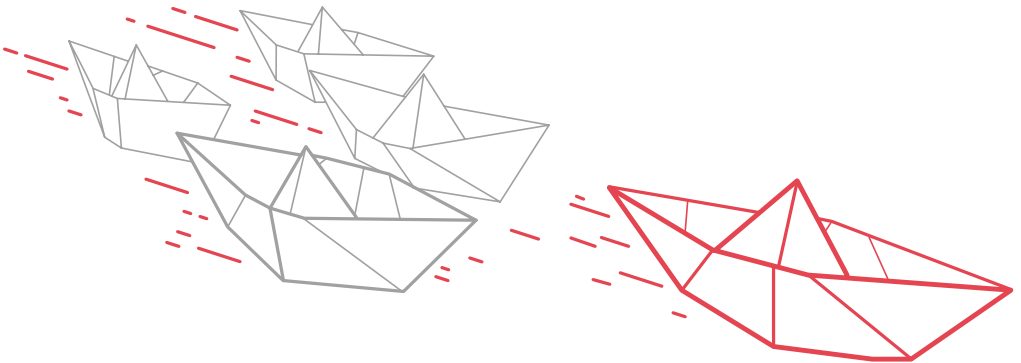


# ***OPENMAKER***

---

■ *PROTOTYPES DEVELOPED THROUGH  
MAKER – MANUFACTURER  
PARTNERSHIPS ENABLED BY THE  
OPENMAKER ACCELERATION PROGRAMME*



This project has received  
funding from the  
European Union's  
Horizon 2020 research  
and innovation  
programme under grant  
agreement No. 687941



**OpenMaker**





# 21

***PROTOTYPES  
DEVELOPED  
THROUGH MAKER  
— MANUFACTURER  
PARTNERSHIPS***

YOU CAN FIND US:

website\_ [OPENMWWAKER.EU](https://OPENMWWAKER.EU)

platform\_ [EXPLORER.OPENMWWAKER.EU](https://EXPLORER.OPENMWWAKER.EU)



# ***THE PILOT SUPPORT SCHEME CALL FOR PROPOSALS***



The Pilot Support Scheme (PSS) Call is a pan-European contest aimed at awarding a total commission of €420,000 to successful partnerships between makers and manufacturers that hold the pioneering potential to break through the 4th Industrial Revolution. The programme is intended to foster collaboration and help the winners to prototype, test and launch their innovations and encourage business models that are sustainable and deliver social impact. The call for application was launched on the 18th of September and closed on the 18th of October. 137 applications have been submitted bringing together 310 makers, manufacturers and stakeholders.

# ***#MEETTHECHAMPIONS: THE WINNERS***



The PSS Call has awarded a commission of 20.000 to 20 innovative projects and assigned a Special Coordinator's Prize, to help new maker-manufacturer partnerships to kick-off their ideas, ultimately reinventing the way we think about traditional manufacturing and projecting us into a more sustainable future. On top of the financial support, the winners are following a 9 month acceleration process in the 4 local hubs, where they are comprehensively mentored to test, prototype and finally launch their innovations



## ***ACCELERATORS***

### ***ITALY\_ FLORENCE/TURIN***

The Italian Accelerator is hosted at Impact Hub Florence and run by LAMA. Most of the accelerator programme took place at Impact HUB Florence and in other locations across the Tuscany Region. Additional events have been also organised in Turin and Milan thanks to the collaboration with TOP-IX, in order to involve manufacturers and makers that operate in these two strategic contexts.

### ***SLOVAKIA\_ BRATISLAVA***

The Slovak Accelerator is managed by Centire. Its events have been organised in cooperation with hubs, co-working spaces and maker spaces all around Slovakia, with a focus on Bratislava. The aim of the OpenMaker project and its application in Slovakia is to bring together manufacturers and makers - to create the conditions for meetings, collaboration and creation.

### ***SPAIN\_ BILBAO***

The Spanish Accelerator is managed by Fundación TECNALIA Research & Innovation and is located in Bilbao. Activities have been held in different locations and facilities around the Basque Country and in other regions of Spain in order to maximise the impact and reach of the project.

### ***UNITED KINGDOM\_ LIVERPOOL, SALFORD AND BIRKENHEAD***

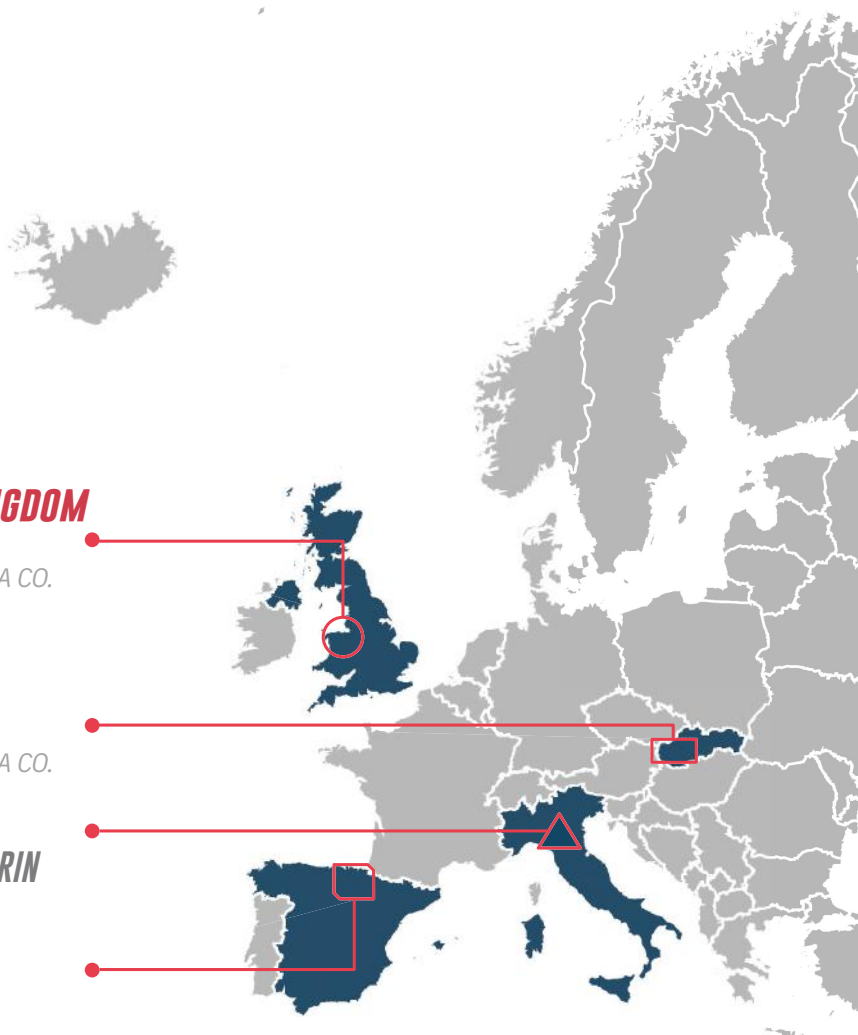
The UK Accelerator has worked across 3 regional maker communities that are active within three very different areas of the traditional manufacturing industry. The Accelerator is being delivered by Accord Housing Group in collaboration with The Beautiful Ideas Company.

**UNITED KINGDOM**  
**LIVERPOOL**  
BEAUTIFUL IDEA CO.

**SLOVAKIA**  
**BRATISLAVA**  
BEAUTIFUL IDEA CO.

**ITALY**  
**FLORENCE/TURIN**  
LAMA / TOP-IX

**SPAIN**  
**BILBAO**  
TECNALIA



# MICROHOME

Conscious Design | Housing Crisis | Urban Planning ■



Microhome responds to a housing crisis in the UK where homelessness has doubled in 4 years and creative producers, essential to sustainable urban economies, are being forced out. Microhome is an affordable live & workspace available in a range of custom-built design prototypes. It is delivered to site fully assembled and is 'plugged in' to services on temporary, permanent, small, and infill sites. It can be used on sites too small for commercial value, difficult locations and assets awaiting long-term value. It has a unit cost of £25-35,000 allowing for rents of £40 to £100 per week.

**MAKER:** *Salford Makers consists of makers, educators, artists & designer based in the Islington Mill Arts Club.*

**MANUFACTURER:** *Salix Homes Developments Limited is a multi-award winning social housing provider, investing £75million into homes and communities and ensuring that every property meets the Government's Decent Homes standard by 2020.*



# JETCLAY

■ 3D Printing | Clay Extruder | Innovative Ceramics



**MAKER:** *Espacio Open* is a large scale Fab Lab / Maker space that mixes maker culture with social projects, traditional industries and contemporary culture. The maker team also includes Javier Pérez Contonente (CIO estudio), Alfonso Montiel Fernández (Cerámica Montiel Taller Y Escuela), Ruben Ferrero Castro (Tecno Factorum).

**MANUFACTURER:** *Mecanizados Igma* focuses on the mass production, repair and modification of machineries. Their new product line includes 3D Printers, laser engraving and CNC milling.

JetClay seeks to develop a dry clay extruder for ceramics and 3D printing, accelerating European innovation at the crossroads between digital fabrication and the ceramics sector, which accounts for EUR 27.8 billion in production value.



sobi aims to close the loop in the textile industry by turning unwanted clothing and textile waste into a resource. By partnering with charity warehouses, NGOs and retailers, the project aims to help them reintroduce old clothing as new-brand products made of recycled non-woven fabric, by processing all the textile waste, even destroyed clothing and blended fibres textiles that are the most challenging for the circular economy. They seek to raise awareness about new eco-social possibilities, responsible consumption and production, while employing vulnerable groups in social workshops and green jobs.

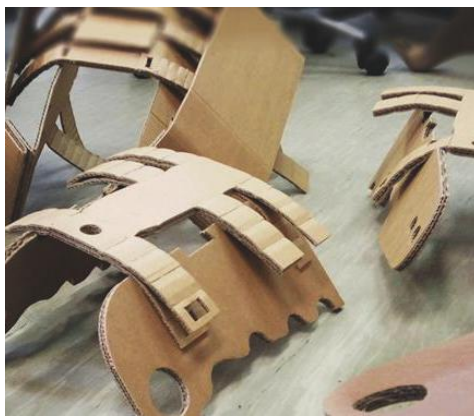
**MAKER:** *sobi was founded in 2017 by Tomáš Horváth, Alena Horváthová and Martin Malina with the aim to create innovative projects with a social and ecological dimension.*

**MANUFACTURER:** *Caritas Trnava (TTADCH) focuses on providing counselling and assistance to vulnerable and marginalised groups, communities and individuals.*

**WEBSITE:** [EN.SOBIOZ.SK](https://en.sobioz.sk)

# COBOPRO

## ■ Cardboard Prostheses | Emergency Kit | Digital Medicine



**MAKER:** *Fab Lab Contea aims to create a professional network of young people living in the outskirts of Florence and to spread digital knowledge in the territory.*

**MANUFACTURER:** *Europack service explorer and discovers new forms and functionalities for paper raw materials, “dressing” every kind of product with the right packaging.*

**MANUFACTURER:** *Biesse has more than 20 years of experience in packaging and cardboard techniques, also producing advanced machineries and manufacturing solutions in the wood, plastic, stone and glass working segment.*

**WEBSITE:** [WWW.COBOPRO.ORG](http://WWW.COBOPRO.ORG)

The project seeks to provide and promote the use of temporary and affordable cardboard prostheses with excellent resistance performances. This innovative idea would have a great impact on the market and would facilitate the production and the delivery of prostheses in war-affected and emergency areas with poor access to health and medical services.

SPAIN

# AQUAPIONEERS

Aquaponics | Local Food | Sustainable Agriculture ■



Aquapioneers aim to promote sustainable urban farming in households, offices and schools with a process called Aquaponics - an ancient cultivation technique to cultivate on water, without soil and making use of fish excrements as fertiliser. It is 100% organic, twice as fast as traditional agriculture and saves 90% of water compared to traditional agriculture. The Aquapioneers kit uses the power of digital fabrication to turn any 50L aquarium into a self-sustaining aquaponics ecosystem.

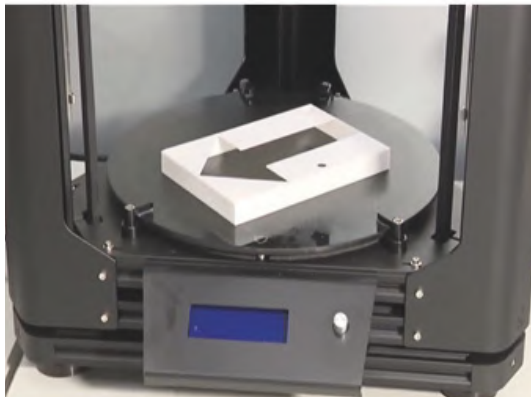
**MAKER:** *The Institute for Advanced Architecture of Catalonia (IAAC) is a cutting-edge education and research centre dedicated to the development of architectural solutions capable of meeting global habitability challenges.*

**MANUFACTURER:** *NODO Architecture is a team dedicated to the development of architectural projects, interior and product design.*

**WEBSITE:** [AQUAPIONEERS.IO](http://AQUAPIONEERS.IO)

# TULIMARK

■ Hiking | Lighting | Safety



**MAKER:** *Doc. Ing. Peter Tauš, Ph.D. works at TU in Košice, the BERG faculty, as a researcher and educator in the field of renewable energy sources.*

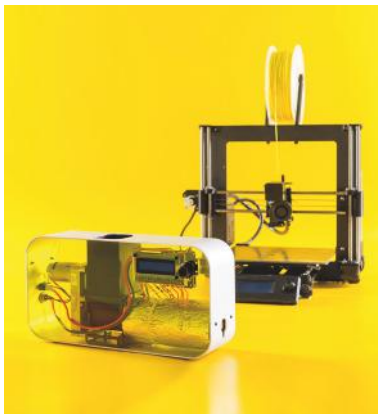
**MANUFACTURER:** *LED-SOLAR s.r.o. is engaged in the development, production, and sale of LED lights and the implementation of lighting systems in various industrial fields.*

**WEBSITE:** [WWW.TULIMARK.EU](http://WWW.TULIMARK.EU)

TuLiMark aims to keep tourists safe on marked, hiking trails. The project is based on a technical solution that uses the latest knowledge in passive navigation to develop a light travel band equipped with its own electronics and a rechargeable battery pack that comes from renewable sources. In case of reduced visibility or poor weather conditions, this technology illuminates the path to follow for the time required to reach the target, while not causing interference to the surrounding nature.

## TRITINO

Home Recycling | Plastic Waste | 3D Printing ■



Tritino is a personal, easy-to-use and affordable shredder that, thanks to Felfil Evo, allows to recycle plastic waste and turn it into brand-new filaments ready to be 3D printed. Thanks to Tritino, the project aims to reduce the volume of domestic waste, ease the recycling process and make 3D printing economically and environmentally sustainable.

**MAKER:** *Felfil S.r.l. is a young start-up that aims to make 3D printing cheaper and eco-friendly, with the help from Fablab Torino and the local community of makers.*

**MANUFACTURER:** *Vibel Group works in the field of metal sheet processing, being it iron, alloy, corten steel, copper or brass. The company aims to combine traditional art-of-doing with new, cutting-edge technologies.*



# AQUA RUNNING

■ Rehabilitation | Inclusive Fitness | Innovative Sport



**MAKER:** After he was forced onto Kidney Dialysis for many years, *Terry Nelson* decided to become the fittest Transplant patient in the World, raising £500.00 for Kidney Research. He is the founder and Managing Director of Aqua Running International.

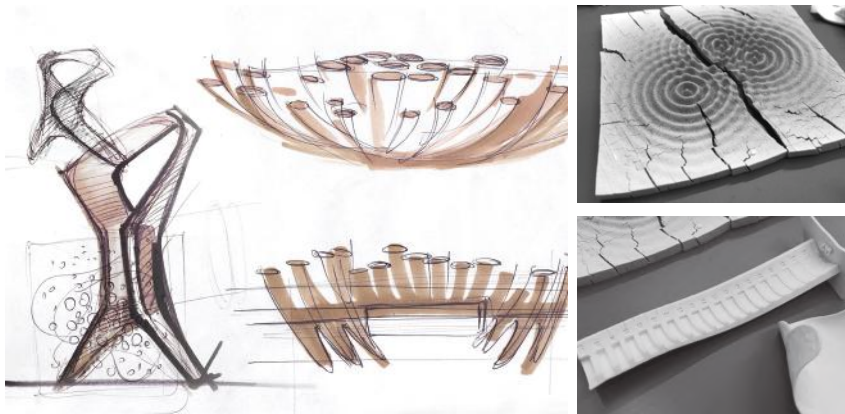
**MANUFACTURER:** Jesn Enterprises Pte Ltd is one of the most professional surfing and diving apparatus manufacturers and traders in China.

**WEBSITE:** [WWW.AQUARUNNING.CO.UK](http://WWW.AQUARUNNING.CO.UK)

The project aims to develop a new wearable, sensors technology to be integrated into the existing Aqua Running bodysuit, to retrieve physiological data of the patient's recovery and monitor exercises. This unique bodysuit allows anyone of any age, ability or disability to exercise comfortably in deep water with no impact on bones, joints and muscles. This allows the wearer to exercise safely and with no risk of injury very early in the recovery from surgery, illness or injury, in turn reducing recovery and rehabilitation time significantly.

## CLAY NEXT

Digital Fabrication | Innovative Ceramics | Local Tradition ■



The goal of the project is to launch a new brand of 3D printed, on demand homeware called “CLAY NEXT”, bringing together consumer electronics, digital fabrication tools and local craft production. Thanks to an excellent product design and a careful market analysis, CLAY NEXT aims to link traditional ceramics to contemporary life and image of traditional ceramic-making and bring back “Made in Slovakia” crafts products.

**MAKER:** *Michala Lipková is a product designer active in the Bratislava’s start-up scene, working along the boundaries of physical and digital product design and UX.*

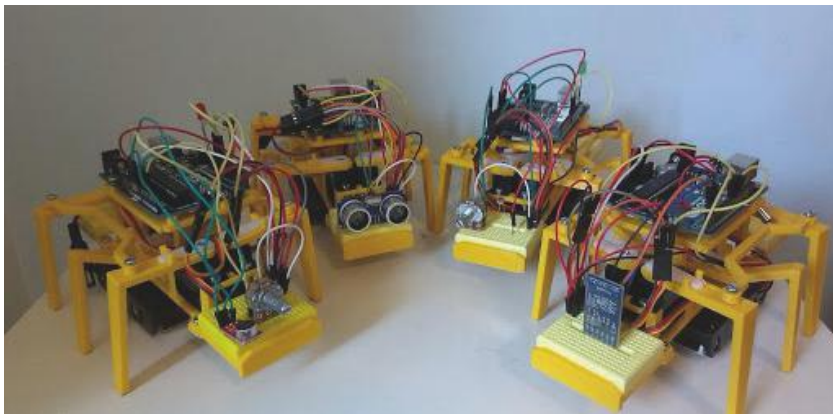
**MAKER:** *Tomáš Tholt is a PhD candidate at the Faculty of Architecture (STU in Bratislava) with extensive experience in leading digital fabrication and software courses exploring the creative use of tools of generative design and emergent fabrication.*

**MANUFACTURER:** *TVAR Open Creative Hub covers the whole process of design, prototyping and manufacturing of both industrial components and consumer products in small series.*



# H.B.R.T.

■ Education | Robotics | STEM Toys



**MAKER:** PaLEoS (Projects and Learning Experiences of Science) operates in the field of scientific and technological education and is involved in cultural promotion and training for citizens.

**MANUFACTURER:** Edison Giocattoli is a leader company in the toy sector, producing and selling worldwide.

H.B.R.T. (How to Be a Robot Trainer) proposes to design a small and affordable robot, using Arduino board, to introduce A.I. in schools, in the educational robotics sector and more generally in the STEM toys market. Thanks to “machine learning” algorithms, the project is planning to create a robot that, through interactions with the environment and with a child as a trainer, “learns” the best strategy to get out of a labyrinth, which is always different and gradually more complex.

# LIVERPOOL AQUAFARM

Aqua-Culture | Local Food | Urban Efficiency ■



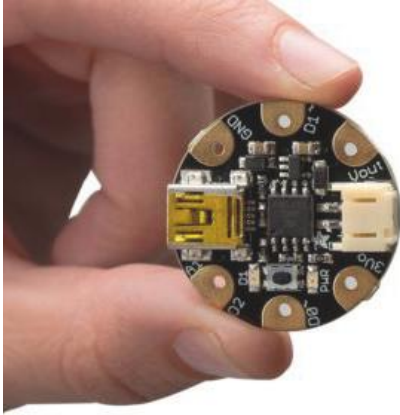
The aim of the project is to develop through a maker-manufacturer collaboration a modular, off-grid, pilot-scale aquaculture centre to produce local food in urban settings, using disused spaces. It will carry out R&D and produce (pilot scale) fresh fish, seaweed and shellfish, addressing the challenges of scale-up for commercial operation, of existing off-grid services and of modularity for flexible scalability, to allow replication in any location. Future phases will use the aquafarm as a focus for an SME cluster and visitor destination to promote innovation and raise awareness.

**MAKER:** *Seaweed Alchemy Ltd is dedicated to promoting the usage of seaweed and advancing the knowledge on its nutritional benefits through cultural exchange, environmentally sustainable applications and enhancing applied research.*

**MANUFACTURER:** *WhiteCircle Ltd is a custom design, fabrication and production company that uniquely utilises the humble Intermodal Shipping Container*

**FENPS**

**Rehabilitation | Inclusive Fitness | Innovative Sport**



**MAKER:** Asociación La Caja Maker  
Space Salamanca (La Caja) is a cultural non-profit association that aims to spread the maker culture, understood as a set of practices based on the “make it yourself” paradigm.

**MANUFACTURER:** Automatización del Internet de las Cosas, SL (AlfaIoT) is a developer and integrator of technology in the area of the Industrial Internet of Things (IIoT) and Industry 4.0.

FENPS (Fall Early Notice and Position System) is a project that allows early warning for disorientation or fall of elders and dependents. A warning on any of its devices will be sent to relatives, institutions or associations concerned about their well-being. Such devices will be developed to detect problems and report incidents through a wireless network specifically designed for the Internet of Things (IoT) due to its ease of installation, coverage area and price.



Digital Crystal Manufacturing (DCM) seeks to digitise the making of sculpture/crystal artefacts by allowing artisans to reuse molds as well as facilitating the shipping processes of crystal sculptures.

Digital crystal manufacturing will leverage on different technologies such as 3D scanning and it will easily allow to copy existing statues “on demand”. Thanks to DCM, once the object/statue becomes a 3D file, it can be sent and managed very easily and without any cost, whereby paving the way to the digital artists of the future.

**MAKER:** *Fab Lab Contea aims to create a professional network of young people living in the outskirts of Florence and to spread digital knowledge in the territory.*

**MANUFACTURER:** *Nuova CEV s.c. perpetuates the long-standing tradition of the master glassworkers in forging crystal. It also experiments new production techniques such as the glass-washing robot and semi-automatic stamping machines.*

# JANE

■ 3D Scanners | Open Manufacturing | Community



**MAKER:** *Maiku Ltd develop physical realisations of technology, combining knowledge of different programming languages with its experience in developing IoT based devices.*

**MAKER:** *Real Space Ltd deal with future manufacturing methods for products for the additive manufacturing industries.*

**MANUFACTURER:** *The Fablab from the Liverpool John Moores' LJMU Art and Design School.*

JANE aims to get companies to work together in new ways, releasing existing assets in new distribution channels. The proposal is to create professional and high quality self-contained 3D scanners (Objocopers) that are easy to use, by collaborating directly with five pairs of creative and manufacturing businesses in the Merseyside region. The results of these collaborations will be used to refine two more Objocopers and run a big event at Sensor City, Liverpool to disseminate and promote the results of these collaborations among the wider community.

## GD3-DCW

3Dprinting | Clay | Green Spaces ■



Thanks to 3D additive printer techniques, Green Divisor 3D Clay Wall aims to promote a modular system of ‘flower beds’ made of baked clay, which can efficiently create green domestic or urban spaces. The system allows to build green divisions and spaces by heaping up several units with the same shape and some special units to finish or bend the wall. 3D technology allows to create empty spaces inside the flower beds, where the water can be stored and flow from one to another, avoiding watering to the maximum. The flexibility of the system allows to adapt the divisions to different configurations as well as to different aesthetic preferences.

**MAKER:** *Loitz Artesania Ceramica* has almost 40 years of experience in the ceramics sector, with pottery and modelling being its specialties.

**MANUFACTURER:** *Abad Design S.L.* is a company with 50 years of experience in industrial design, particularly of interiors. Its new proposals are based on hybridisation: traditional technology, craftsmanship and new 3D printing techniques.



# BIOM

## ■ Biodegradable | New Materials | Plastic Substitutes



**MAKER:** *crafting plastics! studio aims to provide a solid and innovative base for interdisciplinary progress towards enjoyable sustainability and transparent production.*

**MANUFACTURER:** *Panara s.r.o.a is a production and trading company of PE plastics films. Since 2006 the company entered the bioplastics area, with the goal of developing biodegradable, bio-based blends for different types of plastic processing.*

BIOM is a pilot project aiming to develop a renewable, biodegradable material that can replace oil-based plastic. Previous prototypes lacked logistical infrastructure at the collection stage and the material was only biodegradable in industrial compost. The novelty of this 2nd generation material is its revolutionary ability to be home-composted. The ground-laying activity includes the development of a granulate from a new material mixture. An automated production process (pressing, injection molding) is established in order to produce intermediate sheets. Two other main activities are based on designing final products: glasses and cups.

## FUED

Education | Sustainable Food | Urban Farming ■



The project aims to create the first version of FUEd: a powerful, responsive and integrated educational tool designed to keep pace with Industry 4.0, enabling high school students to explore real-world problems through up-to-date technologies.

This approach places curiosity and self-directed problem-solving at the heart of learning, allowing students to participate in collaborative research and citizen science experiments based around Industry 4.0 technology.

**MAKER:** *Farm Urban Ltd* is a bio-science, social enterprise started by bio-scientists, taking science fresh from the lab and linking leading research with local food production.

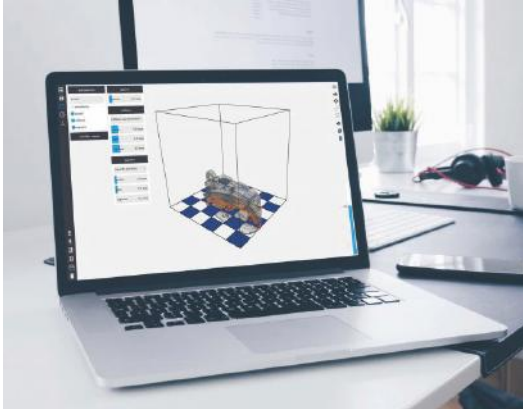
**MAKER:** *IGOO* are a small tight-knit team comprised of designers, coders, writers and digital marketers. They strive to forge long-lasting relationships with local independent businesses, in order to create new economic opportunities with a wider social impact.

**MANUFACTURER:** *REFARMERS* is a vertical, urban & circular farming company, providing equipment & engineering services.



# 3D SLM PRINTER

■ 3D Printing | Selective Laser Melting | Metal



**MAKER:** *SamyLabs S.L. aims to develop 3D printers with SLM technology, drawing on the joined expertise of the three founding partners.*

**MANUFACTURER:** *ONA is a pioneer in the development of EDM technologies (it is the oldest manufacturer of EDM machines worldwide), providing affordable, precise and ecological solutions in the field..*

The project aims to design, manufacture and commercialise high quality 3D metal printers using SLM (Selective Laser Melting) technology for the industrial, aeronautical, dental, prosthetic and prototyping sectors. This printing technology, unlike the popular EDM (Electrical Discharge Machining) 3D printers, obtains end pieces with metallic materials and excellent mechanical qualities. In many cases, the pieces obtained with this technology are impossible to manufacture by other means.

# CIRCULAR WOOL

Wool | Circular Economy | Design ■



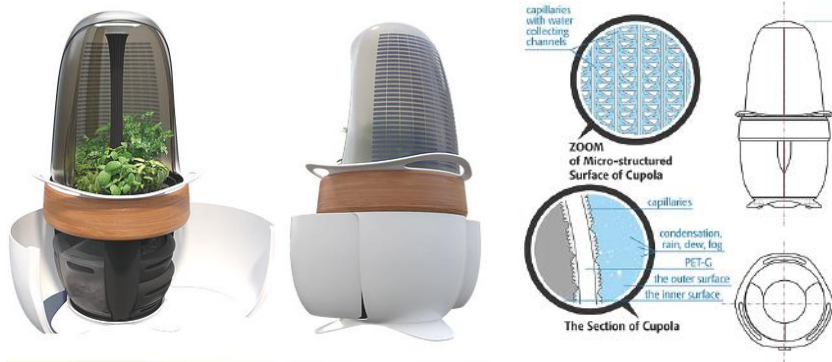
This project covers the experimentation on a semi-industrial scale of the workability of rustic Tuscan wool. This type of wool is taken from sheep produced for meat and is typically too coarse, in fact it's currently not considered of interest in the textile industry for this reason it must be treated as toxic waste in the best case scenario. Wool not brought to landfill, in order to avoid the relative costs, is often dispersed into the ground with the manure; or worse, but also more frequently, is burnt producing dangerous air or terrain pollution. The purpose of this project is: 1) to find a commercial outlet for the use of these wools; 2) to allow farmers a certain economic recovery from the sale of the same wool; 3) to avoid pollution from illegal disposal methods.

**MAKER:** *Lottozero is a center for textile research and networking in Prato, Italy. Their mission is to create a fertile environment for textile research and an international base for networking in the textile sector.*

**MANUFACTURER:** *RS is a private independent centre for innovation and technology transfer, working mainly in the Textile and Clothing production chain.*

# BIOCULTIVATOR

■ Greenhouse | Composting | Home-made cultivation



**MAKER:** The company B4D (Biomimicry for Design) consists of designers, engineers, and scientists. B4D deals with the implementation of the biomimicry approach into the innovative design of the sustainable product that enables planting of bio-products in the urban areas (for full information about the team and product check the website [www.bio-cultivator.com](http://www.bio-cultivator.com))

**MANUFACTURER:** The history of KUBIK INTERIER furniture dates back to 1948 when Ferdinand Kubík started joinery & furniture production in Rabča, Slovakia. In the new millennium, the new generation of Kubík family also came up with state-of-the-art CNC technologies, expanding the portfolio of services and expanding in the rest of Europe.

**WEBSITE:** [WWW.BIO-CULTIVATOR.COM](http://WWW.BIO-CULTIVATOR.COM)

Bio-cultivator is an innovative bio-inspired balcony greenhouse for urban areas. The goal of the project is to build a fully functional product prototype to allow home-made cultivation, self-irrigation and composting. Testing will enable the team to improve the current design and identify strengths and weaknesses. The prototype should fulfil the basic function of planting and composting on a balcony.

## ***SPECIAL COORDINATOR'S PRIZE***



The PSS competition assigned an additional special prize to recognise the merits of a particularly strong maker-manufacturer partnership and its commitment to foster the core spirit of the Maker Movement and the Open Manufacturing paradigm. The project has also received a commission of €20.000 and it is mentored at the Italian hub.

# CRAFTING FASHION WITH ROBOTS

■ Fashion | Innovative Design | Robotics



**MAKER:** *WeMake* WeMake is an innovative enterprise based in Milan providing services and training to the creative community in the field of digital and traditional manufacturing. WeMake aims to foster the development of a new partnership model between the designer-producer (maker) and agile companies. WeMake is a member of the International Fablab Network affiliated with the Massachusetts Institute of Technology.

**MANUFACTURER:** *ATOMLab* is the research and innovation laboratory of the ATOM Group. Their mission is to support customers in product and process innovation projects along the entire shoe manufacturing pipeline. ATOMLab also works as an advanced research team for the companies of the Group, through a cooperative collaboration with the most important Universities in northern Italy and abroad, and consolidated partnerships with the most active and dynamic shoe technology suppliers.

Crafting Fashion with Robots aims at exploring cross-disciplinary approaches and applications in the design of new on-demand fashion accessories, by using a modified anthropomorphic robotic arm. To this end, the project proposes a partnership between ATOMLab, a manufacturing company in the field of footwear design, and WeMake, an innovative community enterprise fully engaged in the maker movement.







***WANT TO  
DISCOVER MORE  
ABOUT THE OPENMAKER  
COMMUNITY?***

***JOIN  
OUR  
PLATFORM!***

YOU CAN FIND US:

*website\_* [OPENMWWAKER.EU](http://OPENMWWAKER.EU)

*platform\_* [EXPLORER.OPENMWWAKER.EU](http://EXPLORER.OPENMWWAKER.EU)



centire

The Beautiful Ideas Co.