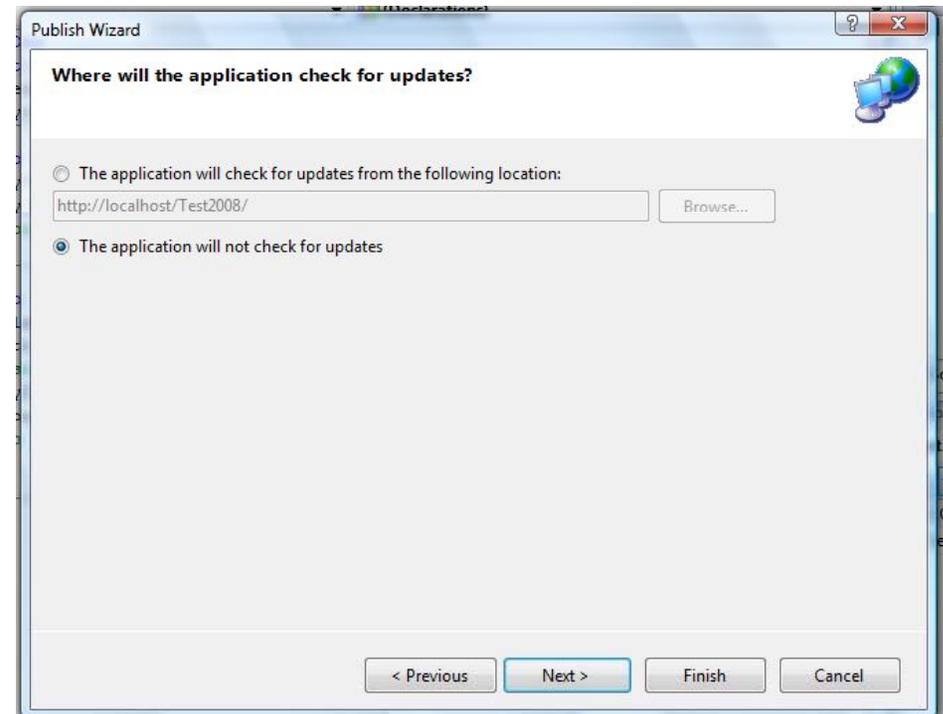
We are making an off line application here. An application that does not need the internet to run. If this application was installed using a web server then when updates are available Click Once could update the application automatically. But this tutorial is about off line applications.
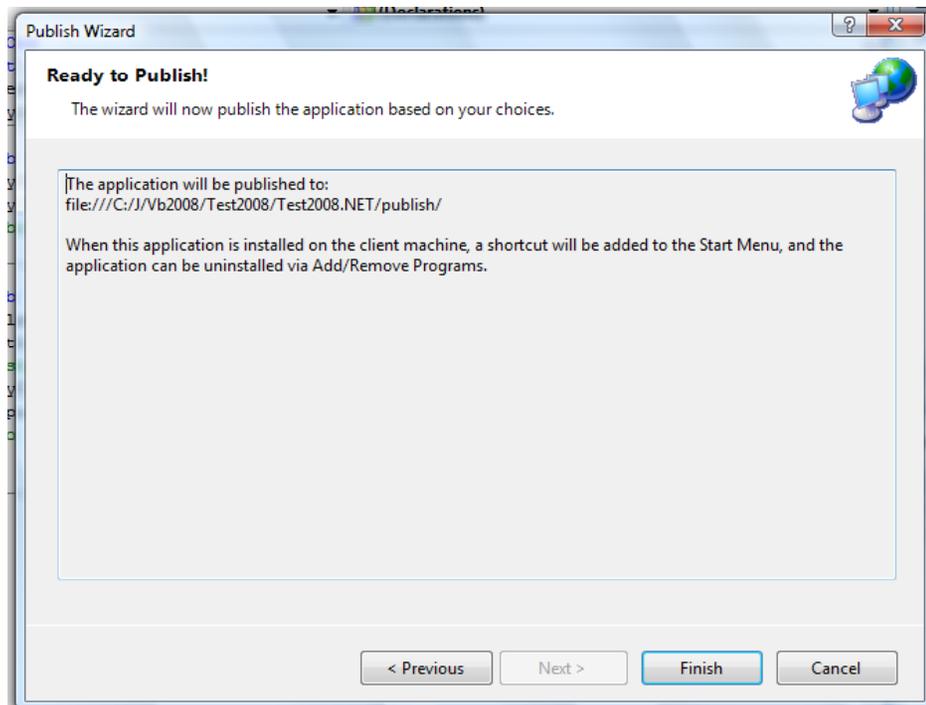
When you click on Finish the directory where the Click Once files are stored will be displayed. Double click on the setup file. The application will be installed. If the installation is successful then the application will start automatically. Look at the text box. This file path is different than the unpublished path created by the IDE. Open up the directory that is pointed to by the path in the text box. I suggest using copy and paste to do the above. In the directory where this path points to you should find the empty subdirectory named INBOX.

Congratulations you have successfully created your first Click Once Deployment. The rest of this tutorial well discuss the Click Once parameters. Where they are located . What they mean. How you change them.
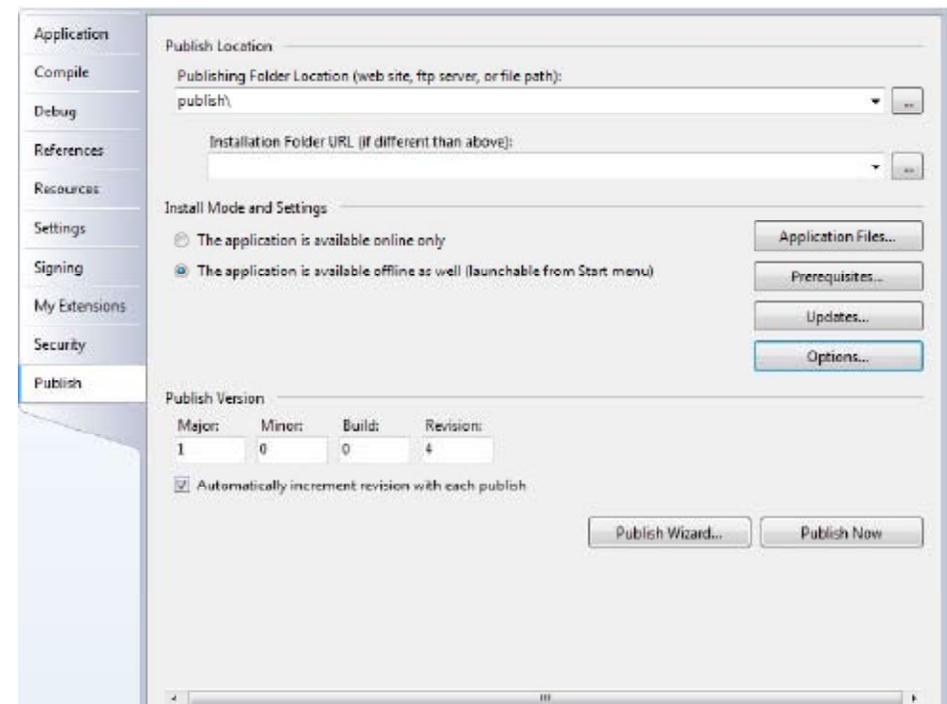
Click on the Project/test2008 properties menu Item and the above dialog form is displayed. Click on the Publish Tab. For off line applications all we are interested in is the Application files and Prerequisites buttons.
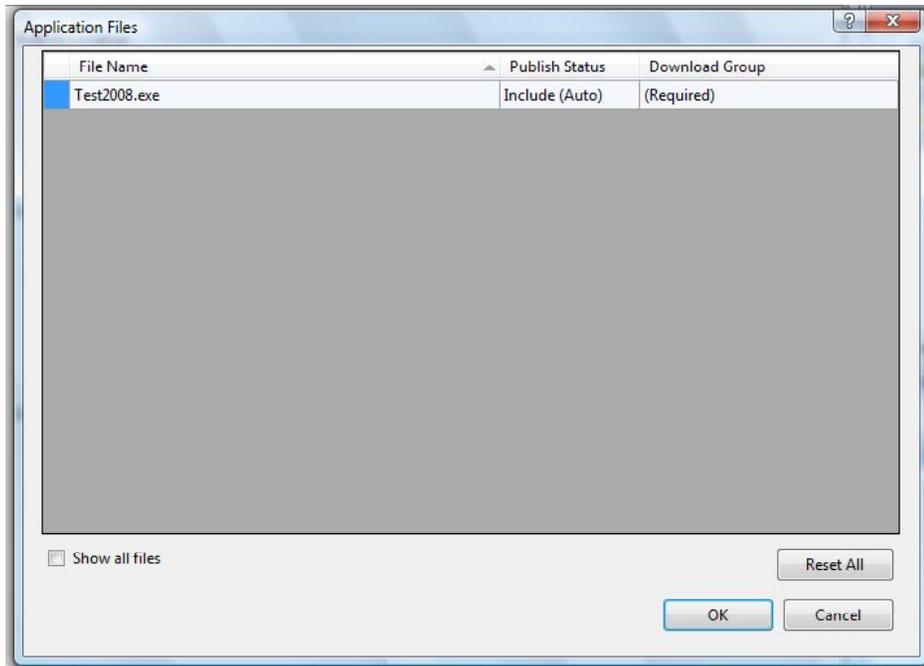
Application Files:

Here is where you would include any files that your project needs to run. The only way to add files to the Application Files dialog box using the Visual Studio 2008 express addition is to include the files in the solution explorer. Took a while to figure that one out. I kept trying to add files here to no avail. If you are using the standard edition then you will find an add and browse button on the above form.
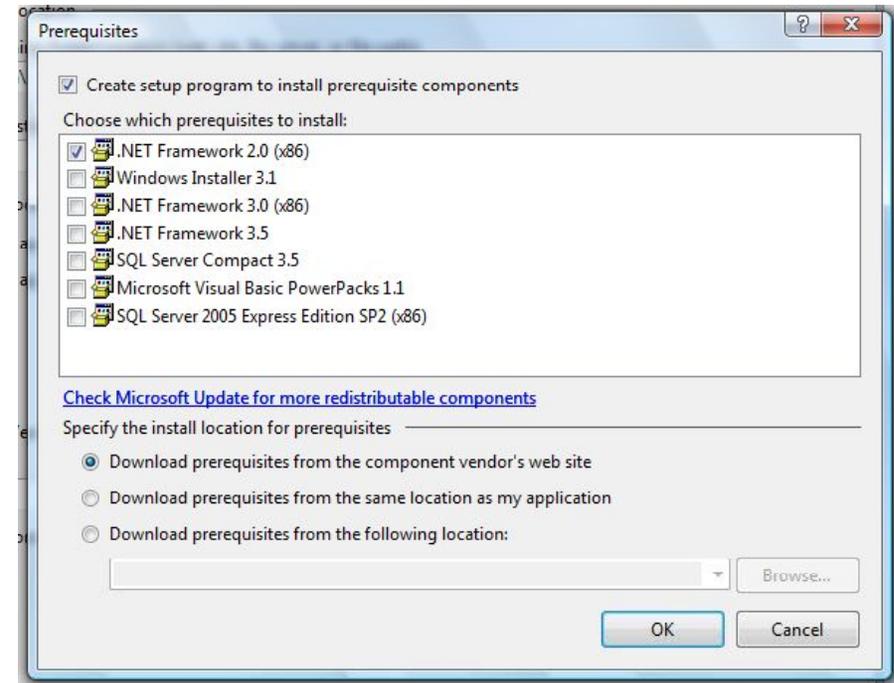
Prerequisites are the support files that your project needs to run. If the user machine does not have one of the above prerequisites that you have checked off then the Click Once Deployment would down load the prerequisite from the location that you have chosen. You chose this location by clicking on the radio buttons at the bottom of the prerequisite dialog box.

Well that about raps up this Tutorial. Hope it was of some help. At the least I hope that it saves you the time it took me to figure this all out.

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Preliminary Treasurer's Report for 2007

Based on the Draft version of the year end financials from our accountant, here is how TAPR ended 2007. No material changes to these numbers are expected in the final report.

Revenue & Expenses

Sales:	$253020.51
Expenses:	233156.28
	_____
Net Revenue:	$ 19864.23

Assets & Liabilities

Cash Accounts:	$49199.31
Inventory:	32817.96
Equipment:	1285.25
	_____
Total Assets:	$ 83312.52

Current Liabilities:	$ 5718.08
Fund Balance:	77594.44
	_____
Total Liabilities	$ 83312.52

In terms of dollar volume of sales, TAPR had a very good year; one of its best ever. This is, of course, the result of the HPSDR related sales of Atlas, Pinocchio, Janus, and Ozymandias boards, along with the TADD product line. Membership is also up.

TAPR has enough money in the bank to comfortably fund several concurrent development projects; however, there is not enough to fund production of the new HPSDR boards that are expected this year. This will require that we continue the pay-in-advance method for orders that we used with Janus and Ozymandias.

Respectfully submitted: Tom Holmes, N8ZM

Feb 16, 2008

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Packet Status Register

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