



Iceni Newsletter February 2025

Coronavirus Impact Covid-19.

If you wish to join us just follow the link or paste into your browser:-

<https://meet.jit.si/IceniComputerClubMeeting>

and follow instructions to allow camera and microphone access. There is nothing to download or install. We still meet on the third Wednesday of the month at 7:30 p.m. via Jitsi.org Video Conferencing.

Our Next Meeting : Wednesday 18th February 2025

3D printing, Octoprint and RPI – Gareth and Peter

Our next meeting will be on 3D printing and developments in our experience of this topic. Gareth has finally tried designing some parts of his own, and printing some interior parts for his Citroen 2CV and will discuss the process for that using TinkerCAD.

Peter will give some interesting links and some of his experience using FreeCAD.

Our Last Meeting: Wednesday 15th January Software defined radio SDR – Duncan

After some initial discussion on broadband speeds, Duncan showed the

"discone" aerial that was in the room behind him and was to be used during the demonstration.

Duncan then started his talk by showing a circuit diagram of a valve radio from 1950. The principle behind most radio receivers has for many decades been to select the specific frequency required by means of a series of tuned circuits (and usually an Intermediate Frequency). The SDR or Software Defined Radio, on the other hand, receives a huge bandwidth and relies on software to select and decode the required signal. This results in a very different, screen based way of using the receiver.

SDR hardware in its present form starts with the TV dongle for computers, about the size of a USB memory stick. Different software was written for these that enables reception of signals other than TV. There is a huge range of quality and price; from repurposed TV dongles (£5+), the dedicated SDR stick such as the RTL-SDR (about £40), to the Italian made Perseus, available at €201 for the one model or €688 for the top range. Duncan demonstrated using a RSP2 manufactured by SDRplay, which claims a receive range of 1 kHz to 2GHz. This model was demonstrated at an Icen meeting at Bourne Vale some years ago, although without much success. This model is discontinued, but current models range from the RSP1B at £106 to the new NRSP-ST with a built-in computer and web server at about \$499.

Because so much of the decoding is done in software, Duncan started the demonstration in a way that would place least demand on his computer, as it was dealing with Jitsi at the same time. This was, to attach the SDR hardware to a Raspberry Pi, which was running SDRconnect software in server only mode. SDRconnect is the multi-platform software dedicated to the hardware sold by SDRplay. The instance of the software on the Pi was then viewed across the local network from another instance of SDRconnect running under Windows. The software is fairly intuitive, with multi-choice options in a menu that can be used to select the waveband required and the software will then choose the most likely bandwidth, tuning step and mode for the band, such as AM, FM, LSB and so on, though these can be changed to suit the actual signal being received. Although Duncan was using a small indoor discone antenna that did not provide a high signal level, he has been able to hear USA CB radio and a Dutch FM station. Amateurs and broadcasts on HF could be heard clearly, and a 2m amateur could be heard on FM.

In addition to SDRconnect linking to other instances of itself across a local network, it can also be used over the internet. A demonstration was then given using the server located in Bedford and provided by the makers of the SDRplay hardware. Although access to the server is time-limited, it was possible fairly quickly to demonstrate that with a better antenna, an SDR receiver is capable of remarkable performance. There was some discussion about the aerial in use at the Bedford site, which was optimised for the amateur bands.

Duncan then stopped the server running on the Pi and transferred the USB cable to the windows machine taking part in the Jitsi meeting. At full bandwidth, the SDRconnect software refused to function. However, by selecting a less processor-hungry setting, the receiver worked well. With a local connection, the software can display more information about the audio spectrum of the received signal than it does with a remote connection. It is also capable of recording audio, or of recording a whole section of radio spectrum as a file and then playing it back for decode later. As timed recordings can be made, this allows the enthusiast to hear obscure signal without staying up all night!

There are some on-line SDR servers that can be accessed through a web browser, without using specialist hardware or software. A list of some of these is at <http://www.kiwisdr.com/public> and one in the Netherlands was demonstrated. Unfortunately screen sharing turned off, so this part of the talk was difficult to follow.

Then finally, Duncan showed the other software provided for the RSP hardware. Known as SDRUno, it only runs on Windows. However, in this case the load on his computer was such that audio stuttered or slowed to a crawl. One advantage of the SDRUno is that it can pipe the output of the receiver into a number of plugins, some free of charge, to allow the decoding of morse, weather fax, DAB, RTTY and many others. It can also work as a scanner of the airbands and some others. The disadvantage is the software is rather confusing, with lots of very small buttons and hidden option screens. The verdict was that despite its fewer functions, the simpler SDRconnect wins for ease of use.

There was discussion on whether the police could be heard using such a device. The answer is no, as although the police used to share the FM band, their services have used the secure digital and encrypted TETRA system for some years. In the days that their messages were sent in the clear,

the authorities developed a paranoia about radio scanners, assuming that only criminals would use one. However, shipping and aircraft communications are in the clear and easily received, as are navigational safety, weather messages and charts, and navigational aids such as beacons, all of which are in legitimate civilian use.

Duncan

I am very grateful to Duncan for this very comprehensive review of the use of SDR. The demonstrations were excellent too. [Ed.]

ICENI Future programme

2025	Subject	Speaker(s)
19 February	3D printing, Octoprint and RPI	Gareth and Peter
19 March	Operating System upgrades, Windows, IOS, Ubuntu and Riscos	Gareth, Michael, Steve et all.
16 April	Chrome OS	Gareth
21 May	AGM and Extras	All
18 June	Open	

The programme is open to changes as the year unfolds and topics may become more detailed.

MEETINGS WILL NOW BE HELD ONLINE BUT STILL ON THE THIRD WEDNESDAY UNTIL FURTHER NOTICE UNLESS OTHERWISE STATED..

Our Website and Email and Jitsi meetings

Our website URL is

<http://icenicomputerclub.org.uk>

Email to: iceni@woolridge.org.uk

The website is where you will find copies of the Newsletter from Previous years and also where you will find our Committee Members and future programme.

I am open to suggestions on what people would like to have included in the website.

JITSI Meetings

I am repeating this here from the top of the document.

If you wish to join us just follow the link or paste into your browser:-

<https://meet.jit.si/IceniComputerClubMeeting> and follow instructions to allow camera and microphone access. We have found some problems with screen sharing on the Mac if using Firefox, but using Safari or Chrome is ok as is using Windows.

There is nothing to download or install. We still meet on the third Wednesday of the month at 7:30 p.m. via Jitsi.org Video conferencing.

End