SILVER SURFER RIDES NEW WAVE updated March 2015
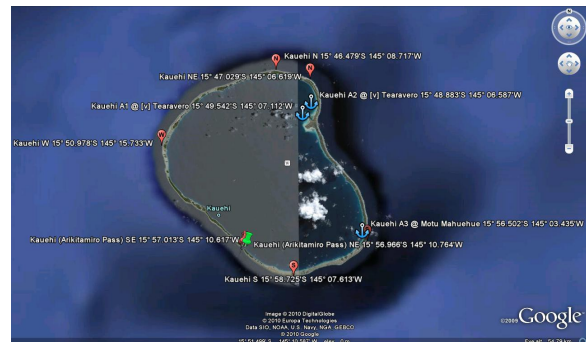
I've always been the tortoise, but never won the race. Probably because there are so many interesting things to see and do, I wander off the track and never reach the finish line. The Pacific has been a bit of a catch-up for me, whilst we have been sailing around Niue, Tonga and Fiji. The "breakthrough" has already been written up in the OCC March 2013 Newsletter. Now we are trying to make sense of it all.

In 2011, when we crossed the Pacific using our usual navigation tools (GPS and paper charts of questionable age) I first went to Google Earth to pinpoint the actual whereabouts of the islands we might visit, and the hazards we hoped NOT to encounter. I marked waypoints of the N, S, E & W extremities of each island, and entrances to reefs. I copied the coordinates into a spreadsheet, which we printed, and saved screen shots (.JPG) of each of my efforts. It was sufficient to give us a greater peace of mind, but was rather a time-consuming exercise, with much redundant information.


1 Spreadsheet of lat/longs gleaned from Google Earth   2 Screen print of waypoints

Since we have now converted to using electronic charts, we have discovered various quirks and foibles, not least of which is the fact that in our current cruising ground, close quarter positioning is still inaccurate. We find it very disconcerting when our little brightly coloured boat appears to float across the screen on land, rather than in the water.

A quick look at Matuku, in the Lau Group of Fiji is the perfect illustration:
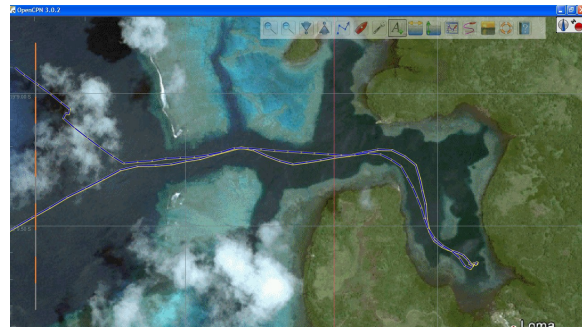
3 Our actual track in OpenCPN …   4 ... and on Google Earth

You might think that it is only close to land that one might have a problem, but on our electronic charts vast tracts of ocean appear devoid of features, whereas in reality there are still reefs to avoid. A classic example are the Minerva Reefs, marked on our paper charts, but not acknowledged on our charting software unless you put the cursor in exactly the right place, and zoom right in. Suddenly a detailed chart pops up on screen.

One solution is to make chartlets from Google Earth (.KAP files), which can be used in the charting program to aid navigation. We now can overlay satellite image chartlets onscreen, and use this as part of our initial route planning. Here I must once again thank Sherry on *Soggy Paws* for introducing us to the concept and the software (GE2KAP), and for her patient long-distance mentoring.

Where the vector charts don't show hazards until you zoom right in, as in Minerva Reefs, a KAP file layer will at least remind you where to look. With North Minerva reef it is possible to zoom in and get a good image.
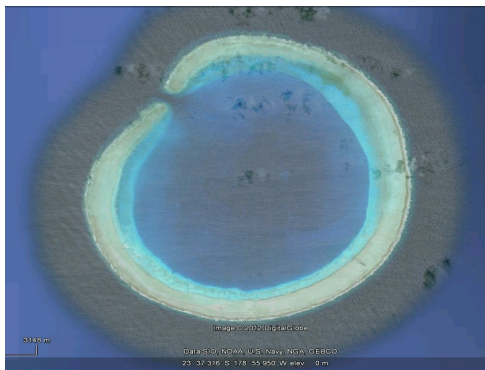

5 North Minerva reef

However, the technique isn't perfect - the Google Earth images aren't always 100% helpful.   When in small scale, Google have considerately put a reminder blob where North Minerva should be, but South Minerva does not show at all – even when you zoom right in!


6 I have marked the entrance to S Minerva Reef

A similar problem exists in various parts of the Lau Group. For instance, Ongea Ndriti and Fulanga are only 20 miles apart, but only the Ongea Ndriti chartlet is clear enough to be useful.
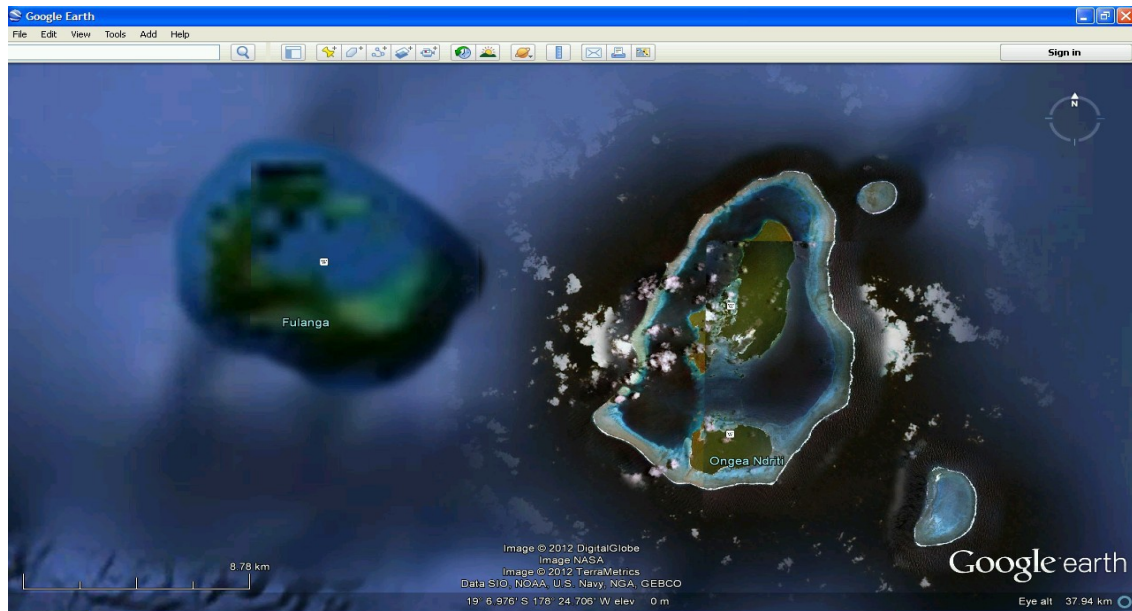
7 Fulanga & Ongea Ndriti

Sometimes the latest Google imagery is not the best for our purposes. Where images are unclear or particularly cloudy, you can click VIEW, HISTORICAL IMAGERY, and use the slider to see if a previous image is actually clearer, as it was between Taveuni and Qamea.
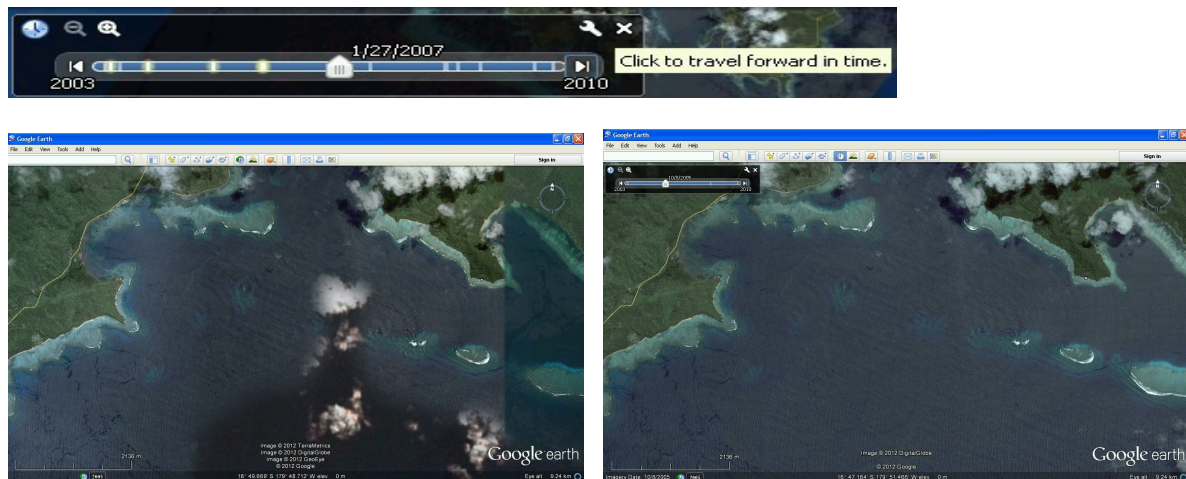

8 in 2010 - A cloud just where you don't want it   9 but in 2005 it was cloud free

Don't forget to turn the historical imagery off again after you have done your GE2KAP screen capture, or you may get old images of everything you look at!
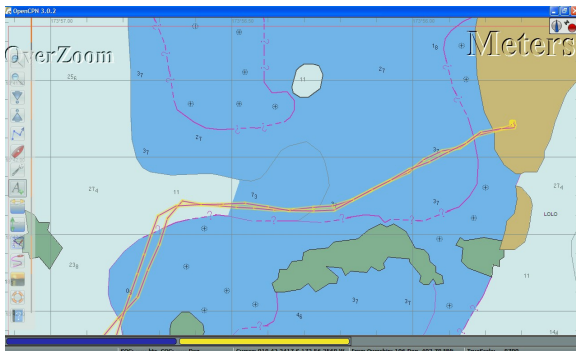
We have used the Google Earth chartlets to help us wend our way through reef-strewn channels with more confidence, a boon when the day isn't one of those perfect "flat sea – sun high behind" sort of days:
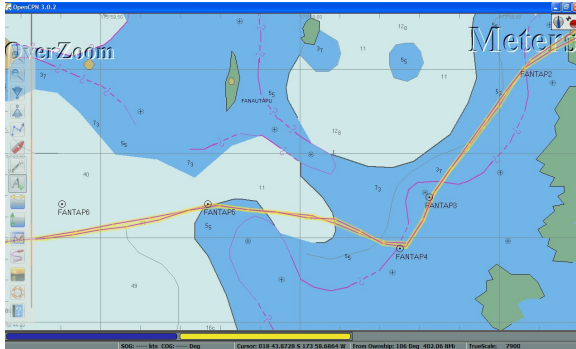
10 Our track through Fanautapu Pass on the chart...
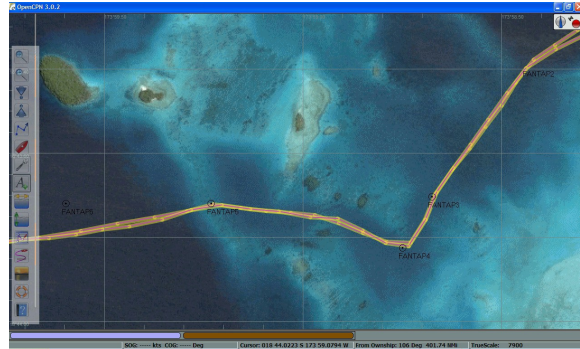
11 ... and on Google Earth

12 And our arrival at Kenutu, Vava'u

13 So much easier to plan the route in Google Earth

But a word of warning from Sherry – there are often clouds obscuring parts of the image, which have a shadow on the water. Look closely; look at the real chart; make an educated guess; or just avoid that area - some of those pretty little puffy white clouds are sitting above reefs, much as you expect clouds above islands.

Finally we have also used the chartlets to pinpoint good likely anchor spots, away from bommies.
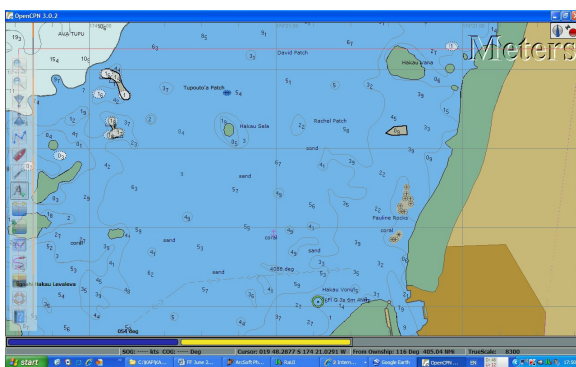
14 In Lifuka, Ha'apai, the chart was pretty good   15 but the GE view also shows the location of each bommie
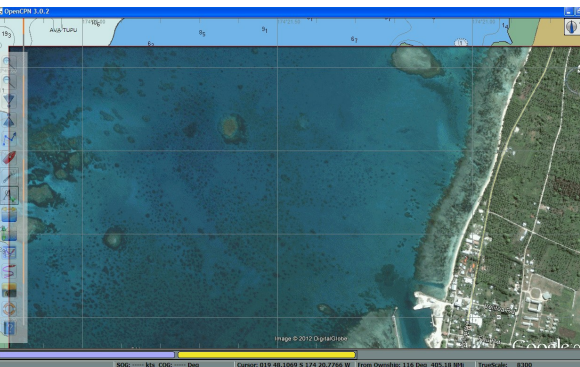
So, that's what I've picked up so far. I know Mike Richey will be turning in his grave, and many more of the OCC membership will be saying "what is the world coming to, paper charts and the sextant were all WE had when WE went there", but I'm having _fun_. I find it interesting, and I believe we plan and study our route beforehand more carefully, have a better idea of the terrain of the terra firma (since the UKHO stopped using those nice pen and ink drawings on their charts), and even if all this electronic wizardry goes down just when you need it most, the brain has retained much from the planning stages. And… we still write down and plot every waypoint on our paper charts – and post a set of eyes on the bow in uncertain and reef-strewn waters.

I know this tortoise hasn't won the race – a further possibility in GE2KAP is to actually manoeuvre the chart to line up with a transparent overlay of a Google Earth chartlet, and I haven't quite got to grips with that yet!

IF YOU WANT TO PLAY, THIS SHOULD GET YOU UNDERWAY:

1. The instructions in the GE2KAP help file are actually quite straightforward. However, they are only available once you are running the program…. so, to get you started:

2. I have assumed a reasonable basic knowledge level of using a computer. If you are at the "dummies" stage, you may need someone looking over your shoulder.

   ➤ Note that GE2KAP is designed to run on Windows – XP, Vista, 7 or 8. I have used XP throughout this example. The designer, Paul Higgins, says that it can also be run on MacOSX >= V10.5 or Linux/Gtk >= V2.6 if running Windows in a virtual machine.

GOOGLE EARTH

3. You will need version 5.1 or higher of Google Earth. If you haven't already got this, download the latest Google Earth program from http://www.google.com/earth/   (currently 7.1.2.2041).

   ➤ If you have decided on the latest download, then make sure you untick the boxes at the top if you don't want what's on offer:

   Download the latest version of Google Earth for PC, Mac, or Linux

   ☑ Include Google Chrome, a fast, free browser made for the modern web. Learn more
   ☑ Make Google Chrome my default browser.
   By installing, you agree to Google Earth's Privacy Policy and Google Chrome's Privacy Policy.

   ➤ Also, check out what you are being offered (or otherwise) in the Advanced Setup before you agree the download...

   ▸ Customize your installation of Google Earth with advanced setup

   Agree and Download

   ▾ Customize your installation of Google Earth with advanced setup
   ◉ Latest version (7.1)   ◯ Previous version (7.0)
   ☑ Allow Google Earth to automatically install recommended updates.
   ☑ Make Google Earth available to all users' profiles. Administrative rights are required.
   ☑ Help us improve Google Earth and Google Chrome by allowing us to collect anonymous usage statistics

4. It is ***ESSENTIAL*** that Google Earth has various parameters set correctly. You can do this once you have downloaded GE2KAP (and use the help files there), but since you are probably now already playing in GE, you might as well explore them now:

    a) Open Google Earth

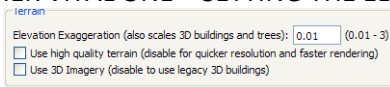   b) Click on TOOLS in the menus, then choose OPTIONS

    c) Click on 3-D VIEW on the tabs

5. You will see a large dialog box. There are 2 very important bits to get right (the graphics mode & the terrain), but I just follow Paul's complete diagram and get all the ticks and blobs the same as his:
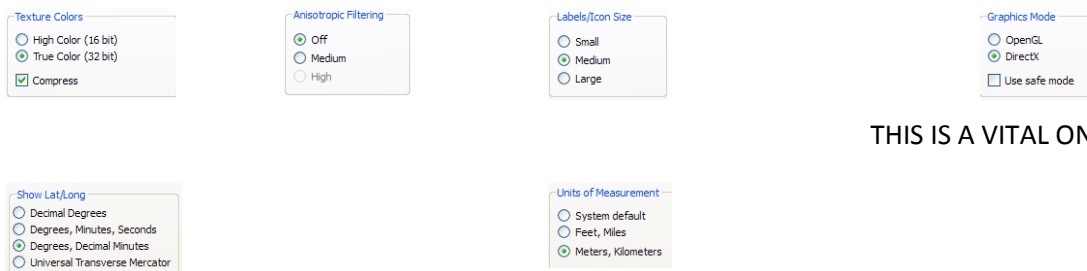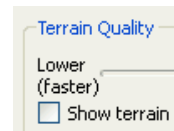
THIS IS A VITAL ONE TO DO

THIS IS THE OTHER VITAL ONE – SETTING THE ELEVATION EXAGGERATION TO **0.01**

If you are using Google Earth v 6, make sure there is <u>NO</u> tick on "Show Terrain". If you are in Google Earth version 7, this will be slightly different – make sure there is <u>NO</u> tick on "Use 3D Imagery (disable to use legacy 3D Buildings)"

➤ When you are sure you have it all right, click **APPLY**, then **OK**.

6. There are various times when you might want to show some of the following parameters again, but when you are making your GE KAP files, the following should be switched off (*ie **no** tick):

    a) In the VIEW MENU, first make sure you have a tick ***on*** SIDEBAR, so that you can see it. In the Layers area at the bottom left of the screen:
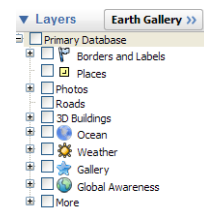
    ➤   a green box by the PRIMARY DATABASE indicates you have *some* active parts (you should be able to see ticks on some items further down the list)
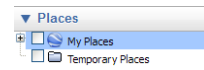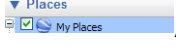
    ➤ a tick by the PRIMARY DATABASE shows *everything* is active .

    ➤   Click on that little box as many times as you need to make the PRIMARY DATABASE box completely blank. This will turn off all the roads, labels, borders, photos etc.

b) Still with the sidebar open, review any ticks in "My Places" at the top left of the screen

> A tick would indicate that all are still active ,

> and a green square would indicate that just some are still active .

> If they are in an area you are going to create a KAP file for, they may be better turned off (*ie **no*** tick). You can turn off all of them by clicking the top box next to "My Places", until it is blank.

c) Do the same for "Temporary Places".

d) Again in the VIEW menu, if any of the following have a tick next to them, you need to click to turn it off. Each time you do one, the menu list closes, so you need to keep re-opening it:
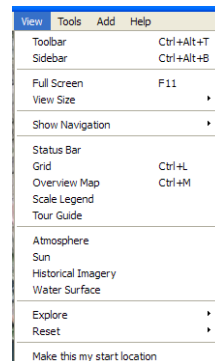
> TOOLBAR

> SIDEBAR (yes, I know you only just used it, but now you want to lose it)

> TOUR GUIDE (GE v7)

> WATER SURFACE

> Although the GE2KAP Help files don't tell you, you don't really want SCALE LEGEND, or anything else ticked in the VIEW section either

e) Open the VIEW menu one more time, this time to remove the Navigation indicator. Place your tick on **NEVER**.
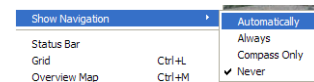
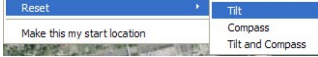7. Well, the screen should look a lot clearer now!

a) If you are zoomed in somewhere close, use the mouse wheel to zoom out, then just grab the globe (hold down left mouse button), and drag to somewhere interesting, that you might like to make a KAP screenshot from. Zoom in by double-clicking your chosen area (several times), then fine-tune using the mouse wheel. If you don't have the ability to mouse-wheel, turn the Navigation Tools back on & use their scroller. Don't forget to turn them back off again.

> If you have something very specific in mind, you can always open VIEW, SIDEBAR and type in the lat/long, then make sure you take the tick ***OFF*** SIDEBAR before continuing.

> If you are a little lost without borders, labels & place names, put these back on in the VIEW, SIDEBAR, LAYERS section at the bottom, then spin & zoom in on your chosen area.

⬤ Make sure you remove all traces of the place names/borders etc, by making sure the box to the left of Primary Database is blank, and get rid of the sidebar before continuing.

b) There is some debate about whether the **STATUS BAR** (VIEW, STATUS BAR) should be on or off. The advantage of keeping it turned on is that it shows you the lat/long, which can help your initial navigation to a spot.

Imagery Date: 8/14/2013   22° 10.360' S 166° 18.228' E elev   0 m   eye alt 5.76 km

➢ Once you are making your KAP charts, do you think it would be useful to show on the screen capture (KAP) the lat/long; altitude, elevation and date of the imagery?

c) Strange things can happen to your image – it can rotate and tilt as you move the globe. Those Navigation Tools you just closed used to show you what had happened. The GE2KAP program seems to take care of it, but I have got into the habit of manually re-setting before each new capture – click VIEW, click RESET, click TILT AND COMPASS, and watch the screen move…

d) Close Google Earth


GE2KAP – THE PROGRAM WHICH MAKES IT ALL HAPPEN

8. Go to the GE2KAP website at http://gdayii.ca and click on **downloads** on the green bar. Click on GE2KAP (currently v16.0.1.0, new on 2015-02-04) to download the file. Note that this is a free program, but there is a place on the front screen where you can donate, if you find the program useful.

a) You get the usual choice of RUN or SAVE. Either go straight for RUN, or SAVE to somewhere on your computer, then double click on the .EXE file to start the extraction.

b) I get a warning that the publisher cannot be verified. There's nothing for it but to click on RUN, or you won't be using the program.
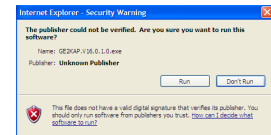
c) The Installer now starts it's work. First, you physically need to click on the program name in the white area, before the INSTALL/UNINSTALL button is available for use.
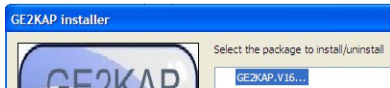
d) The Setup Wizard starts. Do whatever you usually do with the licence agreements, tick to accept and click NEXT.
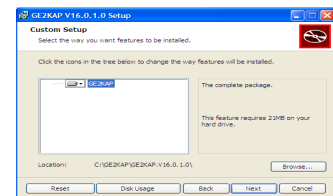
e) Perhaps it's time to explain a couple of things. GE2KAP *must **NOT*** reside in your PROGRAM FILES folder, as it doesn't have the right permissions to run from there. It is trying to locate itself direct on C:\, which seems OK to me. If you have other ideas, then click BROWSE, and choose a different location. Click NEXT.

f) If you are happy with everything so far, click INSTALL to start the installation.

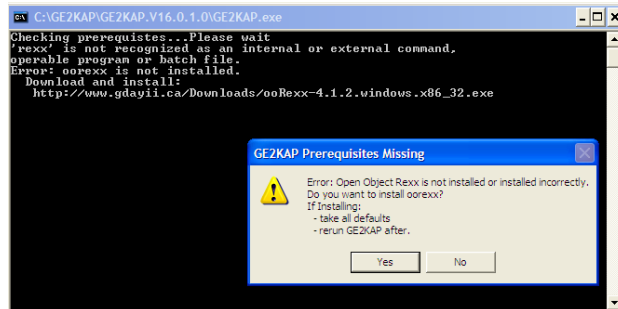g) The dialog box says you are complete, but actually you are not ready yet.

h) Make sure there *is* a tick on Launch GE2KAP, then click FINISH.
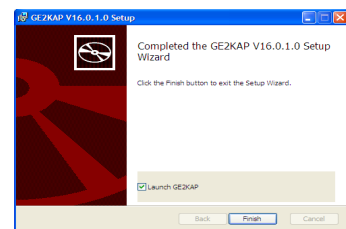
THE MISSING LINK - ooREXX

9. The next screen is a bit alarming. It's the other thing I was going to mention. GE2KAP needs another program, ooREX, to underpin it. Read the boxes carefully, then click on **YES** to proceed.

    a) Now, when I was going through this, I came up against a glitch – The program sent me back to the original http://gdayii.ca/Downloads.php site OK, but the file you are supposed to pick up `http://www.gdayii.ca/Downloads/ooRexx-4.1.2.windows.x86_32.exe` wasn't in the downloads list. It could be because ooRexx has already updated to another version – they are now on v4.2.0. Paul may have rectified this by the time you need it, but if not, simply go to http://www.oorexx.org/download.html yourself, and choose ooRexx install files for release 4.2.0

    b) You will get taken to http://Sourceforge.net to do the actual download
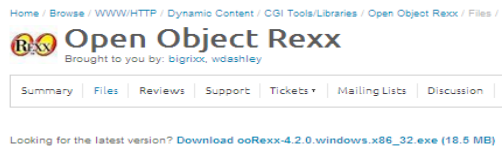
    c) Look no further than the top selection on the next screen – click on

   **Download ooRexx-4.2.0.windows.x86_32.exe (18.5 MB)**

   Use this one, even if you have a 64-bit system.

    d) You may have to jump through more hoops before the download starts (eg your computer may automatically block, and you need to tell it to continue). Then **WAIT**. The top of the screen is telling you the download will start very soon, the rest of the website is trying to tempt you to look at lots of other interesting projects.

    e) Go for Save or Run, whatever is your usual method.

        ▶ If you choose Run, then accept all default settings as you install.

        ▶ If you Save the **.exe** file, then find where you saved it, and double-click on it to start the installation process. As you install, accept all default settings.

        ▶ Again, you will probably get a "publisher could not be verified" box. Click RUN.

        ▶ It must have been a bad day – my download keeled over, but I pressed the button in the top left corner of the internet screen, and chose direct link, which worked fine.
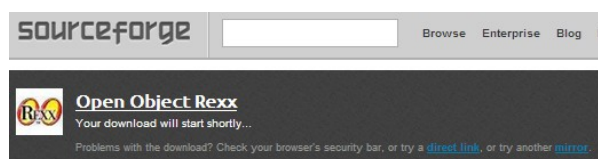
f) Follow the onscreen commands, which guide you through the setup of ooRexx. Accept all the default options along the way, then finally click INSTALL.

g) A lot of files zoom up the screen, but keep watching, because you need to click NEXT before you think it has finished. Then you can click FINISH.
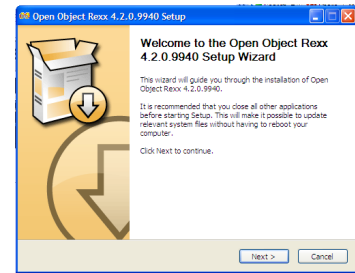
TIDYING UP LOOSE ENDS

10. GE2KAP also needs you to show file extensions. If your machine is currently set otherwise, then try START, CONTROL PANEL, FOLDER OPTIONS, VIEW, scroll down to HIDDEN FILES & FOLDERS, and make sure there is **NO** tick on HIDE EXTENSIONS FOR KNOWN FILE TYPES.

11. Close down your internet program, and you should find a GE2KAP icon on your desktop

    . Also, a listing in START, ALL PROGRAMS.
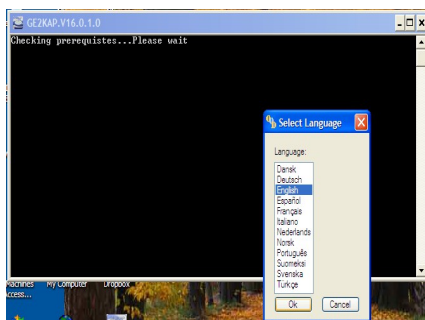
a) Open GE2KAP using any of the usual methods. Choose your language, and click OK.

b) You are asked if you would like to use options from an older version. As I can't find anything which tells me what these options are, I can't advise, but if this is the first time you have run GE2KAP on your computer, you can safely click NO.

c) The next parameter concerns you if you intend to move on to the more complicated KAP files, where you slide a partially transparent chart over the satellite image, then adjust the chart to coincide with the GPS lat/long. If you already have OpenCPN (we are now up to version 4.0.0) on your computer, you might as well say YES – it is simpler to do at this stage than later.
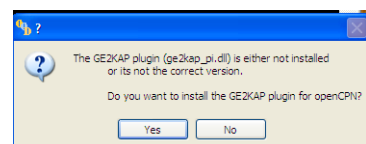
   ▶ If you said YES, you get a further message telling you to go and *enable* the plugin in OpenCPN. You can do this next time you open OpenCPN. (OPTIONS, PLUGINS, GE2KAP 1.5, ENABLE, APPLY, OK).
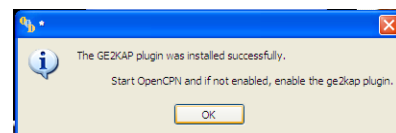
   ▶ If you said NO, just move on.

d) Read the **Welcome Screen** carefully before you click OK.

e) Now, **WAIT** – a lo-o-o-ong time. GE2KAP will automatically open up Google Earth, then switch to showing it's own dialog box when it is good and ready.

12. So …. At last you are all set! Well, nearly.
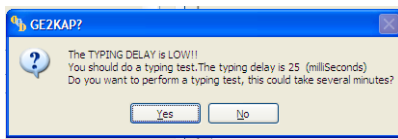
a) You may be asked to reset the typing delay by performing a typing test. You might as well go for it, as internet speeds do vary. The default delay is 200 miliseconds, which should be OK for most circumstances. This will take another chunk of time, and Google Earth will be jiggling all over the place. Just WAIT.

b) The scrollable section of the GE2KAP dialog box is giving you instructions not only on what you need to do to make a chart, but if you scroll down, it gives you a hint about all the advanced options you can go for in the future as well.

c) The Chart Location\Name: section shows you that GE2KAP has already created a folder called CHARTS on C:\ where your charts will be stored.
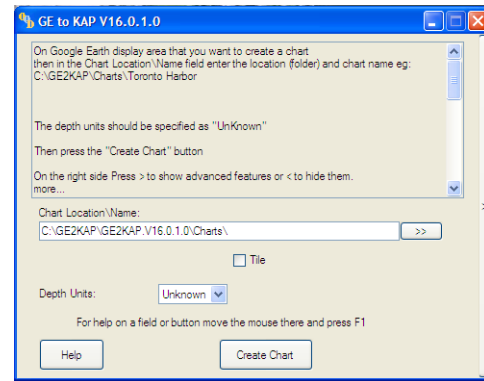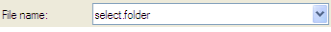
> If you don't want to make any subfolders at this time, simply click in the blank space after the backslash, type in a name for the file you wish to create (anything from "Playtime 1" to "Vanuatu, Port Vila Harbour").

> If you are going for subfolders straight away to keep things neat, then click on the double chevron [>>] to the right of C:\GE2KAP\GE2KAP.V16.0.1.0\Charts\
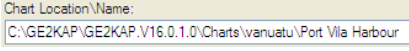
- ● Click the CREATE FOLDER icon at the top right of the SAVE dialog box.

- ● While the "New Folder" text is still blue, simply type in a name for this folder "PLAYTIME" or "VANUATU", then press ENTER to complete the entry. If you have clicked elsewhere, you will have to go and rename it in one of the more longwinded ways.

- ● Now double-click on the yellow folder icon to the left of the word you typed vanuatu. The folder will pop up into the SAVE IN: box at the top. Save in: vanuatu.

- ● Click in FILE NAME, where it says SELECT FOLDER. File name: select.folder. The phrase should go blue, meaning you don't need to delete anything before you type in your own choice of filename (Port Vila Harbour or Play 1, perhaps?), and click SAVE.
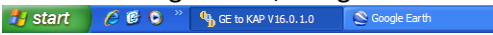
d) You should be back to the GE2KAP dialog box.

> If you want to change the name of the chart you are making, simply click in the box C:\GE2KAP\GE2KAP.V16.0.1.0\Charts\vanuatu\Port Vila Harbour and make the changes you want.

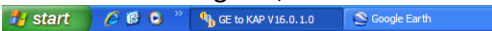e) UNKNOWN for Depth Units is the correct choice for these simple chartlets.
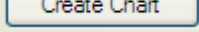
READY TO ROLL…

13. Switch to Google Earth, using the bar at the bottom of the screen
   , or simply click on a part of the screen showing the satellite image.

    a) Spin and Zoom to the *exact* location you wish to capture.

    b) Click on VIEW, click RESET, click TILT AND COMPASS, and watch the screen move…

14. Without disturbing this, switch back to seeing the GE2KAP dialog box

15. *Finally*, click **Create Chart**, then **_WAIT_**.

    i) It is **_absolutely VITAL_** that you wait until the computer beeps at you, and the screen tells you that you have successfully created your chart – otherwise all your effort will be wasted.
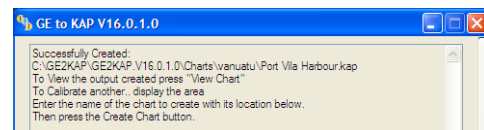
16. I forgot to mention the beep. If it is too overpowering, click on the (insignificant) single arrow at the right hand side of the GE2KAP dialog box to open up a whole new vista of choices, then do so again to open up the third section.
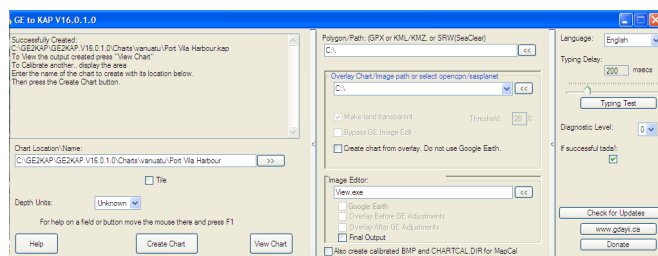
    a) Here you can remove the tick from "If successful tada!", and you will henceforth only get an ordinary beep to congratuate each effort.

    b) You can click the VIEW button on the first section of the dialog box if you want to see what you have produced, but if you REALLY want to see what you've done, you will need to load this KAP file into your BSB compatible chart plotting program (ie one that can read KAP files).

        ▶ If your plotting program won't accept .KAP files, download OpenCPN from http://opencpn.org so that you can play.

Now, wasn't that FUN!!

17. Before you do any more, we strongly advise you to go to the ☐ Help ☐ files, and slowly and carefully work your way through – at least the first 3 sections: Installation; Google Earth; Getting Started. It will consolidate what you have just done, and act as a check that between us we've got it right!

        ▶ HELP, is, of course, in one of those annoying formats where you click on a title on the left hand side, then you wait for something to load on the main bulk of

the screen. On some computers it doesn't appear to load - you will just see white on the right, in which case just scroll down the screen.

➤ THEN, to see the next section, scroll back up to the top, click on the new title, and scroll back down to see the new words of wisdom.

We hope this has helped you get started – there is still so much more you can do when you become proficient. Now you have an inkling of what this is about, please go back and re-read our preamble about what's good about making these KAP files, and some of the pitfalls to watch out for.