DT.1.4.1 FAB14+ event

Report from FAB14+ Study visit - France
Fab City summit, Fab Distributed, Fab14

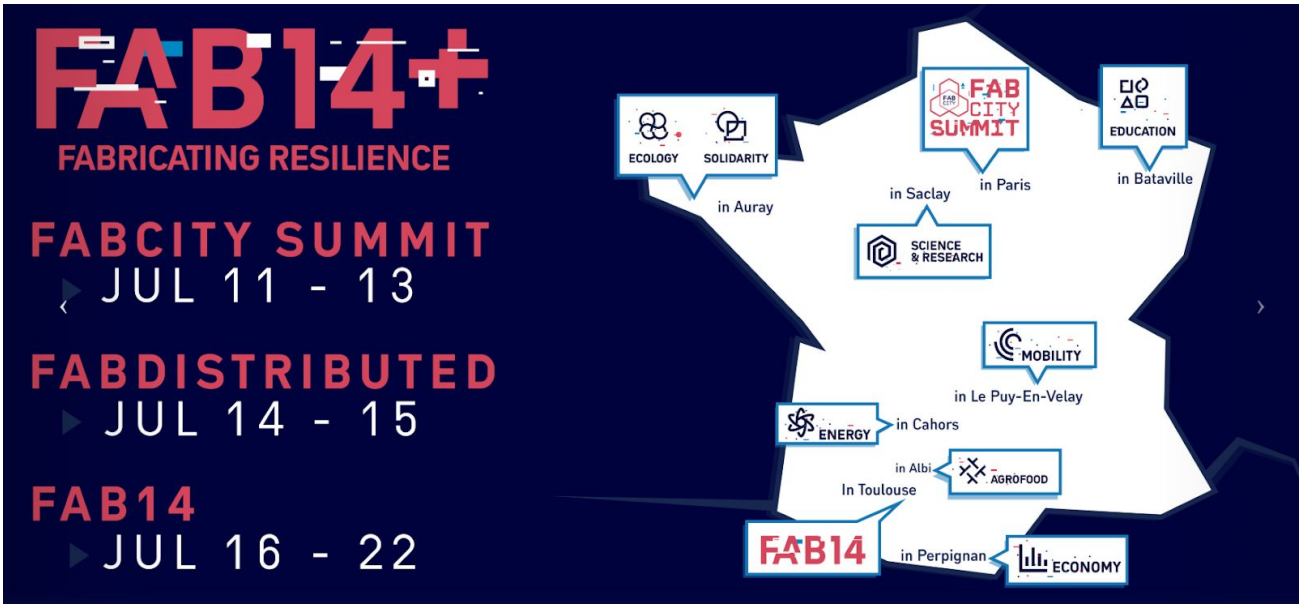
Version 1
08 2018

1. Visit outline

Dates: July 11th-22nd 2018

Venues:

Fab City Summit July 11-13 2018, Paris, France.
Fab Distributed July 14th and 15th, 8 location and themes: AGROFOOD in Albi, ECOLOGY in Auray, ECONOMY in Perpignan, EDUCATION in Bataville, Grand-Est, ENERGY in Clermont-Ferrand, MOBILITY in Le Puy-En-Velay, SCIENCE AND RESEARCH in Paris, and SOLIDARITY in Auray
FAB14 July 16-22 2018, Main event in Toulouse, France



The event overview graphics (Creative commons, FAB14)

2. Overview[1]

#FABRICATING RESILIENCE
Each year members of the more than 1,200 worldwide Fab Labs gather to share, discuss, collaborate and create communities around the different local and global interests regarding digital manufacturing, innovation, and technology.
This year, the FAB14+ conference will be spread out over multiple locations. Fab City Summit from July 11-13, Fab Distributed all over France, July 14th and 15th (8 location and themes to choose from: AGROFOOD in Albi, ECOLOGY in Auray, ECONOMY in Perpignan, EDUCATION in Bataville, Grand-Est, ENERGY in Clermont-Ferrand, MOBILITY in Le Puy-En-Velay, SCIENCE AND RESEARCH in Paris, and SOLIDARITY in Auray) that will allow you to discover different parts of our beautiful country. And finally, FAB14 Main event in Toulouse, France the 14th International Fab Lab Meeting to be held, July 16-22 at the Pierre Baudis Convention Center; with "Fabricating Resilience" as its central topic.
FAB14+ in France has established 3 center point that marks the path to a new way of Fabricating Resilience, where this year Fabbers will have the opportunity to travel around France and discover the magic that Digital Fabrication brings to the Region. Today thanks to technology, our French culture and society are becoming more and more integrated into the world, generating a sort of understanding to other alternatives ways to grow as a country, society, and community. This event aims to gather people from the global network to debate and build the Fab Lab Network and to forms of knowledge networking. The most distinguished investigators and specialists from all over the globe are invited, generating activities and traversal impact in the Toulouse. Our motto "Fabricating Resilience" sets the stage for sharing experiences and creating a collaborative network. To make this possible we have created 5 topics to be developed that can create a big impact in the region, which are: FOOD, MOBILITY, MACHINES, MONEY AND ACCESS.

Partners attending the visit:

LP MUSE - Museum of Science Trento - MUSE FabLab (Marco Fellin)
PP2 - Happylab Wien (Karim Jafarmadar)
PP3 - HU FabLab Budapest (David Pap)
PP5 - CZ Brno University of Technology (Tomáš Koutecký, Aneta Zatočilová)
PP6 - PL Regional Development Agency in Bielsko-Biala (Jan Sienkiewicz, Patrycja Węgrzyn)
PP7 - SI RogLab (François Friderich, Meta Štular, Tomo)
PP8 - SK Slovak Scientific and Technical Information Centre - Fablab Slovensko (Nina Bratkova, Jozef Vaško)
PP9 - HR FabLab Zagreb (Roberto Vdović, Zrinka Valetić)
PP10 - DE UnternehmerTUM MakerSpace GmbH (Julia Kitta)

[1] Text from the Fab14+ event organizers. Creative commons, Fab14.

The FabLabNet group at the FabCity Summit in Paris

3. Lessons learnt

3.1. FabCity Summit - Paris

The event gathered together the fast-growing community of FabLabs, together with the persons and institutions who has funded it. The major figures in this sense were Prof. Neil Gershenfeld, the Director of MIT's Center for Bits and Atoms, Tomas Diez from FabLab Barcelona and Fab Cities, Sherry Lassiter, president and CEO of the Fab Foundation.

The global FabLab movement is growing fast, doubling its number every two years. We are not talking about marginal movements, no more an utopia, but a real new player which can address major world challenges.

We are on the edge of a new revolution, where it's possible can build locally using global information (FabCity). This process can be a new production economic model, extremely efficient in terms of carbon emissions and produced wastes. The FabLabs are not in competition against

the big companies, but they propose a new development model where the goods will not be transferred (no more containers, ports, cargo ships…) but only data knowledge is transferred.
During the event the capacity of manufacturing with extremely small building blocks has been presented. This is interesting now in locations where the supply chain can be problematic (e.g. International Space Station, or remote areas), but in a close future extended to the world. In simple words, it is the ability to create e.g. electronic components beginning with a few universals nano blocks, specifically assembled by a nano-resolution machines on specific needs.
This is where the Bits and Atoms are important: Bits represent the global infrastructure, where Atoms the local one.
Each Fab Lab can also be the place where a new FabLab can be started; both the FabLab organization/space structure and machines can be build (some equipment e.g. a 3D printer can be produced in Fab Lab, see as an example RepRap).
These laboratories are important for the involvement of people. The outcome from the FabLab often is not the product, but the process of making itself.
The FabLab can have a great role for barriers destruction. Physical barriers (in a FL it's possible to build aids for impaired persons), cultural (a FL is a training and teaching institution) and even political (making something together is a great mutual knowledge opportunity, and eventual ethnic fights disappear. It is the case of Fablabil and Hope Lab that gather together Palestine and Israeli members or the Belfast Fablab in Northern Ireland.
The training and teaching spans from as low as 8 years old pupils to very advanced courses, which may take the name of *Fab Academy*. All these courses can help to share global knowledge on local level. Diffusion of knowledge, sharing more than learning, giving more than taking, are the pillars of the FabLab. In this sense FabLabs are diffusing knowledge, schematics, codes, layouts under a free use right (see e.g. creativecommons.org), or with an easily accessible Library or a video tutorial page.
Reversible, scalable, possible are the 3 keywords that accompanied the public during this event.
There is the need to face another building model for the future cities: a zero waste building which can be entirely recycled after use. A building model where frugality is the ruling keyword, where low tech and high tech meet to generate the *slow tech*, a new paradigm of Eco-buildings and *inclusive city*. The new system generates also by following the UN Sustainable Development Goals.
The environmental aspects around the FabLabs and the world they are helping to build, was well expressed by the Doughnut economics concept by Kate Raworth.
The event presented real cases of good practices, such as a large scale participatory model in Barcelona city. There the concept of Fab City is taking form in reality, with a new public procurement system, the data sovereignty (every data regarding citizen is open to the public), the adoption of open source software and a secured system for report corruption based on Tor.

Very promising start-ups and successful realities were presented as well. The concept of modular, upgradeable phones, plastic recycling machines were just a few of the wide examples of project based on community. This is much better than a project funded by a single company: if the company decides to suspend or end the project, the project collapses. But funding a project on community basis it means the project is practically endless.
The Fab City summit in Paris has seen the official presentation of City of Zagreb as part of the Fab City network. FabLab Zagreb, one of the FabLabNet partners, was officially presented and acclaimed in this very exciting moment.

The FabLab Zagreb has been officially included in the FabCity network. A great award to be proud of.

3.2. Fab Distributed - France

Each partner took the occasion to attend one of the various thematics of the Fab Distributed. This allowed maximizing both inputs to the FabLabNet project and output in terms of project presentation to a wide public.

Lead Partner - Italy attended the AgroFood thematic in Albi, PP3 Hungary attended Economy thematic in Perpignan, PP5 Czech Republic attended Scientific Research thematic in Saclay, PP7 Slovenia attended Mobility thematic in Puy-en-Velay, PP9 Croatia attended FabCity in Paris.

The project FabLabNet was actively presented via one to one meetings and also via 2 dedicated sessions. The role of FabLab and FabLabNet for Agriculture-based communities was presented in Albi, and the FabBox experience in Puy-en-Velay.

The Agro-Food thematic was introduced via a visit of the local market. In less than 1 hour participants experienced the various Agriculture sectors: livestock,fishery, vegetables and fruits in both raw and processed typologies. Then participants explored the various opportunities for FabLabs in meeting the AgroFood sectors needs. Demonstrations of hydroponics systems, geodesic greenhouse, smart hives, platform for sharing gardens and garden works took place together via a field study. A very interesting case study was the Digital Vegetable garden[2], where a school teaches how to reduce food waste from school canteen. They compost it, and they do a vegetable garden they will eat themselves. The garden is equipped with electronic and hydraulic systems (e.g. water collection…), for data teaching. In this way students learn science, data analysis, ecology, reduction of waste. They also have a bee colony, they promote biodiversity and organic food, they co-teach with various matters in lyceum, solar panels, geodesic dome, LORA data transmission. In addition, they plan to link various schools with both data management and garden results.

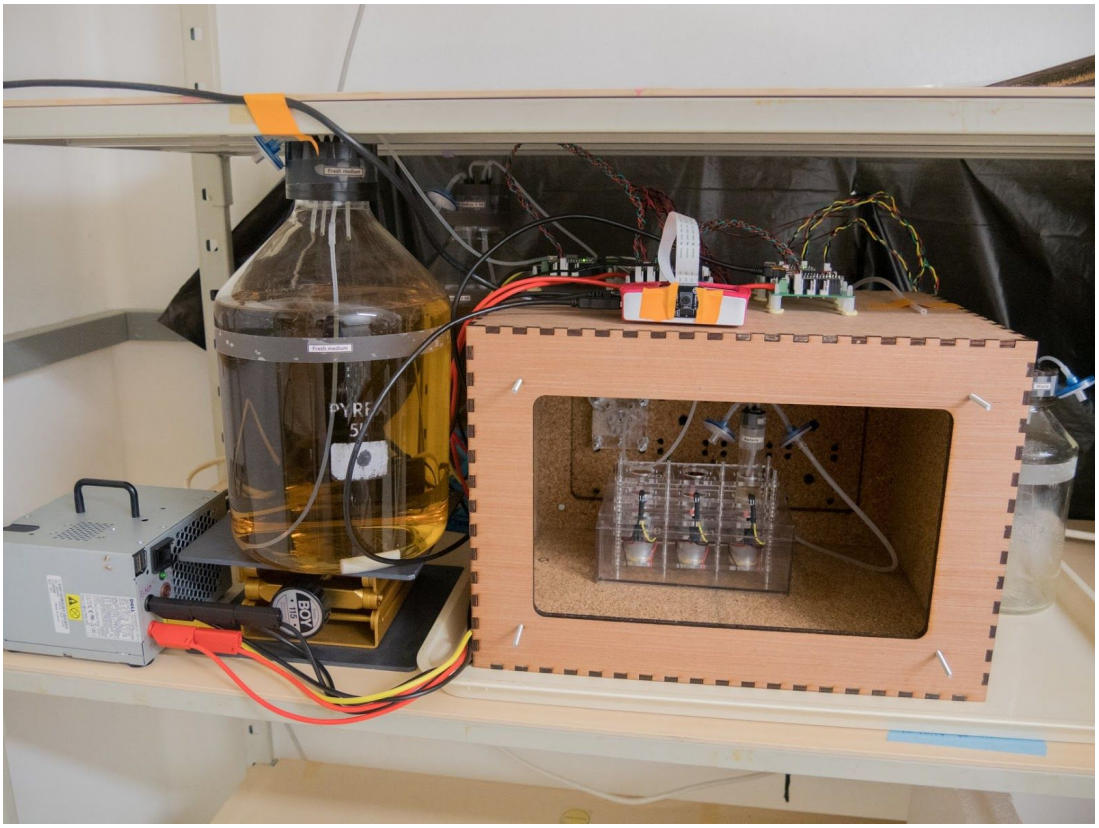
The farmer's market in Albi: the best location for knowing the local Agro-food products.

[2] Potager numerique, Lycee L. Rascol

The solar-powered geodesic greenhouse (left) and the hydroponics system demo.

Community shared garden (left), a FabLabNet project presentation (top) and FabLab Albi visit.

The Scientific thematic was carried out as a traditional conference, with some exhibition of case studies where the FabLab had a key role in improving/facilitating research. There is a pretty high number of FabLabs connected to research institutions. Some of these are reserved for students and employees of the institution, while others are open also to attendees from outside of the institutions. In all cases FabLabs are primarily about the community, where ideas and good practises can be shared. The building and equipment are of secondary importance, and also teaching acquires a new meaning: it’s no more the teacher who teaches how to use the equipment and how to "do things" but users share their knowledge among others and learn from each other and cooperate.



A demo equipment: the Arduino controlled bacteria & phages bioreactors (credits: Pierre Nicolas and Cyprien Guérin from INRA/MaIAGE, made at Fablab Digiscope)

The keynote speech by Neil Gershenfeld (CBA/MIT) (Credits: FAB14 Distributed Science Research)

3.3. Fab14 conference - Toulouse

The event was very positive for sharing the FabLabNet project: through informal exchanges (workshops, coffee break, evening gathering, parties) many people including key responsible are now aware and engaged on the FabLabnet importance. The dedicated workshop on a FabLab network lead to a chat group which is now a starting point toward a network in Europe's. It became clear that FabLabnet has a very important role to play, especially based on the experience acquired in the first 2 years of project and also concerning the capability of meeting EU funding requirements. During the workshop a memorandum of understanding was written. This process could be similarly applied to FabLabnet, for the signing of the network agreement.

The optimal and sustainable networking it is based on shared values and making projects. It's useless to create a network and only after its creation beginning cooperation. Sharing the network experiences adding new initiatives and being update is a key issue, and we should focus the network efforts in designing a more readable and accessible way for promoting project outputs.

During the event we realized the Pilot Actions we did during the project pioneered and put in practice the leanings were presented as innovative.

A promising topic to be further investigated is the value creation in form of blockchain and fabchain related to Fab City activities.
Important connections were established with the Vulca team (a sort of Erasmus programme for FabLabs) and the French network of fabLabs (Réseau Français des Fablabs).
During the week a dense schedule proposed various experiences and topics. The most interesting projects presented were those not exclusively focused on machines or based on programmes already made by other fablabs. The most interesting programmes were made by interdisciplinary teams, focusing on solving societal challenges rather than producing unuseful gadgetry it's pretty common to see in many fablabs.

The Fab14 event in Toulouse

4. Mutual benefit and challenges

Attending a so important event, which is the only annual world meeting of FabLabs, has obvious benefits for participants and for the project itself. Meeting people for sharing experiences, challenges, solutions is the major benefit, together with the active participation to the movement which is guiding the global FabLab spirit.
Contacts acquired during these days can be important for future involvement in the project, in terms of direct involvement during events or activities or in terms of getting interesting concrete ideas or best practices.
The event gave the FabLabNet partnership an impulse for the project future activities, especially those oriented to the real constitution of the network of FabLabs. In this sense also being part of the Fab City network, with the Croatian partner, is a strong benefit for the whole FabLabNet network.
This event one more time demonstrated how sharing knowledge, good practices, practical examples of projects, etc. is a benefit for all FabLabs. Inclusion of other FabLabs and involvement of other regions other than the Central Europe are also important for a solid constitution of the network.
On the other side, constituting a Central European network of FabLabs, can better face the Region challenges and proposed solutions. In this sense the focus to one area is positive.

5. Transferability and sustainability

Most of the hands-on and demo activities can be replicated in the partner's FabLabs. Similarly, educational activities are very likely to be tested and implemented, together with incubation programmes for business. The FabLab style that shall be maintained is the importance of the community around the FabLab. The community itself shall be a very active part in teaching FabLab members, encourage the community to learn from each other, cooperate, work on interesting projects.
Allowing a easy knowledge sharing means documenting very well each project, course, activity. For this reason dedicated courses on how to document a project could be organized.
Another interesting idea that could be implemented is the status of super user for some FabLab member. Those selected members have 24/7 access to machines and facilities, and an active and continuative contribution to the FabLab activities (1 task to do every 6 month to keep the status).
To be sustainable a network shall share and meet, in person, at least once per year, by organizing a specific meeting conference.

6. Inspirations for the future of the FabLabNet as CE Network of FabLabs

The FabLabNet network has been inspired by the constituting European FabLab network workshop. FabLabnet plays an important role in this constitution, gathering into the constituting network 2 years of experience.
There is the need of transparency and clarity, which can be addressed by an agreement, as a memorandum of understanding or other typologies.
The optimal and sustainable networking it is based on shared values and making projects. Sharing the network experiences adding new initiatives and being update is a key issue, and we should focus the network efforts in designing a more readable and accessible way for promoting project outputs.
A movement at political level can be also important, informing first then lobbying at the EU level for better support of FabLabs.
The FabLabNet should take advantage of the different types of FabLabs: variety, diversity is a value added. So the network should be open to all kind of fabrication labs, no matter what is their mother institution and how they are called or funded. An exclusivist approach can bring in the long term isolation from other actors of innovative ecosystem.
Involvement of fundations can be also a very good point, to act as a sponsor of the rise of new FabLab or of the network itself.
These topics were actively discussed during a workshop, which minutes are published here.

7. Conclusion

The event was a very important milestone for the FabLabNet project. We had the occasion to present the project to very important stakeholders, to meet in person tens of other FabLab sharing ideas, knowledge, best practices, challenges, solutions.
The participants actively presented the project at various level, with one to one meetings, dedicated presentations, workshops.
The information collected during these 3 connected events will constitute a very important basis for the further development of the FabLabNet.