

More on Narrow Band Messaging— Fldigi Operating Guide



Mike Sloan GU3WHN
Group Controller
Bailiwick of Guernsey

It would seem to be widely accepted that data messaging would be of great benefit to our user services in a real event (especially as they can encrypt the message before giving it to us) and Mike wrote about this in RAY~Link Issue 69, Oct 09 (*A Simplistic Approach to a Narrow Band Emergency Messaging System*). In this follow-up article Mike provides a guide to actually operating the system.

This brief KISS guide attempts to illustrate how we process our data messages within the Bailiwick of Guernsey and also some of the procedures we have taken into use when using Fldigi. We operate on VHF/UHF within the Bailiwick and, whilst we generally use PSK, **any data mode can be used**.

We have assumed a one-to-one exchange but the procedure is equally capable of outstations sending data to each other, so long as Control is actually in *control* of the net to avoid confusion and interference. We control the entire net by voice for this very reason. With the FT-8900's we can leave the microphone connected with no interaction apparent.

Attempts to use data for Control is not a good idea in our experience. On HF this is mainly because of the largely unsuitable conditions on nominated emergency but uncontrolled and crowded frequencies. However, HF operations may be required to transmit data back to the UK mainland and early trials are currently underway in Zone 7. (*Another article—☺ Ed*)

All stations in the Group have a common folder containing all appropriate documentation, including a number of different message formats. The message data templates are all in text format. A copy of the IARU message template, as a simple example, is included at the end of this document.

Each station with data to transmit must first notify Control and await clearance. The rest of the net is placed on standby during the transmission of the data.

We have utilised macro set 3 in Fldigi for our emergency operating procedures.

A simple setup is as follows:

Scroll to Macro Set 3.

Macro 1

Pick a suitable macro to edit and right click to open it.

- Label the macro appropriately in the top window, e.g. *IARU*.
- With the pre-prepared blank data version of the IARU message form, copy and paste all the content of the text document into the main macro window.
- Save the macro. The main *File* menu is the best way of doing this. Click on *File/Save* macros.
- If you click on the macro, the macro will load but it will not transmit at this stage.

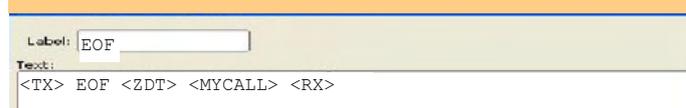
This is **deliberate** as we are now able to enter the data for each field directly onto the screen.

We can now turn our attention to the second macro.

Macro 2

Macro 2 is the *End of File* macro and completes the operation by transmitting the file and also adding some important tags.

An extract of the macro appears below and is hopefully self explanatory:



```
Label: EOF
Text:
<TX> EOF <ZDT> <MYCALL> <RX>
```

Remember that when driving the audio the IMD must be better than -28dB . Direct drive from the soundcard, into a microphone socket for example, must be attenuated to avoid over-driving and serious QRM. Other set-ups could be included here and we use at least three. We can assist with this further if required guernsey.raynet@cwgsy.net.

The following notes apply only to the SignalLink USB soundcard.

Laptop

Be sure to boot up the laptop fully before connecting the USB soundcard.

Check that the volume controls on the laptop are set to maximum.....

Check that the defaults in Fldigi reflect your callsign and that the USB Codec soundcard is configured in the soundcard window. Port audio should be checked, i.e., a small red indicator.

Waterfall settings of -30 and 70 work for me. Place the waterfall cursor at 1500 for transmissions.

This can be achieved as the default setting in the

Soundcard

The following seem to be good initial settings for the soundcard:

- *TX potentiometer at 9 o'clock*
- *RX potentiometer at 12 o'clock.*
- *Delay potentiometer at 12 o'clock.*
- *Don't forget to turn the soundcard on with the front panel switch.*

Now back to the basic procedure in use here.

Fldigi data windows

Make sure that both windows are clear. Right click for the drop down menu in each window to achieve this. ALC settings (bottom right) one third to half way up depending on signal strength received. Too low a setting introduces random characters. Too high a setting can lose data.

Check the mode setting. We use PSK125 unless otherwise advised by Control.

Testing

Test that your setup works **BEFORE** turning the radio on. We have set Fldigi to read audio frequencies on the waterfall, *Configure/Waterfall/Always show audio frequencies*, and set our cursor on the waterfall at 1500 out of purely personal choice. This can be set to default in the *Configure/Misc* menu. It avoids confusion over displayed frequencies.....

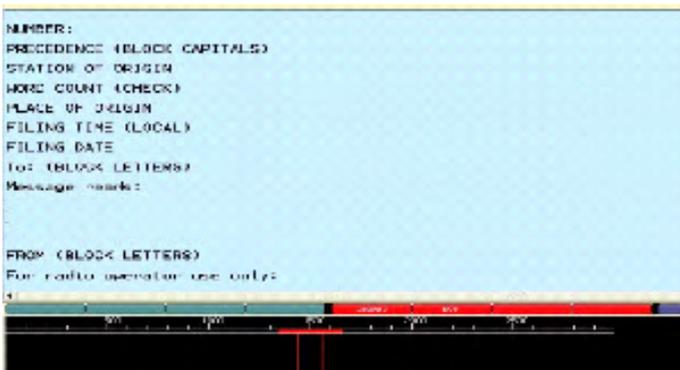
Check that the correct data mode is selected.....

Using Macro Set 3, load macro *IARU* for this exercise. Leave it blank, i.e. no additional data.

Load macro *EOF*. The file should appear to transmit to the top window at this point. Ensure all data is copied and remember that the cursor must be at the end of the edited file before transmission. If it isn't, only partial data will be sent.

Clear both windows of all data!!!

Remember that you can increase the size of the on-screen data window fonts for those of us with such a need — *Configure/Colors(sic) and Fonts/RX/TX Fonts*.



Partial image of loaded, pre-completed IARU data message

Operations

Data for transmission is received on location and in our case must first and importantly be recorded on a single paper record. This would generally be an approved message pad. This document must be filed for legal reasons.

Enter the receiving station's callsign and other requirements into the logging window at the top of the screen.

Load the *IARU* macro. First scroll to the top of the window and type in the already hard-copy recorded data directly into the appropriate fields in the now visible blank record in the lower Fldigi window. Check the accuracy of the data. Check the accuracy again.....

Make absolutely sure that the cursor is at the end of the file.

Call Control by voice transmission and inform them that you have a data file ready to transmit. At this point Control places the rest of the net on standby.

Control will give their authority for the file to be transmitted.

8 Wait for this authority before proceeding.

Check again that the cursor is *after* the last character of the now completed file before it is transmitted.

Click on the *EOF* macro button. Both macros' contents now transmit. The radio returns to receive.

Once the file has been transmitted, wait for voice confirmation from Control that the file has been received. Be prepared to re-transmit. If OK, save the transmitted data in the upper window by using the right mouse button to bring up the menu, i.e., *Save to file*.

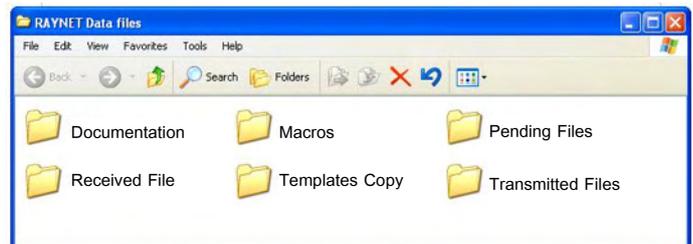
Choose the *Transmitted* folder in the RAYNET Data Folder and save the file using a unique file name appropriate to the operation.

Clear both windows of any data.

Control places the Net back into voice mode.

Control then right clicks on the *newly received file* and saves it in the *Received* folder in the *RAYNET Data Files folder*. Ideally a hard copy should now be printed to enhance the audit trail.

Below is an example of the type of common folders within the RAYNET Data folder on all our laptops. We keep this folder on the top of the Desktop, slightly lowering the top of the Fldigi frame to make it visible at all times. The contents are, hopefully, self explanatory.



In the example below is a blank template which exactly reflects the fields on the approved IARU message form. This text should be replicated *exactly* as it appears here and pasted into the macro labelled *IARU*, then saved. Data is added on screen.

```
NUMBER:
PRECEDENCE (BLOCK CAPITALS)
STATION OF ORIGIN
WORD COUNT (CHECK)
PLACE OF ORIGIN
FILING TIME (LOCAL)
FILING DATE
To: (BLOCK LETTERS)
Message reads:

FROM (BLOCK LETTERS)
For radio operator use only:
RECEIVED FROM          DATE          TIME
SENT TO                DATE          TIME
```

Callsigns for *To* and *From* can be added to the start of the data by means of a simple macro, in our case called *Load* that simply has the following content:

```
<CALL> <CALL> DE <MYCALL> <MYCALL>
```

If this option is used it becomes the first macro to be loaded and the callsign of the recipient must already be entered in the top log window.