Interreg CENTRAL EUROPE
European Union
European Regional Development Fund

FabLabNet

FAB IN A BOX

DT312 - PP7 - SI
Report on Fab in a Box Workshop

Version 1
12 2018

Short overview of the Fab in a Box

The fabbox at PP7 is constituted of 3 main elements:
1 box containing the laser cutter and all its accessories (water chiller, air filter, material)
5 box of small 3d printer
1 set of toolboxes
1 laptop
1 3d scanner
1 vinyl cutter

Dependending on the need, the team can take all the elements or only some of them. The 3D scanner and the vinyl cutter are taken from the fablab, for the model used in the fablab are compact enough to be easily transported at a remote location. Concerning the 3d printers and the laser cutter, the equipment at the fablab is to big and to busy to be taken away for a remote workshop. That's why additional equipment have been purchased and tailored boxes have been build.

Specifications

Laser Cutter

Brand: Full Spectrum Laser
Model: MUSE
Power: 80W
Laser technology: C02
Special feature: in-built camera, Retina 3.0 software, touchpad screen, wifi and hotspot wifi connections.

3D printers

Brand: Wahnhao Duplicator I3 Plus
Technology:FFF FDM
Type:Material extrusion
Year:2018
Assembly:Semi-assembled
Mechanical arrangement:Cartesian-XZ-Head
Manufacturer:WANHAO
Materials:

- Filament diameter:1.75 mm
- Printable material(s):PLA

Build volume: Print size millimeters (xyz):200 x 200 x 180 mm
3D printer and printing properties:

- Accuracy:12 x 12 x 4 Microns
- Layer height:100 - 400 Microns
- Feeder system:Direct

- Extruder type:Single
- Nozzle size:0.4 mm
- Max extruder temperature:536 ˚F / 280 ˚C
- Max heated bed temperature:248 ˚F / 120 ˚C
- Max print speed:50 mm/s
- Frame:Aluminum
- Bed leveling:Fully automatic
- Print bed details:Wanhao build surface
- Display:Touch screen
- Connectivity:SD, USB cable
- Print recovery:Yes

Requirements

- Slicing:Cura, Repetier-Host, Simplify3D
- Operating system(s):Windows, Linux

Dimensions and weight

- Outer dimensions millimeters (xyz):399 x 409 x 399 mm
- Weight kg:11 kg

Demo of the 3D scanner

Lasercutter


FABLABNET
fabbox
ROGLAB


RogLab
fabbox


FABLABNET
FABLABNET
fabbox
FABLABNET

Impact and benefits

- About 20 workshops performed at school in the frame of the pilot 2 with the support of the FabBox equipment
- Demonstration / workshop at Minimaker Faire Ljubljana 2018
- 5 workshop realized so far at various remote organizations, 10 more planned before April 2019
- 8 author workshops developed in collaboration with various maker/designers

Sustainability and transferability

The concept of double calls is totally transferable and ensure a great visibility of the tools, what can be done with it and is a great vector for establishing contact with maker/designers and other organization and to open further cooperation:

- 1 call for maker for new workshops idea, to grow the fablab portfolio of workshops. Makers are refunded for the development of their workshop and hired for 1 or 2 execution of the workshop
- 1 call for organizations. They can choose within the portfolio of workshops. Fablab team come with equipment and mentors. This is a great promotion tool for the fablab concept and to establish further cooperation with local organizations or companies.

Lessons learnt

Stop Doing

(bullet list or short description)

- Don’t buy new model of laser cutter for which no review is yet available (it turned out that the software is not user friendly)

Keep doing

(bullet list or short description)

- Call for makers/designers to complete the workshop portfolio
- Call for organization interested to host a workshop for their community

Start doing

(bullet list or short description)

- Using outcasted paperboard for prototyping and testing
- Focusing on workshop hosted by potential partners