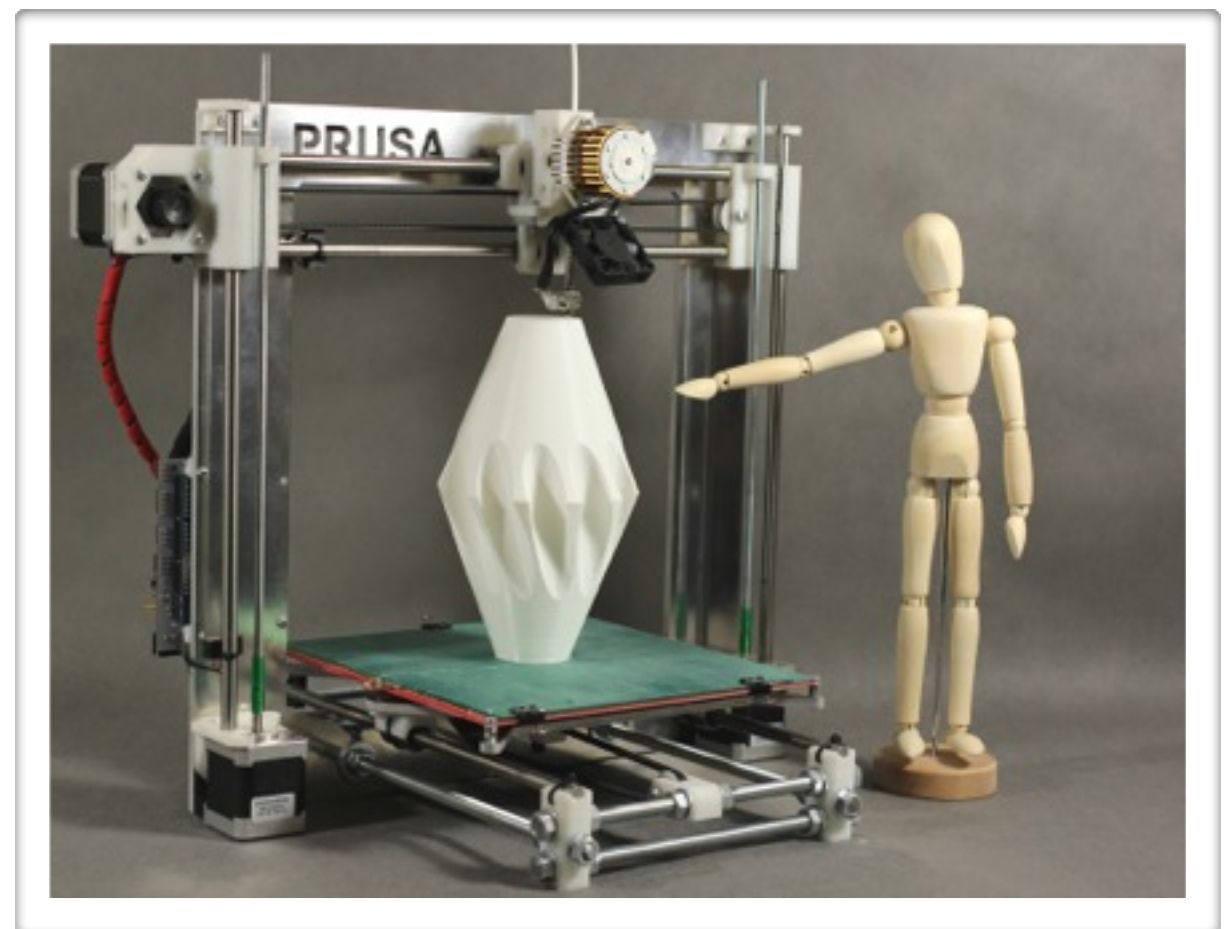


RepRap

Open Source self-replicating 3D printer

Josef Průša
RepRap core developer
Prusa Research s.r.o.

flickr.com/prusajr/
[@josefprusa](https://twitter.com/josefprusa)

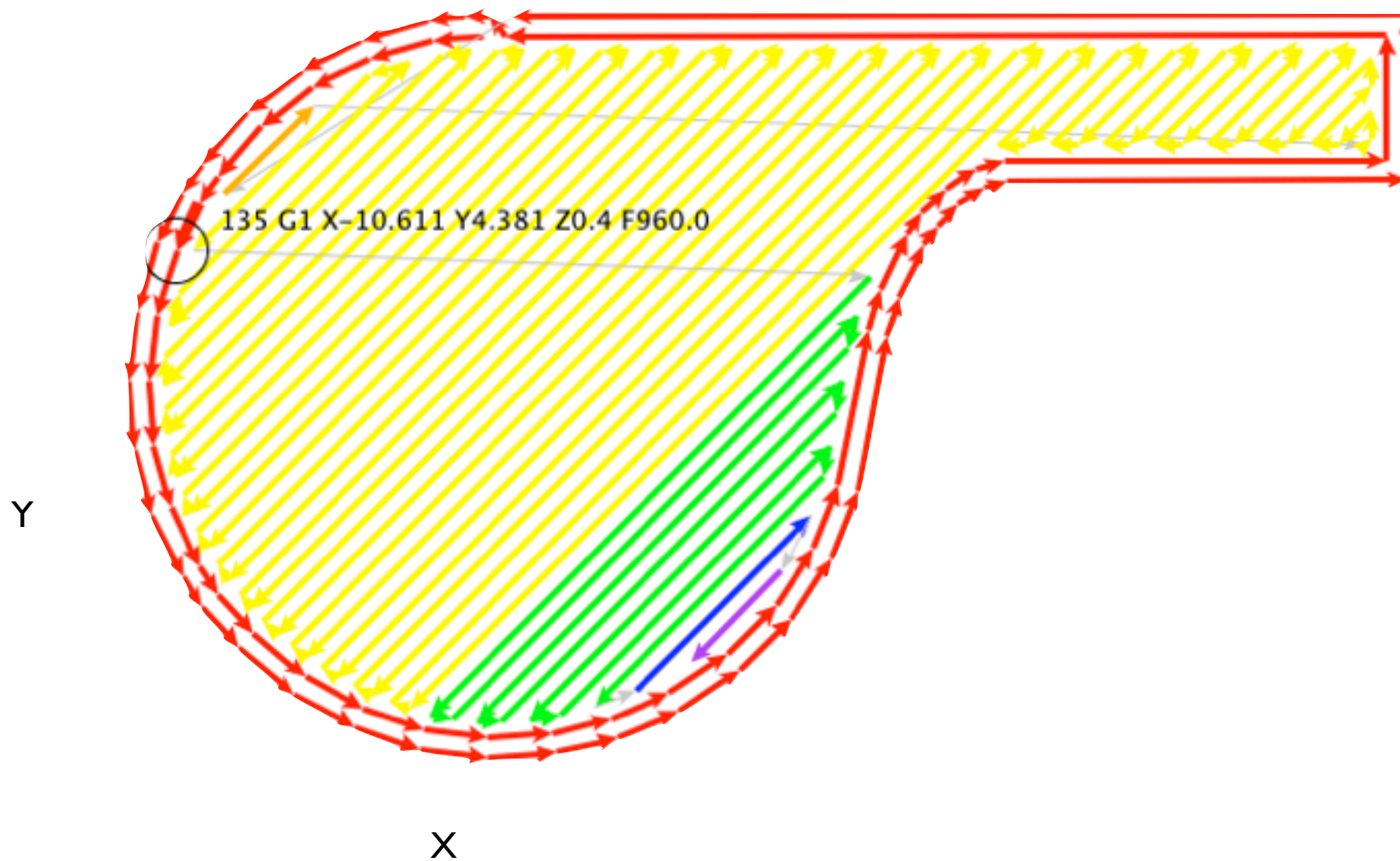


<http://josefprusa.cz>
<http://prusaresearch.com>

What is 3D printer?

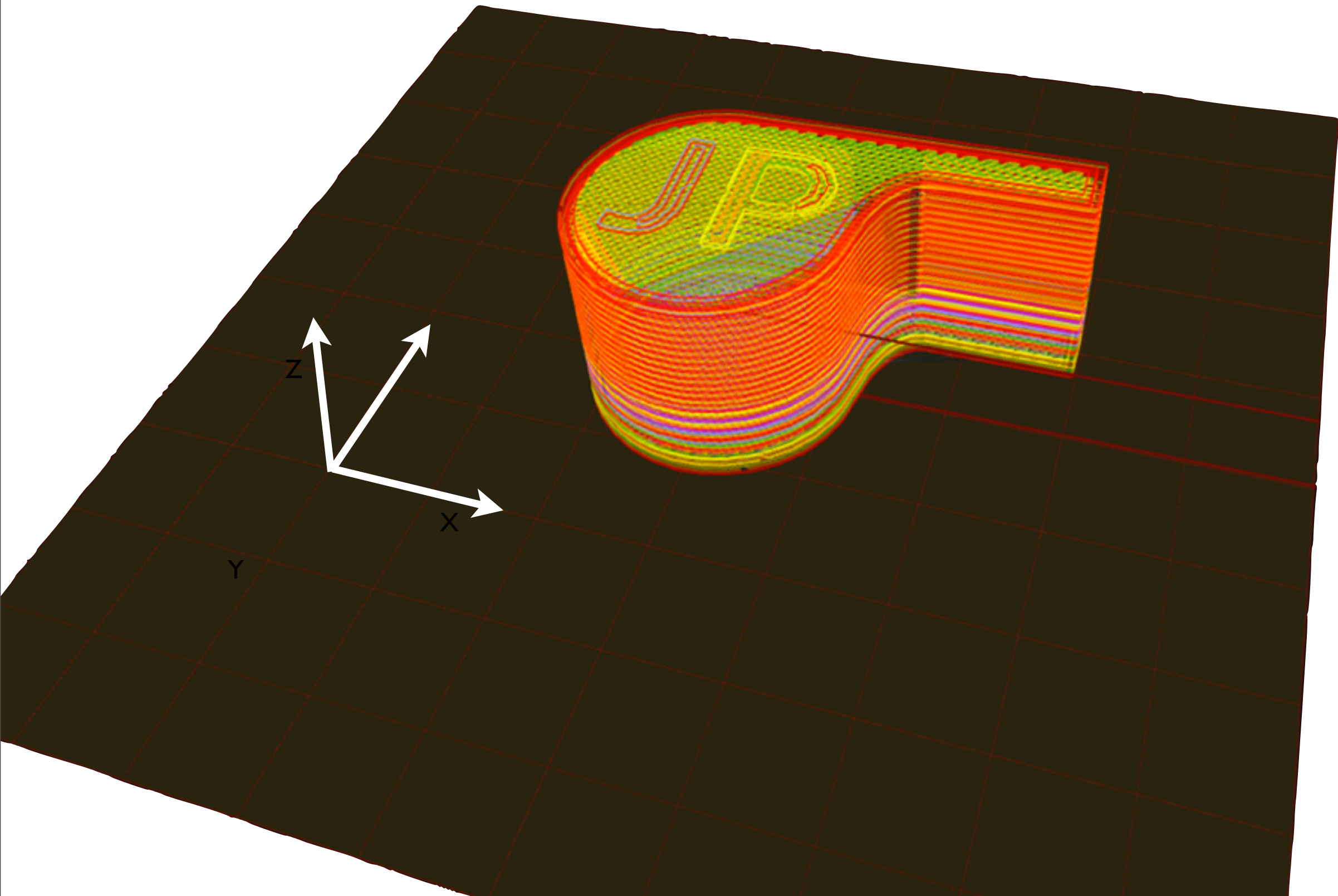
- Additive processes vs. subtractive processes
- 3D printing adds material instead of milling it away
- Technology is 30yrs old

How does 3D printer work?



$$2D + 2D + 2D + 2D + 2D = ?????$$

How does 3D printer work?



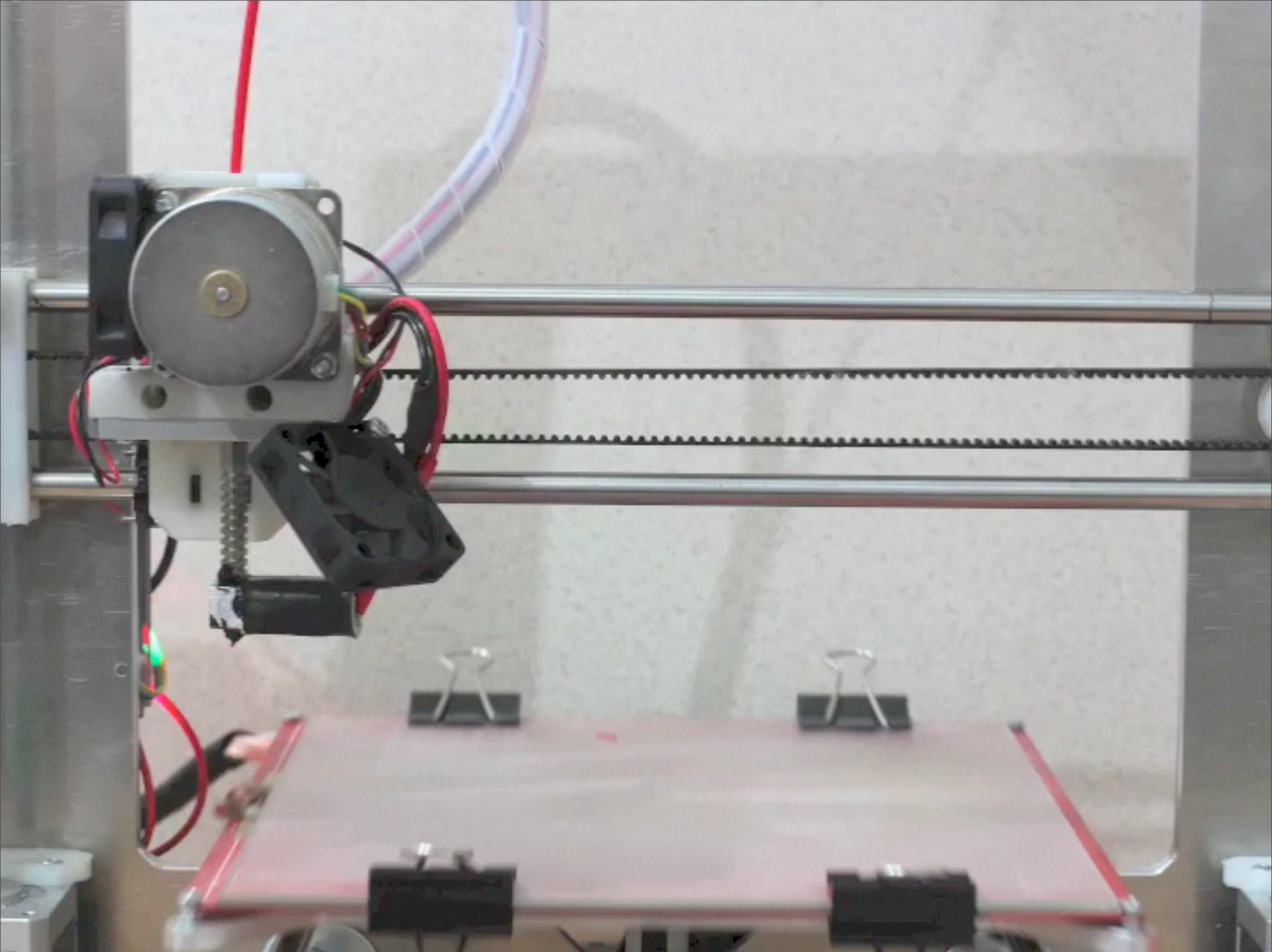
Extrusion detail

video by Koen Kooi

Extrusion detail

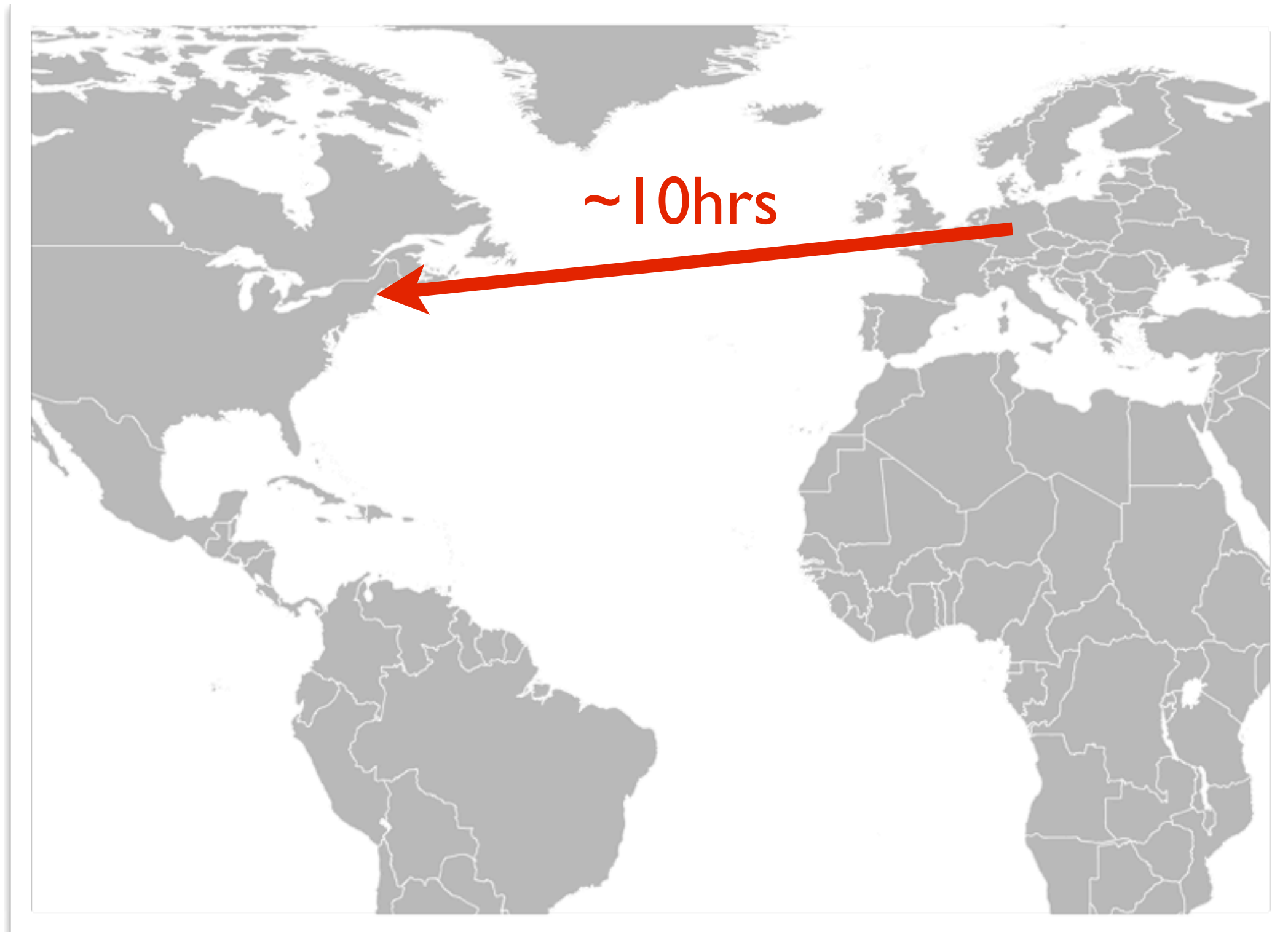


video by Koen Kooi



Whistle story

- Whistle was originally designed by Zaggo, located in germany





Present RepRap like a sir!

Print a custom whistle for every conference guest as surprise!

Josef Průša | josefprusa.cz



FDM - Fusion deposition modeling



SLS - Selective laser sintering



OBJET



shapeways*

Zcorp



shapeways*

Monday, May 27, 13

Ceramics



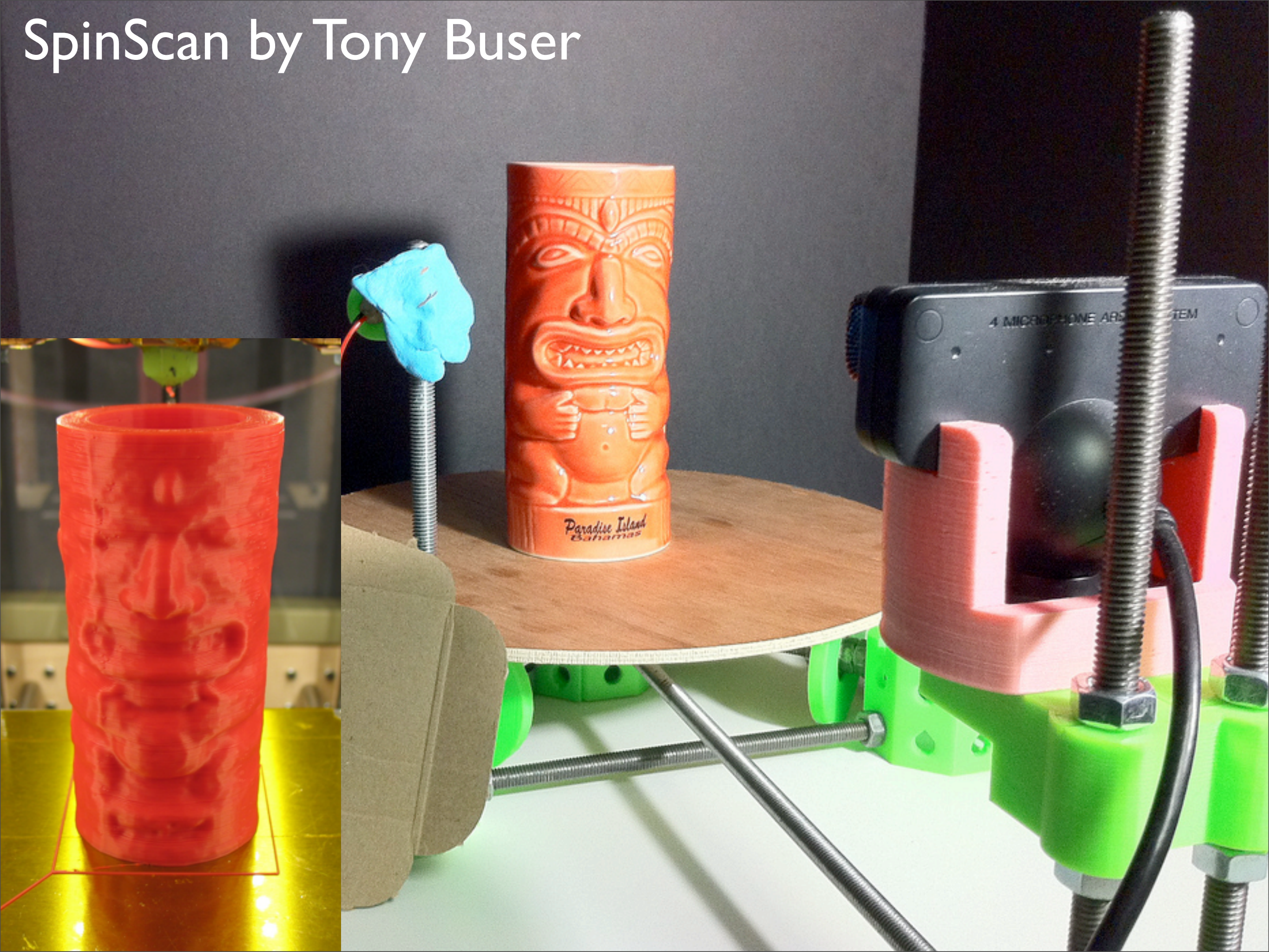
UNFOLD.be

DMLS - Direct metal laser sintering

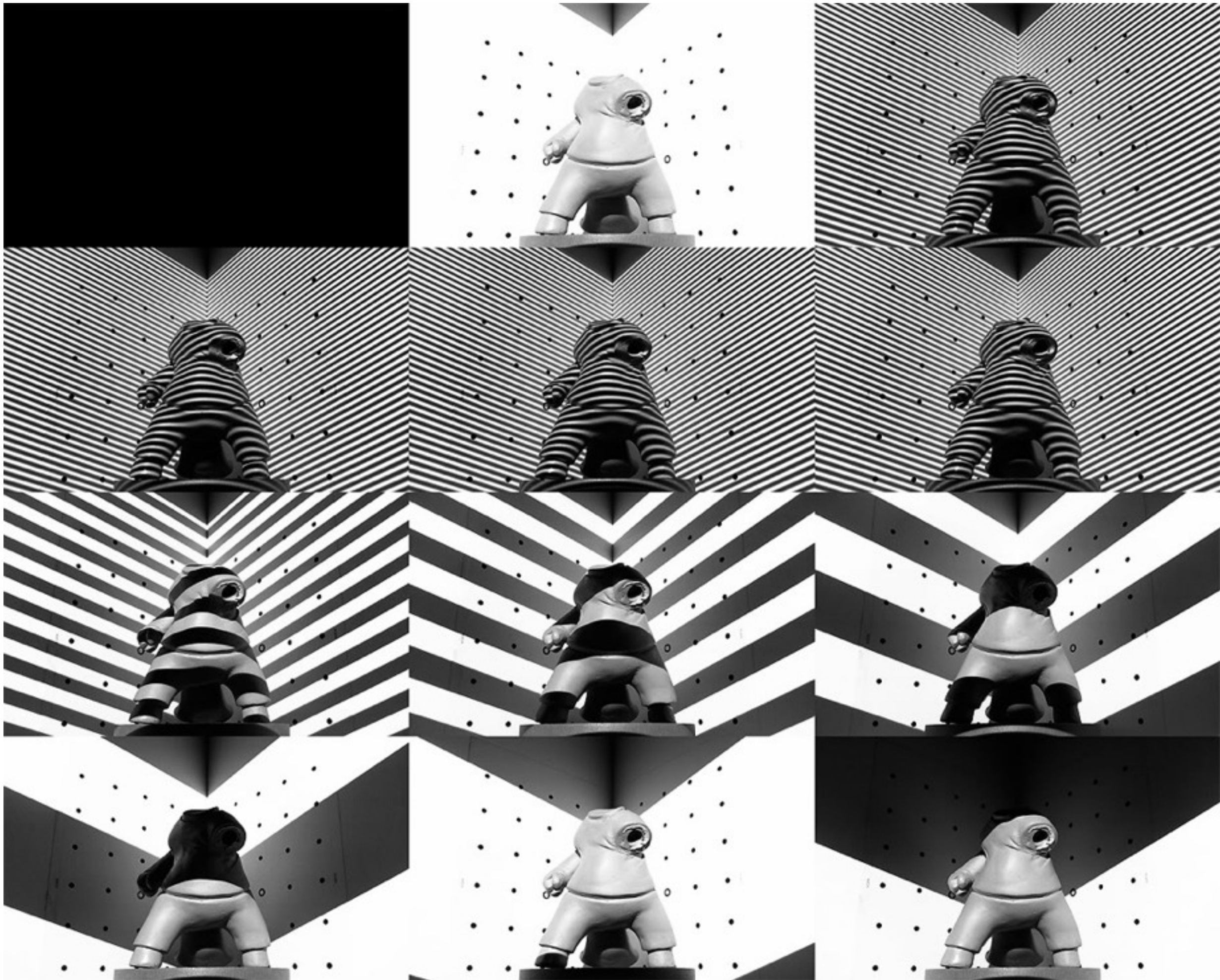


3D Skenování

SpinScan by Tony Buser



Structured light scanning - David Laser Scanner



Microsoft Kinect



ReconstructMe

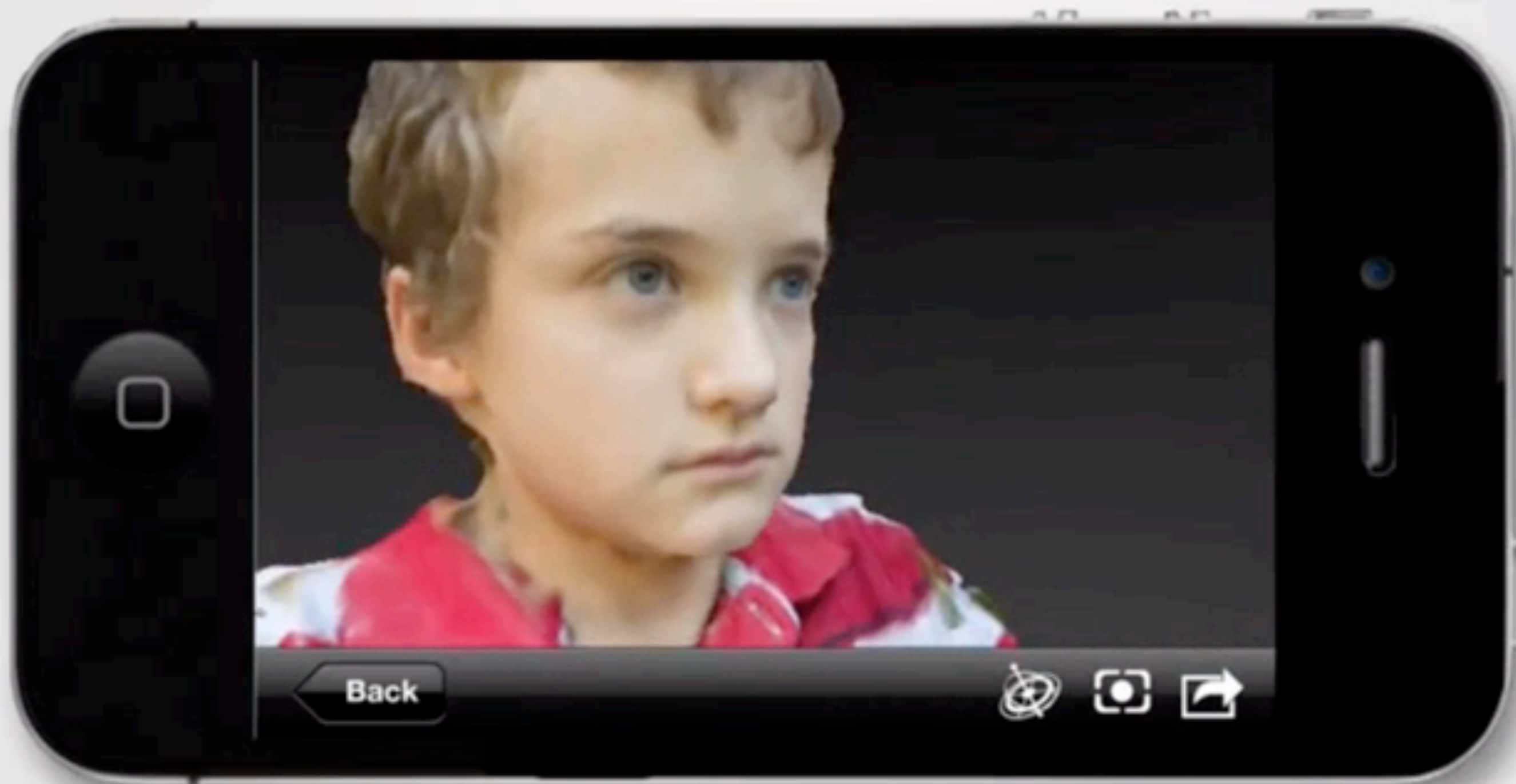


<http://youtu.be/as0UP2D0AW4>





Autodesk 123D Catch



Turn photographs into 3D models.

RepRap

Materials

- mostly thermoplastics in 3mm or 1.75mm rod form
 - ABS (LEGO) 500 Kč/kg
 - PLA (compostable plastic, throw away cups) 700Kč/kg
 - PC (bullet proof glass)
- paste consistence materials
 - clay (ceramics)
 - silicone
 - chocolate
 - sugar
- exotic materials
 - metals
 - chemicals for electronics printing

Impossible ceramics

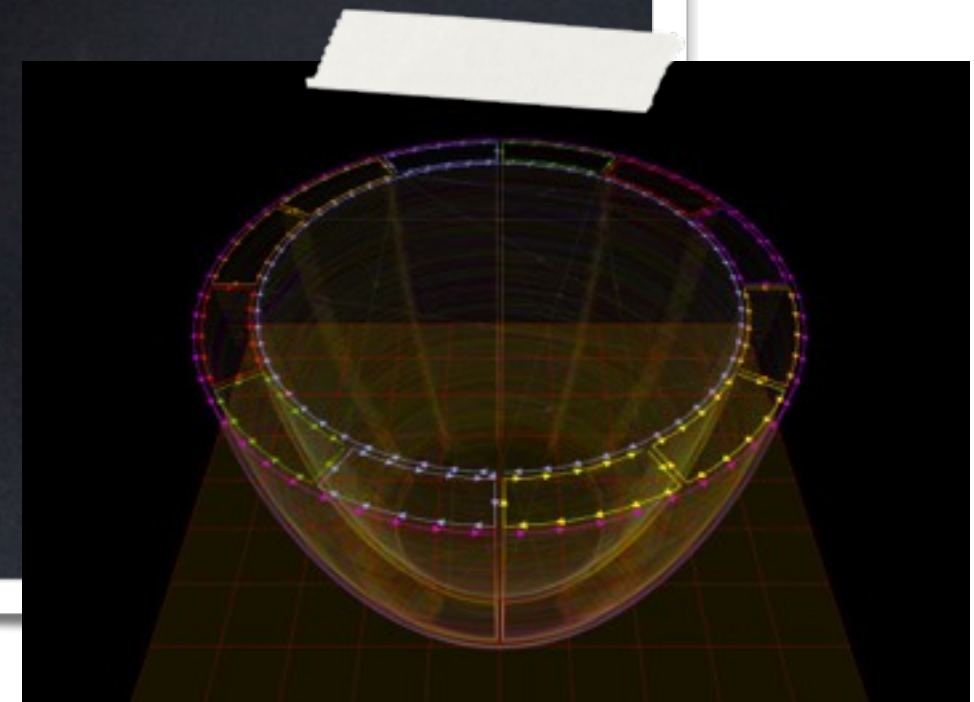
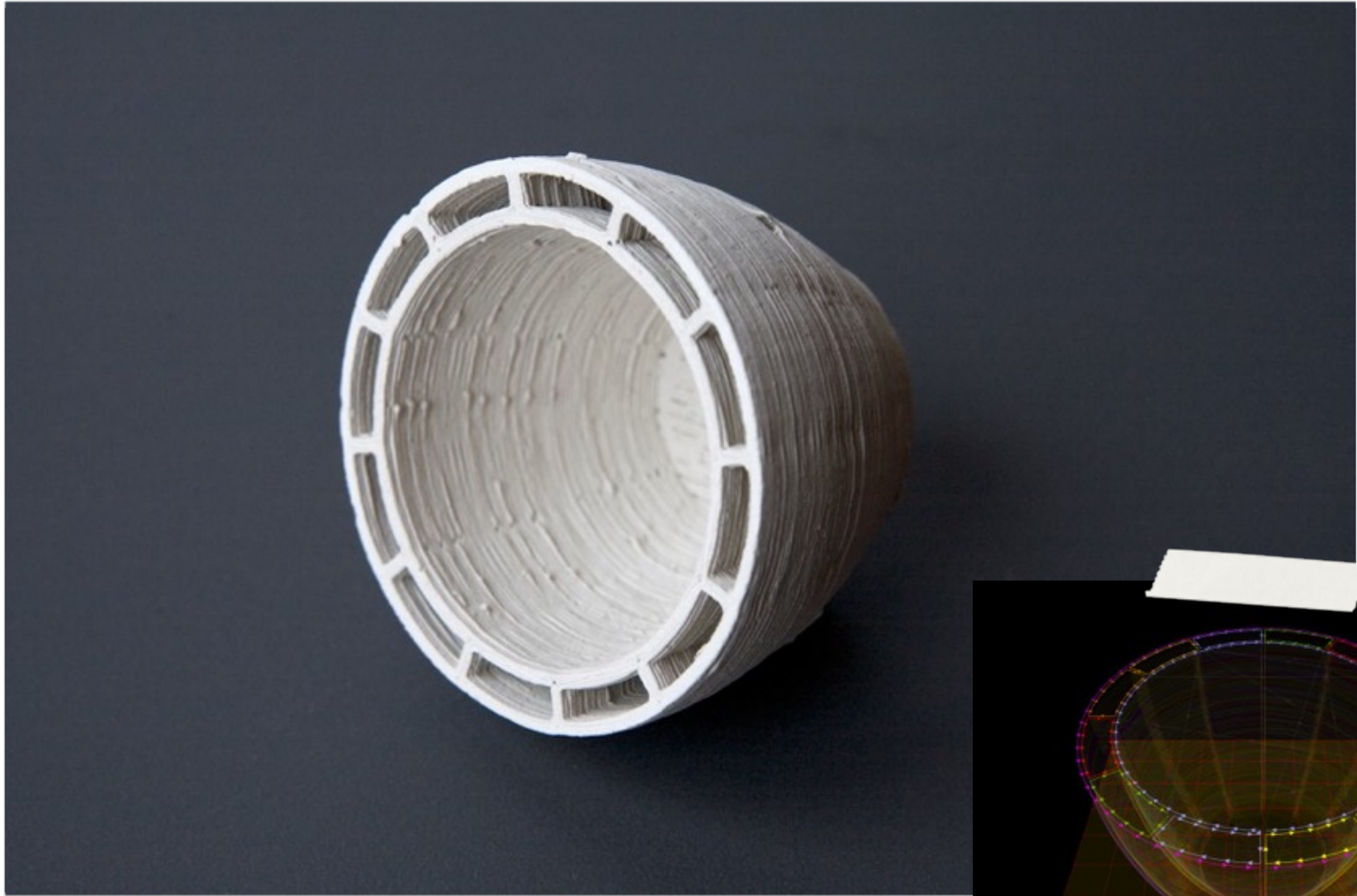


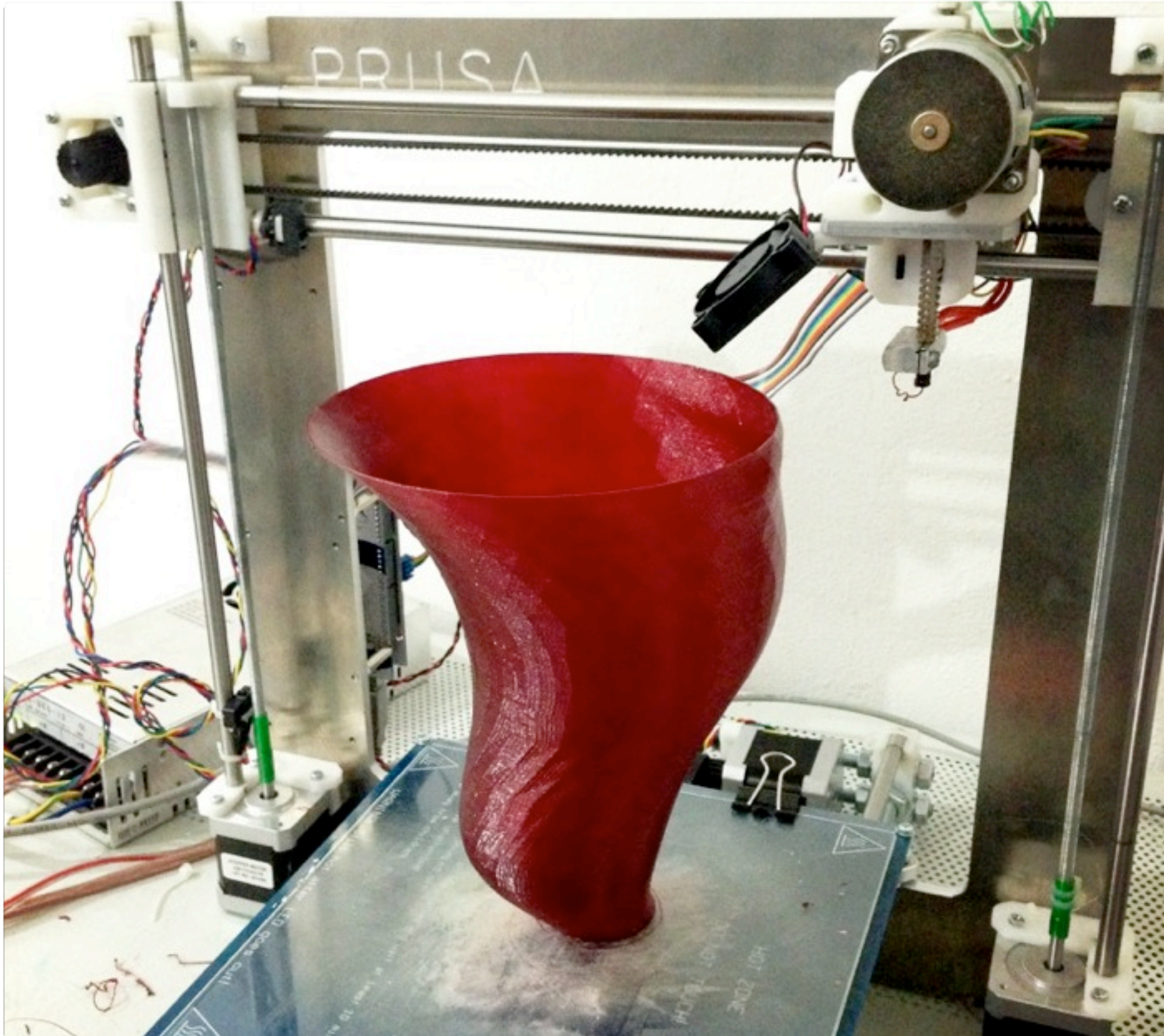
photo by Unfold

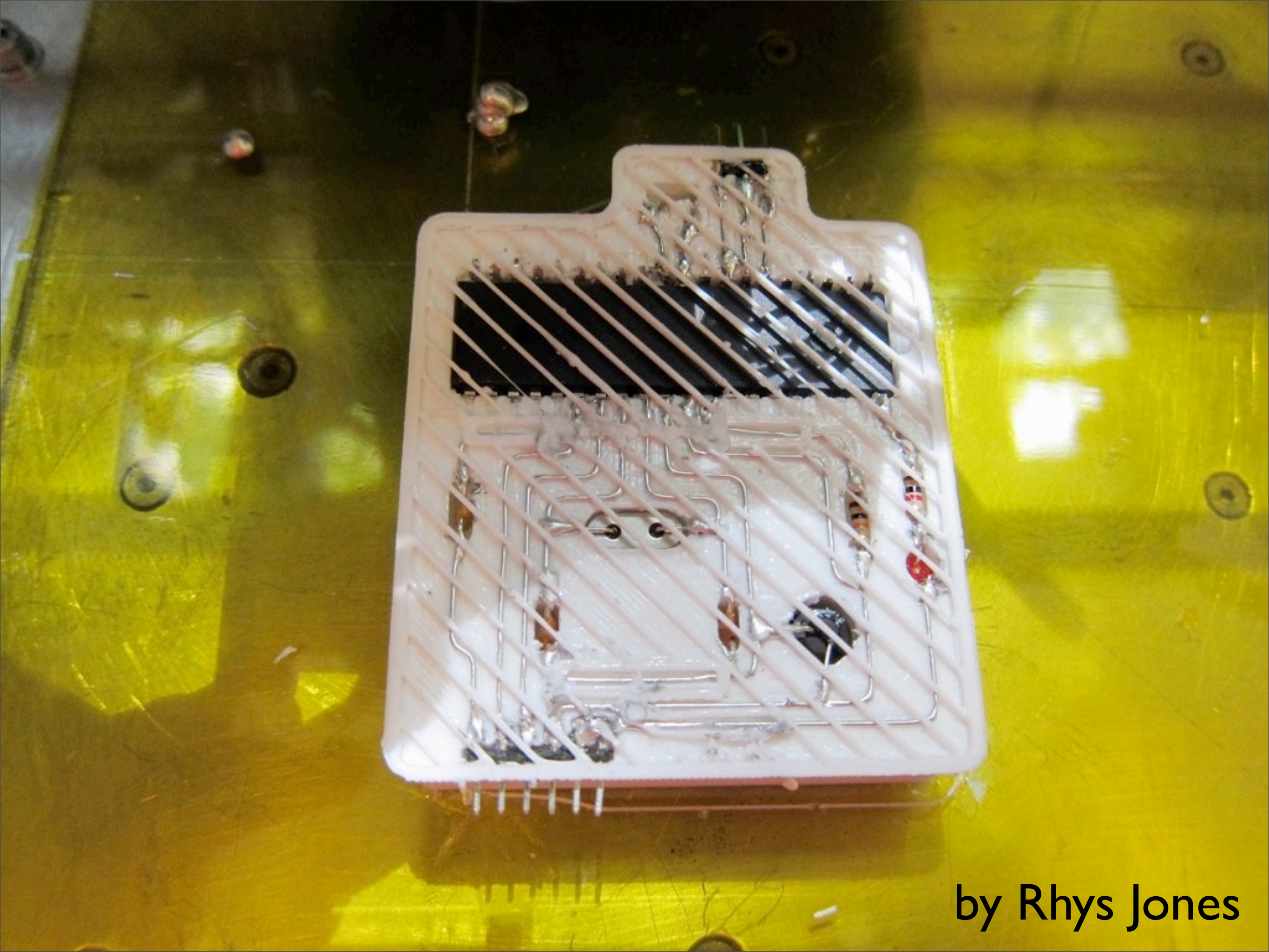
Chocolate



photo by RichRap

Poly Carbonate





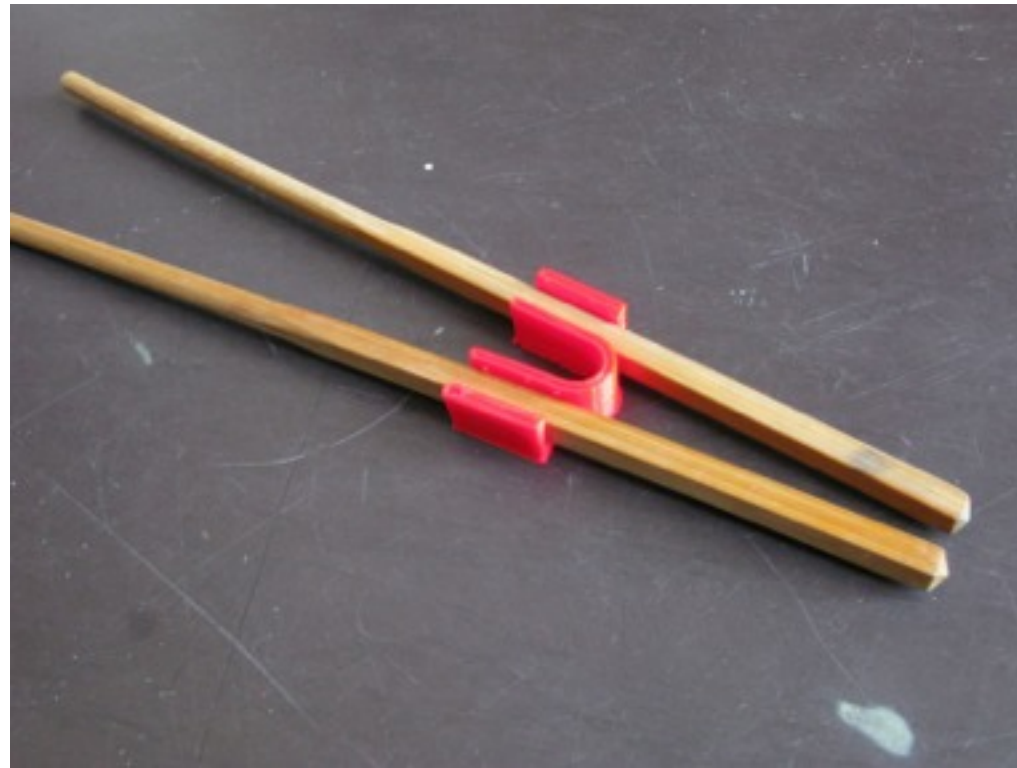
by Rhys Jones

Real life use

- Starts from small everyday use objects



by nophead



by zydac



by DesignGlut

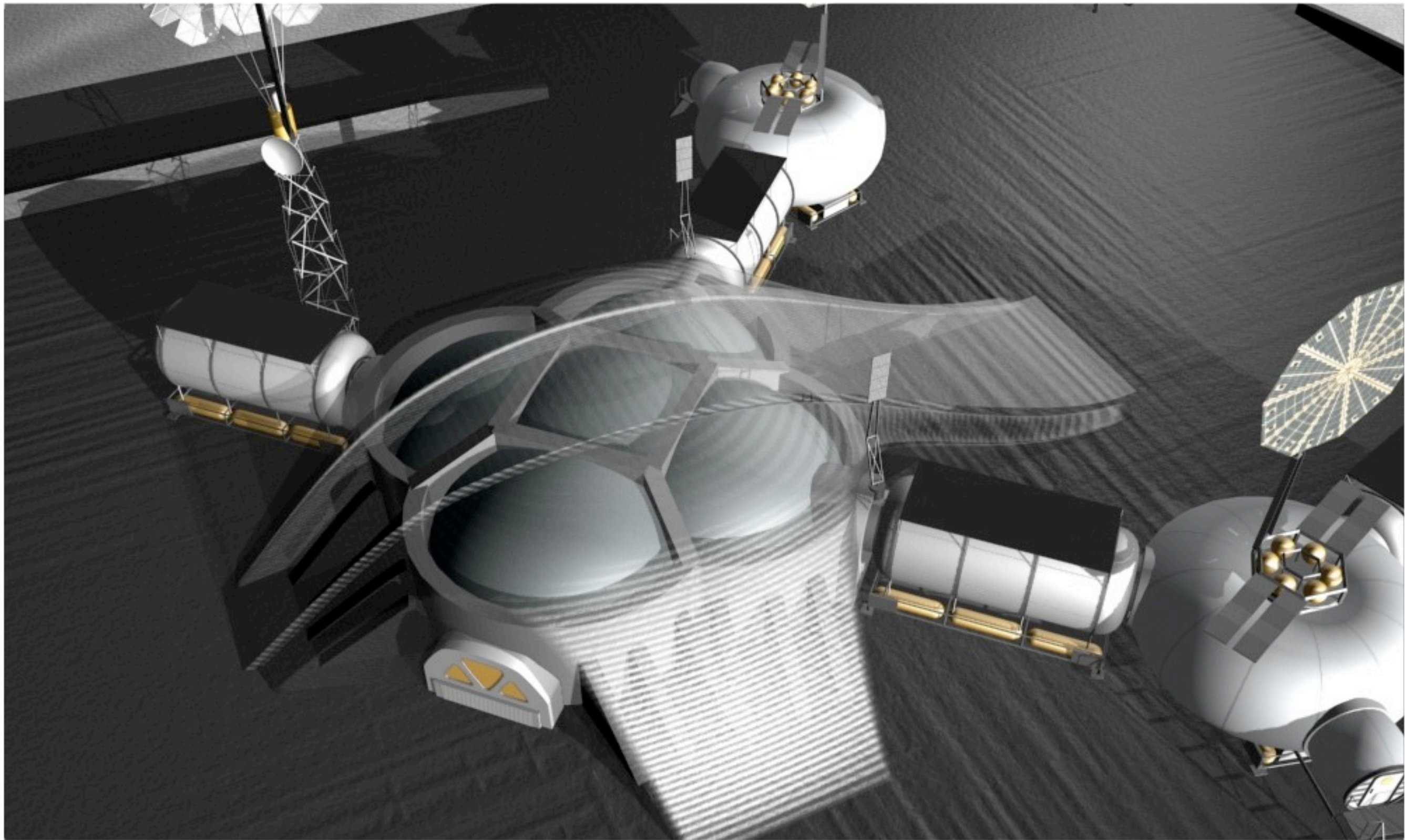


by wade

GNU GPL v2

<http://bit.ly/RRGlasses>



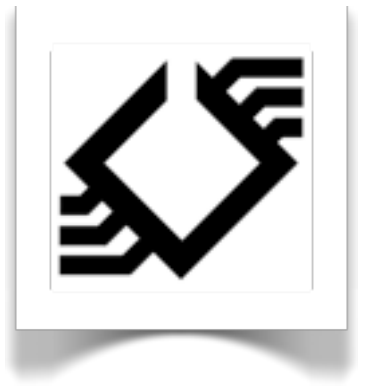


design and image by Tomáš Rousek

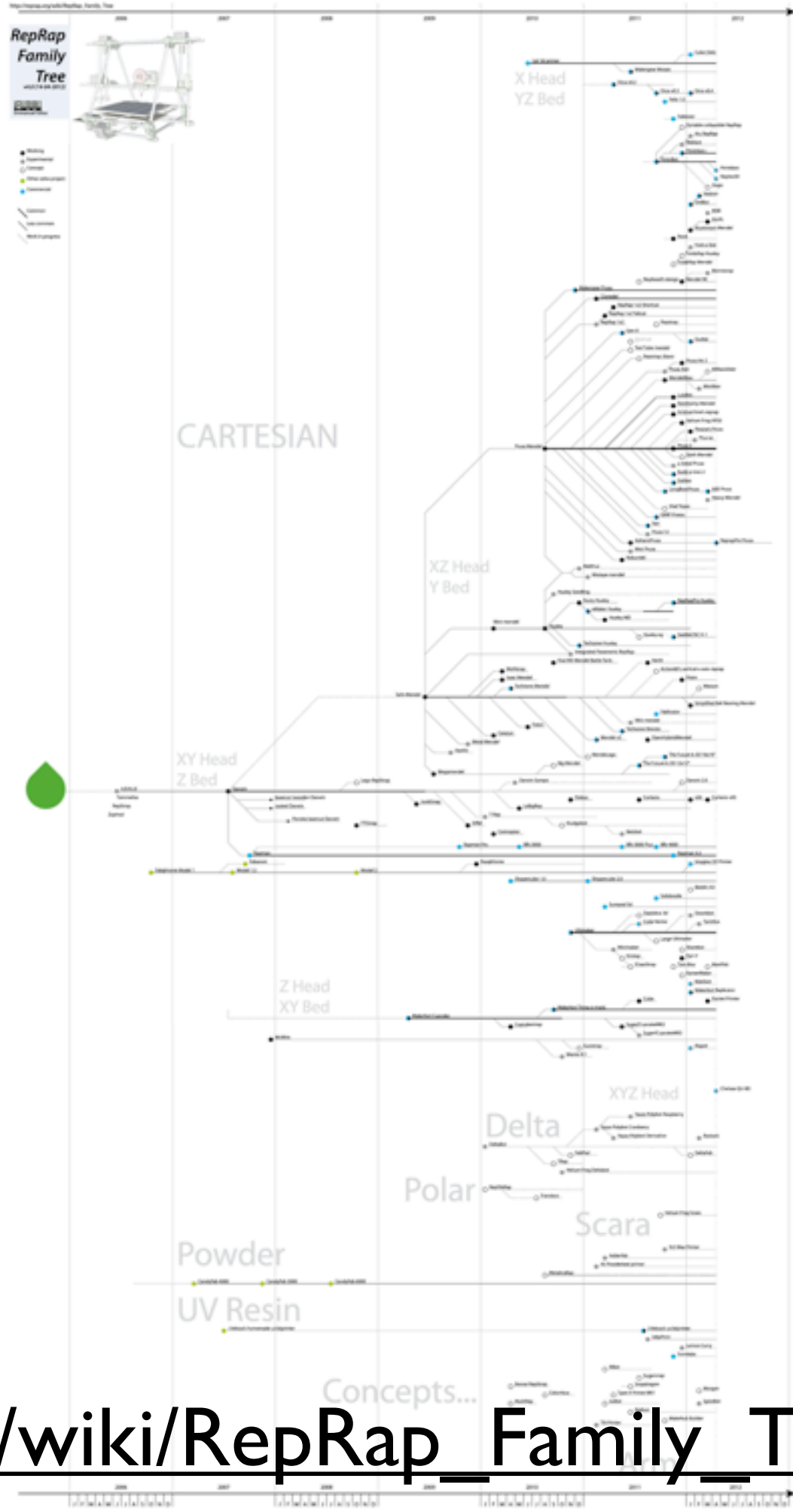


image by NASA

Why Open Source

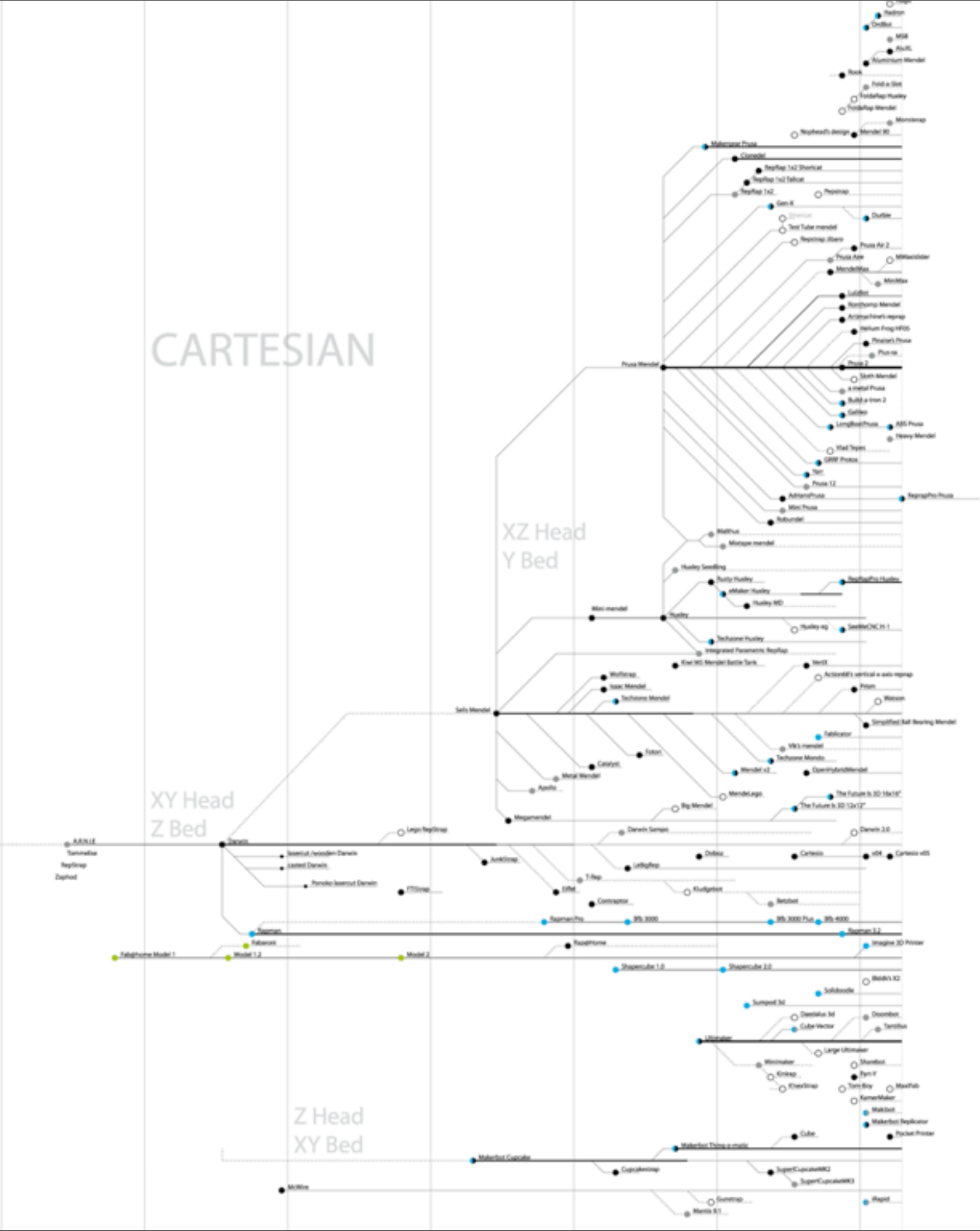


- You can't sell more than one self replicating machine. Its bad business model.
- Much faster development
- No worries with patents, more time for developments
- Free open source education



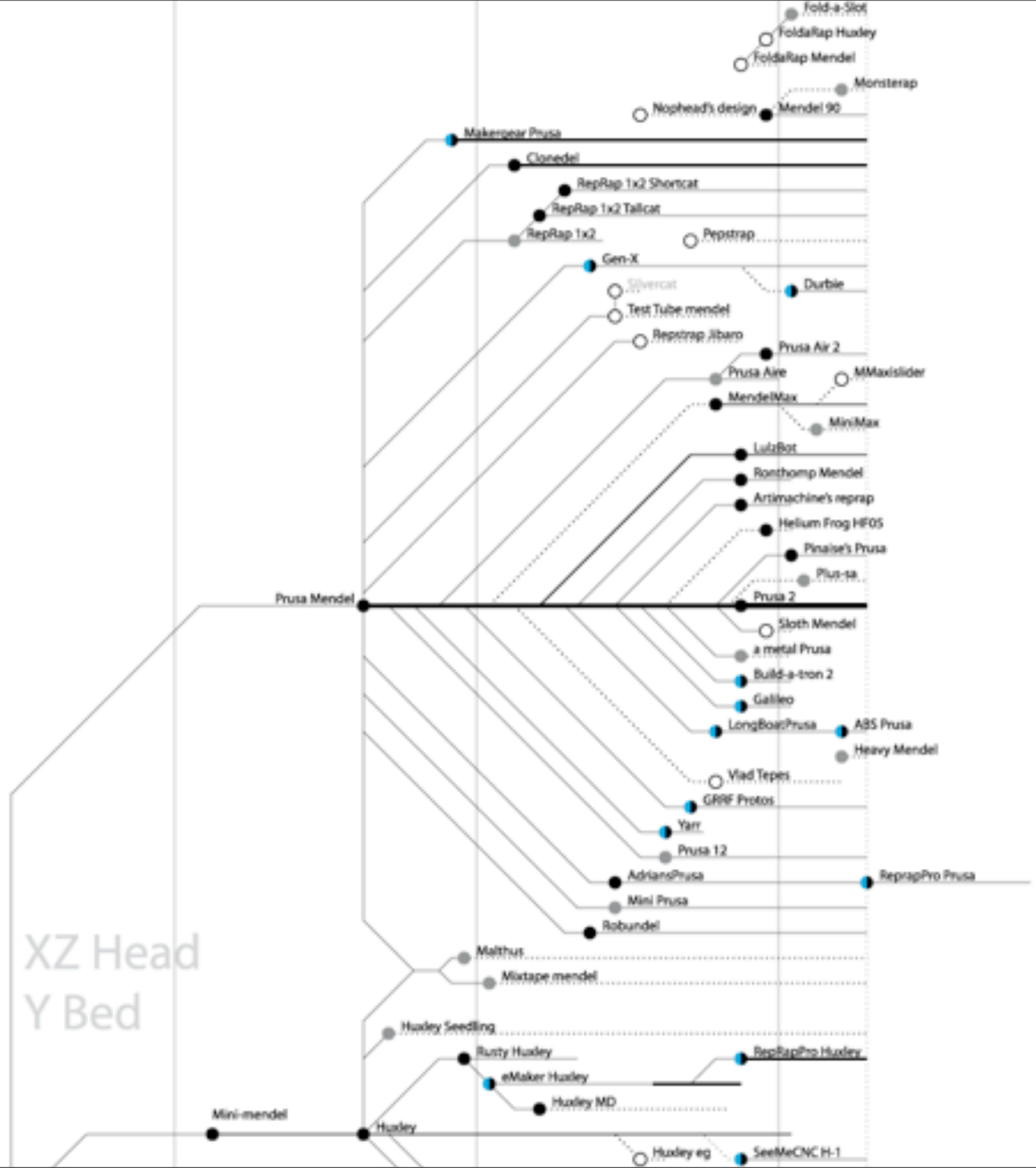
http://reprap.org/wiki/RepRap_Family_Tree

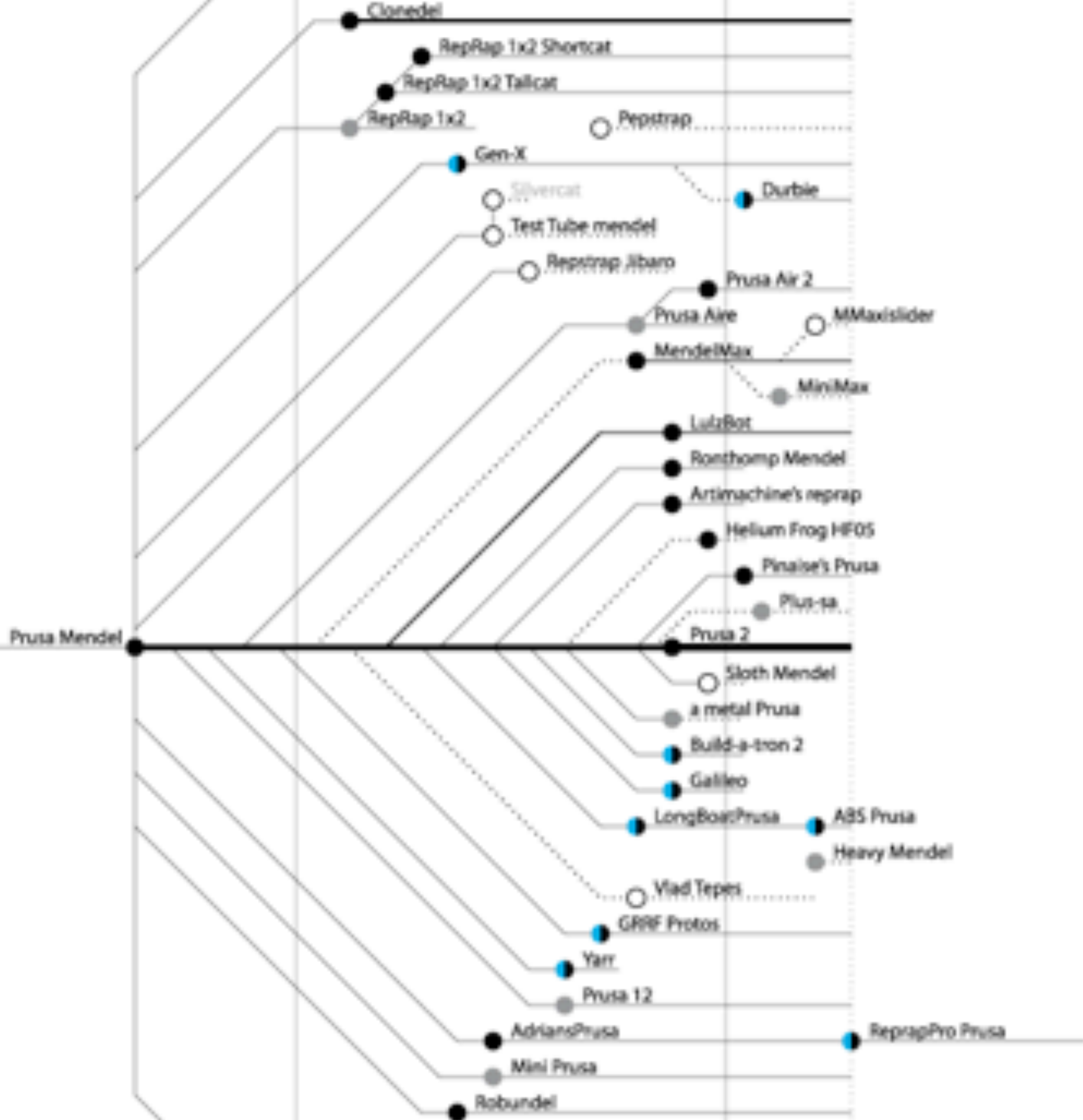
- Commercial
- Common
- Less common
- Work in progress



SIAN

XZ Head
Y Bed





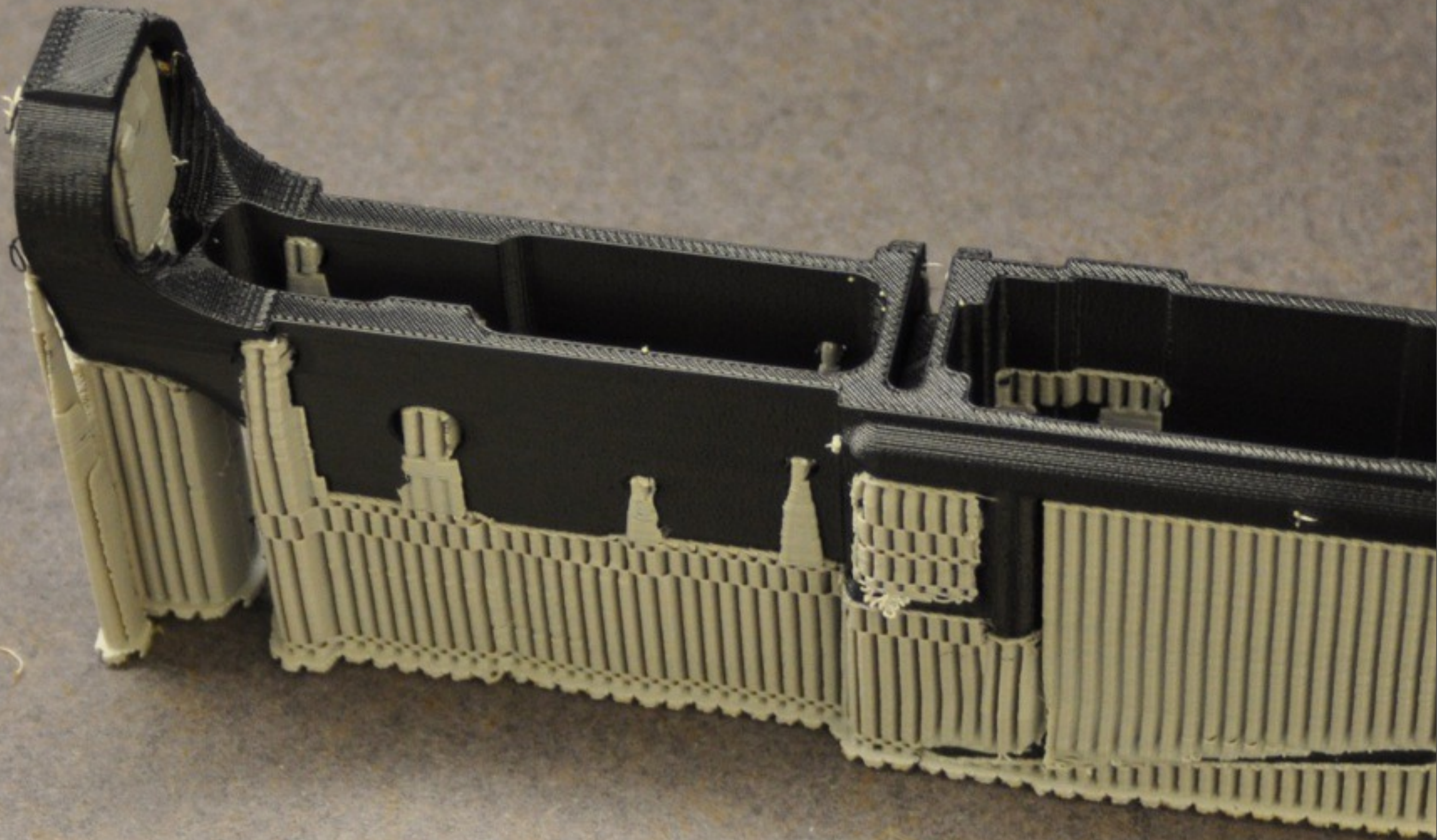
Big time

- Estimates of 40000 - 50000 RepRaps
- Erik de Bruijn estimated in his thesis between 3872 and 4840 people in the community (October 2010)
- Dwarfs all “commercial” printer sales

3D printer in every home

- First in hackerspaces, which will work as 3D copy centers. Basically happens now.
- Nobody can guesstimate when 3D printer will be in every home

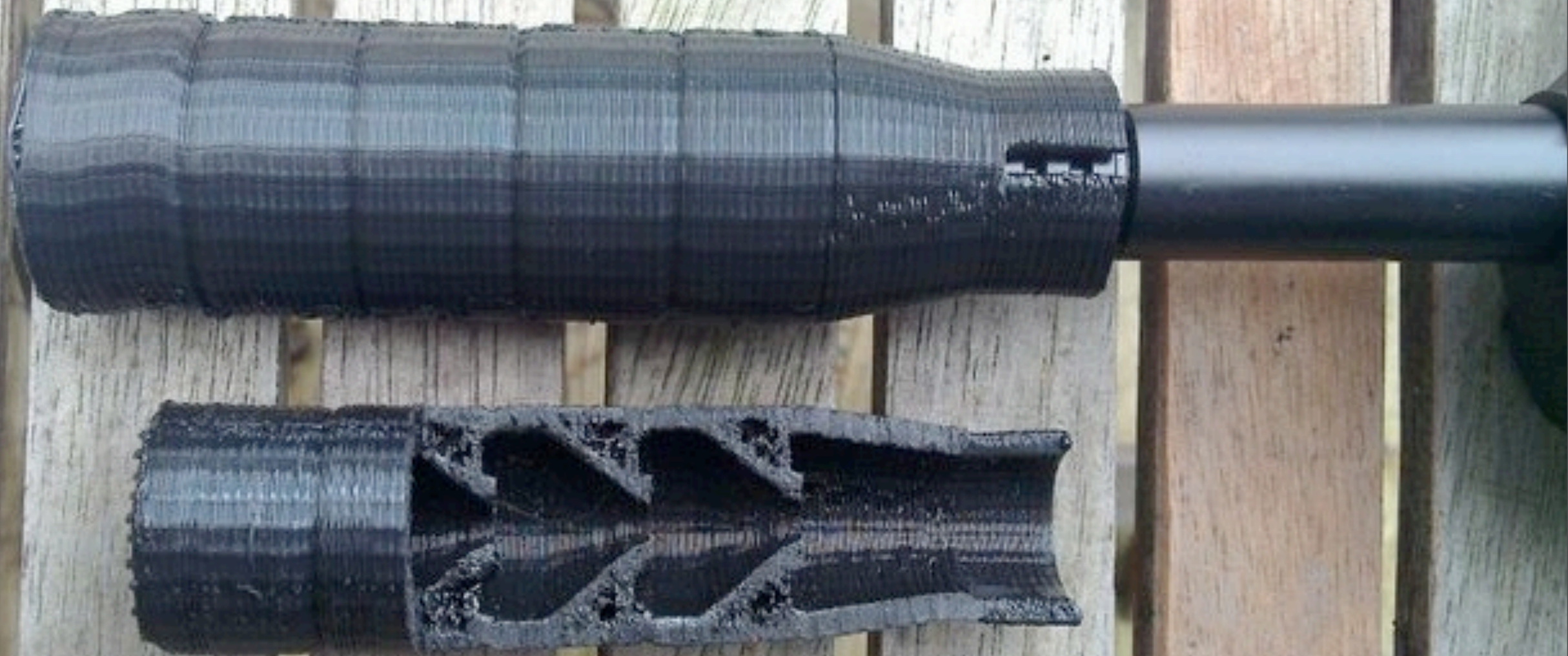




<http://haveblue.org/?p=1041> 28.6.



thingiverse.com/thing:23947



CODY WILSON



© Marisa Vasquez



Discussion

- Recyclation?
- Commercial printers?
- ...?