

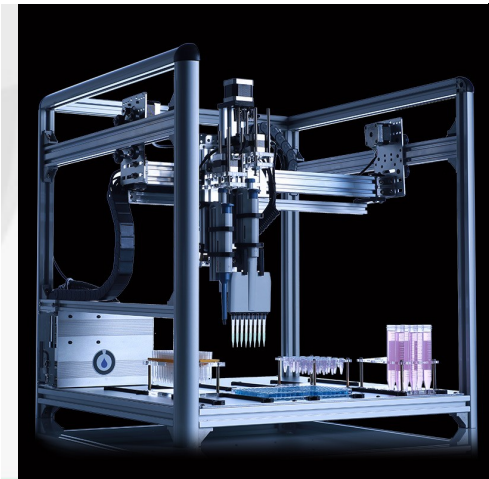
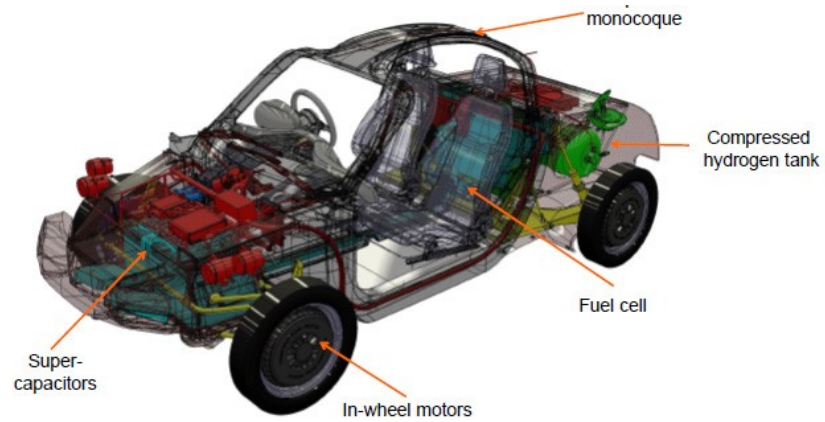
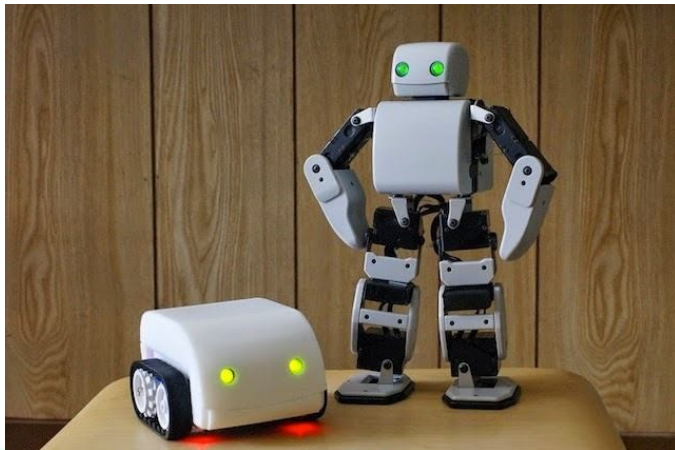
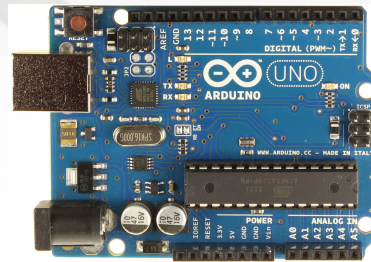
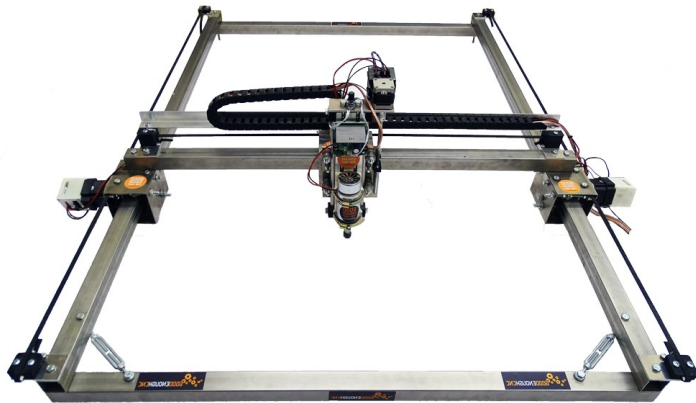
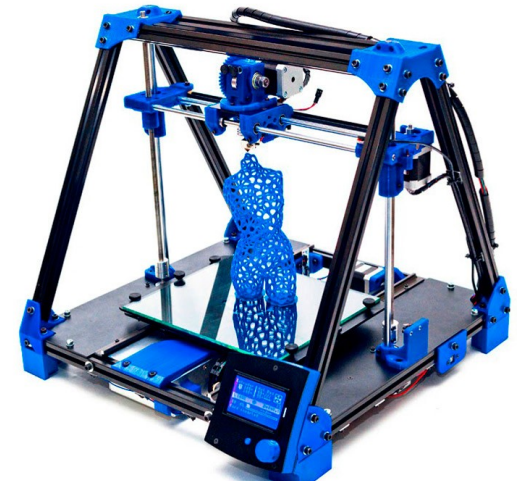
Digital DIY: Rights and obligations in the middle of a paradigm shift



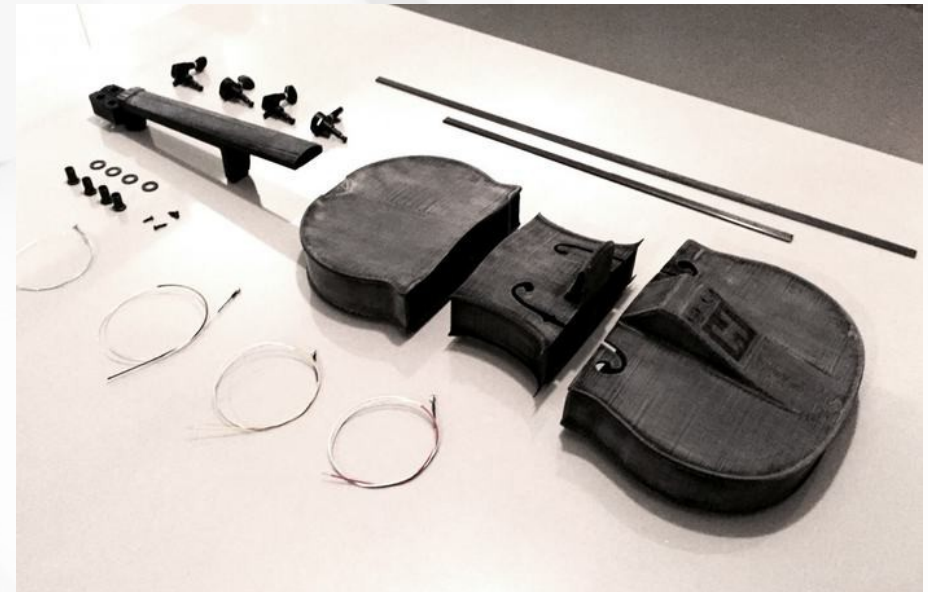
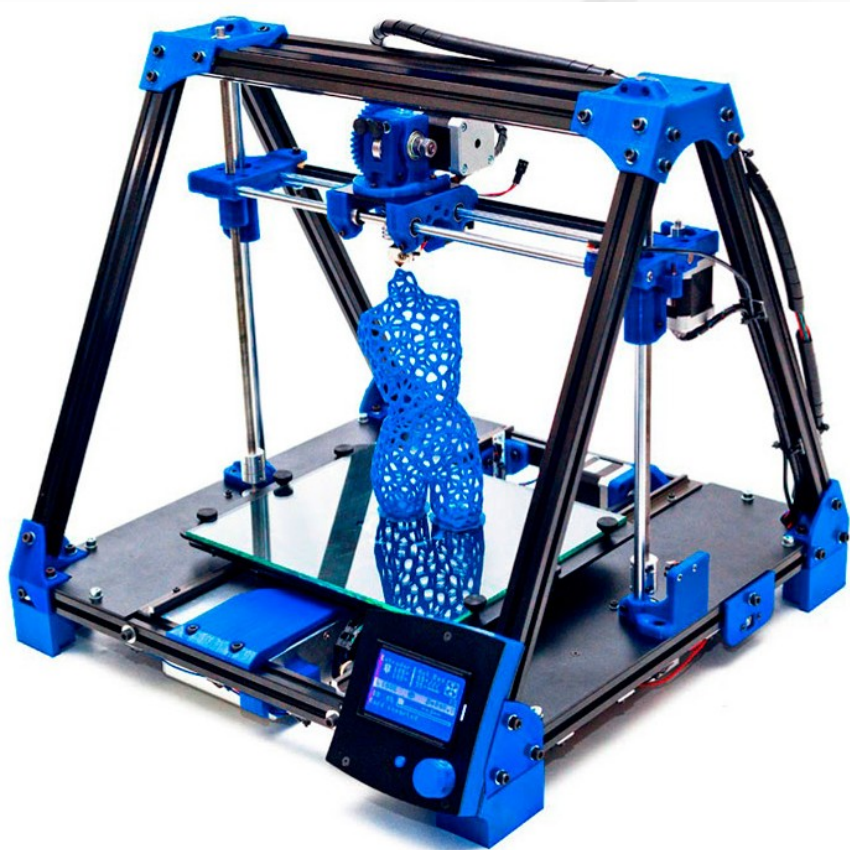
freeknowledgeinstitute



*Digital DIY Community Day
Barcelona, 6 July 2016
by Wouter Tebbens*



Digital Fabrication



Online Design Sharing Platforms



Open Hardware Repository



yeggi

SOLDER Pad



fritzing



Thingiverse

Thing Tracker Network

YM Youmagine



Makey Street



instructables



Design It Yourself

```
1 //Edited 18/07/2015
2 //Maurice's birthday
3 //by Wouter
4
5 //Based off of jag's design
6 //Adapted by Adam Zeloof (azzeloof)
7
8
9 Block_Width = 4;
10 Block_Length = 2;
11
12 Block_Height = 1;
13
14
15 // knob_diameter=4.8; //knobs on top of blocks
16 // knob_height=2;
17 // knob_spacing=8.0;
18 // wall_thickness=1.45;
19 // roof_thickness=1.05;
20 // block_height=9.5;
21 // pin_diameter=3; //pin for bottom blocks with width or
    length of 1
22 // post_diameter=6.5;
23 // reinforcing_width=1.5;
24 // axle_spline_width=2.0;
25 // axle_diameter=9.5;
26
27 union() {
28   translate(1, 0, 2)
29   rotate(90, 0, 0)
30   linear_extrude(height = 1, center = false, convexity = 1, scale=1)
31   text("Maurice", font = "Liberation Sans", size = 6);
32
33   block(Block_Length,Block_Width,Block_Height,axle_hole=false,
    reinforcement=true);
34 }
35 module block(width,length,height,axle_hole,reinforcement) {
36   overall_length=(length-1)*8+4.8+1.45*2;
37   overall_width=(width-1)*8+4.8+1.45*2;
38   union() {
39     difference() {
40       union() {
41         cube(overall_length,overall_width,height*9.5);
42         translate([4.8/2+1.45,4.8/2+1.45,0])
43         for (ycount=[0:width-1])
44         for (xcount=[0:length-1]) {
45           translate(xcount*8,ycount*8,0)
46           cylinder(r=4.8/2,h=9.5*height+2,
47           $fs=.1);
48         }
49         translate([1.45,1.45,-1.05]) cube(overall_length-1.45*2
```

Console

```
Compiling design (CSG Tree generation)...
Compiling design (CSG Products generation)...
Geometries in cache: 9
Geometry cache size in bytes: 158400
CGAL Polyhedrons in cache: 0
CGAL cache size in bytes: 0
Compiling design (CSG Products normalization)...
Normalized CSG tree has 41 elements
Compile and preview finished.
Total rendering time: 0 hours, 0 minutes, 0 seconds
```

3D Scanning



(c) BQ, CC-BY-SA

Reverse Engineering



Photo by <http://www.hitechcaddservices.com/>

What rights and infringements?

- Depends on type of use:

- **DIY/DIWO**

- Non-commercial
- Private

- **Hire someone**
 - Service

- **Buy:**
 - Product

IPR Exemptions

- There are exemptions of private, non-commercial use in various legislations
- However the risk of litigation remains
- Given the huge social benefits of Digital DIY for repair and customisation, we propose a strengthening of these exemptions.
- Furthermore it would be recomendable to extend these exemptions also to commercial use in the case of repair and spare parts.

Free Licensing

- «Open Source Hardware»
 - Assures the «Four Freedoms» for any purpose
 - Is mainly copyright based
 - Applies on designs, documentation, software, graphics, ...
 - But **doesn't apply** on the **Hardware** itself(!)



TAPR
OHL



CERN
OHL

 **creative
commons**



Trademarks

- Open Source Hardware Certification: products may only use the exclusive trademark when certain conditions are met, e.g.
 - **Arduino Certified**: pay a license fee
 - **OSHW Certificate**: all documentation freely licensed
 - **OHANDA**: designs assure the four freedoms



Liability

- Waivers
- Duty of Care
- Testing
- Certification

Privacy

- Big Data: User control over Personal Data
- Threat of Unravelling: Full Disclosure
- Government surveillance
- Anonymity
- Encryption

Thanks!

- Questions?
- We need your help!
- <http://www.didiy.eu/>
 - Cases of legal challenges
 - Legal initiatives and proposals
 - Educational materials



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