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# **Dissemination Report: Summary of Dissemination Actions and Adoption of netCommons Solutions During the First Year**

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## Executive summary

This deliverable summarizes the dissemination activities of the netCommons Consortium and their overall impact during the first year of the project's life. Given the multidisciplinary nature of netCommons, its dissemination activities target a broad set of actors including academia, activists, public authorities, policy makers, and the general public. Hence, in netCommons we developed from the beginning a comprehensive dissemination strategy including the development of a project identity, expressed by visuals and graphics, and the public presentation of netCommons objectives and approach. Chapter 2 describes the rationale we followed in developing such identity, right after the overall summary of activities carried out and the impact achieved is described in Chapter 1.

netCommons had a very fruitful first year in terms of dissemination events, described in Chapter 3 with six organized events (and two forthcoming in early 2017) attended by around 200 people, from local farmers in the Sarantaporó area and local authorities in Barcelona to activists from CNs and the scientific community. It had also significant contribution in seven high-impact international events with thousands of participants, and a wide range of actors, including policy makers, regulators, EC officials, the CAPS community, the diverse global stakeholders of the United Nations (UN) Internet Governance Forum (IGF), and the general public. Finally, netCommons partners were invited to give talks and participate in public panels, ten in total.

In terms of publications, see Chapter 5, netCommons activities produced four book chapters, eight journal papers, and several conference and workshop papers, all published in 2016; more are already accepted for publication in early 2017. The objectives of the netCommons project were also included in an article published by The Conversation Global.

In addition to those institutional dissemination activities, netCommons was very active in reaching out to activists, local authorities and citizens, through a series of local meetings described in Chapter 4, managing to establish strong links with such actors in four areas of interest (Barcelona/Guifi.net, Athens/Sarantaporó, Trento/Ninux.org, and FF DN in France).

Finally, Chapter 6, summarizes a series of additional dissemination by netCommons partners such as interviews (four in total), CAPS networking activities, educational material, editorial boards, and also their engagement in advocacy efforts and struggles against policies and regulations that pose significant hurdles to the sustainability of CNs.

Before describing in detail on all these dissemination activities, Chapter 1 highlights the most important achievements in terms of impact, including: the contribution in two important global events, namely: the recent IGF conference in Mexico and the European Commons Assembly in Brussels; the initiation of an ambitious participatory design process in the Sarantaporó valley, the home of the Sarantaporó.gr Community Network; the public discussion on strategies for efficient collaboration between government, citizens and enterprises in Barcelona around key challenges faced by Guifi.net and other CNs all over the world; and our engagement in the legal and policy battles linked to the so called "EU radio directive" in collaboration with FSFE and other institutions.

The Deliverable closes with the next steps and expected dissemination results during the second year.





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# List of Acronyms

<b>ACM</b>	Association for Computing Machinery
<b>AWMN</b>	Athens Wireless Metropolitan Network
<b>CN</b>	Community Network
<b>CNs</b>	Community Networks
<b>CAPS</b>	Collective Awareness Platforms for Sustainability and Social Innovation
<b>CONFINE</b>	Community Networks Testbed for the Future Internet
<b>DC3</b>	Dynamic Coalition on Community Connectivity
<b>EU</b>	European Union
<b>EC</b>	European Commission
<b>FLOSS</b>	Free Libre Opens Source Software
<b>GAIA</b>	Global Internet Access for All
<b>IETF</b>	Internet Engineering Task Force
<b>IGF</b>	Internet Governance Forum
<b>INCA</b>	Independent Networks Cooperative Association
<b>IRTF</b>	Internet Research Task Force
<b>ISOC</b>	Internet Society
<b>IoT</b>	Internet of Things
<b>IoP</b>	Internet of People
<b>MWC</b>	Mobile World Congress
<b>NGO</b>	Non Governmental Organization
<b>P2P</b>	Peer to Peer
<b>SIGCOMM</b>	Special Interest Group on Communications
<b>UN</b>	United Nations
<b>WP</b>	Work Package

# 1 Summary of activities and overall impact

The goal of WP6 is not only to produce a unidirectional flow of information from the project to the outside world. The netCommons vision requires interactions with, and involvement of, various stakeholders. Thus, the WP6 tasks include the set-up of a fruitful cooperation with a number of external actors. More specifically, netCommons organizes and participates in workshops and meetings that go beyond the “usual” scientific audience of a research project, and needs a multi-modal communication to be effective with a diverse set of audiences, which is detailed in Section 2.1.

Some figures show the commitment of netCommons in this effort: netCommons partners organized or co-organized six events (and two more are forthcoming in early 2017), which were attended by around 200 people, from local farmers in the Sarantaporο area and local authorities in Barcelona to activists from Community Networks (CNs) and the scientific community. The project had also significant contributions in seven high-impact international events with thousands of participants, and a wide range of actors, including policy makers, EC officials, the Collective Awareness Platforms for Sustainability and Social Innovation (CAPS) community, the diverse global stakeholders of the United Nations’ IGF, and the general public. Finally, netCommons partners were invited to give talks and participate in public panels, ten in total, and were also asked to provide four interviews.

In the following, we summarize the major achievements of the netCommons project in terms of communication activities and their current and potential impact, toward the five different target actors we identified in our dissemination plan (see Section 2.1): Existing Community Networks, Local authorities and Stakeholders, Policy Makers, CAPS communities, Scientific Communities, General public. The following sections will provide more the details on each activity.

## 1.1 Existing Community Networks

netCommons contributed in most major events related to CNs, from very technical and international ones, like the Battle of the Mesh (see Section 3.2.2), to more social and local ones, like the Guifi.net SAX meeting or the NinuxDay (see Chapter 4).

Also, netCommons initiated a novel participatory design process engaging professionals from the ICT agricultural sector, local farmers, breeders, stakeholders, and the commons movement in Greece. Together with partners of the project and the Sarantaporο.gr non-profit organization got in contact to develop synergies and co-create solutions that can address pressing needs, after many years of severe economic crisis (see Section 3.1.6).

The first gathering resulted in the identification of promising synergies between GAIA INFARM (Intelligent Services for Agricultural Production), Sarantaporο.gr, and AUEB around the complementary use of networking infrastructure for both Internet access and crowdsourcing of farming information, which could be delivered to the artificial intelligence system developed by GAIA, through an application under development crowdsourcing mobile application by AUEB.

## 1.2 Local authorities and stakeholders

netCommons was very active in reaching local authorities and citizens, managing to establish strong links with such actors in four areas of interest, Barcelona/Guifi.net, Athens/Sarantaporos, Trento/Ninux.org, and FFDN in France, described in detail in Chapter 4.

For example, the challenges faced by the Guifi.net network in Barcelona and the great opportunities that it can help materialize, were heard by important stakeholders and local authorities in the city of Barcelona, during the “*Workshop on community networking infrastructures: efficient collaboration between government, citizens and enterprises*” on June 17, 2016, a very successful event co-organized by netCommons, Ajuntament de Barcelona, and Barcelona Activa; see Section 3.1.2.

## 1.3 Policy makers, regulators, and politicians

netCommons is engaged in advocacy efforts and struggles against policies and regulations that can hinder the development of CNs, including apparently marginal technical regulations like the EU Radio lockdown directive, as described in Section 6.5. Such regulations, often born out of lobbying activities or addressing some technical detail, often risk to have deep impacts on the freedom of communications, making it impossible to properly run a CN.

A key event in this context was the 2016 Internet Governance Forum, see Section 3.2.6, perhaps the most important event of the year regarding the position of CNs in the overall telecom market with high potential impact in policy regulations, but also other actors included in netCommons target audience like existing CNs, local authorities and stakeholders, but also the general public.

More specifically, Guifi.net through its two netCommons representatives, Leandro Navarro and Roger Baig, had a prominent role in the Internet Governance Forum 2016, which gave particular focus this year on the case of Community Networks and the required policy and legal action. Success stories like Guifi.net can be instrumental for supporting very critical legal and policy fights around the radio equipment directive, laws about liability, and the equitable access of Community Networks to public infrastructure. In addition, the scope of impact is not only European but global.

From the main outcomes of the event we highlight the collaboration with the Dynamic Coalition for Community Connectivity (DC3) during the inter-session period to the next IGF event in December 2017, and the Dynamic Coalition on Innovative Approaches to Connecting the Unconnected to contribute in mapping best practices (building on results presented in D1.2).

Most importantly, the Internet Society (ISOC.org) has offered its support to disseminate the results of netCommons globally, and the Association for Progressive Communications (APC.org) has decided to partner with netCommons in developing the 2017 edition of the Global Information Society Watch (GISWATCH.org) focused on a comprehensive analysis of the topic of community networks around the world.

The voice of Community Networks was also heard in the first European Commons Assembly, where Panayotis Antoniadis presented the cases of Guifi.net and Sarantaporos.gr as successful examples of commoning in the area of Telecommunication networks<sup>1</sup>. Through such dissemination activities, reaching a much wider audience than is typically the case, netCommons supports CNs like Sarantaporos.gr offering them visibility and attention from the outside world, and also credibility to the local community, which is an important requirement to ensure its sustainability, which is under threat today.

<sup>1</sup>Video: <https://www.youtube.com/watch?v=XEWDstHb8Bg&feature=youtu.be&t=1h2m17s>



netCommons is also involved in the continuous process initiated by the European Commons Assembly of drafting policy recommendations on different areas of commoning, and Panayotis Antoniadis, Félix Tréguer, and Melanie Dulong de Rosnay are involved in the “Internet Commons” working group. See also the paper “Supporting Community Networks through Law and Policy” by Félix Tréguer [1].

National regulators are another key entity that netCommons has entered in contact with. In the conference organized in Trento (see Section 3.1.4) a representative of the Italian national regulator for telecommunications was invited. The conference was the occasion to introduce the concept of CNs to the regulator and to start a dialogue with the goal of increasing the consideration of CNs from the regulator itself.

## 1.4 CAPS communities

netCommons was present in three EU Horizon2020 specific events and explored possible collaborations with nine other CAPS projects: MAZI, EMPATIA, NextLEAP, CAPSELLA, PIE NEWS, STARS4All, Making Sense, and DiDIY (see Section 6.1).

One of the key dissemination strategies in this context is to conceptualize CNs as possible testbeds, in connection with the Community-Lab testbed established in 2011 by the CONFINE EU FIRE project, or better living laboratories, for experimenting with decentralized applications.

## 1.5 Scientific communities

netCommons was very active in scientific production, with the researchers from engineering publishing in diverse and prestigious conferences and social and legal scientists disseminating the activities through academic journals as detailed in Chapter 5.

The project is proud to have a strong presence on two very relevant special issues of Journal of Peer Production, on “Alternative Internets” (the editorial and two papers), and of First Monday on “Reclaiming Internet architectures” (three peer-reviewed papers), which are two open-access online journals with high standards and wide audience.

netCommons researchers were highly successful in addressing many different technical communities, for instance addressing IFIP, IEEE and ACM venues as well as Elsevier journals<sup>2</sup>. Also social and legal scientist managed to address a wide audience through the publication of books and papers that target different scientific communities, thus laying the ground to let CNs become a topic of interest beyond their traditionally narrow audience in subsectors of ICT and social sciences.

In total, the netCommons consortium produced in 2016, four book chapters, eight journal papers, nine conference or workshop papers, 1 demo. Several others are already submitted and some accepted and will appear in early 2017.

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<sup>2</sup>IFIP, IEEE, and ACM are the three main scientific communities that cover ICT topics at large and networking in particular, their conferences are those that achieve the highest impact and the only ones through which academic work may hope to reach out to industry and telecom operators. Elsevier remains, with the other brands it controls like Wiley and Springer, the leading scientific publisher worldwide.



## 1.6 General public

netCommons was able to gather the public interest on this subject its Internet presence and with a series of interviews with local and global media, four in total as described in detail in Section 6.6.

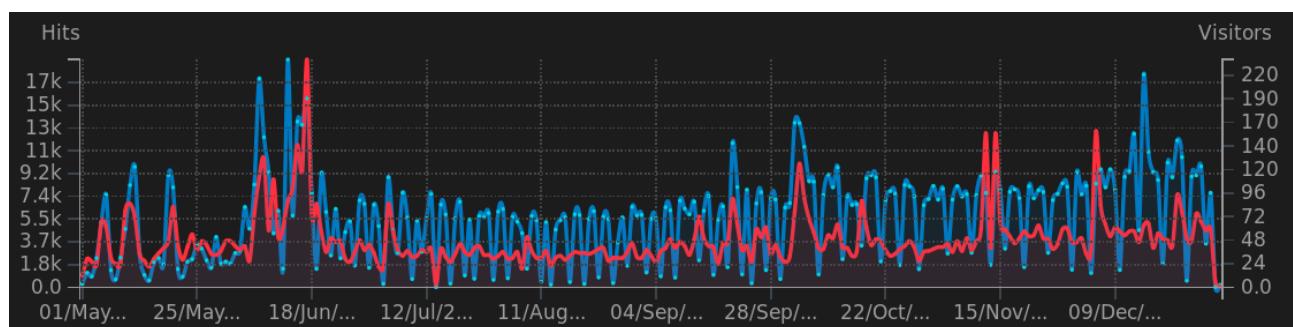
A notable achievement of netCommons dissemination efforts toward the general public was the publication of an article at The Conversation Global, an online media platform with many branches worldwide, which as of October 2016, reports a monthly online audience of 3.7 million users onsite, and a reach of 35 million through creative commons republication<sup>3</sup>. The article was republished by Scroll.in<sup>4</sup> and the P2P foundation<sup>5</sup> and has reached, on January 4th, 10449 readers according to the analytics platform of The Conversation.

More of such articles will appear in 2017. An orchestrated effort to update wikipedia articles referring to CNs, and additional educational and dissemination material will increase the outreach of netCommons and foster the visibility of all related projects.

## 1.7 Internet Presence

In terms of internet presence, netCommons is active on twitter<sup>6</sup>, and is constantly gaining followers (currently more than 200) and impact on its tweets (approx. 160 impressions per day the last two months), despite its moderate, but confident, online activity resulting to 332 tweets in total and 169 following.

netCommons web site<sup>7</sup> in its definitive shape was set-up in April 2016, and in the period May 1st–Dec 31st it served 1,390,295 requests for 11,597 visitors (excluding robots) with an average of 47 unique users per day. Fig. 1.1 reports the time graph of the page hits and the unique daily visitors for the reported period. Fig. 1.1 shows that the trend of both visits and unique users is positive, with some spikes corresponding to the events we participated or organized, such as the workshop organized in Barcelona (see Section 3.1.2).



**Figure 1.1:** The time graph of the number of page hits (blue) and daily unique visitors (red).

<sup>3</sup><https://theconversation.com/behind-the-scenes-creative-commons-publishing-67375>

<sup>4</sup><http://scroll.in/article/821044/diy-community-networks-could-be-the-road-to-a-more-democratic-internet>

<sup>5</sup><https://blog.p2pfoundation.net/61323-2/2016/11/11>

<sup>6</sup>See <http://twitter.com/netCommonsEU/>

<sup>7</sup><http://netcommons.eu>



## 2 Dissemination Plan and the netCommons identity

The goal of the dissemination plan is to coordinate the activities of the partners so that we can convey, outside the project itself, a clear and uniform understanding of the objectives of the project. Different scientific communities normally have a different perspective on an interdisciplinary project, thus it is very important to inform correctly all communities building a common language and a common understanding of the goals and results of the project.

Moreover, netCommons has the clear ambition to reach non-academic audiences, which need specific dissemination strategies. For this, WP6 has been structured to focus mostly on the “extra than usual” effort required to reach audiences outside the scientific communities of the different partners. This means that a large part of the effort invested for this Work Package (WP) is expected to correspond to a variety of dissemination activities that will include such “external” actors. For example, local events both public and private, meetings with stakeholders and local authorities, presence in popular media and large international events with high impact, and so on.

CNs are the archetypal example of CAPS, as they embody all levels of ownership and cooperation to achieve several common goals. They are also a great opportunity for the development of Free Libre Opens Source Software (FLOSS) and Peer to Peer (P2P) systems. Moreover, CNs engage society at many different levels, from activists to policy makers, from law experts to computer scientists and simple citizens. The following list classifies the audiences that we have identified as targets of our dissemination efforts together with the core innovation messages that we wish to communicate and contribute to achieve.

- **Existing CNs:** The key innovation for CNs is to open up, or to become more extrovert using a term borrowed from human behavior. This should happen in two different directions.
  1. To collaborate more with experts, researchers, and activists of different disciplines/areas with the goal of include important sustainability perspectives that are missing in their specific CN, examples of these perspectives include but are not limited to: policy and legal aspects, economic and technical sustainability and evolution, urban and social movements, social acceptance and inclusion, application ecosystems.
  2. To become more inclusive communities themselves by providing access also to people that are not technically savvy or are not part of the initial “tribe” that started the community; access means both interconnection to the infrastructure of the network, and to the community, being more extrovert in their public gatherings, admitting different forms of participation, investing more on the access part of the network and the development of local applications, in some cases be more gender balanced, and so forth.
- **Local authorities and stakeholders:** These two intertwined communities should consider CNs as a grassroots initiative that allows not only to obtain affordable Internet access where the market fails, but also to improve local action and economy, community building, social cohesion, collective awareness, and local specialized services that are impossible or unsustainable on a global scale. They should consider the important overall benefits from providing spaces for gatherings and access to civil infrastructures for the deployment of network devices, and from fostering institutional support and seed funding for minorities inclusion.

- **Policy makers and regulators:** should acknowledge the potential of CNs and take them into account when regulating the telecommunications market in order to guarantee that innovative alternative technical and organizational solutions toward a more open, affordable, and neutral Internet are not suffocated. They should protect CNs from harmful policies and regulations like the EU radio lockdown directive or conservative liability legislation, fighting instead for policies that can help CNs proliferate like the use of radio frequencies for the public good or better institutional structures.
- **General public:** should understand the importance of the ownership of telecommunications infrastructure with respect to important Internet rights, from affordable access to privacy and in general technological sovereignty.
- **CAPS communities:** should conceptualize CNs as a “grassroots Internet” that can form an ideal substrate for interdisciplinary and transdisciplinary Internet Science, but also as platforms that can naturally host distributed applications and promote their use in local urban settings, building links with similar grassroots initiatives.
- **Scientific communities:** should consider CNs as an opportunity for researchers in various specialized disciplines to perform research in collaboration with colleagues that work in complementary disciplines and increase the impact of their work.

Keeping these “messages” in mind, we have given significant emphasis on the organization of international and local events that allows reaching out to these actors, and stay in close contact with them. We have paid special attention to the documentation of these processes to make it easier to improve them along the way, and to create a common understanding and a common vision between the very diverse mix of disciplines and case studies that are part of our consortium.

Moreover, we have decided to use part of our effort to produce outputs in the form of policy recommendations, advocacy and networking activities, blogs and articles, and educational material, like short tutorials, among others, in order to support the cause of different European CNs, and especially those that are close to our project: [Guifi.net](#), [ninux.org](#), and [Sarantaporο.gr](#). This effort is coordinated by WP6 that draws from the specific output of many different tasks (e.g., T1.2 and T1.3 on Governance and Advocacy, or T3.1 on Participatory design and T4.1 on the Legal Framework) to make the outcome of the research work accessible to communities and society in general.

In this context, it is a big chance for netCommons to have in its consortium people that have played and still play a central role in the evolution of very successful CNs, such as Guifi.net, which is with no doubts one of the most successful CNs in the world, but also from ninux.org, which is an example of a national-wide, mostly urban movement with multiple islands focusing on internal and local services instead of Internet access. Sarantaporο.gr is instead an example of a rural community network deployed with a top-down approach, through the financial and technical support of the EU project Community Networks Testbed for the Future Internet (CONFINE), among others, which is now trying to engage locals to appropriate it and manage it truly as a commons. The diverse expertise available in our project can provide invaluable help for these smaller CNs, as well as knowledge and best practices for similar case studies across the world. In the first year of activity we have been in contact mostly with these three CNs, but in the future we plan to try to establish contacts also with others.

Finally, we need to be always aware that we often have to interact with activists that do a lot of volunteering work and who often see with suspicion funded researchers that ask more of their precious time without always offering something back to them.

For all these reasons, the key message that we want to articulate toward the public and especially the



CN communities, is that our project can bring expertise that is complementary to the ones available in CNs, and that can be put to their own service. Hence, the more interactions and close collaborations are maintained between the project partners and real CNs the more the chances that our work will contribute to the success of CNs around the world.

## 2.1 The netCommons storyline

netCommons is a interdisciplinary, or better a transdisciplinary, project aiming to support and enhance the role of (wireless) community networks in Europe with a strong focus on the legal, political, economic, and urban challenges that such networks face today. It is a collaboration of two computer engineering departments (the Department of Information Engineering and Computer Science of the University of Trento and the Department of Computer Architecture at the UPC in Barcelona) with close relationships with two existing community networks (ninux.org and guifi.net respectively) and four additional disciplinary perspectives: CNRS and the department of Law of UniTN for the legal studies, University of Westminster for the political economy, Athens University of Economics and Business for the economic studies of ICT, and NetHood for the urban studies.

netCommons is a multi-faceted project focusing on an area of commoning that is not yet well understood: networking infrastructure and ICTs owned and managed by the people for the common good. In this context, there are different dimensions of diverse views that need to be balanced and to become clear in the storyline of the project. The complexity rises when one considers the different audiences that we need to reach as described in the Chapter 2. This means that we will need multiple stories targeting different audiences in addition to the global identity encompassing all perspectives.

The main concepts that the project storytelling should express, through short descriptions, visuals, graphics, etc, include the following:

- Networking infrastructure as commons: citizens building, owning, and managing their own communication tools;
- Transdisciplinary perspectives: bridging the world of CNs (mostly hackers, geeks, technology enthusiasts) with the scientific community (engineering, law, economics, political theory) and a wide variety of stakeholders (policy makers, local authorities, the general public, etc.).

How these two main concepts are developed and presented revolves around two continued actions or “tensions” that are taken into account trying to keep a balance between them strike a balance between local action in CNs and global action with our scientific achievements.

- Protecting/supporting existing CNs from various challenges and threats vs. pushing them to a new era: more inclusive and with more attention to local services. In other words, we should balance the image of CNs as a gateway to the Internet vs. CNs as a common networking infrastructure for local services. To reach this goal, the commons-based methodology of Guifi.net is very important and we should invest in communicating it better towards all actors involved.
- Bridging the gap between engineering and social sciences in terms of assumptions, languages, methodologies, and in general “world-views” that make collaboration difficult. On the one hand, working on real projects and problem-solving rather than purely theoretical interdisciplinary research, leaning more towards *transdisciplinarity* is a big advantage of our project. On the other hand, the fact that CNs are mainly, sometimes purely, engineering projects raises important challenges that, in turn, require to bring actors from different fields at the same table with representatives from CNs since the very beginning of the project.



## 2.2 Press Kit

As a first step we developed a high-level presentation of the project in our brochure<sup>1</sup>, which summarizes the main points above in a concise way.

First, the brochure states that “*netCommons is a transdisciplinary project for understanding, promoting, and supporting community networks as a common infrastructure*”, for “*resiliency, sustainability, democracy, self-determination, sovereignty, alternatives, social integration*” from different disciplinary perspectives such as “*engineering, computer science, law and policy, political economy, urban, media and social studies, economics.*”

Second, it highlights that community networks are already a success story in Europe with many successful community networks with hundreds or thousands of nodes that span a whole region or even a country (e.g., Guifi.net, Freifunk.net, ninux.org). They provide affordable Internet connectivity and/or local services in a participatory and sustainable way, and indeed, again using the words of the brochure “*a remarkable case study of self-organization, social inclusion, engineering excellence, collective action, commons-based peer production, socio-economic development.*”

Third, the brochure stresses the important challenges that CNs face today like the fact that “[CNs] are not well understood neither by the general public nor by local authorities and often operate more like clubs of like minded people than open infrastructures”, but also the existence of inadequate legislation that “can undermine their legal sustainability and of the free software produced by them.” Also, warning that “the management of network infrastructures as a commons requires sophisticated organizational structures and local institutions” and that the “governments may not realize the potential of community networks for social inclusion and socio-economic development.”

Finally, presenting netCommons as a project that aims “*to promote and support CNs’ cause through a large variety of skills, and expertise from different disciplines*” targeting many concerned actors such as: scientists through “*innovative research work that can bring closer disciplines from different ‘cultures of science’*”; designers and developers by developing open/free software and hardware; policy makers and politicians, through drafting “*regulations for defending the digital rights of the local population*”; civil society and local authorities through “*empowering grassroots initiatives,*”; and finally citizens, by providing “*access to more equitable and affordable Internet access, and a suite of local services.*”

We chose the following motto as simple impacting message in the netCommons brochure:

**A community owning its network infrastructure is not a revolution:  
it is simply progress, democracy and sustainability.**

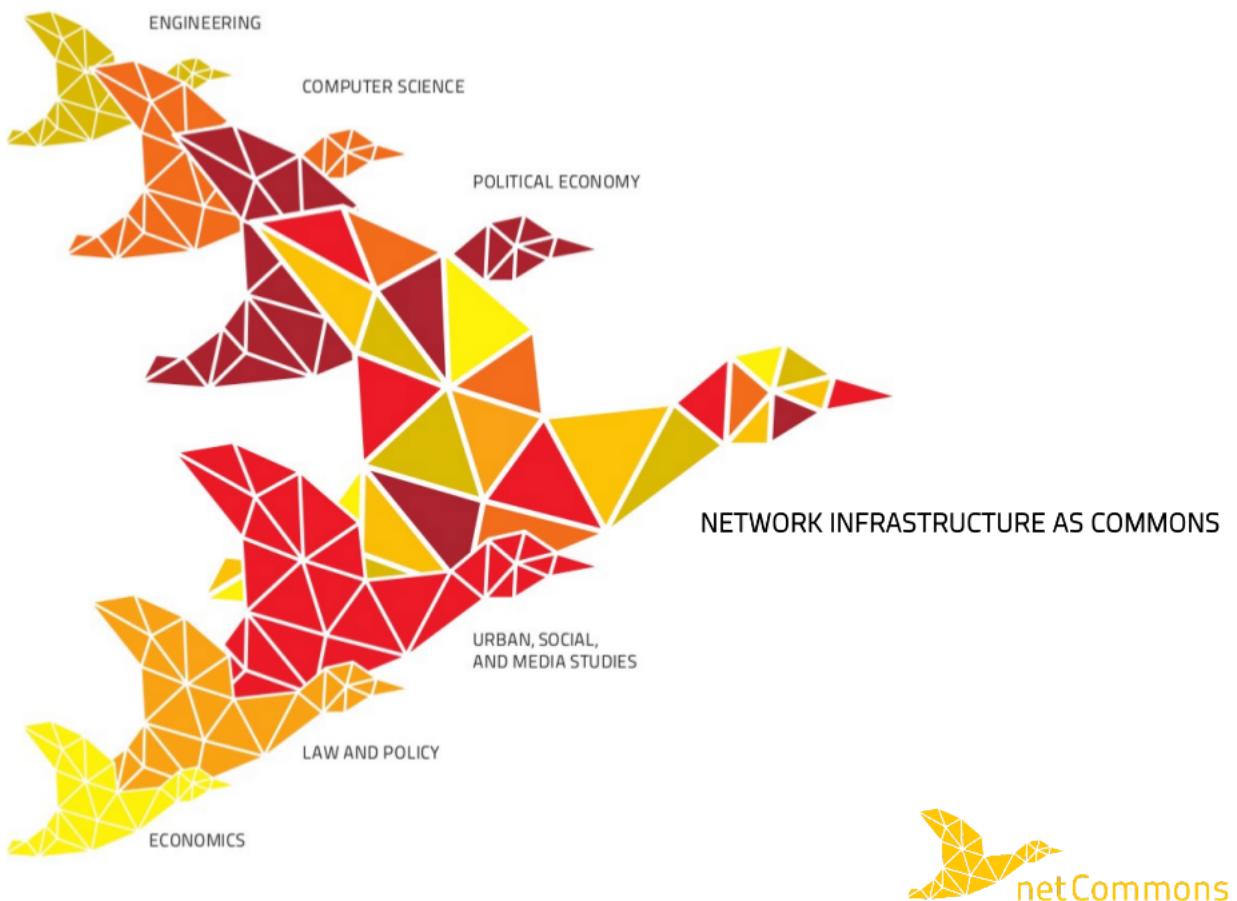
The project’s logo and the key graphic representing its visual identity, reported in Fig. 2.1, express exactly the fact that Community Networks are different and they need to work in close collaboration between them but also with the scientific community from different disciplines to achieve their ambitious objective: the conceptualization of network infrastructure as a commons.

Together with the logo, the web site, hosted by the University of Trento in its data centre, has been designed as an open platform for cooperation and dissemination, collecting the events, blogs, papers produced thanks to the project, and also publishing all the deliverables of the project for public access<sup>2</sup>.

<sup>1</sup>available for public download at [http://netcommons.eu/sites/default/files/netcommons\\_brochure.pdf](http://netcommons.eu/sites/default/files/netcommons_brochure.pdf)

<sup>2</sup><http://netcommons.eu/?q=content/deliverables-page>





**Figure 2.1:** The netCommons logo and the key graphic representing the diversity of CNs and the required diverse expertise for achieving their common objective.





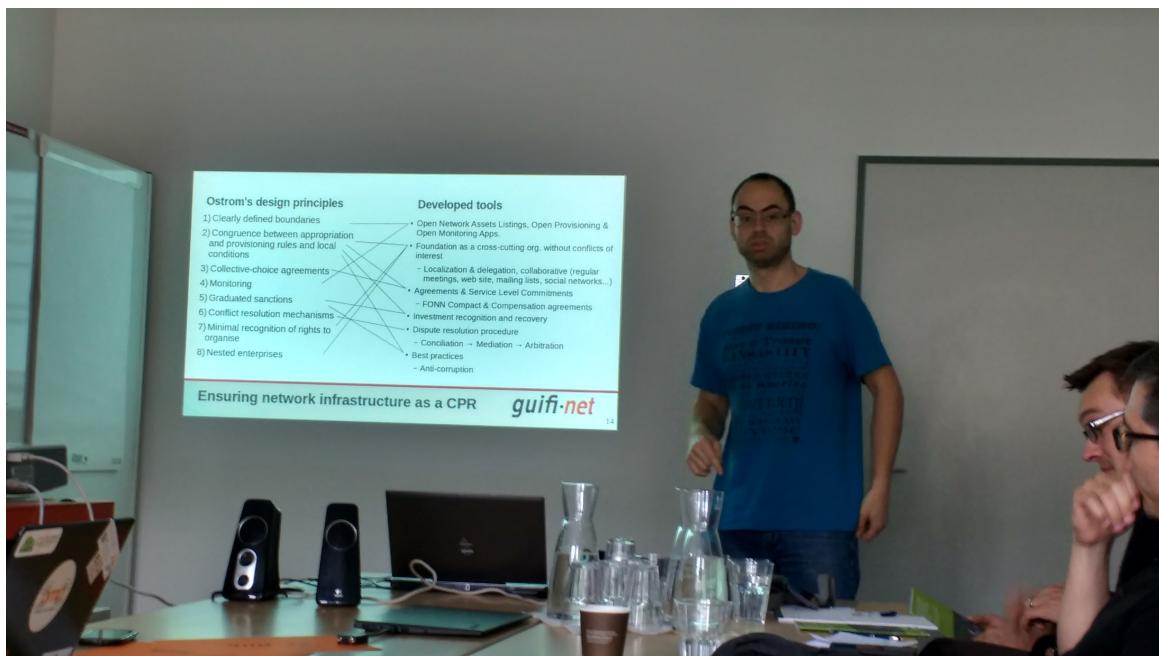
## 3 Events

netCommons has organized numerous events and participated in well established events organized regularly by other stakeholders, being them communities, large scientific societies or other recognized actors. We first report in Section 3.1 on the events organized or co-organized by netCommons, and then in Section 3.2 on those where we participated. These two Sections refer to general multi-cultural events. Section 3.3 reports instead on events organized specifically for CAPS or in general H2020 projects, while Section 3.4 is dedicated to specialist scientific venues where netCommons partners participated. Finally, Section 3.5 and Section 3.6 summarize on general public talks and other community building activities.

### 3.1 Organized events

One of the cornerstones of netCommons' dissemination plan is the organization of events that enable us to bring together different actors around the objectives of the project. To this end, during the first year of the project netCommons organized four main events in Barcelona, Trento, London, and Sarantaporo, and also a netCommons-specific panel and workshop in two big conferences in Bern and Amsterdam respectively. Finally, two more events, scientific workshops, in Cambridge and Stockholm have been organized and will take place in January and June 2017 respectively.

#### 3.1.1 4th Regional European IASC Conference



**Figure 3.1:** Presentation in session: Digital commons in a 'glocal' world, May 13, 2016

**Type:** Conference

**Title:** Global connections and local responses

**Date:** May 10-13, 2016

**Place:** Bern, Switzerland

**Organizers:** Panayotis Antoniadis and Jens Martignoni (NetHood), Leandro Navarro and Roger Baig (UPC)

**URL:** [http://conferences.iasc-commons.org/index.php/iasc/IASC\\_Europe\\_Bern2016](http://conferences.iasc-commons.org/index.php/iasc/IASC_Europe_Bern2016)

**Actors:** Academia and practitioners of the commons, mostly around Ostrom's perspective

**Audience:** Around 300 people at the event, 30/15 participants at netCommons' panels

**Dissemination Level:** International, EU, Africa, US

**Description (from the conference material):** “*This conference aims to look at the interfaces between local and global processes in order to bring together research arenas that have often been kept quite separate until now. We therefore call for contributions focusing on:*

- *how global players such as multinational companies and organizations affect local governance of the commons worldwide;*
- *the role of international law and global trade in shaping the interface between global actors and institutional processes of local commons governance;*
- *the impacts of external economic and political changes on the perception and evaluation of resources and areas by actors related to the commons;*
- *local resistance and the development of political strategies countering the transformation of collective into private or state-based property rights as a consequence of economic and political changes;*
- *the local crafting of institutional designs in global and local arenas, and how these affect access to and distribution of natural resources and related benefits among local to global actors using the commons;*
- *how the encounter of global and local processes affect bargaining power, ideologies and discourses of global and local actors in governing sustainability trade-offs.*

*We especially welcome contributions that aim to address the above mentioned themes through novel forms of integrating theoretical approaches. In addition, the focus of the conference will be on a dialogue among representatives of different academic disciplines (e.g. geography, social anthropology, history, development studies, economics, political science, and law) and between academics and non-academic actors (e.g., practitioners, business representatives, policy makers, or Non Governmental Organizations (NGOs)).*”

**Summary:** netCommons organized two panels in this conference (1.5 hour each). The first one, Panel #B19 on Wednesday 11 May 2016, was a cooperation with the CAPS project MAZI and was titled “Networking, comparing, and integrating urban commons initiatives in research and action”, and included two papers on behalf of netCommons:

- Panayotis Antoniadis, Melanie Dulong de Rosnay, and Félix Tréguer: “What does “as a commons” really mean? A critical reflection on the case of community networks”
- Jens Martignoni and Panayotis Antoniadis: “Community Currencies as a Commoning tool: The case of Cooperative Housing and Community Networks”



The second panel, Panel #C38 on Friday 13 May 2016, entitled “Digital commons in a ’glocal’ world”, was a collaboration of UPC/Guifi.net with eReuse.org and included two papers:

- Roger Baig and Leandro Navarro: “guifi.net, a sustainable implementation of the commons in the telecoms sector” (see Fig. 3.1)
- Leandro Navarro and David Franquesa: “eReuse.org a digital device commons for circular economy”.

The discussions in both panels were very interesting, the first being more attended due to the more convenient day and time. The idea of considering network infrastructures as commons is not very widespread in this community and our contributions toward the conceptualization of network infrastructures as commons were very well received. It would be a great success if this became a “mainstream” resource type considered as an example of commons. Currently we are still at the awareness phase but in future iterations some very constructive interactions could take place with people working on the concept of the commons from very different disciplinary and practical perspectives.

**Additional Notes:** The conference produced a booklet<sup>1</sup> that includes all abstracts of the presentations.

### 3.1.2 Community networking infrastructures



**Figure 3.2:** Workshop: *Community networking infrastructures: Efficient collaboration between government, citizens and enterprises*, Barcelona, June 17, 2016

**Type:** Workshop

**Title:** Community networking infrastructures: Efficient collaboration between government, citizens and enterprises

<sup>1</sup>[http://www.iasc-commons.org/sites/default/files/Program%20booklet\\_0.pdf](http://www.iasc-commons.org/sites/default/files/Program%20booklet_0.pdf)



**Date:** June 17, 2016

**Place:** Barcelona, Spain

**URL:** <http://netcommons.eu/?q=content/workshop-community-networking-infrastructures-barcelona>

**Organizers:** Leandro Navarro and Roger Baig, UPC

**Audience:** Around 80 participants

**Actors:** Community networks, government, academia, local stakeholders

**Dissemination level:** National (Spain). The event has been mixed in English and Catalan to allow net-Commons international speakers to participate, thanks also to simultaneous translation. The primary audience was Barcelona and Catalonia, but extension and resonance to entire Spain was obtained.

**Description (from the workshop material):**

*“Public administrations, citizenship and enterprises are the three key players for the construction and management of any commons infrastructure. This workshop will discuss how they can strengthen ties to optimize a specific case of these infrastructures, community networks. We will analyse tools ranging from governance strategies to implementation at deployment and operation level, paying special attention to the optical fibre, a key technology for achieving the coverage and penetration targets of the European Digital Agenda. Based on the experience and the work done so far, the conference has two main objectives: expand knowledge about this type of collaboration and identify specific lines of action to make them more efficient in the future. With the ambition to achieve an overall analysis, these challenges are faced from the point of view of governance, regulation, and its implementation, dedicating to each block a total of one and half hour. To stimulate discussion and alleviate as many doubts as possible, each block consists of a panel of an hour, and a half an hour open round of comments, followed by a pause. A round table will be a short presentation by each speaker and then a debate between the speakers.”*

**Summary:** As a summary of the detailed description in [2]: There are multiple organizational models to develop a networking infrastructure. Beyond the traditional commercial model (investor and profit driven, extractive for the target service consumers), there are commons-driven models that can develop community infrastructures in a cooperative, cost sharing, and self-organized manner. Diversity of models contribute to ensure the availability of connectivity, the development of sustainable networking infrastructures and ultimately boost local socio-economic development. It has parallel features to free software, that create viable alternatives, is developed cooperatively, and can create opportunities to develop higher added-value in the volunteer, in the professional or commercial sector too. Cooperative models have found ways to create economies of scale (grouping individual entrepreneurs and professionals sharing risks, aggregating costs, sharing infrastructures), create economies of knowledge and tools (sharing the effort to develop know-how, procedures, software tools and services). Public administrations (city councils, municipalities, and governments at all levels) have the responsibility of regulating the offer of networking services to citizens, the occupation of the public space, preventing discrimination: towards citizens under objectives of fair (universal) service to ensure communication rights, and towards network operators to ensure market rights.

Competition should be preserved when available, but the role of public administrations is also to promote the offer or alternatives - including public investment- in cases of “market failure” . However these interventions should be under the principle of the public administration acting as a “private investor”. In any case the regulation of occupation of public space can coordinate all interested parts under the principles of minimizing cost and impact in that occupation. The Universal deployment format is a proposal for the regulation of the deployment of networking infra - structures for advanced



networks through infrastructure and cost sharing. Coordination mechanisms among private and public organizations, and citizens can help to accelerate the development of sustainable net - working infrastructures, for the benefit of all parts and society in general.

Different organizational models (e.g. firm, commons, extractive, collaborative), cooperative and competitive schemes, coordinated and regulated by public entities, allow commercial and community operators to develop and ensure everyone can best participate in the digital society. While most of the ideas are universal, the details can vary across continents, countries, regions, and municipalities. Further work is required to develop universal ideas and generic mechanisms in the light of the local specifics, such as the needs of its inhabitants, geography, history, legal regime, regulation, and other social, economic and environmental factors.

**Additional Notes:** A detailed description of this important event was published as a book chapter titled “*Efficient Collaboration between Government, Citizens and Enterprises in Commons Telecommunication Infrastructures*” in Luca Belli (editor), Community Connectivity: Building the Internet from Scratch, Annual Report of the UN IGF Dynamic Coalition on Community Connectivity, FGV Direito Rio Edition, 2016 [2].

### 3.1.3 History and Theory of Alternative Media



**Figure 3.3:** History and Theory of Alternative Media, London, July 8, 2016

**Type:** Workshop

**Title:** History and Theory of Alternative Media

**Date:** July 8, 2016

**Place:** Westminster University, London

**Organizers:** Christian Fuchs, UoW and Melanie Dulong de Rosnay, CNRS



**URL:** <http://netcommons.eu/?q=content/workshop-history-and-theory-alternative-media>

**Actors:** Academia, activists

**Audience:** 20 participants

**Dissemination Level:** UK and France

**Description:** The purpose of the workshop was to stimulate discussion on theoretical and historical issues of alternative communication networks and media technologies and link them with practical cases drawing on the participants' experiences.

**Summary:** The workshop informed work package 5, Task 5.1, which consists in mapping the historical precedents of alternative communication networks and alternative media. The participants in the event were the CNRS and University of Westminster netCommons teams, as well as a few outside experts based in the UK. The workshop was divided into three parts: firstly, a theoretical presentation and discussion about what makes a communication medium alternative; secondly, a presentation of cases of alternative media networks by the CNRS team; thirdly, an open discussion with outside guests drawing on their experience of alternative media networks and the relevant opportunities and challenges.

### 3.1.4 Local and community networks



**Figure 3.4:** Local and community networks, Trento, September 29, 2016

**Type:** Workshop

**Title:** Local and community networks

**Date:** September 29, 2016

**Place:** University of Trento, Faculty of law

**Organizers:** Roberto Caso and Federica Giovannella, UniTN



**URL:** <http://webmagazine.unitn.it/evento/giurisprudenza/10495/local-and-community-networks>

**Actors:** Scientific community, civil society, policymakers

**Audience:** 25 participants

**Dissemination Level:** Italy, France, Netherlands

**Description:** The event was organized within the project “Wireless Community Networks: A Novel Techno-Legal Approach” funded by the University of Trento as well as within “netCommons”. The workshop focuses on “Local and Community Networks”, meant as local and community networks as infrastructures for digital communication, alternative to typical and mainstream approaches –such as Internet Service Providers’ ones– that resemble a scaled-down Internet and are used to interconnect a community of people who share distinctive goals and motivations. The workshop will consist of two parts. A first, introductory part of the workshop will involve people of public institutions, with the aim to raise awareness on local and community networks (working language: Italian). The second part of the workshop will instead focus on presentations by academics illustrating their research on the topic (working language: English).

**Summary:** The workshop focused on local and community networks and was divided into two main parts. A first, introductory part of the workshop involved people of public institutions, with the aim to raise awareness on local and community networks. It was held in Italian and included representatives from the national Regulator and Competition Authority for Communications (AGCOM - Marco Delmastro) and from the publicly owned enterprise devoted to the development of telecommunication networks in the province of Trento (Trentino Network - Alessandro Zorer). Among the panelists there was also the representative of a WISP (Antonio Rita) and a well-known Italian journalist (Arturo Di Corinto). The second part of the workshop focused on presentations by academics illustrating their research on the topic. The working language was English. The researchers had different background (economics - Walter Lemstra; sociology - Paolo Magaudda & Stefano Crabu; law - Mélanie Dulong de Rosnay & Federica Giovanella) and presented their research.

**Additional Notes:** Among the attendees there were employees and representatives of some municipalities. They showed interest in the project. In particular, Daniele Gubert from “Primiero valley” asked Renato Lo Cigno to organize a meeting in this area (see Section 3.1.5). The discussion was lively. Panelists had different ideas and conception on connectivity (given their different background), but there was a lot of interest in what CNs are and how to build them.

**Video recording of the meeting:** <https://www.youtube.com/watch?v=M8vVJ941b18>

### 3.1.5 WiFi Community Networks in Primiero

**Type:** Meeting with the local community

**Title:** WiFi Community Networks

**Date:** November 22, 2016

**Place:** Comunità di Primiero, Tonadico TN 38054 Italy.

**Organizers:** Renato Lo Cigno, UniTN and Daniele Guber, representative of “Comunità di Primiero”

**URL:** <http://www.primiero.events/e/917/wifi-community-networks>

**Actors:** Civil society, local administration

**Audience:** 15 participants

**Dissemination Level:** Local: Trentino province



**Description:** The goal of the event was to inform in the afternoon a small group of local activists, discussing with them also technical issues, while in the evening the meeting was open to everyone (working language: Italian).

**Summary:** The participation has been small but rather qualified, three activists from Gallia Network<sup>2</sup>, another local CN, joined the meeting to discuss their experience with the local community besides the presentations by Federica Giovanella, Leonardo Maccari and Renato Lo Cigno.

**Additional Notes:** Primiero is a historically isolated mountain community in the north eastern part of the province of Trento, Italy. There is a very strong community feeling and pride in the territory and in the management capacity of the local community. Albeit an optical fiber backbone now crosses the main valley, as the population is sparse in small hamlets and isolated houses so that data connectivity remains poor. Also cellular coverage is not complete and very often limited to 2G technology.

### 3.1.6 Agricultural Sector, ICT Innovations and the Commons – Towards Building Synergies



**Figure 3.5:** Sarantaporo symposium, Elassona municipality, November 26-27, 2016

**Type:** Symposium

**Title:** Agricultural Sector, ICT Innovations and the Commons - Towards Building Synergies

**Date:** November 26-27, 2016

**Place:** Athanasios Minas Winery Facilities, Milea village, Sarantaporo area

**Organizers:** Georgios Klissiaris (AUEB, Sarantaporo.gr), Vassilis Chrysos (AUEB, Sarantaporo.gr), Panayotis Antoniadis (NetHood), Panagiota Micholia (AUEB), Merkouris Karaliopoulos (AUEB)

**URL:** <http://netcommons.eu/?q=content/agricultural-sector-ict-innovations-and-commons-towards-building-synergies>

<sup>2</sup><http://www.gallianetwork.it/>



**Actors:** Farmers, breeders, local authorities, researchers, entrepreneurs, activists, industry

**Audience:** 20 participants

**Dissemination Level:** National (Greece)

**Description:** netCommons' partners Athens University of Economics and Business and NetHood, in close collaboration with Sarantaporo.gr non-profit organization, initiated a series of participatory design workshops in the area of Sarantaporo in order to reveal critical challenges faced by the agricultural sector in the area and explore possible opportunities for the design of innovative cooperative actions around agricultural production with the support of new technologies and common infrastructures, like community wireless networks.

The first (closed) event of this series, a two-day symposium addressed the following three questions:

- What are the biggest and most common problems agricultural sector faces today? Which are the opportunities and which the hurdles for the founding of modern cooperative structures?
- What could be the contribution of modern ICT solutions, and especially those based on the principles of commoning, and which are the suitable strategies and collaboration for this contribution to truly benefit the local society?
- How could the collaboration between the agricultural sector, the commons ecosystem and social entrepreneurs, ICT-based innovative businesses, academics & researchers, and local authorities, lead to generalized cooperative action that combine the traditional agriculture cooperatives with the cooperative networking infrastructures?

The symposium is structured around the parallel description of existing problems faced by the local professionals, and possible solutions that could be developed by researchers and/or innovative businesses in the ICT sector, in the light of the key principles of cooperation and commoning.

**Summary:** A very detailed analysis of the interactions that took place in this symposium is included in Deliverable 3.1 [3].

**Additional Notes:** The event and corresponding publicity material has been in Greek, and translations for this document and other netCommons material has been provided by netCommons participants.

### 3.1.7 Flexonomix District Currency Game

**Type:** Workshop in Conference

**Title:** Flexonomix District Currency Game

**Date:** December 2, 2016

**Place:** Pakhuis de Zwijger, Amsterdam, Netherlands

**Organizers:** Jens Martignoni, Panayotis Antoniadis, Ileana Apostol (NetHood)

**URL:** <http://networkcultures.org/moneylab/>

**Actors:** Researchers, activists, general public

**Audience:** At the conference there were more than 500 people, at the NetHood workshop around 25 participants

**Dissemination Level:** International, EU, US

**Description:** The Institute of Network Cultures of the Amsterdam University of Applied Sciences organized their 3rd Symposium MoneyLab #3, with the general theme “Failing Better”, or a two-day symposium featuring talks, workshops and performances that confront the notion that finance is too big to fail. netCommons was represented in this important event on alternative economies by



NetHood, which organized a parallel workshop on the Flexonomix District Currency Game. This is an educational game on how to manage a commons by a dedicated community currency. The game was enhanced and improved in the context of netCommons, both in its design and presentation as part of T2.3 (see also [4]). This was the first presentation of the game for an international audience.

**Summary:** The implementation of the game was very successful, although many aspects of it had to be shortened due to the limited available amount of time (only 1.5 hours including a short introduction to community currencies). The participants showed impressive engagement with their assigned imaginary roles, some offering "real" commons-based services like free hugs or attracting new people to our workshop room from the outside. They even participated with passion in the assembly, taking it so seriously as to complain that we should not rush them to take decisions before allowing everyone to talk. Overall the feedback was very positive, and the game is now fully functional in its English version and can be easily offered in different occasions<sup>3</sup>.



**Figure 3.6:** District currency game at Moneylab #3, Amsterdam, December 2, 2016

### 3.1.8 Upcoming organized events

In the first half of 2017 netCommons is already involved in the organization of the following upcoming events:

- the "Interdisciplinary workshop on DIY and community networks", Stockholm, June 12, 2017 in the context of IFIP networking 2017, in collaboration with the EU projects MAZI and RIFE.  
**URL:** <http://diynetworking.net/ifipnetworking2017/>.
- the GAIA Community Networks: Sustainability & Regulation Workshop, Cambridge January 26-27, 2017, in collaboration with the Internet Society, EU H2020 RIFE Project, and the EP-SRC GCRF African Internet Measurement Observatory (AIMO) project.

<sup>3</sup>The review of the game by the official Website of the conference is available here: <http://networkcultures.org/moneylab/2016/12/06/flexonomix-district-currency-game/>



**URL:** <http://dsg.ac.upc.edu/gaia-cn-ws>.

## 3.2 Participation in high-impact international events

netCommons contributed in numerous international events of high impact for CNs, most notably the GAIA workshop at IETF 2016, IGF 2016, battle of the mesh, and the European Commons Assembly.

### 3.2.1 Mobile Social Congress and Mobile Commons Congress



**Figure 3.7:** Mobile Social Forum, Barcelona, February 23, 2016

**Type:** Local workshop in parallel with the Mobile World Congress in Barcelona

**Title:** Mobile Social Congress and Mobile Commons Congress

**Date:** February 23, 2016

**Place:** Barcelona, Sants area

**Participants:** Leandro Navarro, Roger Baig, and David Franquesa, UPC

**URL:** <https://www.ereuse.org/en/2016/02/13/mobile-commons-congress>  
<http://www.setem.org/blog/cat/catalunya/mobile-social-congress>

**Actors:** citizens, government, academia, CSO from the social and solidarity economy

**Audience:** More than 60 participants, and dissemination through regional radios and TV.

**Dissemination Level:** Local, Europe. The event has been in Catalan mostly with a few interaction in English, with help from volunteer translators.



**Description:** A one day workshop to discuss about commons and social needs in the digital world, with aspects related to sustainability, human rights, networks and digital sovereignty. Organised as a series of talks, debates and stands as illustrated in Fig. 3.7.

**Summary:** The event served for the presentation and discussion of issues in developing network infrastructures in commons, as a complementary vision to the industry focused Mobile World Congress (MWC)<sup>4</sup>. A lot of topics were identified where netCommons can contribute, a major effort in analysing and formalising this topic. Many people were interested in follow-up work, and therefore an opportunity to report progress in future editions of this event.

### 3.2.2 Battle of the mesh



**Figure 3.8:** Battle of the Mesh, Porto, Portugal, May 1-7, 2016

**Type:** Working Conference and Activist meeting

**Title:** Battle of the Mesh V.9

**Date:** May 1-7, 2016

**Place:** Porto, Portugal

**Participants:** Leonardo Maccari (UniTn), Roger Baig (UPC), Panayotis Antoniadis (NetHood), Dimitris Boucas (UoW)

**URL:** <http://www.battlemesh.org/BattleMeshV9>

**Actors:** community networks, activists, hackers, academics

<sup>4</sup>MWC Barcelona: [https://en.wikipedia.org/wiki/Mobile\\_World\\_Congress](https://en.wikipedia.org/wiki/Mobile_World_Congress)



**Audience:** Around 100 participants

**Dissemination Level:** International, mainly European

**Description:** The Battle of the Mesh is the yearly meeting of all the developers and practitioners that design, develop, test and run network protocols that are daily used in CNs. From the website description: “*We would like to give to the ‘Battle of the Mesh’ the flavor of a tournament with a social character. If you are a mesh networking enthusiast, community networking activist, or have an interest in mesh networks you might find this bunch of crazy folks gathering for the Wireless Battle of the Mesh V9 very interesting. This event is also an opportunity to meet developers from the most popular open source mesh protocol implementations (Babel, B.A.T.M.A.N. L3 and L2, BMX6, IEEE 802.11s, OLSR) and watch their ideas compete. If you have implemented an interesting mesh protocol capable of running on OpenWrt Chaos Calmer (15.05) you can take part in the tournament too.*”

**Summary:** As expected, highly technical, difficult to “penetrate” if not a geek, but with a friendly atmosphere. There was only some tension at the end regarding the failure to produce concrete results from the “battle” between different protocols, which was followed up in the mailing list.

There was a panel on the EU radio lockdown directive, with the participation of international experts. It was extremely interesting and it was followed with a helpful debate and different perspectives from US and EU<sup>5</sup>

The presentation of Leonardo Maccari on improved OLSR routing (Pop-Routing) and monitoring tools for CNs attracted a lot of interest from the more technical people and led to agreements for sharing data in order for Leonardo to extend the experiments done with measures on Ninux to other CNs as well (this presentation is based on work and material collected in D2.5 [5]).

Panayotis Antoniadis organized an avant-premiere of the Sarantaporo documentary, which was well received especially since many of the people in the room were part of it (. In the discussion that followed the main questions were related to funding, beyond Internet connectivity, and sustainability. There was also an informal discussion about economic sustainability of CN projects with the participation of Dimitris Boucas and Panayotis Antoniadis. The discussion was summarized on etherpad<sup>6</sup>.

**Additional Notes:** Some interesting points related to netCommons included the following:

- Many people in this community are working as engineers and volunteering for CNs (in some cases they might consider that this activity “supports” their everyday business but in most cases there are strong political motivations involved);
- In addition to EU research funding (e.g., CONFINE, netCommons), there was discussion on an interesting “open call for participation” on a new project for a “community router” lead by AlterMundi, which was eventually funded<sup>7</sup>;
- The guifi case was acknowledged as a foundation facilitating fair economic transactions around service provision.

### 3.2.3 GAIA workshop at IETF 2016

**Type:** Meeting/workshop

**Title:** GAIA-RG Meeting @ IETF-96

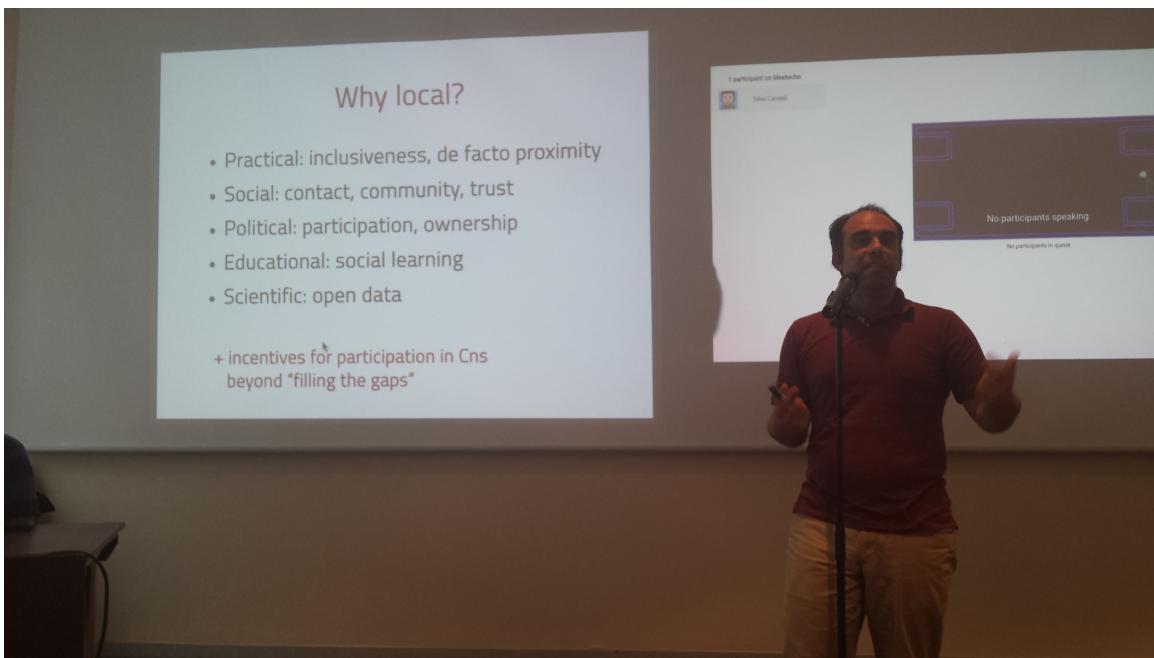
**Date:** July 21, 2016

<sup>5</sup><https://common.tnode.com/pad/p/FCC>

<sup>6</sup><https://padlite.spline.de/p/motivationFF>

<sup>7</sup><https://blog.altermundi.net/article/el-proyecto-librerouter-premios-frida/>





**Figure 3.9:** GAIA/IETF workshop, Berlin, July 21, 2016

**Place:** Berlin, Germany

**URL:** <http://etherpad.tools.ietf.org:9000/p/notes-ietf-96-gaia>

**Participants:** Roger Baig (UPC/Guifi.net), Panayotis Antoniadis (NetHood)

**Audience:** The conference is attended by more than 4000 people, at the GAIA workshop were around 100 participants

**Dissemination level:** International

**Actors:** scientific community, CN activists, engineers

**Description:** A parallel meeting/workshop of the Internet Research Task Force (IRTF) GAIA group at the Internet Engineering Task Force (IETF) 2016 conference in Berlin.

**Summary:** There were many interesting presentation of on-going work around the interests of the Global Internet Access for All (GAIA) group. Two of them were presentations related to netCommons by Roger Baig on the Guifi.net compensation system, and Panayotis Antoniadis on the duality between Internet access and local services. There were interesting discussion captured in the above etherpad.

**Additional Notes:** IETF meetings are recorded, including the section on GAIA<sup>8</sup>. The slides of the presentations are also collected:

- “The dual role of community networks: Internet access vs. local services” by Panayotis Antoniadis (20 mins)<sup>9</sup>.
- “Sustainability in guifi.net: Initial results of cost sharing” by Roger Baig (20 mins)<sup>10</sup>.

Furthermore, detailed notes on the questions following the different presentations are available on an

<sup>8</sup>[http://recs.conf.meetecho.com/Playout/watch.jsp?recording=IETF96\\_GAIA&chapter=chapter\\_1](http://recs.conf.meetecho.com/Playout/watch.jsp?recording=IETF96_GAIA&chapter=chapter_1)

<sup>9</sup><https://www.ietf.org/proceedings/96/slides/slides-96-gaia-3.pdf>

<sup>10</sup><https://www.ietf.org/proceedings/96/slides/slides-96-gaia-5.pdf>



etherpad<sup>11</sup>. Some interesting highlights from the two Q/A sessions after netCommons' presentations are included below since they reflect some standard issues that are raised in relation to netCommons objectives and approach.

### On Guifi.net:

**Juliusz Chroboczek (jck):** what is the scale? you gave us two areas with 10,000 nodes but what is the total size?

**Roger Baig (rbg):** close to half of guifi.net - so 15000 or 20000 nodes - we also discovered a lot of hidden nodes - officially guifi.net has 30k nodes but professionals were deploying infrastructure without declaring it - we discovered that there are more active nodes than are declared on the website  
**jck:** so you're aligning incentives

**christian o'flaherty:** some volunteers, some professionals, some common pool?

**rbg:** no, common pool resource is network infrastructure. infrastructure means nodes and links. some contributed by volunteers, some by public administrations, some contributed by professionals. customers get access to common pool through professionals. in other community networks this is not allowed and it ends up being all volunteer.

**christian o'flaherty:** do you know the percentage of nodes per player?

**rbg:** this is changing. at the beginning guifi.net was almost all volunteer based in 2004. in 2005/6 the first professionals appeared, so those who wanted to be connected but didn't want to climb on the roof paid someone to do the work, afterwards these pros and others started offering services, e.g. internet access, by a proxy. moving from 100% to 80% of professionals.

**jehan tremback:** major difference between guifi and major isp is governance and corporate structure?

**rbg:** yes, which has a lot of implications. like you can be a part of the governance structure.

**guido iribarren:** how do you monitor that providers don't over report their investment?

**rbg:** reports are made public and other providers do a good job of policing the truthfulness of each others statements.

### On Internet access vs. local services:

**gio mazzurco (gmo):**(libremesh) sometimes we build community networks, and they are used to access facebook, which is not what we want to happen. so we need a set of applications that take advantage of the local network. that seems to be an empty space. it seems to us that companies are not interested, generalising scope of libremesh (librestack) to fill gap - interested to collaborate with your organization to fill that gap

**Panayotis Antoniadis (pas):** of course. you mentioned needs - i always talk about this - people ask if people don't need it what is the point, but marketing creates needs - people sometimes need to be lead. it's a dilemma - should we strive to create opportunities for people to go to places they didn't know they wanted?

**jck:** when you were mentioning the garden, you said that they were much more open to letting people in from outside when you said that they could prevent ppl from accessing facebook. are you advocating for networks where the operator can control the sites accessed?

<sup>11</sup><http://etherpad.tools.ietf.org:9000/p/notes-ietf-96-gaia>



*pas: no, I would advocate for local networks w/o access to the internet, and encourage ppl to use them. for example captive portals in train stations - this is my design space - what could be there, what should be there? if the Internet is not available that's fine. i don't think every space should have Internet in order to offer a local service.*

*jck: think its a slippery slope*

*guido iribarren (gin): in my experience, I saw a difference between making a local service also available over internet which takes time, if network has Internet connection, then it adds value to local service for example if its some xmpp server to take the time to make proper DNS records and transparent for user if its on local network. Do you agree that this project has this vision as well, or is it only focused on local services and not thinking of internet?*

*pas: insistence on local is just to create a balance, if the internet is avaialble and we can use it we should use it. if things are local, we should be creative in thinking of local services. intermediate stages are also possible. different cases imaginable, open to all combinations, just starting from this extreme stance to make a case that ppl can have a local network and can do whatever they want with it. we are not religious, we want to create options. sometimes the internet does not exist. its crazy that right now, when the internet falls, we cannot send an alert to our neighbours, from an engineering perspective we should have such networks for resiliency.*

### 3.2.4 INCA Conference at Broadband World Forum



**Figure 3.10:** INCA Conference, community networks session, London, UK, October 19, 2016

**Type:** Workshop in Conference

**Title:** Independent Networks Cooperative Association (INCA) Conference at Broadband World Forum: Building Gigabyte Britain

**Date:** October 19, 2016

**Place:** London, UK



**Participant:** Leandro Navarro (UPC)

**URL:** <http://www.inca.coop/civicrm/event/info?reset=1&id=46>

**Actors:** community networks, alternative network operators in UK government, academia

**Audience:** 160 participants

**Dissemination Level:** UK mostly

**Description:** A one day workshop to learn and discuss about the successes and challenges of getting new networks built and services delivered in the UK.

**Summary:** The workshop was an opportunity to share expertise among community networks and other network operators alternative to the incumbent (BT). There were presentations and debate about new government policy with a talk from the new digital minister Matt Hancock, declaring support for “pure fibre” and 5G networks<sup>12</sup>, INCA’s Building Gigabit Britain report<sup>13</sup>, rural and urban broadband needs, technologies, services, funding and investment models and opportunities - and many introductions of fibre and wireless projects being developed by INCA members.

Leandro Navarro from netCommons, participated in discussions with several delegates, particularly commercial alternative operators and community operators as represented in Fig. 3.10 during the community networking session, with Barry Forde from B4RN speaking. A lot of topics were raised where netCommons.eu can learn and contribute in the future. Very interesting focus on Gigabit and fiber mostly. INCA is an interesting combination of community networks, social enterprises, and commercial enterprises that can manage city and rural networks, with shared governance with communities. There is potential for continuing contact in the RIFE-netCommons-GAIA WS in January 2017<sup>14</sup>.

### 3.2.5 European Commons Assembly

**Type:** Assembly

**Title:** European Commons Assembly

**Date:** November 15-16, 2016

**Place:** European parliament, Brussels

**Participants:** Panayotis Antoniadis (NetHood)

**URL:** <https://europeancommonsassembly.eu/>

**Actors:** Academia, civil society, members of the parliament, policy makers

**Audience:** Around 150 people

**Dissemination Level:** European

**Description:** The first European Commons Assembly took place on November 15-16 2016 in Brussels. Around 150 commoners convened to “discuss, showcase, and reclaim Europe in the European Parliament”, in cooperation with the EP intergroup on Common Goods and Public Services. As described in the open call, “*Civic and community initiatives are working to vitalize our urban, rural, scientific and digital commons, and promoting a future guided by democratic participation, social equity and environmental sustainability. At the heart of these acts of “commoning” are satisfying, joyful social relationships that regenerate our interpersonal and physical surroundings.*” ... “we call

<sup>12</sup>Talk: <https://www.gov.uk/government/speeches/broadband-world-forum>

<sup>13</sup>Report: <http://www.inca.coop/policy/building-gigabit-britain-report>

<sup>14</sup><http://dsg.ac.upc.edu/gaia-cn-ws>





**Figure 3.11:** European Commons Assembly, European parliament, November 15, 2016

*for and open the invitation to join an ongoing participatory, inclusive process across Europe for the building and maintenance of a Commons Assembly. Together we can continue to build a vibrant web of caring, regenerative collective projects that reclaim the European Commons for people and our natural environment.”.*

**Summary:** netCommons participated in the first European Commons Assembly through Panayotis Antoniadis (NetHood) to advocate for laws and policies required to support the numerous community networks across Europe and in general the concept of network infrastructure as commons. Panayotis presented three different cases of CNs, as success stories of commoning in Europe, and more specifically Guifi.net, Freifunk.net, and Sarantaporo.gr. The fact that this was one of the less well-known and understood cases of commoning attracted a lot of interest afterwards. A related article by Panayotis in the popular media<sup>15</sup>, which triggered the invitation to present in the first place, was also linked in the main blog entry summarizing the event.<sup>16</sup> In general, the event was very successful and the discussion continues online in the commonswatch mailing list and the collaborative editing of policy proposals on loomio, including one on the “Internet commons” for which netCommons is involved.

**Additional Notes:** The 7 min presentation of Panayotis Antoniadis is available on youtube<sup>17</sup>.

<sup>15</sup> <https://theconversation.com/diy-networking-the-path-to-a-more-democratic-internet-67216>

<sup>16</sup> <http://commonsnetwork.eu/commoners-hit-the-capital-of-europe-commons-assembly-in-brussels>

<sup>17</sup> <https://www.youtube.com/watch?v=XEWDstHb8Bg&t=1h2m17s>



### 3.2.6 Internet Governance Forum 2016



**Figure 3.12:** Internet Governance Forum, Guadalajara, Mexico, December 2-9, 2016

**Type:** UN conference

**Title:** Internet Governance Forum 2016

**Date:** December 2-9, 2016

**Place:** Zapopan (Guadalajara), Mexico

**Participants:** Leandro Navarro, Roger Baig, UPC

**URL:** <https://www.intgovforum.org/multilingual/content/igf-2016>

**Actors:** All stakeholders (civil society, governments, companies, academia, citizens)

**Audience:** More than 2000 delegates from 83 countries

**Dissemination Level:** International

**Description:** The IGF is a multistakeholder space that facilitates the discussion and dialogue of public policy issues pertaining to the Internet. The IGF was convened in 2005 by the United Nations General Assembly. The IGF facilitates a common understanding of how to maximize Internet opportunities and address risks and challenges that arise. The IGF is also a space that gives developing countries the same opportunity as wealthier nations to engage in the debate on Internet governance and to facilitate their participation in existing institutions and arrangements. Ultimately, the involvement of all stakeholders, from developed as well as developing countries, is necessary for the future development of the Internet.

**Summary:** During the last 12 months, the discussions started in IGF 2015 were sustained into the Dynamic Coalition on Community Connectivity (DC3)<sup>18</sup> forum, which, as its name indicates tries to address the problem of lack of appropriate (access) networking. IGF 2016 was full of direct or indirect references about the lack of infrastructures and lack of access and therefore about CNs.

<sup>18</sup><https://www.intgovforum.org/cms/175-igf-2015/3014-dynamic-coalition-on-community-connectivity-dc3>



In the opening talk<sup>19</sup> Internet Society President & CEO Kathryn C. Brown mentioned the goal of an Internet everywhere and for everyone. This implies a significantly increase of access, universal and affordable access to the Internet, particularly in the least developing countries, and therefore to all. CNs were mentioned as part of the solution.

netCommons participated and presented (when mentioned) in the following (sub-)events, given the number, importance and complexity of the organization we leave references to the original documents and web site pages as hyperref links.

#### **Day 0 – Monday, 5 December:**

- Workshop: *Community Networks: How to Build Connectivity?*. A DC3 preparatory session to introduce what community networks are and the participants, since some of them had met for the first time. A draft of the joint declaration was discussed. Summary notes from [Digital Watch](#).
- Workshop: *Linking connectivity, human rights and development*. A broad coalition of member organizations from across Civil Society, public and private sectors, combination of research, advocacy and direct country engagements.
- *Global Connect, IEEE, ISOC, ITU, UNESCO, WEF, and the World Bank - Advancing Solutions for Connectivity: Improving Global Coordination and Collaboration*. A related discussion about coordinating global organizations to provide solutions.
- The “[Disco-Tech](#)” was an informal event designed to bridge the gap between technical and political solutions to attacks on internet rights and freedoms. The topic for this event, organised by APC, IFEX and ISOC, was “Community Networks: Civil society’s efforts to improve connectivity in local communities”.

#### **Day 1 – Tuesday, 6 December:**

- Workshop: *Initiatives connecting the unconnected: where's the data?*. According to their notes, ICTs are cross-cutting enablers of development. In particular, universal access to broadband and mobile services. Goal number [9 in the SDG](#) is about building resilient infrastructures (mentioning explicitly ICT), promoting inclusive and sustainability development and fostering investment. The aim was to contribute to the debate on how to expand Internet access to the unconnected and how to design effective policy based on data to enable access, in particular for those in remote and/or rural areas, and also to bridge the existing gaps and disparities in many countries in the global south.
- Workshop: *The right to access the internet in Latin America*. A discussion about Internet as a right, as recognized by several countries, the importance of internet access for individuals and society, the relationship with other rights, obligations of states, role of other stakeholders. Concepts such as availability, equality, accessibility were discussed.

#### **Day 2 – Wednesday, 7 December:**

- Dynamic Coalition on Community Connectivity. Report launch, featuring the authors of the papers included in the DC3 Report. Presentation of two papers coming from netCommons authors and project's contribution. Tweeted by the audience: let the next billion connect themselves:  
<sup>20</sup>. Report: <http://gg.gg/dc3book>
- Dynamic Coalition on Community Connectivity (DC3) Workshop WS238: Empowering the

<sup>19</sup>[https://www.youtube.com/watch?v=\\_90wfghENpU](https://www.youtube.com/watch?v=_90wfghENpU)

<sup>20</sup><https://twitter.com/CreyM/status/806549670981996544>



Unconnected. Participation in the discussion of ways community networks can build commons-based community infrastructures.

- Dynamic Coalition on Innovative Approaches to Connecting the Unconnected. Participation in the discussion on the commons model for participatory and sustainable community network infrastructures that enable local access for the unconnected.

### Day 3 - Thursday, 8 December



**Figure 3.13:** Bilateral meeting with the European Parliament delegation, Internet Governance Forum, Guadalajara, Mexico, December 8, 2016

- A bilateral meeting with the European Parliament delegation, lead by Pilar del Castillo (see Figure 3.13). Discussion on Open and free access to the internet, and other emerging issues from IGF 2016. There was a brief description of community networks in Europe and a description of the netCommons.eu project to the MEPs and separately to the head of the delegation. She showed interest for future followup in particular to the revision of the Telecom package that she is specifically in charge in the European Parliament.

### Day 4 – Friday, 9 December

- Best Practice Forum on Policy Options for Connecting the Next Billion. Participation in the discussion in working groups about ways to finance and manage network infrastructures following the commons model as an alternative to let the next billions to connect themselves in a sustainable manner.
- Workshop WS161: Public Wi-Fi/Open access models in developing countries. The audience was more than 2000 delegates from 83 countries, including all stakeholders (civil society, governments, companies, citizens).

#### Additional Notes:

- Community Networks have become a major and recognized way to bring alternatives in connectivity and definitely a very good way to empower the unconnected to build networking infrastructures to self-provide connectivity locally. I hope next IGF would allow to report more advances and mature success cases. The link is established between community connectivity and the SDG (Sustainable Development Goals).



- DC on Community Connectivity produced its Guadalajara Declaration: (still in draft format)<sup>21</sup>
- The draft report<sup>22</sup> of the IGF event says: “two new coalitions, on ‘Community Connectivity’ and on ‘Innovative Approaches to Connecting the Unconnected’, emerged in 2016”
- The IGF Report (DiploFoundation) says: “The rise of community networks” “The discussion on community networks helped raise the point that there are other connectivity models than those provided by telecom companies, and that the use of the term ‘broadband’ as synonymous with ‘connectivity’ is misleading and prevents real connectivity and communication. Communities need to overcome the paradigm of ‘waiting for service’. Community networks offer a bottom-up strategy that relies on the active participation of local communities. The infrastructure is owned by the community and operated democratically. Yet, although community networks face many challenges, the main challenge in connecting a community is the lack of awareness about the value of the Internet, rather than the lack of connectivity itself. The work of the DC on Community Connectivity, and its Guadalajara Declaration can further highlight the potential of such networks, and how obstacles can be overcome.”<sup>23</sup>
- The two main themes from the IGF transcripts are (as analysed by the Diplo Foundation): Access and Digital Divide. Therefore community networks, as the best recognized model for solving these issues, can be seen as a success story.
- The next GISWATCH 2016, supported by APC.org, ISOC.org, netCommons.eu, and probably IDRC from Canada will be the major success. It will be presented in the next IGF in Geneva (December 2017).

### 3.2.7 Community networking workshop

**Type:** Internet Society (ISOC) workshop

**Title:** Community networking workshop

**Date:** December 10, 2016

**Place:** Guadalajara Public Library, Guadalajara, Mexico

**Participants:** Leandro Navarro, Roger Baig, UPC

**URL:** [https://pad.codigosur.org/cnws\\_igf10](https://pad.codigosur.org/cnws_igf10)

**Actors:** community networks, government, academia, CSO (APC, ISOC)

**Audience:** More than 20 participants

**Dissemination Level:** Word-wide (Honduras, Colombia, Argentina, USA, Brazil, Argentina, Spain, South Africa)

**Description:** A one day workshop to discuss about outputs, issues and plans to clarify and coordinate the development of community networks and connectivity. In particular, focus on ongoing activities, institutional sustainability –Known Practices, Sustainability Strategies–, Business Case Factors, Technology Experience, Regulatory/Policy Issues, Brainstorm for future collaboration

**Summary:** netCommons participated in the plenary discussion and coordination of one working group about Community networks sustainability / organization / business / governance / models / funding. netCommons has been seen as a major work in this topic. Lots of people were interested

<sup>21</sup>[http://www.intgovforum.org/multilingual/index.php?q=filedepot\\_download/3680/130](http://www.intgovforum.org/multilingual/index.php?q=filedepot_download/3680/130)

<sup>22</sup>[http://www.intgovforum.org/multilingual/index.php?q=filedepot\\_download/12/206](http://www.intgovforum.org/multilingual/index.php?q=filedepot_download/12/206)

<sup>23</sup>[http://digitalwatch.giplatform.org/sites/default/files/IGF2016\\_FinalReport.pdf](http://digitalwatch.giplatform.org/sites/default/files/IGF2016_FinalReport.pdf)





**Figure 3.14:** Community Networking Workshop, Internet Governance Forum, Guadalajara, Mexico, December 10, 2016

in follow-up work. The next contact in the RIFE-NetCommons-GAIA workshop in Cambridge UK, on 26-27 January 2017<sup>24</sup> jointly organized with the next netCommons plenary meeting at UoW in London.

### 3.3 EU Horizon 2020 events

#### 3.3.1 Net Futures 2016

**Type:** EU conference

**Title:** Net Futures 2016: Driving Growth in the #DigitalSingleMarket

**Date:** April 20-21st 2016

**Place:** Brussels, Belgium

**Participants:** Leandro Navarro, Felix Freitag, UPC

**URL:** <http://netfutures2016.eu/>

**Actors:** scientific community, EU officials, local authorities, stakeholders

**Audience:** Around 1000 participants in total, around 300 people passed by netCommons' booth

**Dissemination Level:** Mostly European

**Description:** NET FUTURES wishes to maximize competitiveness of the European technology industry. The conference gathered over 1.000 attendees, to form an interconnected community involving companies, organizations and people in:

- Research & Innovation,
- Market Validation & Living Lab Research,

<sup>24</sup><http://dsg.ac.upc.edu/gaia-cn-ws>





**Figure 3.15:** NetFutures project stand just before the opening, Brussels, April 20-21, 2016

- Business Development, Entrepreneurship & Enterprise Strategy,
- Policy Making.

**Summary:** netCommons booth was titled “Network services enabled by common pool resources and their operation”. The netCommons project contributed to Net Futures 2016 by sharing with the audience the concept of commons-based ICT infrastructure as a complementary model for the future Internet, and will give insights in the network and service provision by community networks. netCommons exemplified commons-based ICT provision by highlighting the case of Guifi.net, recently distinguished by the European Broadband Award 2015<sup>25</sup>, which with more than 30.000 nodes in Spain can be considered the largest community network worldwide. The showcases demonstrated not only the successful operation of commons-based ICT services, but also successful business cases operating upon the commons model, motivating the audience to consider this model for the design of future Internet services, such as those related to IoT and Fog/edge cloud computing.

### 3.3.2 Berlin CAPS workshop

**Type:** H2020 Workshop

**Title:** CAPS Community Meeting and Workshop

**Date:** May 18 2016

**Place:** Internationales Kulturzentrum ufaFabrik e.V. Viktoriastrasse 10-18 – 12105 Berlin, Germany

**Participants:** Renato Lo Cigno, UniTN

**URL:** <https://www.eventbrite.com/e/caps-community-meeting-and-workshop-tickets-24782588389>

**Actors:** scientific community, EU officials

<sup>25</sup><https://ec.europa.eu/digital-single-market/en/news/five-projects-got-first-ever-european-broadband-award>



**Audience:** Around 80 participants

**Dissemination Level:** Coordination and dissemination among CAPS projects

**Description:** This event aims at bringing together old and new CAPS projects, discussing ideas for the next workprogramme, defining clusters of projects, and ultimately establishing a working community of innovation entities that will actively cooperate with the EC on Digital Social Innovation over the coming years. The community meeting is mainly for the 36 CAPS projects to meet each other and their project officers, but it is also open to any external participant interesting in gathering knowledge about the current developments and interacting first-hand the current CAPS activities, from peer to peer.

**Summary:** Renato Lo Cigno gave a 5 minutes presentation of netCommons to the audience. After the presentations from several of the projects there were small groups discussions on CAPS development and possible cooperation among projects. netCommons reinforced the cooperation with MAZI.

### 3.3.3 3rd Internet Science Conference

**Type:** Workshop

**Title:** 3rd Internet Science Conference

**Date:** September 12-14, 2016

**Place:** Florence, Italy

**Participant:** Leonardo Maccari (UniTn)

**URL:** <http://inisci2016.complexworld.net/home>

**Actors:** Scientific community

**Audience:** 30 participants

**Dissemination Level:** European

**Description:** This highly multidisciplinary conference allows to foster dialogue among scholars and practitioners belonging to various disciplines: Computer Science, Sociology, Art, Mathematics, Physics, Complex systems analysis, Psychology, Economics, Law, Political Science, Epistemology, etc. Researchers from various disciplines presented papers shedding light on Internet research and in particular crossing rigid disciplines boundaries, describing original research and innovative ideas.

**Summary:** Leonardo Maccari presented the project briefly on the first and the second day, he also participated to the CAPS round table on the first day.

The conference was the third in a series of conferences started from the Internet Science support action of FP7. This year it involved mostly people from the running or just ended CAPS projects that reviewed their project, this approach and their results. The conference did see a good participation in the first day, then multiple sessions started and the audience fragmented in workshops organized by some of the panelists.

The CAPS community is spread over many themes and it is not easy to put all the efforts together under the same topic/workflow. Some CAPS projects can be linked to netCommons, but it is not straightforward.

**Additional Notes:** Leonardo Maccari was interviewed by Ksenia Ermoshina from the NEXTLeap<sup>26</sup> project, in order to understand what is the community we refer to and if we could have some interactions with NEXTLeap

<sup>26</sup><https://nextleap.eu/>



### 3.3.4 CAPSSI Community workshop

**Type:** EU meeting

**Title:** CAPSSI Community workshop

**Date:** October 28, 2016

**Place:** Bratislava, Slovenia

**Participants:** Leonardo Maccari (UniTn), Panayotis Antoniadis (NetHood)

**URL:** <https://capssi.eu/event/capssi-community-workshop/>

**Actors:** scientific community, and some activists

**Audience:** 20-25 participants

**Dissemination Level:** EU countries involved in the CAPS calls

**Description:** The first CAPSSI Community Workshop was held in Bratislava on the 28th September 2016 (just after the ICT 2016 Proposers' Day). This event created opportunities for networking with other CAPS projects but, most importantly, to map needs in terms of knowledge and networking, discuss common challenges and exchange experience gained until then with other active players in the community so as to identify collaboration opportunities. The workshop was highly interactive and made use of participatory methods to be able to involve all participants as active contributors. Many project coordinators and other partners attended and contributed to actively animate discussions.

**Summary:** Leonardo Maccari presented an overview of the project to the audience made of primarily other researchers involved in CAPS projects. The meeting was mainly introductory to the CAPS agenda and the CAPS basic concepts. Many projects just started and the idea was to make some connections between the various projects. We actually took contact with the representatives of the DSI project and Stars4All for future cooperations.

**Additional Notes:** Some discussion was raised in order to clarify the concepts and differences between SI/DSI/CAPS/CAPSSI. Also a voting for the most important topics to include in the upcoming CAPS conference in Rome. Finally, a "world cafe" style brainstorming session allowed many participants of different CAPS projects to interact and debate around important concepts behind CAPS.

## 3.4 Scientific conferences and workshops

### 3.4.1 Guild of Independent Currencies Conference

**Type:** Conference

**Title:** Guild of Independent Currencies Conference, Tools for a Fairer Economy

**Date:** April 20-21, 2016

**Place:** Liverpool, UK

**Participants:** Panayotis Antoniadis and Jens Martignoni (NetHood)

**URL:** <http://guildofindependencurrencies.org/conference-2016/liverpool-2016-programme/>

**Actors:** Scientific community, activists, civil society

**Audience:** More than 80 participants

**Dissemination Level:** European, mostly UK



**Description:** The guild of interdependent currencies was created in 2014 by Bristol Pound CIC to help other local groups to launch their own independent currencies, supporting them through shared knowledge and technology, best practice and with anything else they may need. It organizes regular conferences and meet ups to share information, include this conference in Liverpool in April 2016 attended by 80+ delegates, from 30+ different schemes from around the UK and Europe.

**Summary:** Panayotis Antoniadis moderated a panel with Jens Martignoni who introduced the famous Swiss complementary currency, WIR, and Paolo Dini who introduced Sardex.net<sup>27</sup>.

Note that WIR and Sardex are two very important success stories of community currencies that are not very well-known even to people who are active in this area, like many community activists from the UK that were present in this conference. For this, our intervention had significant impact and a very important contact with the CEO of STRO (Cyclos) was established toward future collaborations.

### 3.4.2 International Conference on Sustainable Connectivity

**Type:** Conference

**Title:** International Conference on Sustainable Connectivity

**Date:** April 29, 2016

**Place:** Rio de Janeiro, Brasil

**Participant:** Federica Giovanella

**URL:** <http://internet-governance.fgv.br/en/international-conference-sustainable-connectivity>

**Actors:** scientific community, civil society

**Audience:** Around 50 participants

**Dissemination Level:** International, South America, EU, US

**Description:** The conference was organized by the Center for Technology & Society (CTS) at FGV School of Law, Rio de Janeiro. The event was intended to bring together representatives of the private sector, academics and experts to discuss on sustainable connectivity, mainly - community networks, but including also other practices, such as zero rating or national broadband plans. The conference focused mainly on developing countries, but the approach taken by developed countries was analyzed and discussed to see if it could be an example to be followed.

**Summary:** Federica Giovanella gave an invited presentation on “Community Networks: Legal Issues and Possible Policy Actions”. The presentation was well received and activists/members of communities who were present asked for more information about netCommons and its contribution to the legal/regulatory framework for CNs.

### 3.4.3 IFIP Networking 2016

**Type:** Conference

**Title:** IFIP Networking 2016

**Date:** May 17-19, 2016

**Place:** Vienna, Austria

<sup>27</sup>See also <http://guildofindependencurrencies.org/conference-2016/sardex/> and <http://guildofindependencurrencies.org/conference-2016/wir/>



**Participants:** Leonardo Maccari

**URL:** <https://networking2016.univie.ac.at/>

**Actors:** scientific community

**Audience:** more than 100 participants

**Dissemination Level:** International

**Description:** The main objectives of Networking 2016 are to bring together members of the networking community from both academia and industry, to discuss recent advances in the broad and quickly-evolving fields of computer and communication networks, and to highlight key issues, identify trends, and develop visions for the networking domain.

**Summary:** The IFIP Networking conference is a well known and respected conference, it has an acceptance ratio below 30% and gathers many specialists in the Networking field, Leonardo Maccari presented a paper based on the work of D3.1 titled “*Optimized Cooperative Streaming in Wireless Mesh Networks*” by Luca Baldesi, Leonardo Maccari, and Renato Lo Cigno [6]. The paper raised the attention of the public, several questions asked and some interesting feedback gathered, CNs are confirmed to be a very stimulating playground for technical research, and they reach the interest of several people.

### 3.4.4 Internet of People

**Type:** Workshop

**Title:** The 1st Internet of People Workshop

**Date:** May 20, 2016

**Place:** Vienna, Austria

**Participant:** Leonardo Maccari

**URL:** <http://cnd.iit.cnr.it/iopw2016/index.html>

**Actors:** Scientific community

**Audience:** 20-30 participants

**Dissemination Level:** International

**Description:** From the workshop description: “*The IoP workshop aims to stimulate research and aggregate an inter-disciplinary community of researchers around the concept of the Internet of People. The massive penetration of Internet connectivity and devices with networking and computing capabilities (such as “things” and personal users’ devices) is pushing a tighter and tighter convergence between the cyber world - of Internet protocols, services and Apps - and the physical world, with continuous interactions and mutual impact between these two worlds. According to an “anti-Copernican” view, humans are put back at the centre of the “Internet universe”, whenever they are in the loop of cyber-world services. Applications, middlewares, but even Internet services and network protocols are more and more designed incorporating Human Individual and Social Behavioural (HISB) models. This vision, that we call “the Internet of People” (IoP) generalises emerging concepts and technologies such as Internet of Thingss (IoTs), which put the emphasis on the communication between “machines”, and adapt to the users’ behaviour only as an afterthought. Designing Internet of People (IoP) protocols, services and applications thus requires a profound inter-disciplinary approach, where “non-ICT disciplines” such as social sciences, cognitive sciences, economics, complex network sciences, impact the way Internet algorithms are conceived and defined.*”



**Summary:** Leonardo Maccari presentad the paper ‘*On the Technical and Social Structure of Community Networks*’ by Leonardo Maccari [7]. The paper was the first work on the ninux community realized in T2.4. It described and discussed the matching between the data on the ninux community and the data on the ninux network. It gathered many feedback and several questions, for the methodology and the results. The audience was mixed, so the questions were from different areas, but the net result was encouraging.

### 3.4.5 Internet L@w Research Colloquium

**Type:** Workshop

**Title:** 2016 Geneva Internet L@w Research Colloquium

**Date:** June 24, 2016

**Place:** Geneva, Switzerland

**Participant:** Federica Giovanella, UniTN

**Organizers:** School of Law of the University of Geneva; Berkman Center for Internet & Society at Harvard University; CRIDES Center for Economic Law and Society at the Catholic University of Louvain (UCL); Digital Asia Hub; Geneva Internet Platform; Institute for Technology and Society of Rio

**URL:** <https://www.unige.ch/droit/pi/summer-school/research-colloquium/>

**Actors:** Academia and research

**Audience:** 35 people

**Dissemination Level:** EU, USA, Brasil

**Description:** The colloquium was thought as a moment in which researchers could present their ongoing research and receive feedback from experts and well-known scholars. It was part of a Summer School on the same contents, attended by many students from all over Europe. Presenters were selected through a peer-review process, and came from all over Europe and from the USA.

**Summary:** Federica Giovanella gave a presentation on “*Tort law and CNs*”, which was well received. Not only it attracted the interest of the attendees, but it also obtain good feed-back. Scholars were also interested in the netCommons project as a whole.

### 3.4.6 MobiHoc conference

**Type:** Conference

**Title:** ACM MobiHoc 2016

**Date:** July 5-8, 2016

**Place:** Paderborn, Germany

**Participant:** Merkouris Karaliopoulos and Iordanis Koutsopoulos, AUEB

**URL:** <https://www.sigmobile.org/mobihoc/2016/>

**Actors:** Primarily academia and research, industry

**Audience:** 100 participants

**Dissemination Level:** UK, France, Italy, Germany, US, India, China, Russia, Greece, Switzerland, Serbia, Japan, Canada, Sweden



**Description:** MobiHoc 2016 was the 17th edition of the International Symposium on Mobile Ad Hoc Networking and Computing, a premier international symposium dedicated to addressing challenges in dynamic networks and computing. It brought together researchers and practitioners from a broad spectrum of networking research who presented the most up-to-date results and achievements in the field. The conference featured a highly selective technical program, multiple distinguished keynote addresses, and an exciting panel. In addition, it included workshops that were focused on areas of emerging interest.

**Summary:** Merkouris Karaliopoulos presented a paper titled “*First learn then earn: Optimizing Mobile Crowdsensing Campaigns through Data-driven User Profiling*” by Merkourios Karaliopoulos, Iordanis Koutsopoulos, and Michalis Titsias [8]. It was a very interesting conference, one of the most competitive in the field, presenting research results in state-of-the-art research areas. Interestingly, it hosted a couple of papers promoting cooperative distributed approaches to network and service provision and had interesting keynotes about approaches to distributed computing.

The paper was well received. The feedback focused on the need of preserving user and data privacy when making contributions. These approaches still meet a lot of reservations from the industry side, highlighting the need for inclusive business and economic incentive models.

### 3.4.7 MSCC workshop at MobiHoc

**Type:** Workshop

**Title:** MSCC workshop of ACM MobiHoc 2016

**Date:** July 5, 2016

**Place:** Paderborn, Germany

**Participant:** Iordanis Koutsopoulos, AUEB

**URL:** <http://www.utdallas.edu/~sxt146930/mscc2016.html>

**Actors:** Academia & research, industry

**Audience:** 15 participants

**Dissemination Level:** International

**Description:** Mobile sensing, computing and communication (MSCC) technologies extend conventional functions, providing services and results to the world of future mobile applications. The workshop brought together researchers, developers, and practitioners in current participatory sensing, computing and communication from academia, industry, and service providers, to share ideas, experiences, and practical implementations related to new MSCC technologies and applications.

**Summary:** Iordanis Koutsopoulos presented the paper “*Mobile Crowdsensing Incentives under Participation Uncertainty*” by Panagiota Micholia, Mekouris Karaliopoulos, and Iordanis Koutsopoulos [9]. This was a focused workshop on sensing technologies, primarily, that could be of great relevance to distributed networks such as community networks.

### 3.4.8 EuroPar

**Type:** Conference

**Title:** EuroPar: 22nd International European Conference on Parallel and Distributed Computing

**Date:** August 22-26, 2016



**Place:** Grenoble, France

**Participant:** Felix Freitag (UPC)

**URL:** <https://europar2016.inria.fr/>

**Actors:** scientific community, industry

**Audience:** 150 approx.

**Dissemination Level:** International

**Description:** Euro-Par is an annual series of international conferences dedicated to the promotion and advancement of all aspects of parallel and distributed computing. Euro-Par covers a wide spectrum of topics from algorithms and theory to software technology and hardware-related issues, with application areas ranging from scientific to mobile and cloud computing. Euro-Par provides a forum for the introduction, presentation and discussion of the latest scientific and technical advances, extending the frontier of both the state of the art and the state of the practice.

**Summary:** Felix Freitag presented the paper “*Towards Network-Aware Service Placement in Community Network Micro-Clouds*” by Mennan Selimi, Davide Vega, Felix Freitag and Luís Veiga [10]. An estimated audience of 40 people assisted the session. Cloud computing in community networks was brought to the attention of the scientific community of Europar. The paper illustrated to the community one of the scenarios of edge computing, which is expected to gain importance in Europar in the future.

### 3.4.9 Conference of the Association of Internet Researchers 2016

**Type:** Conference

**Title:** #AoIR2016: Internet Rules!

**Date:** October 5-8, 2016

**Place:** Berlin, Germany

**Participant:** Félix Tréguer (CNRS)

**URL:** <https://aoir.org/aoir2016/>

**Actors:** Scientific community

**Audience:** 300 approx.

**Dissemination Level:** International

**Description:** AOIR brings together social science researchers from all around the world. This year, issues related to the political economy of the Internet and its impact on human rights were central to the many panels and presentations organized during the three days of the conference.

**Booklet:** [https://aoir.org/wp-content/uploads/2016/11/AoIR\\_2016\\_ConfSched.pdf](https://aoir.org/wp-content/uploads/2016/11/AoIR_2016_ConfSched.pdf) (pdf)

**Summary:**

- Presentation in a pre-conference workshop entitled “404 History Not Found: Challenges in Internet History and Memory Studies”, which gathered around 30 participants.
- Subsequent discussions fed into deliverable 5.1 and nurtured a forthcoming paper on ”Gaps and Bumps in the History of Digital Rights Contention” (of which the history of community networks is an integral part).



### 3.4.10 41st IEEE Conference on Local Computer Networks (LCN)

**Type:** Conference

**Title:** 41st IEEE Conference on Local Computer Networks (LCN)

**Date:** November 7-10, 2016

**Place:** Dubai, UAE

**Participant:** Mennan Selimi (UPC)

**URL:** [28](http://www.ieeelcn.org/)

**Actors:** Scientific community

**Audience:** 189 registered persons

**Dissemination Level:** International

**Description:** The LCN conference focuses on theoretical and practical aspects of computer networking. It is highly interactive, enabling an effective interchange of results and ideas among researchers, users, and product developers. Major developments from high-speed networks to the global Internet to specialized sensor networks have been reported at past LCNs.

**Summary:**

- Short paper presentation in the poster session. Paper titled: “*Bandwidth-aware Service Placement in Community Network Micro-Clouds*” by Mennan Selimi, Llorenç Cerdà-Alabern, Liang Wang, Arjuna Sathiaseelan, Luís Veiga, Felix Freitag [11]. 120-150 people attended the poster session. Around 40-45 people were interested about our work and we had a discussion. (3 hours in total we had for the poster presentation)
- Selimi and Freitag also presented a Demo with title “Advances in the CLOUDY Community Network Cloud Distribution”. More than 30 people had the opportunity to see completely our Cloudy – Docker integration demo, which lasted for over three hours.

### 3.4.11 Information Law and Policy Centre research workshop

**Type:** Workshop

**Title:** Restricted and Redacted: Where now for human rights and digital information control?

**Date:** November 9, 2016

**Place:** London

**Participant:** Melanie Dulong de Rosnay

**URL:** <http://www.legalscholars.ac.uk/event/research-workshop/>

**Actors:** Legal scholars

**Audience:** 30 people (at the paper session)

**Dissemination Level:** UK

**Description:** Information Law and Policy Centre research Workshop at the Institute of Advanced Legal Studies (IALS).

**Summary:** Presentation of the msnuscript “*Intermediary Liability and Community Wireless Networks Design Shaping*” by Melanie Dulong de Rosnay, Federica Giovanella and Félix Tréguer. Melanie

<sup>28</sup>See also <https://www.ac.upc.edu/app/owncloud/s/v2bUm0tQYhrdut2>  
and <https://www.ac.upc.edu/app/owncloud/s/w1MFxBnNDmcDG5E>



Dulong de Rosnay presented the legal framework around CNs' liability and the Mc Fadden case of the European Court of Justice involving open Wi-Fi. Useful remarks were made with regards to the status of internet service providers and additional case law which could be considered. An extended version of the paper has been submitted to Bloomsberry's Communications Law Journal, to be published in the February 2017 edition.

### 3.4.12 IEEE GLOBECOM 2016

**Type:** Conference

**Title:** IEEE Global Communications Conference

**Date:** December 4-8, 2016

**Place:** Washington DC, USA

**Participant:** Leonardo Maccari

**URL:** <http://globecon2016.ieee-globecom.org/>

**Actors:** scientific community, industry, standardization bodies

**Audience:** 2288

**Dissemination Level:** International

**Description:** IEEE GLOBECOM is one of two flagship conferences of the IEEE Communications Society (ComSoc), together with IEEE ICC. Each year the conference attracts about 3000 submitted scientific papers and dozens of proposals for industry events. The conference meets once a year in North America and attracts roughly 2000 leading scientists, researchers and industry practitioners from all around the world. IEEE GLOBECOM is therefore one of the most significant scientific events of the networking and communications community, a must-attend event for scientists, researchers and networking practitioners from industry and academia.

**Summary:** Leonardo Maccari presented the paper "*On the Computation of Centrality Metrics for Network Security in Mesh Networks*" by Leonardo Maccari, Quynh Nguyen, and Renato Lo Cigno [12]. An estimated audience of 30 people assisted the session. The presentation received several questions and the topic of the practical constraints for computing centrality metrics was interesting and further discussed also in other networking sessions.

### 3.4.13 Conference on citizen science

**Type:** Conference

**Title:** Disciplining or Empowering the Citizenry Through Citizen Science: Historical and Normative Perspectives on Knowledge and Power

**Date:** December 7-8, 2016

**Place:** Taipei

**Participant:** Melanie Dulong de Rosnay

**URL:** <http://i.iias.tw/CSCon2016/>

**Actors:** Legal scholars, historians, STS, information science and citizen science practitioners

**Audience:** 100 people

**Dissemination Level:** International (Asia, + Europe and North America scholars)

**Description:** An international academic conference on knowledge and power of citizen science.



**Summary:** Melanie Dulong de Rosnay (CNRS) was invited speaker at this conference gathering scholars and practitioners of citizen science. The main point of the paper she presented, titled “Peer Production Platforms, Community Networks and Techno-scientific Citizenship”, and the discussion which followed with the audience, was how CN qualify as citizen science and how policy-making can be understood as production of new knowledge and scientific impact.

The other papers were presenting citizen science projects from other realms than internet science and the commons. Some participants were experts of the commons but it was not the topic of the event. It was underlined that relation between citizen science and the commons should be understood.

### 3.5 Invited talks, public panels

**Christian Fuchs** was invited to give a keynote talk at the University of Warwick, March 17, 2016, on *The MacBride Report in 21st Century Information Capitalism, the Age of Social Media and the BRICS Countries*. The conference was titled “Internet, Participation and Society: Opportunities for the Global South” and was organized by the Warwick Mexican Society in collaboration with the Department of Politics and International Studies and the Centre for Multidisciplinary Studies. Christian Fuchs discussed in his invited keynote talk the implications of the 35th anniversary of the MacBride Report’s publication for the digital media landscape. The MacBride Report argued for an alternative world information order. Fuchs described how the contemporary digital media world has democratic deficit that affect developing countries and argued that we can get inspiration from the MacBride Report for thinking about democratic digital transformations. In the netCommons context, this means that we can ask the question what potentials for developing country contexts and for democracy in general community networks pose.

**Panayotis Antoniadis** gave an invited talk at the Group seminar of the Communications and Information Systems Group, University College London titled “*Building networks together, as commons*”, April 22, 2016. He focused his presentation on the possible role of community networks as local infrastructure for local services. There were 15 people in the audience and the discussion focused on the key question “why?”. The reason that attracted most the attention of the participants was “resiliency” the important role of diversity, or net-diversity, in the case of disasters was elaborated in detail<sup>29</sup>.

**Panayotis Antoniadis** participated at a panel titled “*Transitional networks*” at the Digital Wednesday series, of the Onassis cultural center, Athens, June 8, 2016, together with Ilias Marmaras, the director of the Sarantaporo documentary, and Giorgos Kleisiaris (co-founder of Sarantaporo.gr non-profit organization) who presented relevant projects in Greece and abroad, as well as examples of community networks created in order to connect non-privileged groups, such as residents of rural areas and refugees, and explored their relationship with critical contemporary art. The audience was around 100 people mostly from art schools but also people from the civil society and the general public<sup>30</sup>.

**Christian Fuchs** gave an invited keynote talk at the workshop “A Digital Turn? Emergence of a Digital Sociology”, organised by Abertay University and the British Sociological Association at Abertay University, Dundee. June 29, 2016. This conference explored the emergence of digital sociology and sociological ways of how to study digital media. It was especially aimed at postgraduate and doctoral students. Christian Fuchs focused in his invited keynote talk, titled “Social Media and the Capitalist Crisis”, on digital media in the context of the ongoing political-economic crisis. He pointed

<sup>29</sup>See <http://www.ee.ucl.ac.uk/~uceeips/group-seminars.html>

<sup>30</sup>See also <http://www.sgt.gr/eng/SPG1660/>

and the full video (in Greek): [https://www.youtube.com/watch?v=G\\_w\\_pH1TR8k](https://www.youtube.com/watch?v=G_w_pH1TR8k)





**Figure 3.16:** Public panel with Ilias Marmaras, George Klissiaris, and Panayotis Antoniadis, Onnasis cultural center, Athens, June 8, 2016

out how the digital media landscape is dominated by large transnational companies and how the crisis poses affects the digital media economy. In the netCommons context, the question arises what role community networks can play in a digital economy that is dominated by large US-based Internet and telecommunications corporations and what opportunities such alternative networks pose.

**Melanie Dulong de Rosnay** participated at the UNESCO panel on Internet Issues, IAMCR (International Association for Media and Communication Research) conference, University of Leicester, on July 27-31, 2016. This UNESCO panel of the Communications Policy and Technology session of the IAMCR conference, with 5 invited speakers including Melanie Dulong de Rosnay, discussed how Internet issues have an impact on society. IAMCR is one of the leading conferences in media & communications. CNs were mentioned as an example of innovative internet service provider, which should be supported by the law in its role of protecting privacy, independence and local democracy.

**Melanie Dulong de Rosnay**, Panel of the Peer Value Global Conference: Advancing the Commons Collaborative Economy, “*Is the EU only a problem or can it also be part of the solution?*”, Amsterdam city town hall, 2 September 2016. In this panel of the closing conference of the CAPS P2Pvalue project, Melanie Dulong de Rosnay, who was also a member of the consortium, mentioned the potential role of CNs as advocates at the European level. The panel was attended by over 50 participants, scholars and activists of the commons.

**Melanie Dulong de Rosnay**, Book talk: “*Peer to Peer Law, Digital Golems and Lex Electronica*”, Sussex Law seminar series, invited book talk, November 1, 2016. Melanie Dulong de Rosnay presented her book on Digital Golems as well as her First Monday paper, building on the case of CNs which, when relying on mesh networks, question the law that was drafted for centralised artifacts revolving around individual actors. Around 15 faculty and PhD students attended the invited lecture. The relation between law and technology and the impact of new artifacts and architectures on law and society was discussed after the presentation.

**Christian Fuchs** gave a keynote talk titled “The Limits of Participatory Media Culture in Digital Capitalism” at the 2016 Challenging Media Landscapes Conference “Access, Participation and the



Mediatised World”. University of Salford. November 14, 2016<sup>31</sup>. The task of this conference was to explore the opportunities, challenges, problems and limits of the digital media landscape. Christian Fuchs in his talk discussed contemporary theories of digital media and how they relate to participation and democracy. He pointed out that it is of key importance to look at how economic and political power structures frame digital media. In the netCommons context, the implications for community networks is that they are embedded into larger power structures, where telecommunications corporations and state institutions play important roles.

**Melanie Dulong de Rosnay** “Production par les pairs, plateformes et réseaux citoyens”, Forum du CNRS “Que reste-t-il à découvrir”, Table ronde “Aux sciences, citoyennes!”, Métropole Européenne de Lille, November 18-19, 2016. In this event of dissemination to the public, Melanie Dulong de Rosnay presented CNs as citizen science and alternative networks. A question which was raised was whether the contribution of CN was technology, rather than science. In that traditional understanding of research, technology would be more applied knowledge, developed by engineers, while science with a capital S would imply more than the development of communications opacity.

### 3.6 Community-building events

**Melanie Dulong de Rosnay**, Commons Watch in Europe, invited participant, Commons Network, Villarceaux, France, May 18-20, 2016. At this advocacy community-building event which resulted in the organisation of the European Commons Assembly attended by Panayotis Antoniadis in Brussels in November, Melanie Dulong de Rosnay presented the project and how infrastructure commons may be presented as a strong case study in Europe, incarnating a successful narrative of sustainable commons, and advocating for the preservation of such alternative initiatives.

On September 12, 2016, Chris Marsden (Professor at Sussex Law School, former member of the EINS project) gave a public seminar at CNRS ISCC on network neutrality. **Melanie Dulong de Rosnay** and the CNRS team had a meeting with him. It is interesting to learn from neutrality concerns in commercial ISPs to sustain the legitimacy of the claim of neutrality of the service provided by community networks.

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<sup>31</sup><http://salfordmediafestival.co.uk/events/academic-conference/>



## 4 Local meetings

Local actors and especially local authorities are sometimes very difficult to reach and influence. For this reason, it is critical to document appropriately the attempted interactions and comment on successes and failures in ways that we will help us (and others) to gradually improve our strategy.

In the following, we present the current status of the interaction of netCommons partners with local actors in different places in Europe.

### 4.1 Guifi.net, Barcelona

Guifi is the most advanced and most active CN connected to netCommons, and it is very difficult to document all local meetings; recently, Guifi.net people have aperiodic meetings with Francesca Bria (chief of ICT and innovation) and the Barcola advisory group. netCommons was also present in the Guifi.net annual gathering SAX 2016.

We summarize below the current situation in terms of challenges, pending tasks, and success and failures of previous efforts.

The current challenges are the following:

- Create a balance between commercial and voluntary activities;
- Improve the compensation mechanism for a manageable and sustainable community infrastructure among the diverse players in the city;
- Integrate Barcelona's citizen access network to Guifi;
- Overall understanding of the general public and authorities (what is Guifi and why?);
- Links with solidarity economy players in Barcelona.

The current strategy for reaching local authorities is to focus on the municipality which is interested in pilots, and the following are under negotiation:

- Pilot on alternative currencies and city network infrastructures (see also D2.4);
- Development of pilots in several neighborhoods (Raval, Poble Nou, Gràcia);
- Development of citizen mesh networks in two neighborhoods (Sants, Poble Nou).

Achievements/failures:

- (Failure, so far) Municipality locked in with previous long-term contracts and procedures that prevent sharing infrastructure and services;
- (Success) Development of the guifi.net infrastructure in Barcelona by a local cooperative (exo.cat);
- (Success) Development, formalization, implementation and consolidation of the compensation model in several local areas. This process and its success has also been documented in a scientific paper<sup>1</sup> presented to an Association for Computing Machinery (ACM) Special Interest Group on Communications (SIGCOMM) worksho;

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<sup>1</sup> “*Making Community Networks economically sustainable, the guifi.net experience*”<sup>2</sup> by R. Baig et al. [13].

- (Success) Participation in advisory board for collaborative economy in the City of Barcelona (Barcola).

## 4.2 Sarantaporο.gr, Athens

After a few exploratory local meetings with people from AWMN and the Sarantaporο.gr team, AUEB and NetHood decided to invest all their efforts on the case of Sarantaporο.gr NPO, which is the most active and engaged on advancing their project and their principles and objectives fit perfectly in netCommons. The chance to become active in the Sarantaporο area and explore opportunities for contributing to the sustainability of the corresponding community network through the implementation of a local application (Task 3.2) sounded very promising. Moreover, many of the members of Sarantaporο.gr NPO are also part of Athens Wireless Metropolitan Network (AWMN), which leaves a door open for engaging with the famous community network in Athens once various internal organizational issues will have been resolved.

Ever since, there have been a series of fruitful meetings and interactions with the Sarantaporο.gr core team: face to face meetings, skype calls, attendance and participation of AUEB and NetHood to the documentary screening and discussion events of Sarantaporο.gr in the Impact Hub of Athens, a panel at the Onassis cultural center, among others, discussing in more depth the possibilities for collaboration. The main aims of these meetings have been to identify the real problems and needs of the local community that is served by the network, and jointly propose ways and actions to address them. We all agreed that we should attempt to work together and transform the community network into a tool that best serves the local agricultural economy and an integral asset of what could become a new generation of techno-agricultural cooperatives.

The seeds planted in these meetings have flourished in several directions.

- Two core members of Sarantaporο.gr have recently joined our team as members of the netCommons project through AUEB making the collaboration with them even tighter and give the opportunity to the netCommons consortium to work closely with a third successful European CN, after Guifi.net and Ninux.org.
- AUEB participated in an event organized by Sarantaporο.gr in the area of Elassona and informed the locals about the goals of netCommons, discussed their needs in person and received feedback for the proposed ideas.
- AUEB is currently in the process of designing an application that addresses a basic part of these needs drawing on crowdsourcing principles. Its aim is to facilitate locally the information exchange and the provision of assistance in different types of tasks. The application itself is expected to serve as an incentive for enhancing the participation and active involvement of the locals in the community network.
- AUEB and NetHood jointly organized a participatory design workshop in the home area of the community network, to bring the local community in touch with stakeholders from the areas of agriculture, ICT, and the commons, which is described in detail in D3.1 [3].

In addition to the participatory design process, AUEB and NetHood are also involved in discussions around the design of a suitable legal framework that would help CNs in Greece to be able to provide telecommunication services through a commons-based model, similarly to Guifi.net. Further details can be found in D2.3 [14].



## 4.3 Italian CNs, Trento

### 4.3.1 Ninux.org

University of Trento is very close to the Ninux community, through Leonardo Maccari who participated to the third NinuxDay, in Florence, an aperiodic national gathering of the ninux community. ninux is one of the oldest community networks in Europe and it has always been peculiar because it is primarily focused on the network itself, rather than on Internet access. ninux people try to build a network for hackers and experimenters, without a specific interest in addressing digital divide, but with a participatory and horizontal organization. Many ninuxers consider their network as the translation into networking of the principles of free software.

In 2013, the previous ninuxDay, several ninux “islands” (this is the name of each separate Italian community) were present from the South and the North of Italy. This time only three active islands were represented and in general, a decrease in the activity was observed. The Ninux assembly was focused exactly on this theme: why the network is stalling and in some cases decreasing instead of growing like other European experiences and why young hackers do not join Ninux. Among the themes touched in the assembly some key questions were addressed, and partly answered.

- Does it make sense to have an experimental wireless network in 2016? When Ninux started, early 2000s, it was impossible to have a 10 Mb/s uplink between two houses, and a direct wireless link was outperforming any home ADSL. Techies were interested in the performance of their networks, and were attracted by this new technical innovation. Today Italy is being connected with fiber, and the performance of a wireless link is now comparable to the performance of a fiber-to-the-home connection.
- Is wireless itself enough today to attract youngsters? “Wireless” is not anymore appealing as it was, as it became a standard communication media, and young hackers are not passionate about this technology anymore because they give it for granted. Ninux needs to hybridise with new technological innovations (makers, devops, etc.) that are more appealing, and break the limit of being a **wireless** community network.
- Does it make sense to re-focus to an Internet access network? The majority of the people of the community still do not see this as a real goal of the network. Given the availability of fiber broadband connections that is enlarging in Italy this theme did not motivate many of the people present in the assembly.
- Does it help to structure the community in a better defined way? nlinux is currently completely flat and unstructured. It has no legal entity, not even any sister association that can be used when it is necessary to expose a legal identity. In the past, some unrelated formalized associations agreed to shield nlinux when it was necessary to have some legal identification, for instance to participate to research projects. This sparked a long discussion: in the past many ninuxers were utterly against this approach. The feeling today is that if some formalized structure can help to be rooted in the society and thus achieve higher visibility and attract new people then it would have been better accepted. The primary condition is that the association does not represent nlinux itself, but remains a separate entity, an instrument to access to some possibility that is today precluded.

Another important theme that was introduced, but only partially analysed is the definition of the community: nlinux people gather around a manifesto that is extremely generic, derived by the pico peering agreement. With the growth of the network, and the extension to locations other than Rome



(that was the initial core of the network and still contains the majority of the nodes) the need for self-definition of the community raised, and it was touched again in the assembly. Many felt the need to better comprehend what Ninux is, in order to understand how it should change to survive in the future. This task was started collecting the various motivations of the people present in the assembly (that will be further evaluated) and thus identifying the drivers for the community. It is the beginning of a process that may lead to a better internal view of the community network but needs much more future work if it wants to reach self-determination and be the basis to some form of governance.

It was also the occasion to show what netCommons is doing and in what way it can help the development of the community. There was a brief presentation of the goals and the composition of netCommons and some technical analysis that was made on the Ninux network and community, that are included in D2.5 [5]. The community was very interested to the analysis and to the tools used to make it, a discussion followed on the way such tools can be integrated in the ninux monitoring tools, or in some more general community monitoring tools such as Grimoire Lab. The feedback gathered is extremely important and opens the way to factual collaboration and adoption of the open source instruments provided by netCommons in the ninux community.



**Figure 4.1:** Ninux Day, Florence, November 26-27, 2016

### 4.3.2 Existing and in-progress CNs

While ninux is the largest Italian CN, in terms of nodes, participants and geographic extension, there are several other small to medium communities that cover mostly small disconnected regions in Italy. Among them some are worth to be mentioned in this deliverable since the university of Trento started a dialogue with them. The informal conversation currently going on has the goal of understanding their needs and strategies and possibly including them in the future experimentation of the results of netCommons:



- **Gallia Network<sup>3</sup>:** Gallia is a network that serves about 100 families in the village of Canezza (and its scattered hamlets) about 20 km from Trento. UniTn had several contacts with them, both face to face and email discussions. The people from Gallia are developing their network as a small Community-ISP and suffer from lack of participation and isolation from larger movements. netCommons can help them with their legal asset (that they are currently re-organizing), with new stimuli on the technological side and with the inclusion of their association in the broad CN movement.
- **Project Neco<sup>4</sup>:** Neco is another small community-ISP located in the south of Italy (Vietri di Potenza, a small town suffering from digital divide). It is one of the first community ISP in Italy, and also one that had to face many of the difficulties related to connect a disconnected area with low-cost DIY solutions. Discussion with the Neco project is going on about their economic model, and could feed the work of WP1 and WP2 with another example of small sustainable ecosystem.
- **Reti Senza Frontiere<sup>5</sup>:** another small community ISP located in the neighborhood of Rome, created by some of the activists of Ninux that stemmed an association with the goal of becoming a small local wireless ISP. Several discussion with the president of the associations were carried in order to understand what is their goal and what is the way they organized their association. Again, the feedback received can be useful for the work of WP1, WP2 and other WPs as well.

The mentioned communities, plus other ones have created a mailing list that is participated also by people from netCommons.

## 4.4 FFDN

CNRS has established close contact with FFDN, by attending their general assembly in the Spring of 2016, conducting interviews with prominent members on the history of the CN movement in France, and participating in discussions over the regulatory framework of CNs, their legal obligations as well as advocacy strategies.

The FFDN general assembly was held in a rural area close to Grenoble, near the French Alps, and was attended by more than 60 people from almost all FFDN's members. Félix Tréguer (CNRS) held a short presentation to introduce the netCommons research agenda. Then, over the course of the event, he attended various workshops touching on technical or regulatory themes.

On the regulatory front, fascinating discussions were held over the legal obligations of Internet access providers operating open WiFi hotspots, in particular on issues such as data retention were significant legal uncertainties remain. Other topics of interest included the upcoming European consultation on Net Neutrality guidelines, the transposition of the EU Radio Directive, and more generally the need to be proactive in trying to influence telecom regulation. The recently announced French plan for fiber roll-out —and the promise of many “fiber orphans” that this disappointing plan entails— was seen as an avenue for seeding new community networks in under-served areas.

In the July and October 2016, face-to-face interviews were also conducted with the founders of FDN, France's oldest CN.

So far, the collaboration has been sustained and fruitful, though of course the level of engagement

<sup>3</sup>See <http://www.gallianetwork.it/>, in Italian.

<sup>4</sup>See <http://www.progettoneco.org/>, in Italian

<sup>5</sup>See <http://retisenzafrontiere.org/>, in Italian



is not always as strong as it could be given the fact that FFDN is a volunteer-run organization with limited resources. Other interactions and joint actions will be conducted in the coming months.

## 4.5 The UK scene

In the period July-December 2016, Dimitris Boucas and Maria Michalis (University of Westminster) liaised with various CN activists, notably in Greece and Britain. These contacts materialised while working on D2.2 [15], but were also an opportunity to discuss the project and try and identify advocacy for CNs that can be used by such activists and also feed into other actions of the project. The researchers established contacts with the following CNs:

- Consume.net, in East London
- Free2Air, in East London
- Digcoop, in East London
- B4RN, in Lancaster
- Kinmuck, in Aberdeenshire

The intention of neCommons is to maintain the contacts established with these Community Networks (CNs) and if possible to extend contacts to other CNs. We have included the names of the key actors in mailing lists of the University of Westminster so that they can take part in relevant public events and CN-related meetings local to the UK. In addition, we will seek to follow the developments in their community networks by paying visits and participating in some of their local meetings, also for the purposes of extending the activity presented in D2.2[15] toward the goal of both scientific and social dissemination. Most significantly, we see these actors as relevant to the broader goals of the netCommons project: for instance, the need for incentives in community networks (WP2), the issues of economic sustainability (WP2), or indeed the legal aspects (WP4).



## 5 Publications

### 5.1 Popular media

Panayotis Antoniadis. (2016). DIY networking: The path to a more democratic Internet. The Conversation Global, November 8, 2016. Available at: <https://theconversation.com/diy-networking-the-path-to-a-more-democratic-internet-67216>

### 5.2 Book chapters

Leandro Navarro, Felix Freitag, Roger Baig, Ramon Roca. (2016). A Commons-oriented Framework for Community Networks. In Luca Belli (editor), Community Connectivity: Building the Internet from Scratch, Annual Report of the UN IGF Dynamic Coalition on Community Connectivity, FGV Direito Rio Edition [2].

Leandro Navarro, Felix Freitag, Emmanouil Dimogerontakis, Roger Baig, Ramon Roca, Renato Lo Cigno, Leonardo Maccari, Panayotis Antoniadis, Maria Michalis, Melanie Dulong de Rosnay, Félix Tréguer. (2016). Efficient Collaboration between Government, Citizens and Enterprises in Commons Telecommunication Infrastructures. In Luca Belli (editor), Community Connectivity: Building the Internet from Scratch, Annual Report of the UN IGF Dynamic Coalition on Community Connectivity, FGV Direito Rio Edition [2].

Federica Giovanella. (2016). Community Networks: Legal Issues, Possible Solutions and A Way Forward in the European Context. In Luca Belli (editor), Community Connectivity: Building the Internet from Scratch, Annual Report of the UN IGF Dynamic Coalition on Community Connectivity, FGV Direito Rio Edition [2].

Félix Tréguer and Primavera De Filippi. (2016). Wireless Community Networks: Towards a Public Policy for the Network Commons? In Luca Belli and Primavera De Filippi (editors), Net Neutrality Compendium: Human Rights, Free Competition and the Future of the Internet, Springer [16].

### 5.3 Journals

Mélanie Dulong de Rosnay. (2016). Peer to party: Occupy the law. First Monday, [S.I.], n. 12/2016. ISSN 13960466. doi:10.5210/fm.v21i12.7117 [17].

Available at: <http://firstmonday.org/ojs/index.php/fm/article/view/7117/5658>.

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- Félix Tréguer, Panayotis Antoniadis, and Johan Söderberg. (2016). Alt. vs. Ctrl.: Editorial notes for the JoPP issue on Alternative Internets, Journal of Peer Production, Special issue on Alternative Internets [21]. Available at: <http://peerproduction.net/issues/issue-9-alternative-internets/editorial-notes/>.
- Stefano Crabu, Federica Giovanella, Leonardo Maccari, and Paolo Magaudda. (2016). Hacktivism, Infrastructures and Legal Frameworks in Community Networks: The Italian Case of Ninux.org, Journal of Peer Production, Special issue on Alternative Internets [22]. Available at: <http://peerproduction.net/issues/issue-9-alternative-internets/peer-reviewed-papers/ninux-org/>.
- Melanie Dulong de Rosnay. (2016). Alternative Policies for Alternative Internets, Journal of Peer Production, Special issue on Alternative Internets [23]. Available at: <http://peerproduction.net/issues/issue-9-alternative-internets/experimental-format/alternative-policies-for-alternative-internets>.
- Panagiota Micholia, Merkouris Karaliopoulos, Iordanis Koutsopoulos, Luca Maria Aiello, Gian-marco De Francisci Morales, Daniele Quercia. (2016). Incentivizing social media users for mobile crowdsourcing, International Journal of Human-Computer Studies, Special Issue on Mobile and Situated Crowdsourcing [24]. Available at: <http://www.sciencedirect.com/science/article/pii/S1071581916301203>.

## 5.4 Conferences/workshops

- Panagiota Micholia, Merkouris Karaliopoulos, Iordanis Koutsopoulos. (2016). Mobile Crowdensing Incentives under Participation Uncertainty. ACM MobiHoc 2016, MSCC workshop, July '16 [9]. Available at: <http://dl.acm.org/citation.cfm?id=2940357>.
- Merkouris Karaliopoulos, Michalis Titsias, Iordanis Koutsopoulos. (2016). First learn then earn: Optimizing Mobile Crowdensing Campaigns through Data-driven User Profiling. In Proc. ACM MobiHoc 2016, July '16 [8]. Available at: <http://dl.acm.org/citation.cfm?id=2942369>
- Luca Baldesi, Leonardo Maccari, and Renato Lo Cigno. (2016). Optimized Cooperative Streaming in Wireless Mesh Networks. In Proc. of the 15th IFIP Networking Conference (NETWORKING), 2016 [6]. Available at: <https://doi.org/10.1109/IFIPNetworking.2016.7497230>.
- Leonardo Maccari, Nguyen Quynh, Lo Cigno Renato. (2016). On the Computation of Centrality Metrics for Network Security in Mesh Networks. IEEE Global Communications Conference (Globe-



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Available at: <http://ieeexplore.ieee.org/document/7497253/>.

Mennan Selimi, Davide Vega, Felix Freitag, Luís Veiga. (2016). Towards Network-Aware Service Placement in Community Network Micro-Clouds. In Proc. of Euro-Par 2016 [10].

Available at: [http://link.springer.com/chapter/10.1007%2F978-3-319-43659-3\\_28](http://link.springer.com/chapter/10.1007%2F978-3-319-43659-3_28).

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Félix Tréguer. (2016). Supporting Community Networks Through Law and Policy. Workshop on community networking infrastructures. Barcelona [1].

## 5.5 Working papers

Mélanie Dulong de Rosnay. (2016). Peer-To-Peer Law. Further Reflections. Media@LSE Electronic Working Paper Series WP no.41, December 2016. ISSN: 1474-1938/1946.

## 5.6 Demos

Felix Freitag and Mennan Selimi. (2016). CLOUDY: Community Cloud Edge Distribution in Guifi.net. 41st Annual IEEE Conference on Local Computer Networks (LCN 2016).





## 6 Other dissemination activities

### 6.1 CAPS Networking

netCommons partners had numerous interactions with partners from related CAPS projects, and especially those that have “common” partners like **MAZI** (NetHood). For example, in addition to NetHood, UoW (Dimitris Boucas) and CNRS (Melanie Dulong de Rosnay) attended the MAZI workshop in Greenwich Deptford, London<sup>1</sup>, organized by James Stevens, one of the pioneers of CNs who was then invited also at the netCommons workshop in London and contributed to D2.2.

Ileana Apostol (NetHood) and Leandro Navarro (UPC) and Leonardo Maccari (UniTN) had several interactions with Giovanni Allegretti, coordinator of the **EMPATIA** CAPS project, during the Net-Futures conference in Brussels, April and the netCommons workshop in Barcelona, June. The aim was to explore the connection between participatory budgeting and the development of community networking infrastructures supported by municipalities involved in participatory budgeting. Future jointly organized events or sessions were explored.

NetHood (Panayotis Antoniadis and Ileana Apostol) had also a half-day meeting in Paris with Francesca Musiani and Carmela Troncoso (CNRS), and Vincent Puig (IRI/Centre Pompidou) from the **NextLEAP** project to discuss possibilities for collaborations (Francesca Musiani is also part of netCommons). In addition, Leonardo Maccari, had an interview with Ksenia Ershomina, also part of **NextLEAP** that was interested in understanding what are the contact points between the two projects.

Panayotis Antoniadis (NetHood) met with Eleni Toli (ATHENA), the coordinator of the **CAPSELLA** project, at the CAPSSI event in Bratislava. A very fruitful interaction in this event led to the invitation of Eleni Toli to the Sarantaporo symposium. Unfortunately she could not attend but she joined the preparatory meeting at the Athens Impact Hub and many opportunities for collaboration between the two projects were identified (see D3.1).

Leonardo Maccari presented netCommons at the kick-off meeting of the **PIE NEWS** CAPS project, and together with Panayotis Antoniadis they met with Maurizio Teli, (PI of PIE NEWS, expert on Participatory Design and editor of the Journal of Peer Production). Teli invited netCommons to submit a paper on the Sarantaporo participatory design process for the conference on “Participatory Design” in Belgium in 2018<sup>2</sup>.

Leonardo Maccari is in contact with Oscar Corcho from the **STARS4All** and Frank Kresin from the **Making Sense** CAPS projects on the possibilities to place light pollution and air-quality sensors respectively on CNs.

Finally, Melanie Dulong de Rosnay had an informal meeting with Juan Carlos De Martin, Francesca Musiani, Félix Tréguer, Melanie Dulong de Rosnay in Paris on 4 November 2016: discussion on CAPS cooperation as Nexa Center is starting a new CAPS project on IoT and Melanie is proposing to liaise with **DiDYI** (Melanie Dulong de Rosnay sits on the legal board of this CAPS project and the legal issues seem related).

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<sup>1</sup>See <http://wrd.spc.org/mudlarking-on/>

<sup>2</sup>See [http://pdcproceedings.org/next\\_pdc.html](http://pdcproceedings.org/next_pdc.html)

## 6.2 Educational material

It is part of our dissemination plan to produce a wide range of educational and dissemination material to make CNs better understood and help them advance their objectives.

In the first year of the project our principal focus was on producing the main results of our collaborative research, documented at this stage in the project's deliverables. This output will then form the basis for producing more accessible material in the form of short tutorials or booklets that can be used in events, local meetings, and other dissemination activities. As a first step, the netCommons consortium has decided to contribute to the improvement of the Wikipedia pages on key concepts around CNs, based on the material produced for D1.2 (Report on the Existing CNs and their Organization), which will take in an organized fashion in the second year of the project.

Another way to reach the wider public is through popular media and our first output in this respect is an article in The Conversation Global, by **Panayotis Antoniadis** (NetHood) titled “DIY Networking: a path to a more democratic Internet”<sup>3</sup>. The article provides a short introduction to the concept of DIY networking and community networks and raises important issues that need to be addressed in the future.

## 6.3 Editorial boards

**Félix Tréguer** (CNRS) and **Panayotis Antoniadis** (NetHood) were co-editors for the special issue #9 Alternative Internets, of the Open Access Journal of Peer Production. netCommons also supported the design and printing of a “preview” of the issue as shown in Fig. 6.1, including selected fragments from all articles in a 24 page booklet, which was distributed during the 4S/EASST conference in Barcelona, among others venues<sup>4</sup>.

**Panayotis Antoniadis** is also co-editor for the most recent issue of the Journal of Peer Production, issue #11 CITY, which has recently published its call for papers, including many topics related to the objectives of netCommons<sup>5</sup>.

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<sup>3</sup> See <http://theconversation.com/diy-networking-the-path-to-a-more-democratic-internet-67216>

<sup>4</sup> See <http://netcommons.eu/?q=news/jopp-issue-9-alternative-internets>

<sup>5</sup> See <http://peerproduction.net/cfp-jopp-special-issue-11-city-abstracts-due-31-january-2017/>





**Figure 6.1:** The preview version of JoPP issue #9 sponsored by netCommons

## 6.4 Internet drafts

Panayotis Antoniadis and Leandro Navarro (UPC) participated in the editing and online discussions at the GAIA e-mail list for the finalization of the “RFC 7962 - Alternative Network Deployments: Taxonomy, Characterization, Technologies, and Architectures”<sup>6</sup>.

## 6.5 Advocacy

The netCommons project has been following very closely the developments regarding the EU radio directive<sup>7</sup> which was adopted in 2014, and which is currently being transposed at the national level by member states. netCommons signed the ”Joint Statement against Radio Lockdown”<sup>8</sup>, published a short summary of the main points included in the statement<sup>9</sup>, produced a set of high-level policy recommendations for these important policy challenges CNs are facing today<sup>10</sup>, and is currently part of the discussions for the participation in a specialized working group that has been formed in the European Commission in collaboration with the MEP Julia Reda (Pirate Party, Greens/EFA).

Félix Tréguer, Melanie Dulong de Rosnay and Federica Giovanella signed this open letter to the European Commission (EC) on monitoring and liability titled ”Open Letter to the European Commission

<sup>6</sup> Available at: <https://www.rfc-editor.org/info/rfc7962>

<sup>7</sup> Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC Text with EEA relevance, OJ L 153, 22.5.2014, p. 62–106

<sup>8</sup> <https://fsfe.org/activities/radiodirective/statement.en.html>

<sup>9</sup> <http://netcommons.eu/?q=content/defending-free-software-radio-devices>

<sup>10</sup> <http://netcommons.eu/?q=content/supporting-community-networks-through-law-and-policy>



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## 6.6 Interviews

**Renato Lo Cigno** was interviewed by RAI 1 the first channel of the Italian public radio in February, the interview was transmitted in the transmission “Manuale d’Europa” on Feb. 20, 2016<sup>11</sup>

In April, **Melanie Dulong de Rosnay** gave an interview in the Socialter printed French magazine (no online version) on the topic on the commons, in which she mentioned CNs as an instance of infrastructure commons to provide connectivity outside of commercial-only models.

**Leonardo Maccari** was interviewed by the daily Italian newspaper “Il Fatto Quotidiano” about the European Radio directive and the netCommons project<sup>12</sup>. “Il Fatto Quotidiano” is one of the most read national Italian newspaper of 2016, with roughly 40.000 daily copies sold and 10.000 on-line paying subscribers.

On July 22, **Panayotis Antoniadis** gave an interview at the Agroknow blog through the CAPS project CAPSELLA speaking both on MAZI and netCommons<sup>13</sup>.

<sup>11</sup>The transmission is available at <http://www.radio1.rai.it/dl/portaleRadio/media/ContentItem-eb220d2b-7103-4f5e-9fae-de6b7b50272c.html> from minute 16.15 to 19.40.

<sup>12</sup>The article was published July 19th, 2016 and it is available through this link (visited Dec 2016) <http://pontiniaecologia.blogspot.it/2016/07/ce-una-rete-senza-padroni-ma-lue-la.html>

<sup>13</sup>The interview is available in full at <http://blog.agroknow.com/?p=5143>



## **7 Conclusions**

In its first year, netCommons achieved remarkable results in terms of scientific publications, outreach to the CN community and other stakeholders, and local engagement in two important cases with very different characteristics: Barcelona and Sarantaporó area.

Of course, the project is not yet in a position to claim that there has been some sort of “adoption” of final “solutions” produced inside the project, mostly because all of our research activities are still in progress. However, the fact that netCommons has managed to be part of a wide range of relevant communities and contribute with tangible ways in their cause brings us in a very good position to be able to offer to our forthcoming solutions the attention of the actors that can benefit for them.

Having made a very good first step in all the target domains of actors “beyond academia”, the next steps for the project will be to keep all these parallel threads alive and start “connecting the dots” between them. More attention is being directed to the production of publicity and educational material in order to make more visible and more useful for CNs the significant results that are coming out of the project’s scientific work.

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The netCommons project

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netCommons-D6.1-1.0

Horizon 2020

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