Protocol for Accompanying Community Network Deployments in Social Isolation Scenarios
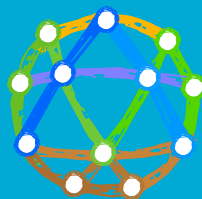
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Protocol for Accompanying Community Network Deployments in Social Isolation Scenarios

Objective

This protocol proposes a series of steps to co-create, in times of mandatory social isolation, a Community Internet Network with neighbors in the community.

Introduction

We understand that the current situation of preventive isolation shows that connectivity and access to the Internet is a basic need for individuals and communities to develop a dignified life. At this time, the inequality between those who have Internet in their homes and those who do not has an influence on the exercise of rights and the development of daily activities that range from doing homework, carrying out procedures, accessing health consultations and a number of activities that are developed virtually to sustain life.

At AlterMundi we have been promoting a methodology for the deployment of Community Networks that we call Semilleros. These are training and work sessions that materialize the birth of Community Networks, co-created by the communities themselves, starting their process of sovereignty in digital communication from the technological appropriation.
Some records of these experiences:

- Semillero de Redes Comunitarias en la comunidad de Cherán K´eri, Michoacán, México.
  (https://www.youtube.com/watch?v=PyN8n94ROyE)
- Semillero de Redes Comunitarias de Traslasierra, Las Calles, Córdoba, Argentina.
  (https://www.youtube.com/watch?v=_EMmU707-v4)

The following protocol is an adaptation of the Community Network Seedbeds model to the current context of social isolation by COVID-19, transforming several face-to-face activities into virtual ones and minimizing physical interaction and circulation, while remaining a collective construction.

Community Networks are also possible in scenarios of social isolation. Their role, in addition to connectivity, is to collaborate in keeping alive the community social fabric from the digital territory.

Protocol

Organizing the comunication

- A coordinating committee for the deployment, of 2 or more members of the community, that will energize the different stages of work.

- A virtual and accessible communication channel for the communication between the neighbours of the community. For example a group of whatsapp for its universality. For convenience, we will call it from now on "the group".
- We think of those people who do not have access to virtual communication, because they have no signal or some other reason, and try to include them.
- Funds are made available so that the neighbors can charge mobile credit to communicate.

Mapping

At this stage of the work, the neighbors identify the geographical and social territory, recognizing where the houses are, the buildings of interest such as schools and community centers, the topology of the terrain and other characteristics to be taken into account for the layout of the network. The objective is to choose where the first nodes of the network will be located, responding to the needs of the community.

- We share among the neighbors the booklet of "Mapping a Community Network" (http://docs.altermundi.net/P%C3%A1ginaInicial?action=AttachFile&do=get&target=Participatory+mapping+of+the+libre+community+network.pdf) (Spanish (http://docs.altermundi.net/P%C3%A1ginaInicial?action=AttachFile&do=get&target=Mapeo+of+a+Network+Free+and+Community.pdf)) that addresses this activity and the tasks to be performed collectively. Also the video that complements this booklet of Collaborative Mapping of a Free and Community Internet Network (https://www.youtube.com/watch?v=jkKni5LKMJ8)
- Each person makes a sketch that includes a graphic description of their house and the surroundings, mentions with which other houses they have direct visibility and the characteristics of their mounting point.
- Each person shares to the group a photo of their individual sketch and the GPS location of their house.
- The coordinating committee compiles all the individual sketches on a general map, visualizing possible links for the deployment of the network. This can be done using link mapping tools such as Link (https://link.ui.com/) or simply by drawing it on a poster.
- The coordinating committee, with the support of AlterMundi, analyzes what would be the best initial topology for the network, responding to the needs of the community and the feasibility of deployment.
- The coordinating committee shares the proposal of network topology with the neighbors by the group and it is discussed collectively.
- To corroborate the line of sight of the proposed nodes, a schedule can be coordinated to climb the roofs and place colored fabrics where the nodes would be installed.
- The network topology to be adopted in this initial stage is defined.

Pre-mounting preparation

In this stage, the neighbors are trained in how to assemble a LibreRouter node. They get all the necessary materials and tools and we organize the assembly schedule. The objective of this stage is to prepare for the deployment of the Community Network.

- The training booklet "Assembly of a LibreRouter Node (Spanish)" (http://docs.altermundi.net/P%C3%A1ginaInicial?action=AttachFile&do=get&target=Montaje+de+un+Nodo+LibreRouter.pdf), that explains in detail the materials, tools and requirements for the assembly of the LibreRouter node, is shared with the neighbors. It is also important to watch the video of "Mounting a node on the wall" (https://https://youtu.be/c-VX6YRBVLY) to complement information and have greater clarity of the work to be done and what is necessary for its preparation.
- Each person makes a drawing of how the installation of their node would be and shares it with the group. Guided by the booklet, they also specify the materials and tools they consider necessary for the installation of their node.
- The coordinating committee systematizes the information and writes the purchase list of materials and tools with the accompaniment and supervision of AlterMundi.
- A Materials Manager is appointed. Th person who will receive the tools and materials at home, will organize and then distribute them. It is important to have a vehicle.
- A person in charge of LibreRouters is appointed (LibreRouter Manger). This person will receive the LibreRouter kits from AlterMundi.
- With the support of AlterMundi the LibreRouters Manager will do the initial configuration of all the kits and labeled with the name of the family to which it will be assigned. The configuration will be done based on the documentation "How to configure the nodes with the LimeApp" (https://) (No previous knowledge required)
- The coordinating committee purchases network materials and tools (ethernet crimper, network cable reel, tokens, fonts, internal routers, etc.) from a supplier who delivers to the location.
- The purchase of hardware and fastening materials (pipes, fastening elements, spout omegas, screws, drill bits, etc.) is made in one go at a nearby hardware store.
- All the purchased supplies will be delivered at the Materials Manager's place.
- The Materials Manager assembles The Toolbox, with all the tools that will be used for mounting the mesh nodes. This person will follow the protocol for sterilizing the tools.
- The LibreRouter Manager sterilize the LibreRouter kits, which are already configured and labeled for each family and takes them to the Materials Manager.
- The Materials Manager groups together the materials for each node.
- A deployment schedule is made so that The Toolbox will travel from home to home and the community can virtually accompany the person who is assembling his/her node.

Mounting

This sections describes the mounting of the network nodes

- The Materials Manager takes and delivers everything necessary for the assembly to the neighbor's house.

- The neighbor sterilizes the materials and tools.
- The neighbor checks that everything necessary for the installation is present.
- The family installs the structure of the LibreRouter node (the wired pipe, and its tensors if necessary).
- The family performs the installation of the LibreRouter.
- The family goes through the installation checklist in the assembly manual.
- The family aligns the LibreRouter antennas with the neighboring nodes, based on the video "How to use the LimeApp Alignment Tool".
- During the installation the family can share photos and consultations to the group and the rest of the community can give support and advice.
- The family gathers all the materials and tools and sterilizes them.
- At the end of the installation the Materials Manager picks up the toolbox and takes it to the next shift of the Schedule.
- This Mounting Protocol is repeated for the rest of the nodes.

Virtual Wrap up Day

Neighbors share to the group things learned, what they liked and what they didn't like, anecdotes, photos, videos, etc. This is an important opportunity to share knowledge, doubts, concerns and to continue planning the community network among all.

Conclusion

This protocol proposes a series of steps to achieve the deployment of a Community Network in times of isolation, which minimizes the movement and physical interaction of people to only:

- A Materials Manager who must distribute the necessary materials and tools to each house in his or her vehicle.
- A person in charge of the LibreRouters who must take the them already configured to the house of the Materials Manager.

The rest of the tasks are developed in each of the houses with the members of the family group and the logistics are organized virtually.

Annex

List of Tools and Materials

Kits LibreRouter

Each LibreRouter Kit consists of:

- 1 LibreRouter

- 2 Sectorial antennas, with their fastening elements.
- 4 Pigtail cables (2 for each antenna)
- PoE power source
- Documentation booklets.

Hardware Tools

- Screwdrivers
- Adjustable wrench
- Fixed wrench (8mm)
- Pliers or cutting pliers
- Hammer
- Tape measure
- Drill
- Drill bits
- Masonry bit to go through the wall

Network tools

- Network cable tester
- RJ45 Crimper

Fastening and assembly materials

- Pipes
- Screws
- Omega mounting bracket
- Self Locking plastic strip (UV resistant)
- Antenna guy wires

Network materials

- Outdoor UTP cable with a ground wire
- RJ45 crimpable connector
- Commercial routers for the interior