



Iceni Newsletter March 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 19th March 2025

Operating System upgrades, Windows, IOS, Ubuntu and Riscos - All

Our next meeting will be our annual revisit of the various Operating Systems we use and updates / new features they may have received.

Gareth no doubt will have the beta of Ubuntu 25.04 “Plucky Puffin” that will be released later in April, together with recent macOS. Hopefully we’ll have someone with some of the new things in RISCOS, Windows and more!

Our Last Meeting : Wednesday 18th February 2025

3D printing, Octoprint and RPi

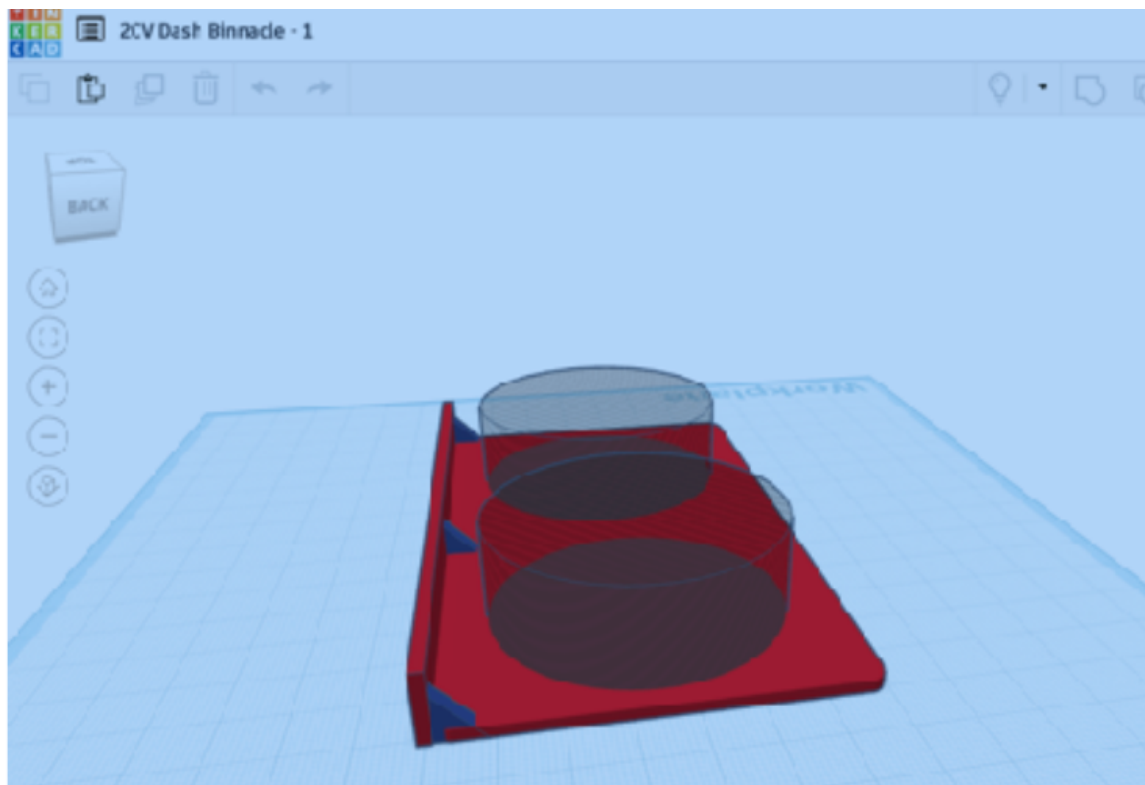
– Gareth and Peter

At our last meeting Gareth gave an update on his recent 3D printing activities. His printer had laid dormant for most of the year since our last discussion of this topic, until recently when he started on a project to create a binnacle to take some additional gauges for his Citroen 2CV.

This was also the first time Gareth had designed a print of his own using TinkerCAD which is from Autodesk.

TinkerCAD is a completely online tool, and has various educational activities but can also be used for simple CAD design. A very simple web interface is used to create the work item which can then be exported in a number of formats, one of which is the STL format used for “slicing” a design for a 3D printer.

Gareth’s initial design was a small mounting plate to take 2x 52mm gauges that would attach to the side of the 2CV dash pod:

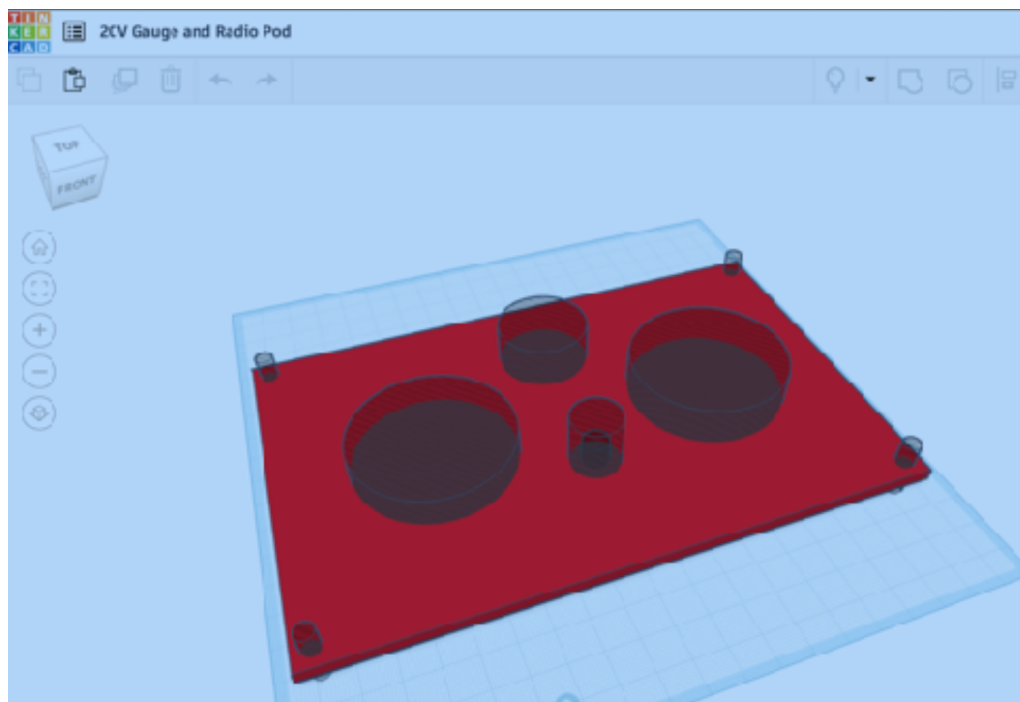
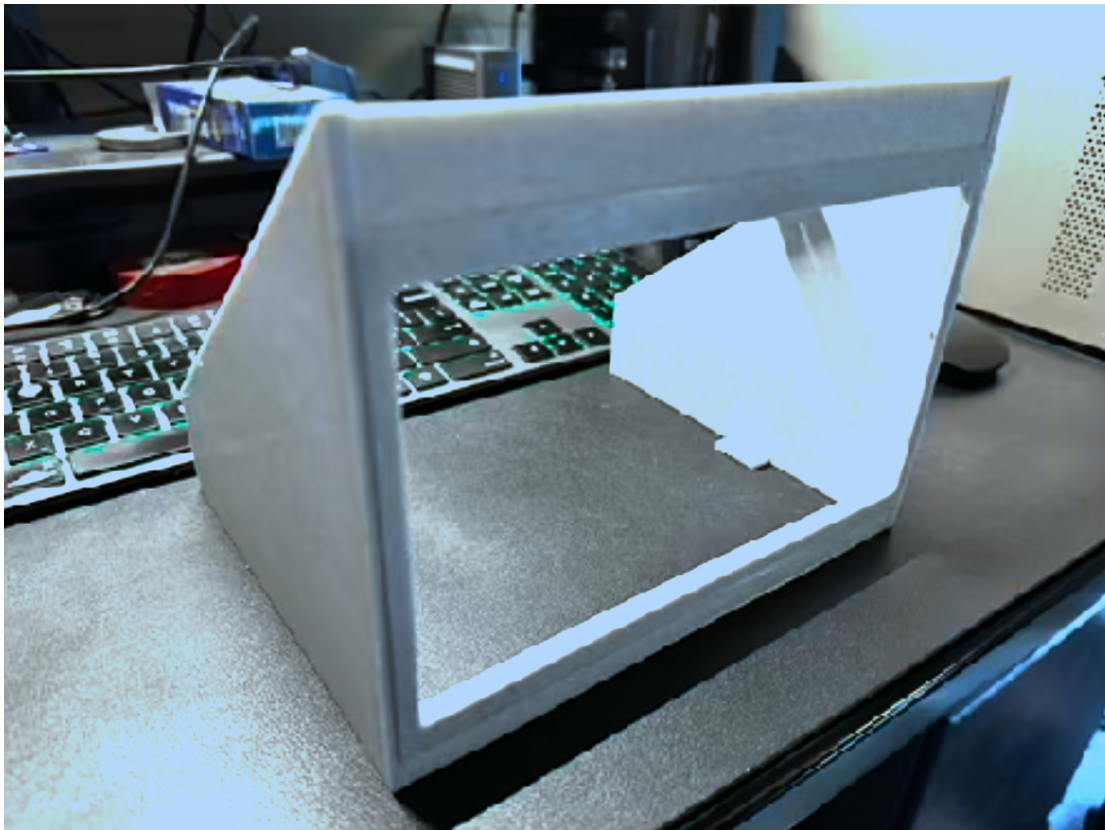


Here Gareth used some the simple built in primitives such as the a cylinder set to hole vs solid to create the design. One thing he learned on the first print was that the cylinders were not very

round with jagged edges which was resolved by increasing the number of segments.



After trial fitting this in the car Gareth decided it would not work, but found on Thingiverse a design to take a “double DIN” car stereo and mount it to the 2CV front shelf:



Then using Tinkercad again Gareth designed a face plate for this to mount 2 gauges, one rev counter and one cylinder head temperature gauge, plus a small bluetooth amplifier. The latter will be used with 2 speakers as an almost hidden sound system (if you can hear it over a 2CV engine of course!).



Gareth is still using a mostly standard Creality Ender 3 v2 3D printer, and so has to manually level the bed and adjust the clearance between the print head “hot end” each print. Peter in comparison has upgraded his printer to support automatic bed levelling, something Gareth plans to investigate more when time allows.

Some chat links here:-

From the SDR meeting for SDR with a Raspberry Pi

Radio Hacking 101: Raspberry Pi SDR with a CaribouLite.

<https://www.youtube.com/watch?v=Hz2WqhWmjZE>

and

<https://uk.store.bambulab.com/products/p1s?id=564206947792834566&skr=yes&gQT=1>

for Bambu Lab P1S 3D Printer Completely enclosed for high temperature printing works straight out of the box fully automated levelling etc.

£699.00 GBP£869.00 GBP

Inc. VAT

I am looking forwards to Gareth getting one of these! [Ed.]

Thank you for the write-up of your presentation Gareth.

Peter had mentioned to his daughter, who was visiting him and has a printer of her own and in fact gave Peter his, that he would be speaking about 3D printing at our meeting and she generated a ChatGPG article on 3D printing. Peter ran through some of it which he thought useful and has reproduced the article here. It includes some useful links at the end.

The brief:

“Write me a 10 minute talk on 3d printing including details on filament, things you can print, some website links for print designs.”

The Result with only a minor edit in the introduction:-

10-Minute Talk on 3D Printing

Introduction

Good Evening Everyone!

Today I want to talk to you about 3D printing, an exciting technology that's rapidly evolving and reshaping industries from manufacturing to healthcare. Whether you're an engineer, artist, or hobbyist, 3D printing has something to offer. In this talk, we'll go over how it works, the types of filament you can use, some cool things you can print, and where to find design files for 3D models.

What is 3D Printing?

At its core, 3D printing is the process of creating three-dimensional objects from a digital file. The process is additive, meaning the object is built layer by layer, as opposed to subtractive manufacturing, which removes material. This allows for intricate designs and shapes that would be impossible or impractical with traditional methods.

The process starts with a 3D model, which can be created using software like Tinkercad, Fusion 360, or Blender. Once the model is ready, it's sent to a 3D printer that lays down the material in precise layers to create the final object. These printers can vary widely in size and cost, from affordable desktop models to large industrial machines used by businesses.

Types of Filament Used in 3D Printing

One of the most important aspects of 3D printing is the filament, the material that the printer uses to build the object. The type of filament you use determines the strength, flexibility, and finish of the object. Here are a few of the most popular filaments:

1. PLA (Polylactic Acid):

- PLA is the most commonly used filament, especially for beginners. It's made from renewable resources like corn starch, making it environmentally friendly.
- PLA is easy to print with, has a low melting temperature, and is available in a wide range of colors. It's ideal for printing prototypes, decorative items, and educational models. However, it's not the best for objects that need to withstand high temperatures or stress.

2. ABS (Acrylonitrile Butadiene Styrene):

- ABS is a strong, durable plastic that's commonly used in everyday products like LEGO bricks and car parts.
- It has a higher melting point than PLA, which makes it better suited for objects that need to withstand heat or pressure. However, it can be tricky to print with due to its tendency to warp, and it requires a heated bed.

3. PETG (Polyethylene Terephthalate Glycol):

- PETG is a popular choice for those who want a material that's both strong and flexible. It's more durable than PLA and has excellent chemical resistance, making it ideal for functional parts.
- PETG is also easy to print with, similar to PLA, but it has a higher resistance to heat and stress. It's used in applications like containers, mechanical parts, and outdoor products.

4. Nylon:

- Nylon is a very strong, flexible material that's ideal for functional, high-stress parts. It's often used for things like gears, hinges, and wear-resistant components.
- Printing with nylon requires higher temperatures and may need a heated bed, but the results are worth it for items that need durability and flexibility.

5. Resin:

- Resin is used in SLA (Stereolithography) printers, which use light to cure liquid resin into solid layers. Resin prints are often highly detailed

and smooth, making them ideal for jewelry, dental models, and figurines.

- Resin can be more expensive and messier to work with compared to filament-based 3D printing, but it produces stunning results in terms of accuracy and surface finish.

Things You Can Print with 3D Printers

The beauty of 3D printing is its versatility. You can print practically anything, depending on the printer and materials you have. Here are just a few examples of things you can create:

1. Prototypes and Models:

- 3D printing is a game-changer in product design and engineering. Designers and engineers can print prototypes quickly and inexpensively, allowing for rapid iteration and testing.

2. Tools and Spare Parts:

- If you break a tool or need a replacement part for a piece of equipment, you can often print it yourself. People print everything from replacement knobs and brackets to entire tools like wrenches and pliers.

3. Home Décor:

- You can print custom vases, lampshades, picture frames, and other decorative objects. The possibilities are endless, and with the right filament, you can make items that are both beautiful and functional.

4. Art and Sculpture:

- Artists are using 3D printing to create intricate sculptures and installations. The precision of 3D printers allows artists to experiment with shapes and textures that would be impossible to achieve by hand.

5. Medical Models and Prosthetics:

- 3D printing has revolutionized the medical field. Doctors can print detailed anatomical models to help with surgery planning. Additionally, customized prosthetics and implants can be printed to fit individual patients more precisely.

6. Educational Tools:

- Teachers are using 3D printers to create educational models that bring complex concepts to life, from the solar system to human anatomy, enhancing student learning and engagement.

7. Fashion and Wearables:

- Fashion designers are exploring 3D-printed clothing and accessories. Some of these pieces are made entirely out of filament, while others are hybrids with traditional materials.

Where to Find 3D Print Designs

One of the best things about 3D printing is the large online community that shares designs. Here are some popular websites where you can download or purchase 3D models:

1. Thingiverse (www.thingiverse.com):

- Thingiverse is one of the largest repositories of free 3D printing models. You can find everything from toys and gadgets to mechanical parts and tools. It's a great starting point for beginners.

2. MyMiniFactory (www.myminifactory.com):

- MyMiniFactory offers both free and paid 3D models. It focuses on high-quality prints and works closely with designers to ensure models are optimized for printing.

3. Cults (www.cults3d.com):

- Cults is another marketplace for 3D models. It offers a variety of designs, from functional objects to artistic creations. Some models are free, while others are available for purchase.

4. Pinshape (www.pinshape.com):

- Pinshape is a community-driven platform where designers can share and sell their 3D models. It's a great place to find both free and premium designs.

5. TurboSquid (www.turbosquid.com):

- TurboSquid is a platform that offers professional 3D models, often used for animation and visual effects. While many of the models here are paid, you can find high-quality designs suitable for printing.

6. YouImagine (www.youimagine.com):

- YouImagine is another open-source community for 3D printing. It's a smaller platform but still a great resource for free models.

Conclusion

To wrap up, 3D printing is a powerful technology that's transforming the way we create and innovate. From the filament you choose to the objects you print, the possibilities are endless. Whether you're printing prototypes for your business, creating a piece of art, or just making something cool for fun, 3D printing is a hobby or tool worth exploring.

If you're interested, start by browsing some of the websites I mentioned to find free models or inspiration. And if you're ready to get started, there are plenty of affordable 3D printers out there that will give you the chance to bring your ideas to life.

Thank you for your time, and happy printing.

No mention of Cura or FreeCAD however but quite useful.

Peter

Octoprint is software for remote control of the 3D printing process and includes a camera to oversee the printing process. It is not networked but an RPi can be connected to the 3D printer via its USB socket.

See octoprint.org Gareth has not managed to set this up yet since he has been too busy with work etc. Hopefully we can see more in future.

ICENI Future programme

2025	Subject	Speaker(s)
19 March	Operating System upgrades, Windows, IOS, Ubuntu and Riscos	Gareth, Michael, Steve et all.
16 April	Computer Surgery evening.	All
21 May	AGM and Chrome	All
18 June	Open	

Please note a small change in the programme because Gareth will be away for the April meeting.

We still need a Committee meeting so that that we can determine next year's programme. Any topic suggestions would be useful.

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