


Affordable Innovation in Environmental Monitoring



James Proctor (WJP Software Limited)

24th Sept 2024

Background



WJP Software has been running for 20+ years.



We develop Healthcare (Pharmacy) products.



Our flagship products is our Microbiological Report System (MRS).



Work with over 50% of the NHS Acute Trusts



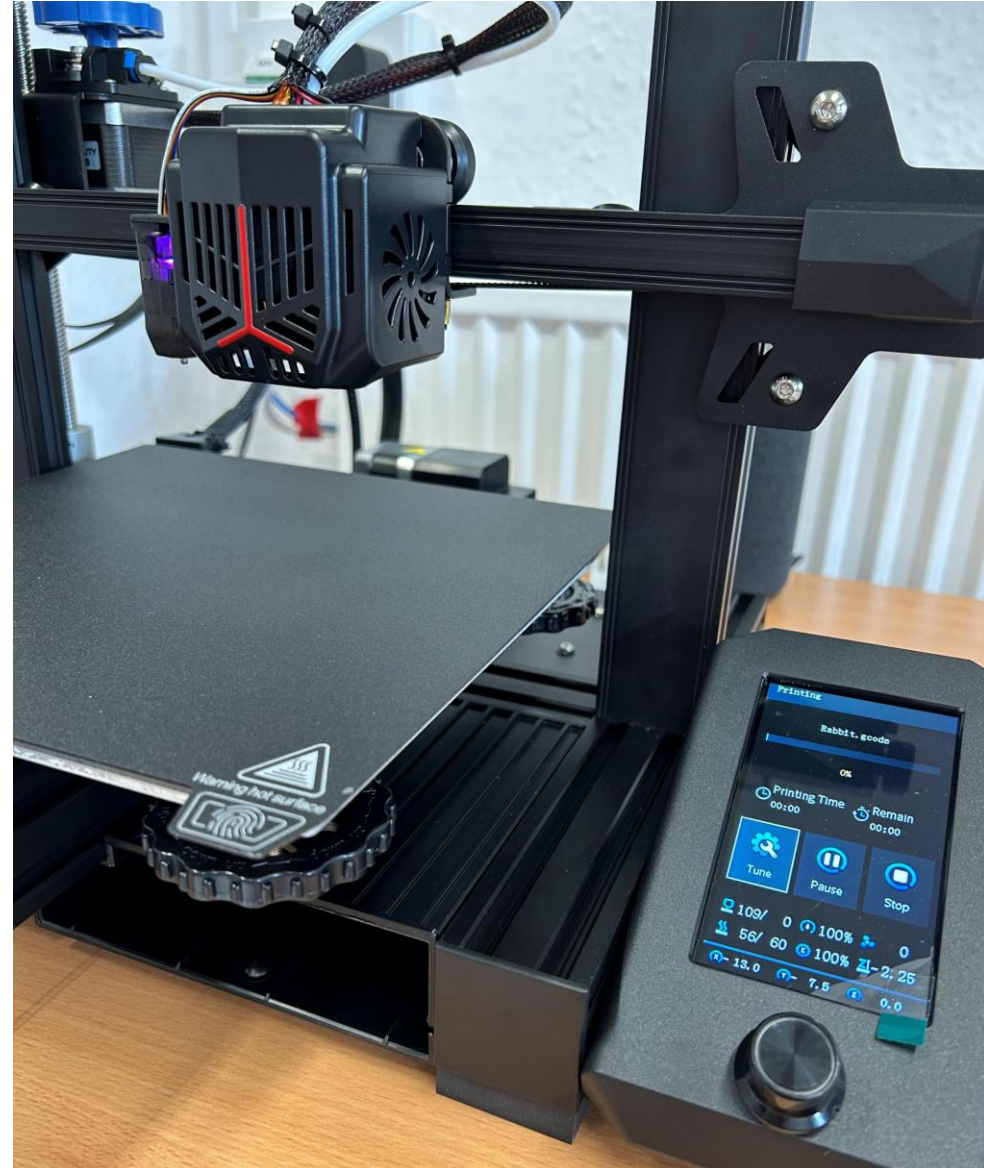
Based in the small town of Bedale, North Yorkshire



Small team

How it all started?

- We purchased a 3D printer but weren't sure what to use it for.
- 3D printers allows you to print plastic objects using filament, on layer at a time.
- Thought about how we could apply it to be used in EM to go along side the software.



How we came up with the idea?

- Having attended QATS and talking to a lot of customers, we realised:
 - Lots of people take photos of plates
 - Require an SLR, or mobile phone with substandard lighting
 - Time consuming
 - Where do we store the photos?



What we wanted

- We have the idea of
 - Being able to take a photo and store it directly in MRS,
 - Show the photo on the web

This was the easy bit....

RESULT SET RS2029

LOCATION:
Customer: Validation Hospital
Unit: Validation Unit
Room: Combined Room (V1.0)

BOOK-IN INFO:
Book-in ID: 2029
Instance: Weekly Settle
Instance Date: 28/08/2025


RELEASE INFO:
Result Set ID: RS2029
Released By: WJPS Admin
Release Date: 04/09/2025

RESULTS 4

#	LOCATION	GRADE	PLATE TYPE	GROWTHS	TOTAL COUNT	OPERATORS / SERVERS
5	Clean Room Floor	Grade B	Settle Plate	Awaiting ID1018	4	Va01 / Va04, Va05

READ BY: WJPS Admin **READ DATE:** 04/09/2025 **VISUAL ID:** B x 1, B x 1, M x 2 **ALERT LEVEL:**

GROWTH TYPE	GROWTH CODE	CONTAMINATION
Bacteria	B	
Bacteria	B	
Mould	M	



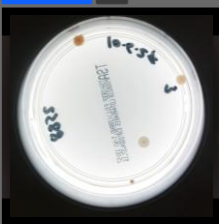
MRS 3.4.2.5

Enter Result Set

Customer: Validation Hospital Unit: Validation Unit
Room: Combined Room Instance: Weekly Settle
Batch #: SP1234, SP7754 Exp Date: 28/08/2025

#	Plate Location	Type	Grade	Op	Serve	Batch	Count	Identification	Saved
5	Clean Room Floor	Settle Plate	Grade B	Va01	Va04				<input type="checkbox"/>
6	Clean Room Hatch	Settle Plate	Grade B	Va01	Va04				<input type="checkbox"/>
13	2nd Change Room Floor (C)	Settle Plate	Grade C	Va06	Va08				<input type="checkbox"/>
14	1st Change Room Floor (C)	Settle Plate	Grade C	Va06	Va08				<input type="checkbox"/>

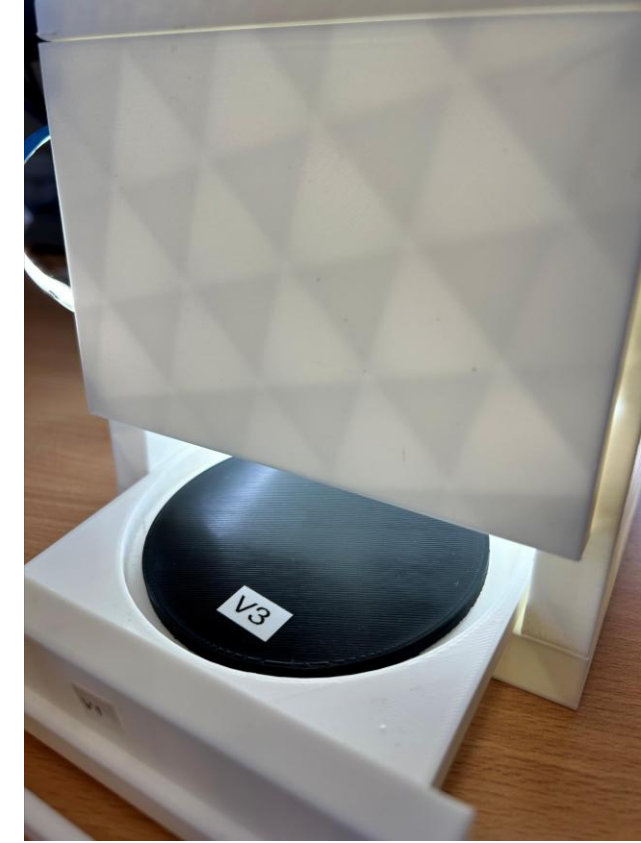
Images:



Total CFU: 4 ☐ TNTC

Growth	CFU	Further ID
Bacteria	1	ID1018
Bacteria	1	No Further ID
Mould	2	No Further ID

☒ Show All Growths



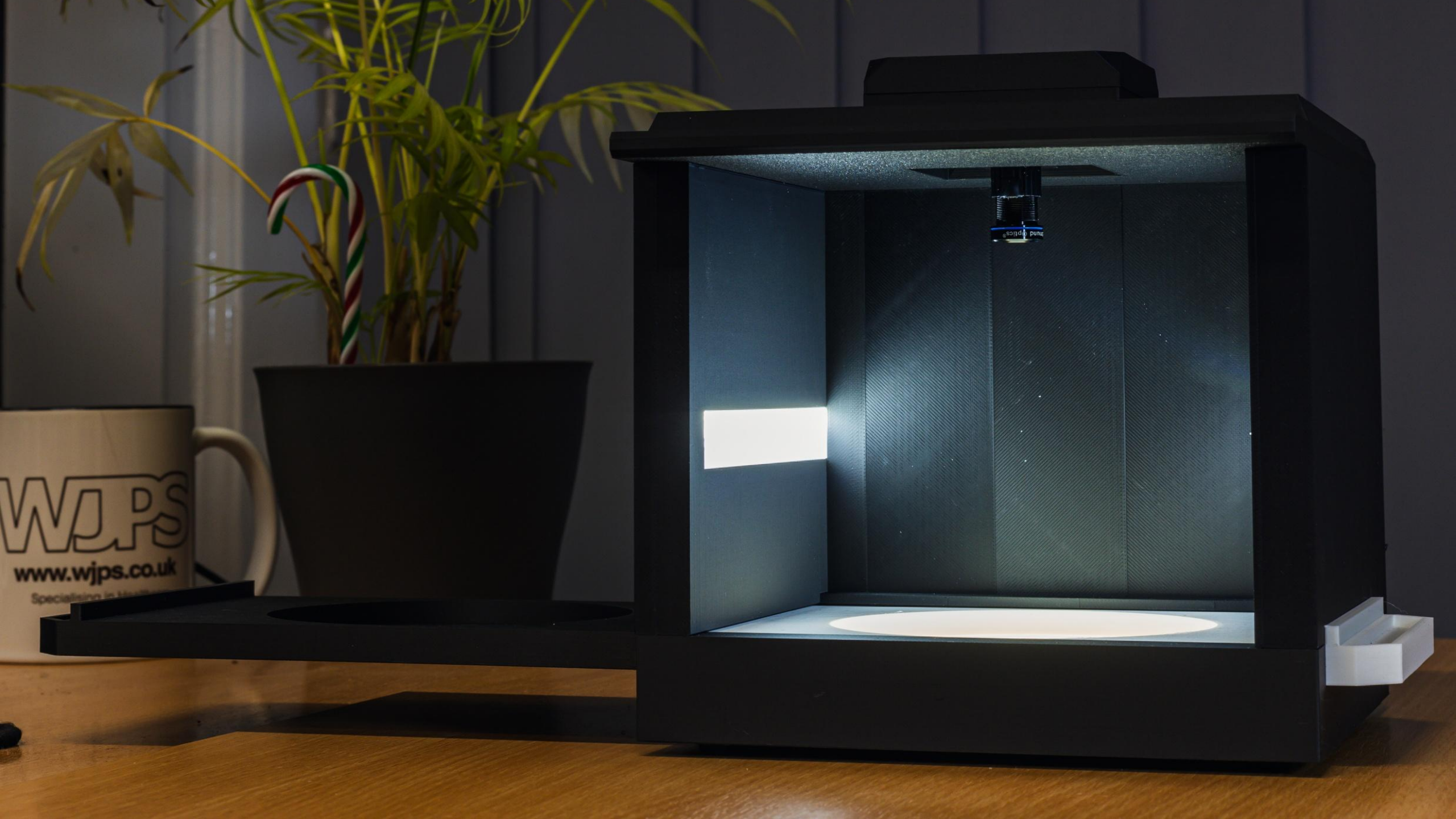
Prototypes

- Released it needed to be a better camera
- Enclose to control the environment lighting
- Be lit above (side) and below
- Easy for people to load
- Different backgrounds / take bottom lit out

Final design (for the moment)

- USB Camera (16mp camera with HQ Lens)
- Separate Power for Lights
- Slidable tray to cut out bottom light
- 3 sides to make it quicker to load

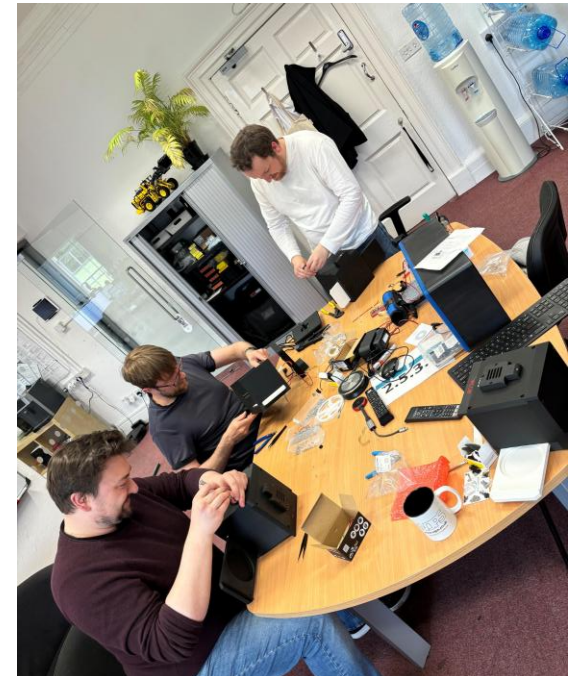
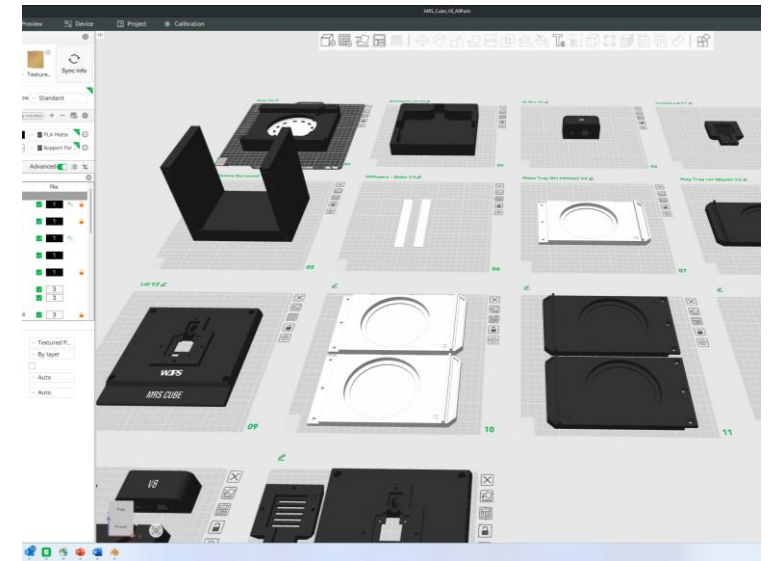
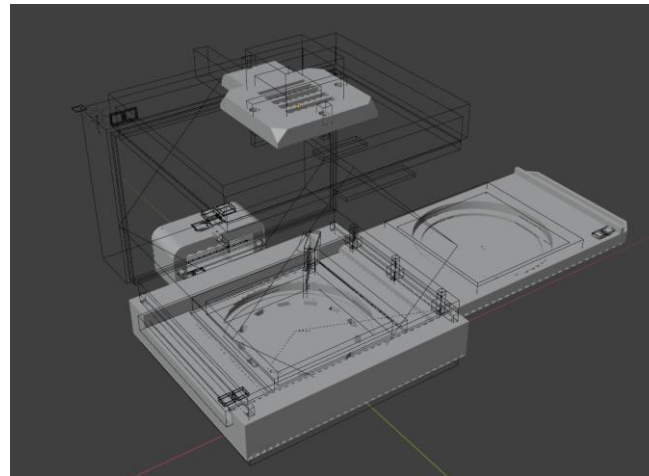




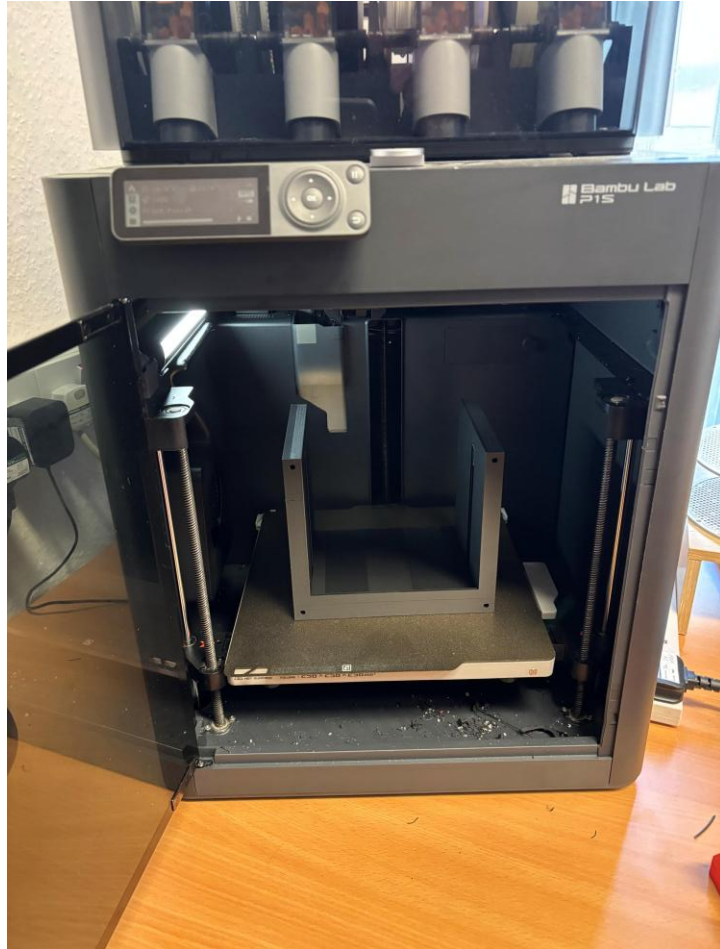
WJPS
www.wjps.co.uk
Specialising in Health

How do we get there

- Design a 3D object (Blender)
- Slice to Design into layers (Printer Tool)
- Print it using the 3D Printer
- Assemble it / Test

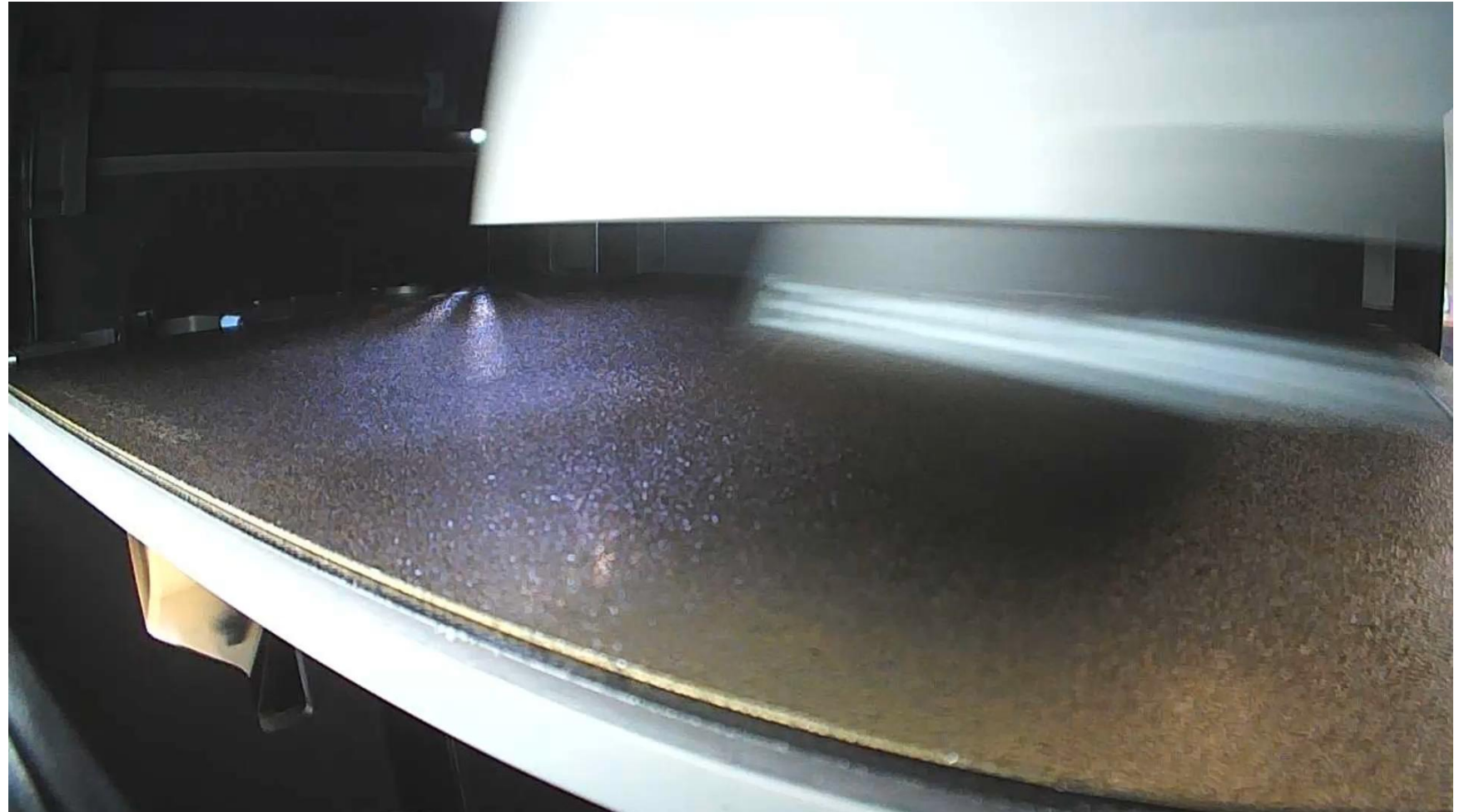


3D Printers



- Print in parts using filament.
- Prints a layer as a time 0.2mm
- Lid 169 Layers
- Different colour filaments
- Take between 4-8 Hour to print.

Printing....



So what's next...

- We have a standardised photo:
 - Apply AI to it?
- What could AI do?
 - Count and Visually ID (your first read)
 - Might take a few seconds
 - Model needs to be released in increments.
 - Suggest growths that have been missed, or the human eye hasn't spotted.



How we see it!

- Market Disrupter. It's something on every analyst's workstation
- Gives customers extra information
- Stand alone or integrates with MRS
- Just the start.... Where will it go?



A large orange circle occupies the left side of the slide, partially cut off by the edge.

Thank you

- If you would like to find out more about the cube, or have suggestions then please visit us on Stand 39 in the Concourse Room.
- Thank you for helping with development to:
 - Leeds Teaching Hospital NHS Trust
 - Tayside NHS Trust

