The West Australian
VHF Group Bulletin
July 2004

Calendar

Jul	12	VHF Microwave Net
	19	Committee Meeting
	26	General Meeting
Aug	9	VHF Microwave Net
	16	Committee Meeting
	23	General Meeting
Sep	13	VHF Microwave Net
	20	Committee Meeting
	26	**Spring Scramble**
	27	**Annual General Meeting**
Oct	11	VHF Microwave Net
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	25	General Meeting
Nov	8	VHF Microwave Net
	15	Committee Meeting
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Committee

President	Alan	VK6ZWZ
Secretary	Don	VK6HK
Vice President	Terry	VK6ZLT
Treasurer	Cec	VK6AO
Activities		
Materials		
Publicity		
Librarian	Al	VK6ZAY
Museum Rep	Tom	VK6ZAF
Bulletin Editor	Ben	VK6IC
Councillor	Luigi	VK6YEH
Councillor	Wally	VK6KZ
Councillor	Terry	VK6TRG

The official newsletter for the West Australian VHF Group (Inc), PO Box 189 Applecross. Email for the editor can be sent to vk6ic@amsat.org.

News and Events

Ben Rampling, VK6IC

Welcome to July bulletin. The most important Monday evening on our calendar for 2004—the Annual General Meeting—will be held on Monday 27th September at the Wireless Hill meeting room in Melville at 2000hrs local time. If you want to nominate a member or be nominated for Committee, complete the form printed at the end of this bulletin, or attend the meeting.

At the August Committee Meeting it was agreed that in recognition of past services rendered, including Treasurer and in addition to support of the Group through membership over many years, that Life Membership be awarded to Bert Meuwissen VK6ME.

Amsat Echo has been successfully launched and commissioned. It normally operates modes JA and JD, however frequent "experimenters days" (aren't they all?) are scheduled for mode L/S, 38k4 BBS operation and PSK31. Frequencies, orbital elements and schedules are available from http://www.amsat.org/amsat-new/echo/ or the Amsat bulletin.

The Spring Scramble is on again, at 2:30pm to 3:30pm on Sunday 26th September. The rules are enclosed in this bulletin. Note the time has changed this year.

The ACA has released a draft on the new "Australian Radiofrequency Spectrum Plan". The plan will come in to effect in January 2005, and includes changes from the 2003 ITU World Radiocommunication Conference, defence requests and requests for greater access to the 5 GHz band for wireless LAN's. The draft is now available from the ACA web site. Search for "Radiofrequency Spectrum Plan" on the ACA web site for more details.

The City of Melville will be holding an open day at Wireless Hill on 16 October 2004 in celebration of the 25th anniversary of the Museum. A number of activities are being planned by Tricia Dicks VK6QL and Dennis Muldownie VK6KAD. Other groups planning activities are the State Emergency Services, Scouts, The Morsecodians, The Vintage Wireless & Grammophone Club, and the Friends of Wireless Hill. A BBQ including amateur radio operators, CB operators and WiFi experimenters has also been proposed for the day. The special event callsign VI6VIP has also been requested in the name of the VHF Group. The official events begin at 10:00am and end around 4:00pm.

RADIO MOBILE Software Package A Review

Don Graham, VK6HK

Recently attention was drawn to the availability of the Radio path propagation software application called RADIO MOBILE and its associated Terrain Data.

Before going any further, it is important to point out that this review is not intended to be

a “How to do It” treatise but rather to point out what the programme can do. So if you want just some general information—read on.

Radio Mobile is available from the Canadian website of VE2DBE with a URL of:

http://www.cplus.org/rmw/english1.html

A word of caution; some of the required files are pretty large at several Mb so those with dialup services will need to be patient when downloading. With ADSL they are a breeze.

To download and install, follow the instructions on the VE2DBE website as I did and found no trouble with installing the programme.

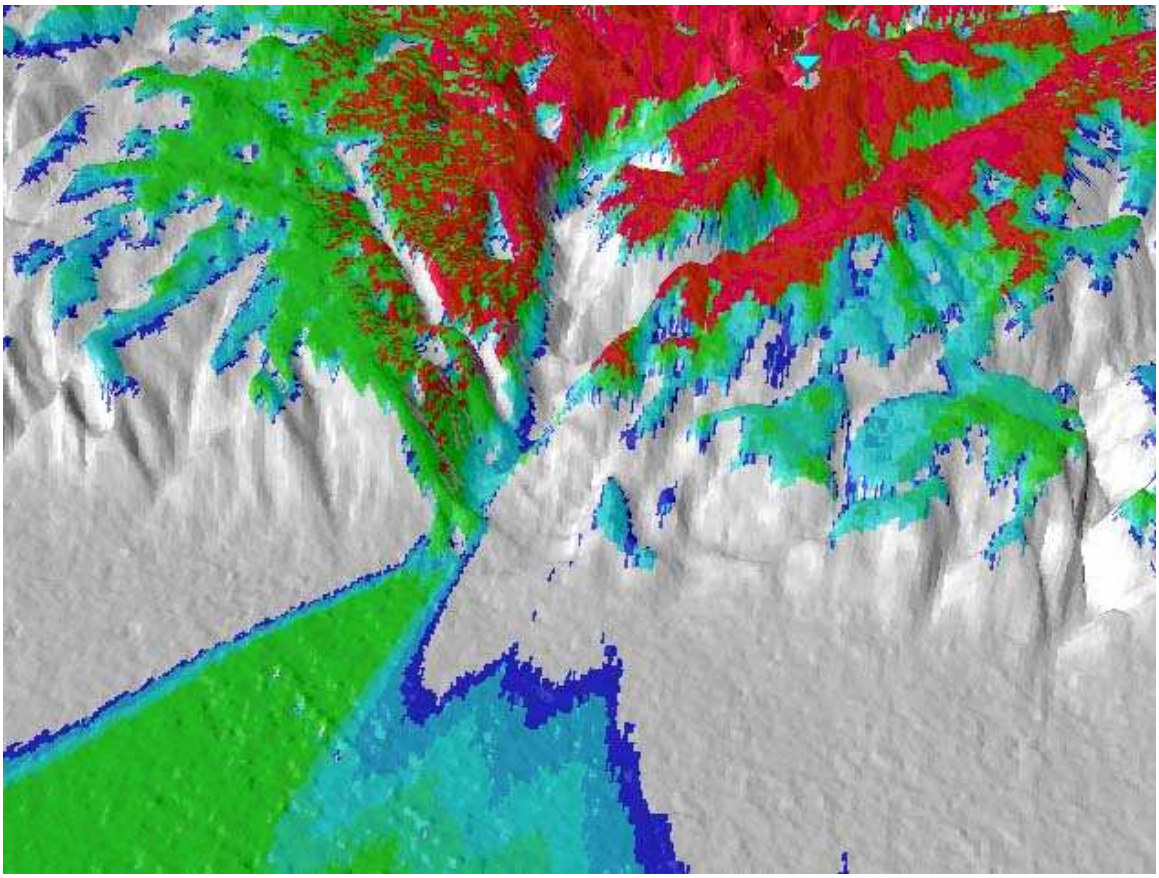

Figure 1. A 3D plot of an area overlayed with a polar radio coverage plot.

So what you might ask. Radio Propagation programmes there are aplenty. The difference here is that RADIO MOBILE uses a Digital Terrain database to plot the path profile between the terminals of interest or the many profiles and influence of the ground characteristics required to compute radio coverage over 360 degrees from a central transmitter.

Digital Terrain databases have been around for maybe 15-20 years but have been very expensive and hard to justify for AR use, or if in the public domain of limited accuracy. There has also been some criticism of the accuracy for radio path analysis of what has been available (at a cost) for Australia. This has all changed with the freeware release only since 2nd July this year of the database files for Australia as generated by a NASA Space Shuttle project. The data files are available for download from a link provided on the above URL.

The information is in the form of text files each of about 2Mb size covering 1 degree of

latitude by 1 degree longitude of the earth's land surface. A zipped version of the files is also available from an alternative link and these are about 0.9 Mb. So far it appears that not all of the Australian mainland is covered but the SW of WA is well served. The resolution is stated to be 3 arcseconds which translates to about 90 metre intervals horizontally with vertical heights of better than 10 metres. Data for North America is said to be of 1 arcsecond resolution. The RADIO MOBILE programme needs information input about the location of "Command" (Base) stations and "Subordinate" (Mobile or Remote Terminal) stations. E.g. Location in geographic coordinates or Maidenhead six figure locator. It will also accept location determined from the cursor cross hairs placed on a terrain map drawn on the screen from its own database. To take advantage of the accuracy of the database it is by far best to use accurate Geographic coordinates rather than even six figure Maidenhead Locator information.

In fact a good place to start practicing to use the programme is to specify your own location by clicking on File/Map Properties then "Enter Lat/Lon or QRA" and entering your Locator or (preferably for best accuracy) Latitude and Longitude. Then click "Apply". The programme should draw a Terrain map—but it probably won't because you haven't loaded any database files yet have you? So take note of the filenames that the programme says are missing and go to the link for 3arcsecond data on the VE website and download same, installing them in the same directory as the programme files. Repeat the above and you should have your map.

You can manipulate the centre of the map and its scale to suit, by clicking on File/Map Properties again and exploring the buttons there. Click "Apply" after each change and the map is redrawn.

The programme also needs three other types of input defining "Networks", "Units" and "Systems". This includes the Frequency of interest which can be from MF to 10 Ghz.

As an example path, use your QTH and say the Perth beacons.

The "Network" will become "Perth Beacons".

The "Units" are your and the VK6RPH site location details.

The "System" (Up to 25 of them) specifies the transmitter and receiver parameters, such as power antenna gain, etc to be applied to a particular "Unit".

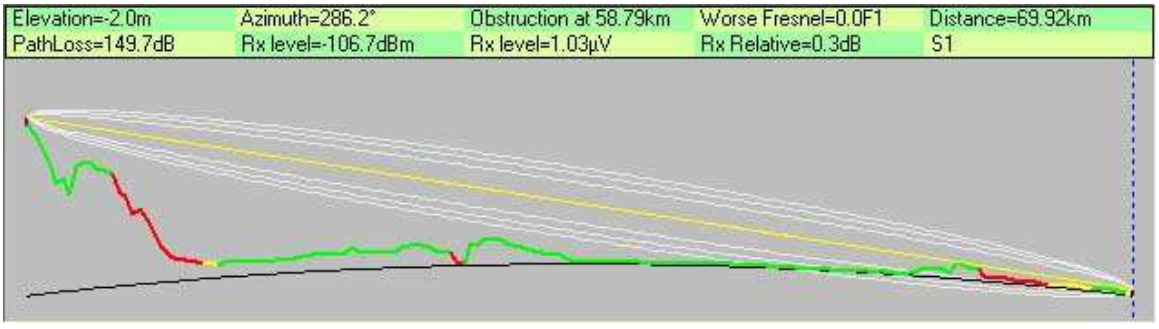

Figure 2. A profile plot of a particular radio link.

Having provided the location information for at least two points, you can then get the programme to draw a coverage diagram from the "Command" station which assumes an omnidirectional antenna - or more correctly the coverage from a station of the "System" specifications that you have entered in all directions (as if say a beam had been rotated through 360 degrees). An alternative display is that of the point to point path between your minimum two stations showing

the path profile and computing Fresnel clearances, received signal levels etc.

As drawn by the programme the Terrain maps can have contours overlaid to your choice with wide choice of the colours of presentation. It will add major cities but in Australia these seem to be confined to the Capitals. However an interesting feature is that it is possible to import other maps and after specifying certain details the programme will overlay contours thereon. This is useful to establish reference to existing roads and infrastructure.

Another interesting feature is the ability of the programme to draw on the terrain map the visual coverage from a particular site and elevation. This may be of interest for those seeking a site for a record via laser communication!

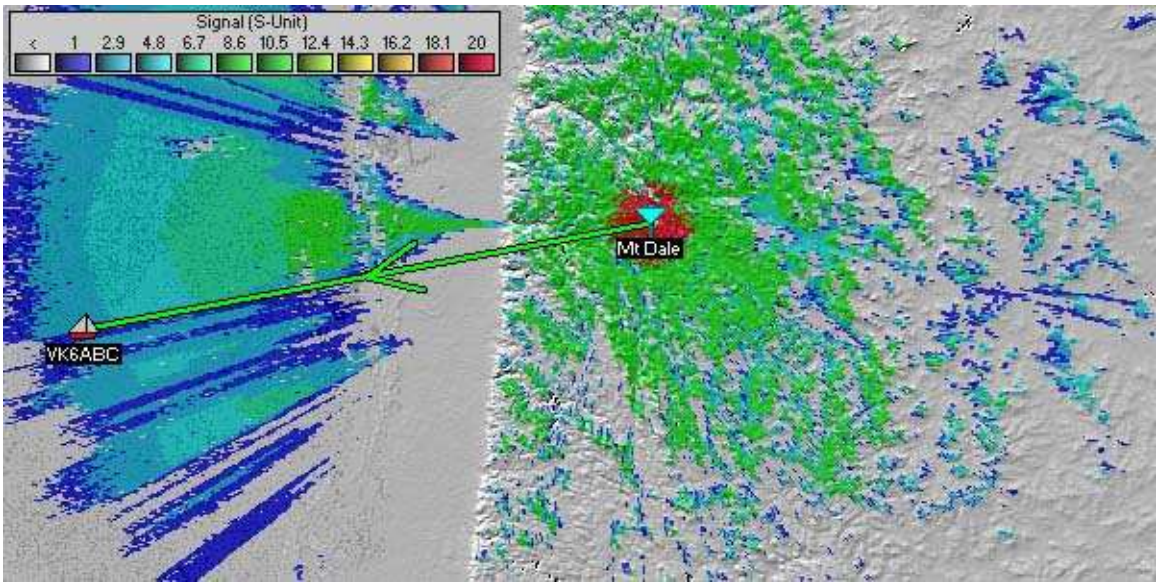

Figure 3. Another area overlayed with a polar radio coverage plot.

The most obvious applications for AR are:

- Checking potential microwave paths
- Assessing the performance of sites for a new personal QTH
- Checking site potential for beacons
- Analyzing existing site performance

These are not the only features of a remarkable programme - all the more remarkable because the technology, including the database, is freeware!

Spring Scramble

Sunday, 26 September 2004

1. 1430-1530 WST (0630-0730 Z), Sunday, 26 September, 2004.

2. The object is to contact as many different stations as possible, on as many bands, 50 MHz and above, as possible. All licensed modes may be used. To encourage those stations who are halfway to being on another band, CROSSBAND CONTACTS ARE PERMITTED. Under special conditions, SATELLITE CONTACTS ARE ALSO PERMITTED.

3. To take into account cross band operation, points are based on SERIAL NUMBERS rather than contacts. A serial number consists of three digits, to which an optional signal report may be prefixed.

4. Starting with 001, transmit a different serial number to each station on each band. Aside from satellite contacts, ONLY ONE SERIAL NUMBER SHOULD BE TRANSMITTED TO ANY GIVEN STATION ON ANY GIVEN BAND. It may be retransmitted to the same station on the same band, at any time during the scramble. The receiving station must confirm reception of the serial number for points to be scored, but may give this confirmation on any VHF/UHF/SHF (or higher) band.

5. A station scores half a point for each serial number it successfully TRANSMITS, and half a point for each serial number it RECEIVES. The usual sort of two-way contact on a single band involves 2 serial numbers, so scores 1 point.

6. Serial numbers count double if at least one of the stations involved (transmitting or receiving) is a country station, meaning at least 60km from GPO Perth.

7. Serial numbers count double if at least one of the stations (transmitting or receiving) is a novice or limited novice.

8. Transmission of serial numbers, and/or confirmations via terrestrial repeaters is not permitted.

9. In addition to terrestrial contacts made under rule 4, any pair of stations is allowed one contact per satellite, provided that both stations are in the VK6 call area, and that all uplink and downlink frequencies used are in the VHF/UHF/SHF Amateur bands.

10. The scramble is primarily for FUN, so works on the honour system. Add up your total points. Then

11. CALL BACK: on 146.5 MHz FM at 1535 WST, or on 144.120 MHz SSB at 1140 WST. Alternatively, communicate your call sign and score to the September Meeting of the West Australian VHF Group at Wireless Hill, Applecross, commencing at 8pm on Monday, 27 September 2004, preferably by coming along!

REMEMBER: HALF A POINT PER SERIAL NUMBER, double for country stations and double if at least one station is a novice.

SUGGESTED ACTIVITY FREQUENCIES:

SSB: 50.175 MHz, 144.120 MHz, 432.120 MHz, 1296.120 MHz
FM: 52.525 MHz, 53.5 MHz, 146.5 MHz (+/- QRM), 439 MHz, 1296.3 MHz
Liaison: 145.375 MHz (FM), 144.175 MHz (SSB), 432.175 MHz (SSB)

West Australian VHF Group Inc.

Annual General Meeting

27 September 2004

Nominations for Group Representatives

Position nominated:

Proposer:

Name	Signature	Date

Seconder:

Name	Signature	Date

Nominee:

Name	Signature	Date

West Australian VHF Group Inc.

Annual Subscription

Send to **The Treasurer**
The West Australian VHF Group Inc.
PO BOX 189 Applecross 6953

Callsign: VK _____ Name: _____

Subscription: $ _____ Address: _____

Donation: $ _____ _____

The 2004/2005 subscription is $20 per Annum.