HUGHES
NETWORK SYSTEMS · EUROPE

# DW6040: D4
# VAP Remote Installation Guide

*Version 1.5*
*22nd July 2005*

# *Table of Contents*

## *Change History*

***1.***

| ***Version*** | ***Date*** | ***Comments*** |
|---|---|---|
| *1* | *21th April 04* | *M Rachel, DRAFT* |
| *1.1* | *22th Nov 04* | *M Rachel, Update with network engineering information (Panos &Oli)* |
| *1.2* | *7th Dec04* | *Trouble shooting updates* |
| *1.3* | *10th Jan 05* | *Incorporation of engineering documents* |
| *1.4* | *16th Jun 05* | *Commissioning procedure update* |
| *1.5* | *22nd July 05* | *Trouble shooting update* |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

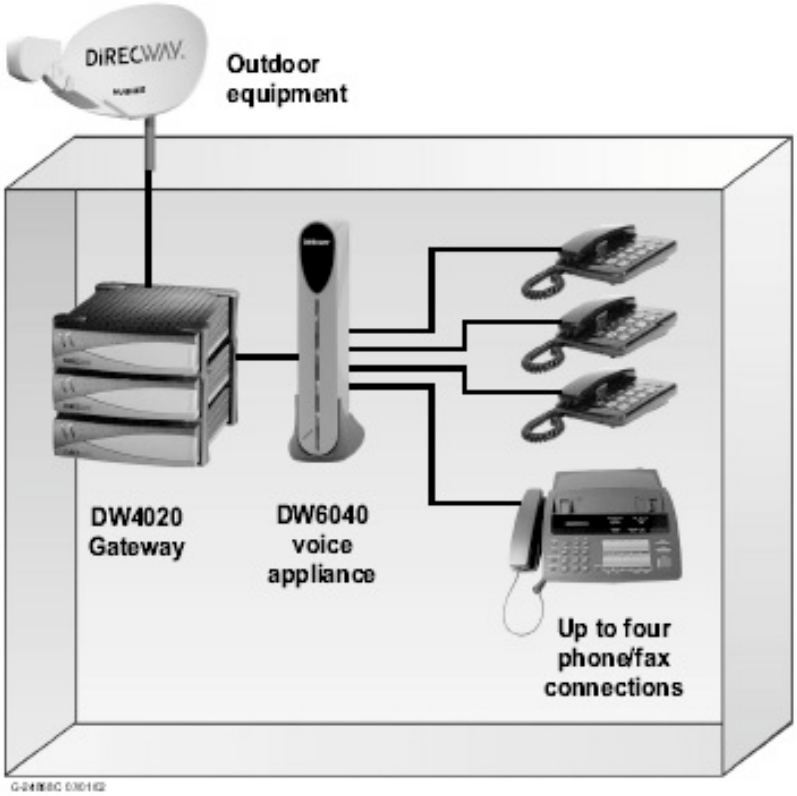
## *2. Applicable Documents*

| ***Provider*** | ***Doc*** | ***Title*** | ***Version*** | *Date* |
|---|---|---|---|---|
| *HNSE* | *D4* | *DW4020 Installation Guide* | *1.3* | |
| *HNSE* | *D4* | *DW6000 Installation Guide* | *1.2* | |
| *HNSE* | *RFPF* | *DW6040 Request Parameters Request Form* | *1* | |

# *D4: REMOTE INSTALLATION GUIDE DW6040*

*This guide assumes the successful installation and commissioning of a DW4020 or DW6000 terminal with a DW6040 specific RPR form. Without the correct RPR form for your site's DW4020/DW6000 the installation will not be successful.*

## *3. Remote Site Network diagram*



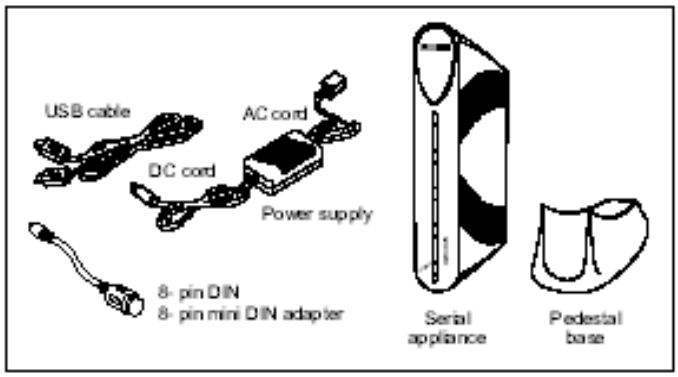

## *4. Equipment & Equipment Preparation*

| *Description* | *Part Number* |
|---|---|
| *DW4020 (3 tier unit)* | *RX 3003161-0210/0310, TX 3003162-0210/0310 Gateway 3003618-0003* |
| *DW4020/DW6000 PSU* | *1031105-0001* |
| *DW6000* | *1032021-0001/0002* |
| *DW6040 (VAP) 1 port* | *1032020-0004* |
| *DW6040 (VAP) 4 port* | *1032020-0001* |
| *DW6040 (VAP) PSU* | *1032021-0001 /1030875-0001* |
| *RFU (Isis)* | *1032552-0006 / 0018 (for W1)* |
| *RFU (Tigris)* | *1025901-X007 (X=0,1 or 2) (for W1)* |

*Ensure that the correct PSU is used with the correct DW Unit, failure to do this may damage the equipment.*

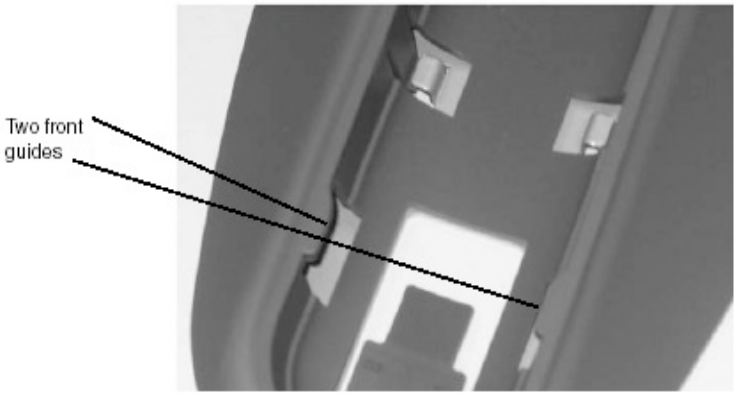
*You will need the following items, included in your DW6040 box (The DW6040 D4 (this document) is not included, this must always be carried by HNS qualified installers).*

*The DW6040 (VAP)*

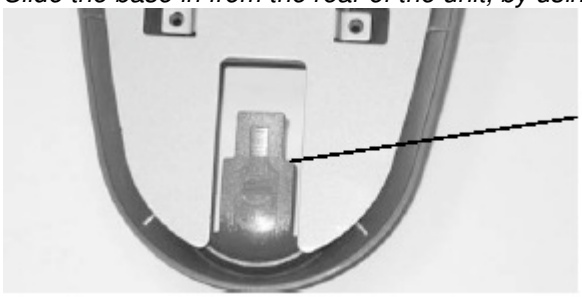



- *The DW6040 is supplied with a stand; ensure that this is fitted to the unit. This is important for heat dissipation.*

*Connect the base to the DW6040 (VAP) as shown below:*




*Slide the base in from the rear of the unit, by using the locating guides.*

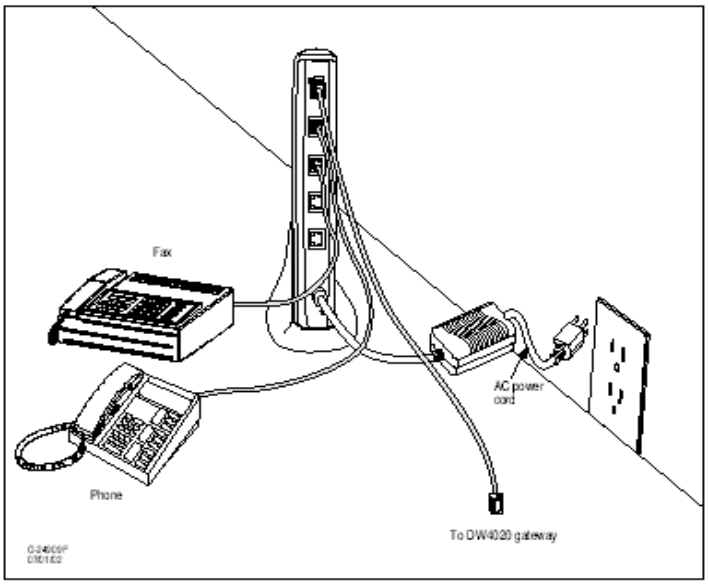



*Ensure the clip is locked in position; the clip can also be de-pressed to remove the base.*

## 5. Installer Requirements

- *The DW6040 (Voice Appliance) requires a configured and operational DW4020 or DW6000 with a Public ip address (this is for the DW6040) .*
- *Ground Wire for the DW6040 unit*
- *A PC with a network card and the VAP Software Utilities (VSU) program installed – this software is available for FTP download at 195.238.48.11/pub/dw6040 (user/pass: ftp/ftp). The VSU software is provided as a self-extracting executable. (Currently: VSU_4.2.0.0.exe)- Just double-click on it and follow the installation steps.*
- *A mini hub if using a DW6000 unit*
- *The correct completed DW6040 RPR form (Remote Parameter Request Form) for the site to be installed*
- *VAP/Net2phone account (you need this for your telephone number, call billing etc)*
- *A compatible telephone for testing the DW6040 unit*

*The diagram below shows a typical DW6040 setup.*
*Both units (DW6040 &DW4020/DW6000) must be connected via the CAT5 patch cable for normal operation, the DW6040 cannot operate independently.*
*For initial configuration just connect the DW6040 directly to your PC.*




## 6. DW6040 configuration

***IMPORTANT TIME SAVING STEP***

*Prior to doing anything with the DW6040, commission your DW4020 or DW6000 first!*
*If the VAP serial number is NOT on the form for the site you are installing you MUST GIVE YOUR HELP DESK THE SERIAL NUMBER AND SITE ID. The VAR help desk MUST inform the HNSE help desk so your site will be configured in a timely manner.*

### Connecting DW6040 and PC for configuration of boot parameters

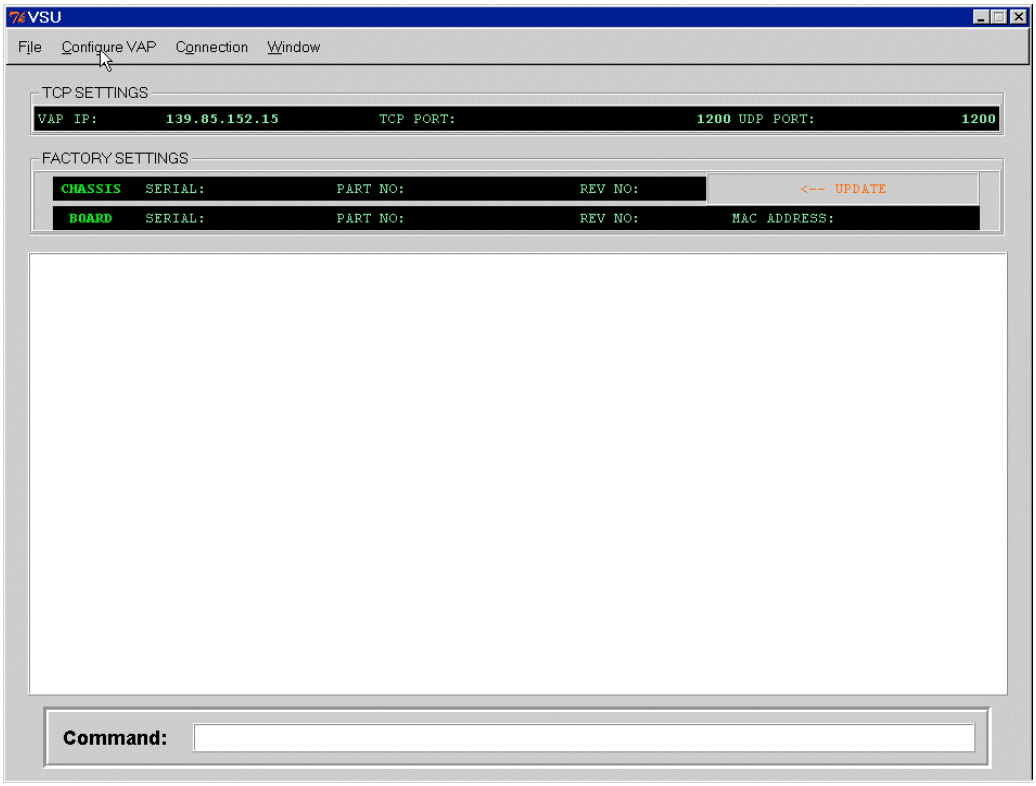
a) *A permanent connection must be made from the ground stud on the back panel of the VAP to a known good ground point; this must be a minimum of a 10AWG-stranded wire.*

b) *Note/check the VAP serial number located on the back label of the VAP (10 digit starting Vxxxxxxxx).*

c) *Connect your PC directly to VAP (using a straight Cat5 cable and a mini hub or X cable directly) and power on (check for the activity LED on the VAP to verify connectivity.*

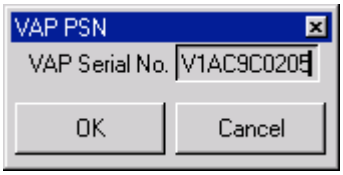
d) *Configure your PC with an ip address of* ***169.254.0.1*** *(subnet 255.255.0.0)*

e) *Launch the VSU software (Start>Programs>VAP>VSU)*




f) *On the VSU main screen, Connection > Connection Type, Set the connection type to TCP-IP (this should be the default)*

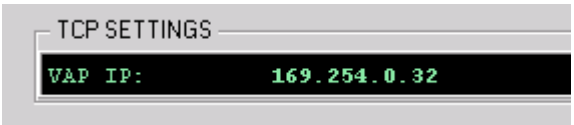
g) *Next select Configure VAP > Commission VAP. This will bring up the dialog shown in below (VAP-PSN). Enter the VAP 10-digit serial number (the PSN may contain letters(A-Z) as well as numbers (0-9)). The VSU will automatically derive the IP address of the VAP from its serial number. After clicking the 'OK' button the commissioning screen will automatically come up plus display the factory configured IP address of the VAP should be observed in the TCP Setting > VAP IP at the top of the VSU screen as shown on page 8.*




*VSU VAP serial number box*

*The VAP Profile screen will follow next (also shown on page 8), enter the parameters from your RPR Form – Note the global settings:*

h) *The address you see should look like this: 169.254.0.xx , where the last two octlets depend on the serial number that was entered. The VSU will take digits 8 & 9 of the serial number (20, in the serial number dialog box example on page 7) and use it as the xx portion of the ip address. Since the serial number is given in hexadecimal notation it has to be converted to decimal when computing the ip address –* ***this is carried out automatically by the VSU software.***




*VSU TCP Settings*

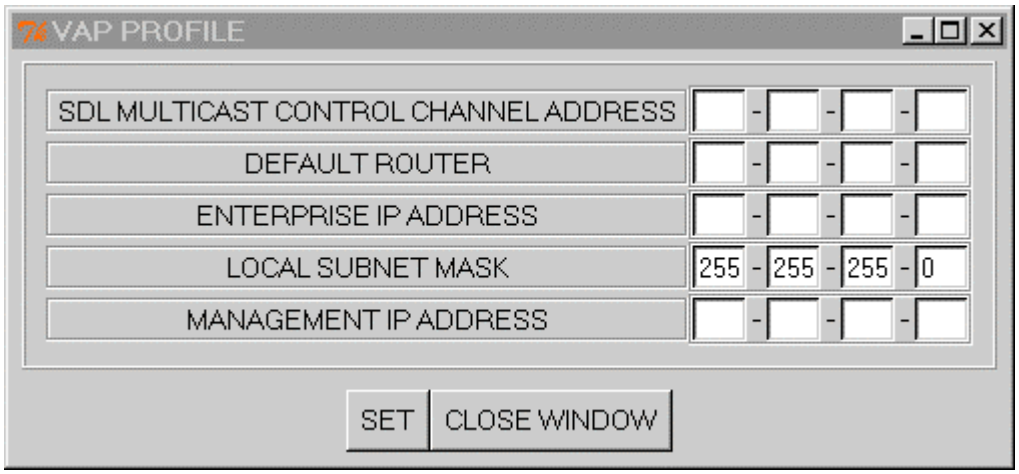
i) *To verify that the connection between the VSU and the VAP has been established, type "version" into the VSU command line. The VAP should respond with the version numbers of the software and firmware it is currently running. If an error message is displayed, go to Connection > TCP-Ip and increment the 'xx' portion of the IP address by 1 and check the version again. If necessary, repeat this process until the VAP version is correctly displayed.*

*Tip: Also try to ping the VAP from your PC, if you cannot ping you will not be able to update any VAP parameters*

j) *The parameters needed for configuring the DW6040 are as shown below. Some parameters are Global and will be the same across all sites, the rest of them will be site specific and you will find them in the RPR form for the site to be installed.* ***Note that the values shown in table below in red as "site specific", are only examples, please find the site-specific values for your site on your RPR.***

| ***Parameter*** | ***Value*** | ***Global/Site specific*** |
|---|---|---|
| *SDL Control Multicast IP Address* | *224.0.1.8* | *Global* |
| *Default Router* | *As per LAN1 of DW4020/DW6000* | *Site specific* |
| *Enterprise IP address* | *VAP IP address (LAN1 +1)* | *Site specific* |
| *DW4020/DW6000 Subnet Mask* | *255.255.255.240* | *Global* |
| *VAP Management IP Address* | *10.1.x.x* | *Site specific* |

***NOTE: The SDL Control Multicast IP address is not the same for the VAP installation and for the DW4020/DW6000 installation and the VAP Management IP address is not the same as for the DW4020/DW6000.***




*VSU VAP Commissioning Screen*

***Click SET after entering parameters, the window will remain on the screen until you close it***

***NOTE: After clicking set you will no longer be able to connect to the VAP UNTIL you change your PC ip, see the next stage.***

k) ***Reset*** *by power cycling the VAP. You* ***MUST*** *now reconfigure your PC to match the new ip addresses of the VAP (into the ip range of the DW4020/DW6000 RPR for this site) – Remember the PC will have the ip address will be VAP +1 or higher, from the given range.*

l) *Connect the VAP to the DW4020 or DW6000 (with mini hub) together with your PC and ensure they are all powered on, connected and are able the browse, you should also be able to ping the VAP's Private & Public ip addresses.*

m) *Connect a compatible telephone to the first RJ11 port (port1) on the back of VAP- use port 1*

n) *Go back to the VSU software select Connection > TCP/IP – Change the ip address to the new VAP ip (from your RPR form) then click* ***Done*** *- do not change any port settings.*

o) *The VAP automatically downloads its software when its connected to the DW4020/DW6000.*

p) *Verify from the VSU that the VAP has loaded its software and configuration by entering "version" at the command line- the current factory default is 4.2.0.0 for 4 port and 4.2.2.10 for 1 port, current HNSE version 4.2.1.19 (Only when the satellite software download is complete).*

q) *See stage* ***8*** *to Verify operation*

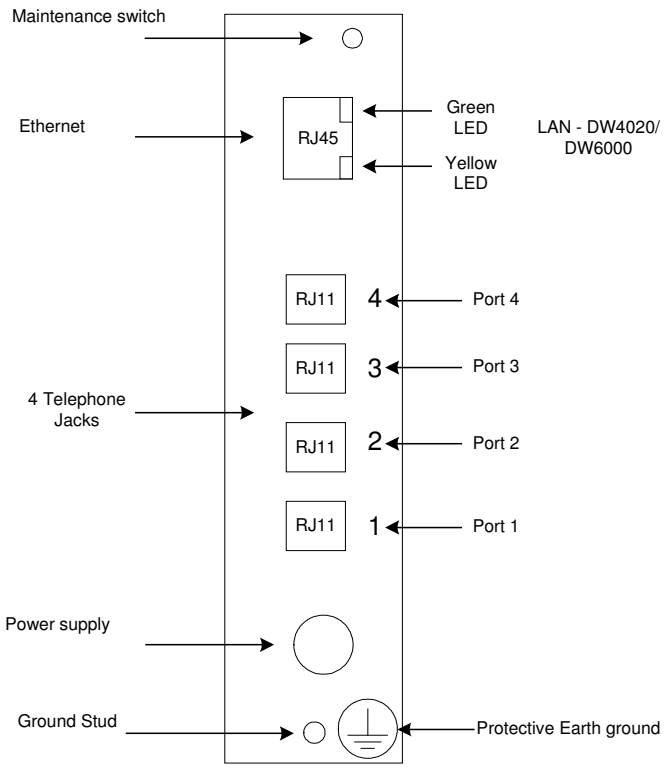
***Note: If may take around 10 minutes for the VAP to download its software via the satellite connection. Once the VAP has completed the download, it will reset.***

## *7. DW6040 Connections.*

*The VAP is connected to the DW4020/DW6000 via a standard Ethernet/Fast Ethernet cable. A proper connection between the VAP and the Satellite Terminal is indicated by the yellow LED and green LED on the VAP RJ45 as shown below.*
*The VAP can operate in both 10BaseT and 100BaseT modes.*

*If the green LED is on and the yellow LED is flashing, the connection is Fast Ethernet (100BaseT)*
*If the green LED is off and the yellow LED is flashing, the connection is Ethernet (10BaseT)*
*The VAP and DIRECWAY 4020/6000 can be separated by as much as 100 meters of cable. It is not necessary to power off the units when connecting the Ethernet cables.*

VAP Back Panel



## *8. Verifying correct DW6040 operation.*

With a compatible analogue telephone connected, a dial tone (constant tone) should be heard when the handset is picked up. If the engaged tone (pulsing tone) is heard check the software download is complete – as described in stage ***6 p***).
If no dial tone is present refer to the trouble shooting stage of this document.

Stage **10** describes how to add and remove telephone numbers.

## *9. Connecting Telephony Devices.*

There are up to four standard telephone RJ11 sockets on the VAP back panel; each socket can be used to connect to an analog telephone of FAX machine directly to the VAP.

It is not necessary to power off the VAP when connecting a telephone line.

Ensure the telephone is analog and of US spec (UK spec handsets require an adaptor or modification).

## *Activating the lines with N2P supplied account numbers*

### 10. Entering Net2Phone Service Account Information

Before you start, please be prepared with the following information:
- Net2Phone Service account number(s)
- Personal identification number(s) (PIN) associated with each account number

In order to be able to place calls, you need to configure the VAP with the Net2Phone Service account information on each port that will be used.
Each port has to be configured separately using the procedure below.
You can use the same account or different accounts for each port, depending on how the service is being set up and used.
At present the VAP is set to use different accounts for each voice port.

***To enter the account information for each port do the following:***

1. Plug in the RJ-11 cable from an analogue telephone to the port of the VAP to which you want to assign an account number to (ensure you have a dial tone).
2. Pick up the handset of the telephone connected to the VAP.
3. Enter two asterisks (**) followed by the Service account number you want to assign to the port.
   Then enter another asterisk (*), followed by your PIN and the number sign (#).

For example:

If the account number is 123456789 and the PIN is 0000, then you would enter:

**123456789*0000#

4. Once you have entered the account information, hang up the handset and wait for approx. 10sec.
5. Your account should now be active, make a test call as described in stage **11**.

**Removing and checking accounts for a VAP unit**

There are two ways to remove an existing account from a VAP unit.

a) Simply over write it with a new one as shown above

b) ***Telnet*** to the Vap ip address, type ***ls*** *<enter>* , you should see a file called ***acc0.dat*** (for port 1, acc1.dat for port 2 etc) type ***rm "acc0.dat"*** *<enter> to remove the file*

*You can also check you have entered the account number correctly by typing* ***copy "acc0.dat"*** *while* ***telneted*** *to the unit. The account number and pin will be displayed.*

## *Placing calls with VAP*

### 11. Placing Calls to Regular Telephones

To make a call to a regular telephone:

1. Pick up your telephone handset attached to the VAP and listen for a dial tone.
2. Using your telephone keypad, dial the telephone number of the person you want to call.

The VAP will then place the call.



*TIP:*

*- For US calls dial:*
*1 + area code + 7-digit telephone number.*

*- For all calls outside of the US dial*
*011 + country code + city code + telephone number.*

**NOTE**:
Dialling the Hash (#) symbol after completing the dialled digits

Example, to dial the HNSE helpdesk from a VAP you would dial:

**011 49 6155844144 #**

3. When you have finished your call, simply hang up your telephone handset.

Placing Calls to other VAP Devices

To make a call to another VAP:

1. Pick up your telephone handset attached to the VAP and listen for a dial tone.
2. Using your telephone keypad, dial ***72**, followed by the account number of the VAP that you want to call.

For example:
If the account number of the destination VAP is 9876543210, you would dial:

***72 9876543210**

**NOTE:** Dialling the Hash (**#**) symbol after completing the dialled digits ensures that the call setup time is reduced.
The VAP will then place the call.

3. When you have finished with your call, simply hang up your telephone handset.

Placing Calls from outside to a VAP Device

To make a call to a VAP from any landline or cellular-phone:

1. Pick up your telephone handset and listen for a dial tone.
2. Using your telephone keypad, dial the Net2Phone dial-in-number (DID) assigned to the VAP Service account number & VAP port you want to call.

For example:
If the DID account number of the destination VAP/N2P account is 1123456789, you would dial:

001123456789 or +1123456789 from a mobile telephone

## *12. VAP Operations Tips / Troubleshooting*

**Symptom:**

No software download

**Possible solution (s):**

Is the DW4020/DW6000 online?

Verify SDL multicast ip address in VAP – this should be 224.0.1.8 – Check this by telneting to the VAP then type copy “ip.dat” the full ip config will be displayed – correct any errors with the VSU software.

If all is OK, call the helpdesk and request a forced download

If you still have a problem manually delete the software via a Telnet session as follows:

**telnet** *DW6040 ip address*
**cd "config"**
**ls**

Make sure there are no files in this directory. If that is not the case, delete **all** files listed in this directory as follows: (some files may differ from these examples but delete them all)

**rm "vs"**
**rm "vt"**
**rm "vp"**
**rm "vl5605"**

After you are done list the content of the directory again and make sure there are no files left (by re-entering the **ls** command)

Then re-boot

When the unit comes back up it should automatically download new software

**Symptom:**

No dial tone

**Possible solution(s):**

Check the telephone connection to the VAP – is it an analogue phone

Power-cycle VAP & DW4020/6000

Call NOC to check VAP cfg.

Telnet to the VAP unit and check for messages when the handset is picked up

Check if VAP has second IP address in the network

Check that no other host in the network has been configured with the second IP address in the network

**Symptom:**

No phone calls can be placed at all.

**Possible solution(s):**

Check CW4020/DW6000 – VAP connectivity

Check DW4020/DW6000 Tx/Rx codes

Check your public ip address is active

Re-enter N2P account information in VAP

Check that no other host in the network has been configured with the VAP IP address in the network (Lan1 +1 / first host ip available from RPR)

Check N2P account balance >0$

**Symptom:**
Sometimes the VAP may give a continuous busy tone whenever you try to dial out.

**Possible solution(s):**
Please reboot the VAP by powering it down and up. This will clear the VAP of the engaging tone.

**Symptom:**
IP address of a VAP has been misconfigured or forgotten

**Possible solution(s):**

Use sniffer software to detect the VAP ip address (available from *downloads.com*)
Or see the VAP board recovery mechanism on page 14.

**Symptom:**
You have entered your account details with the telephone handset but you cannot make calls.

**Possible solution(s):**
Check you have enter the account details correctly by ***telneting*** to the ***VAP IP*** address and carrying out the following command **ls** <enter> you should see a file called **acc0.dat** if not re-enter your account details, then check for this file again.
If it is present type **copy "acc0.dat"** <enter> this command will display the entered account information and pin number.

# VAP BOARD RECOVERY MECHANISM

This procedure may be used in a case that the IP address of a board has been misconfigured or forgotten.

1. Configure your PC with the IP address 192.168.1.1/24.
2. If not already done download a ftp server (e.g. GuildFTPd) from www.download.com.
   If the server is already configured skip to step 9.
3. Run the GuildFTPd.exe to install the program.
4. Run the ftp server from Start->Program->GuildFtpd or double click on desktop icon.
5. Right click on System in the left frame of the screen and select Add Group.
   Select “vap” as the new group name.
6. Right click on the new group ‘vap’ in the left frame of the server screen and select Add User.
7. Select ‘vap’ as the username and password.
8. Make sure the user ‘vap’ is selected (highlighted) and click on Admin->Add Path. Change the local path to c:\vap and check **all** attributes.
9. Make sure the ON/OFF button in the task bar is set to “ON”. Minimize the server.
10. Download the BSP (VxWorks_v10_bsp) from 195.238.48.11/pub/dw6040.
    Copy the file into the directory C:\vap and rename it to ‘VxWorks’
11. Power off the VAP.
12. Press down the maintenance switch on the top backside of the VAP and power on the VAP while holding down the maintenance switch for another 10secs.
13. The main LED will flash red/green, the VAP will download the BSP from the PC and the LED will turn into solid red or green.
14. The VAP is now configured with the IP address 192.168.1.2.
    Connect an Ethernet cable and verify the connectivity. It will respond to a ping from the PC.
15. Launch the VSU and follow the procedure for commissioning a VAP outlined earlier in this document.

**Note:**

After entering the serial number of the VAP, the VSU will automatically set the IP address for the VAP to be 169.254.0.xx.
Since this is not a standard commissioning case that address has to be changed.
To do that leave the commissioning screen up and click on ‘Connection->TCP-IP’ in the main menu of the VSU.
Set the IP address to 192.168.1.2 and confirm.
Now you can continue by filling out the commissioning screen.

16. Reboot the VAP and it should come up with the new configuration.