Application 2024-10-439 Connecting Lika - Rural Digital Commons received

The following submission was recorded by NLnet. Thanks for your application, we look forward to learning more about your proposed project.

Contact

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organisation name	▶	UnCiv
country	▶	NL / HR
consent	▶	You may keep my data on record

Project

code	▶	2024-10-439
project name	▶	Connecting Lika - Rural Digital Commons
fund	▶	Commons_Fund
requested amount	▶	€ between 8000 & 21500
website	▶	• https://wiki.tech-inc.nl/User:Becha/Lika/ProjekatPovezanoPolje

synopsis

Goals of the project are: bringing internet connectivity to a village in Croatia (Gubavcevo Polje), in order to achieve the rejuvenation of the remote rural communities, continue the tradition of "governing the commons", bring digital rights for the marginalised population , while following "Environmental Justice in Tech" principles (Limitations / Reparations / Solidarity) & principles of Feminist Internet.

The proposed solution is to build a wireless community mesh network: distributed, decentralised, not-for-profit, communally owned & operated, built from repurposed / refurbished equipment, and set up by volunteers from the hackers & (digital rights / climate justice / feminist) activists.

Reasons for focusing on this area are: the multitude of disadvantages (historical, political, economic) in the last 30 years : ravaged by war (1991-1995), de-population, isolation, Climate & Environmental Crisis, Economic Crisis, Political crisis... And my personal & emotional connection to this village.

Duration is 3 years: November 2024 - November

2027

* Phase 1: Exploration & Negotiations (1–9
Months) Time: November 2024 – August 2025
* Phase 2: Building (1–3 Months) Depending on
the phase 1 outcomes
* Phase 3: Maintenance (0.5 – 2.5 years) Time:
6–24 months after the building.
* Phase 4: Final Review & Closing (6 months)
May–November 2027

experience

I have been involved in several aspects of sim-
ilar projects: Community Building , technical
networking, feminist activism, Mesh networking,
conflict resolution (NVC) & regional connec-
tions.

I am a Computer Science engineer.

I have been teaching core networking from 1996
to 2011 (BGP, DNS, IPv6, RPKI...).

I have a long history of feminist activism, and
is currently fulfilling a Diversity & Inclusion
Advisor role within my regular (part-time) em-
ployment, and multiple Community Awareness /
Code of Conduct Team volunteer roles in various
intentional communities.

Mesh: in 2016, I contributed to the RFC "Alter-

native Network Deployments: Taxonomy, Charac-
terization, Technologies, and Architectures"
https://datatracker.ietf.org/doc/html/rfc7962

& https://wiki.techinc.nl/MeshNet

From 2011 to present date I have been a Commu-
nity Builder at RIPE NCC, involved with Inter-
net Governance, organising hackathons, being on
the Programme Committee for South-Eastern Eu-
rope regional meeting. Recently, my focus is on
"environmental sustainability in tech".

Being in Lika started as a "dream" in 2013, of
going back to Nature and escaping civilisation.
In 2016 I organised a festival/hackers-camp,
and in 2022 I started planning this project.

usage

Budgeting Exploration Phase : 13000
- Minimum (3500 €)
- sustainable local transport:
second-hand cargo e-bike (2500 €)
- for the local NGO, on loan to
me when I visit there
- donations to local NGOs: 500 €
each = 1000 €
- pro-bono: Vesna's work of docu-
mentation, project management, fundraising,

promoting)

- pro-bono: work of technical experts
- Optional (+2000 € -- +5000 €)
- expert fees for NVC mediators, for negotiations within local community (1000 €)
- travel expenses for the visit to local NGOs (100-500 € for the train ticket x 2 = 1000 €)
- stipend for core-team members who are self-employed (500 € per month per person x 3 months x 2 = 3000 €)
- pro-bono: accommodation in LikaLodge
- Even More Optional (2000 – 4500)
- Organising LikaCamp2025 : 2000 € – 4500 €

Budgeting Building Phase : 4500

- equipment: antennas, servers, cables, poles, batteries, solar cells = 2000 €
- connectivity fees: 100€ x 12 = 1200€
- electricity costs (in case we do not get enough renewable solar energy) 15€ x 12 = 300€
- stipends for experts: 2x500€ = 1000€

Budgeting Maintenance Phase : 8000

Per Year: 5000€

- stipend for local-team members (100 € per month per person x 12 months x 2 = 2400 €)

- connectivity fees: 100€ x 12 = 1200€

- electricity costs (in case we do not get enough renewable solar energy) 15€ x 12 = 300€

- repairs of equipment: 1000 €

- Insurance 100€

Optional

- travel to two conferences: 2x1000€

- donations to local NGOs: 500 € each = 1000 €

comparison

My proposed solution will be FREE OF CHARGE to the users for the first year, subsidised by grants, volunteer work & repurposed equipment;

after the first year, it will be funded by contributions , in the co-op / community governance model.

Existing commercial alternatives are:
* local telecom offer : e.g. 13€/month, but

without guaranteed reachability:
https://telemach.hr/mobilni-internet/paketi-za-pretplatnike ; and limited to household

* Starlink: 80€/month, with initial investment of 500€ - again, individual solution that does not scale & is not economically viable for poor people

I have been researching other solutions, and here are 3 concrete examples of what I am NOT interested in doing — while they do have some elements that are suitable; I might borrow the ideas & work together with them:

* RuralNet: Croatian, Commercial, based on optical fiber, state-owned (or state sponsored) https://www.ruralnetwork.eu/hr/o-nama/

* Rhizomatica: Very successful with community, I have been working with them, but it's based on mobile technology : https://wiki.tech-inc.nl/Rhizomatica_Community_Telecommunications_Infrastructure

* off-grid micro-net: Ideologically perfectly right, good tech tips, but not yet successful: https://anarchosolarpunk.substack.com/p/off-gridinternet

My solution will, additionally, provide empow-
erment for women:

— strengthening of local community by sharing a
common infrastructure

"Governing of infrastructure as commons" will
again benefit women, since the existing cooper-
ation between strong female leaders (examples
listed in other KPIs) will keep this new in-
frastructure in their hands; since there will
be no profits, there is less danger of the
"takeover" by men (who are still having deeper
patriarchal attitudes).

challenges

There are multiple challenges, related to: ge-
ography, technology, legal structures, desired
principles & cultural norms:

* Technical Challenges: — getting "backhaul"; —
securing electricity supply; — negotiating with
land owners; finding "lines of visibility" ;
* Area Challenges: — hilly; — hard to access; —
isolated from supply chains
* Legal / Administrative : — creating a struc-
ture for shared ownership; revitalising a cul-
ture of commons governance; — vandalism (de-
stroying the antennas by hunters or bored
youth) ; — theft (stealing equipment)

* Climate disasters (deep snow, strong winds, flooding, heat waves)

* Principal Challenges (that are also "technical")
- using ONLY renewable energy / fossil-fuels free (Climate Justice)
- using only repurposed / recycled / refurbished equipment (that is at the same time low-power-usage)
- using only Free & Open Source software https://feministinternet.org/en/principle/open-source

References: https://labs.ripe.net/author/becha/environmental-impact-of-internet-urgency- de-growth-rebellion/
& https://labs.ripe.net/author/becha/towards-climate-justice-in-tech/

Stretch Goals
- adding other equipment to the "WiFi sites", with sensors & measuring (Klimerko, RIPE Atlas... LIGHTNING DETECTORS) -> making this ^^^ data available to locals
- monitoring & alerting & STOPPING deforestation, water abuses, illegal hunting, forest fires...

My preferred technical solution is developed

by Elektra Wagenrad : "Independent Solar Ener-
gy Mesh System" : https://isems.netlify.app/en/

ecosystem

This village (and nearby villages) is in need
of support, due to de-population, war, and eco-
nomic under-development: https://en.wikipedi-
a.org/wiki/Gubavčevo_Polje &
https://en.wikipedia.org/wiki/Gračac
https://www.academia.edu/79963682/Demograph-
ic_characteristics_of_Lika_region

I have been visiting here every year since
2013, I have organised one mid-size in-
ternational festival in 2016, and many smaller
gatherings in the last 10 years: https://wik-
i.techinc.nl/User:Becha/Lika & https://wik-
i.techinc.nl/User:Becha/Lika/2013-plans

This rural, isolated area is NOT well covered
by the mobile network of national telecom
provider: https://www.hrvatskitelekom.hr/karte-
pokrivenosti

Making wireless mesh network is a well estab-
lished alternative for remote areas:
https://cn-roadmap.github.io

Local community has built & maintained own
drinking-water infrastructure, governed as com-

mons, since 1950's, still in operations; and they had a co-op for local produce exchange & re-selling from 1945 till 1995 (between two wars) ; this shows that they are capable of maintaining Internet infrastructure as commons;

Women, specifically, have been focus of the re-development efforts: https://likaclub.eu/4-medunarodna-konferencija-zene-i-tocka-i-ove-go-dine-u-lici-okuplja-uspjesne- poduzetnice/

Engagement & providing benefits to relevant ac-tors: locals, diaspora, youth, women, digital nomads, squirrels.

Most benefits will be for the native/local com-munity, who would be able to do their adminis-tration on-line, and to stay connected with the region, country, Europe & world; and their fam-ilies in diaspora / emigrants from the region would be able to re-connect with their region of origin, and with families & friends left be-hind. Youth / next generation is more likely to visit their grand-parents, if they know that they can continue their "on-line lifestyle" even if they are in this remote village.

Secondly, women in the community, who are al-ready strong leaders, will be able to influence the decisions about the network deployment,

since one of the guiding principles is the principles of the Feminist Internet. (for example, "access" : https://feministinter-net.org/index.php/en/principle/access)

Thirdly, having connectivity would enable enable "remote working" for temporary visitors, and thus invigorating local community interactions; mid-term, "digital nomads" would visit too; long-term: it would attract more people to MOVE IN & create new (intentional) communities / international communities of hackers, activists, artists and friendly experts.

And as importantly, there will be aspect of "no harm", that will bring the benefits to planetary environment & the more-than-humans: rivers, birds, forests, squirrels.

pgp

attachments

- Lika-vesna.pdf

- Vesna CV Bibliography May 2024.pdf

Check

Please check that the above contact details are correct and that any attachments you have included have been uploaded. If you are in doubt, and near a deadline, don't hesitate to re-

submit - better safe than sorry. If you want to make changes to the proposal, do the same.

If you experience any technical problems, please contact the webmaster.

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Besides the obvious candidate for undelivered email (check your spam folder if you have it), some people run into their own outdated email configuration. Do you use a legacy forwarding mechanism for your mail, from me@example.com to theactualmailbox@another.example.org? In that case, the final mailserver may toss these out due the use of modern anti-spoofing techniques (notably DMARC, DKIM and SPF) at our side. Essentially, forwarding the original email as was done historically means that you can't satisfy the origin and integrity conditions - and thus our email to you will be discarded...

The structural solution is to do the forwarding with a mechanism like *Sender Rewriting Scheme*. Ask your service provider, or consult the documentation of your software how to do that.