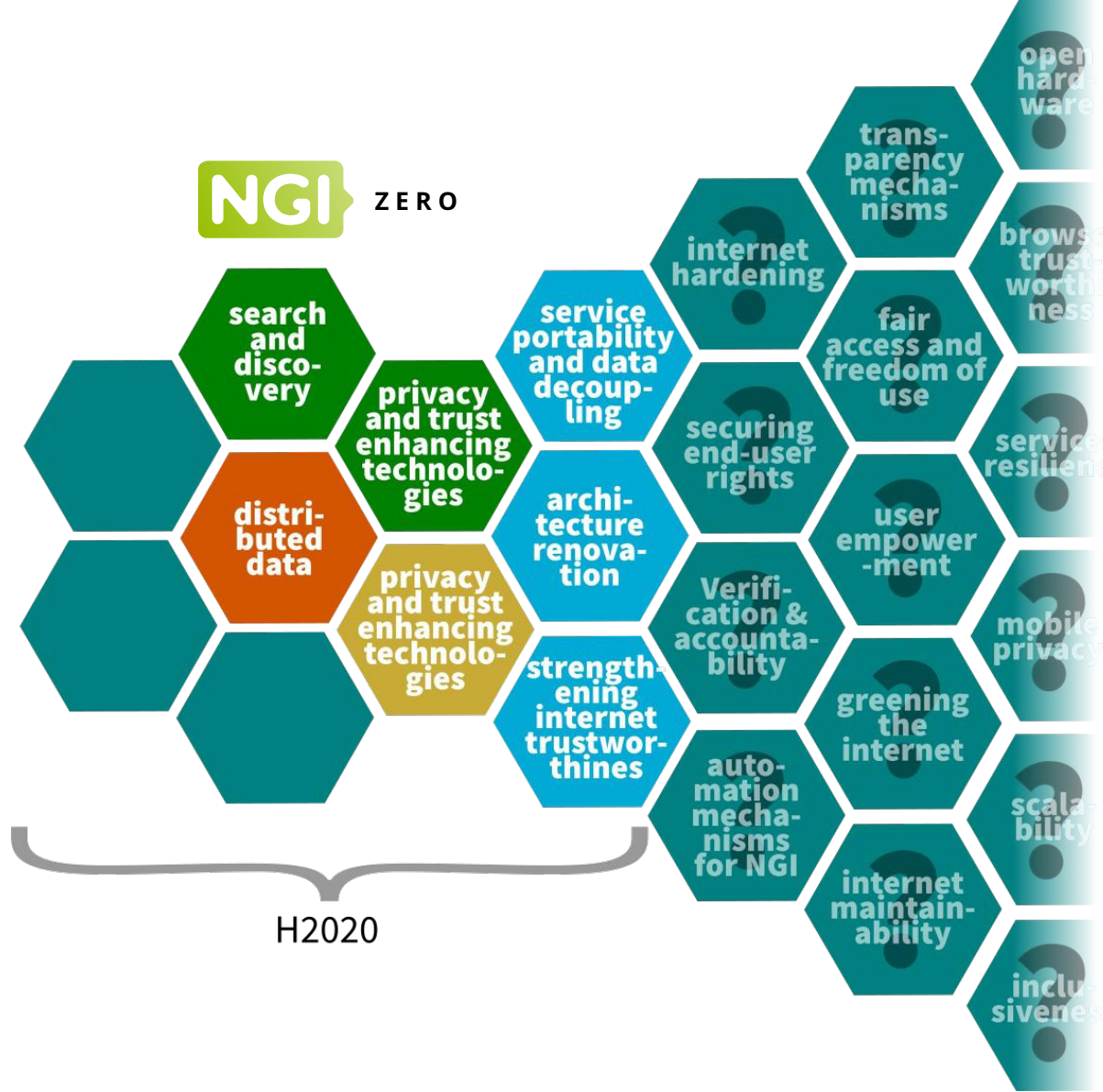# NGI ZERO

Open calls on improving search and discovery

**Powered by the
European Commission Directorate-General
for Communications Networks
Content and Technology**

825322

NGI Q&A

NGI ZERO

Next Generation Internet
Research & Innovation actions

search and discovery

privacy and trust enhancing technologies

service portability and data decoupling

distributed data

privacy and trust enhancing technologies

architecture renovation

strengthening internet trustworthines

internet hardening

securing end-user rights

Verification & accountability

automation mechanisms for NGI

transparency mechanisms

fair access and freedom of use

user empowerment

greening the internet

internet maintainability

open hardware

browser trustworthiness

service resilience

mobile privacy

scalability

inclusiveness

H2020

Key characteristics

search
and
disco-
very

5.6 million euro
in small grants
between 2018 and
2021

NGI ZERO

Competitive calls every **two months** until the budget is allocated.

Projects between 5k-50k

Walk the talk:
Inclusion
Security
Localisation
Open Standards
Free & Open Source
Deliver to deploy

privacy
and trust
enhancing
technolo-
gies

5.6 million euro
in small grants
between 2018 and
2021 (NOW CLOSED)

NGI ZERO

nlnet FOUNDATION   NGI ZERO

nlnet
FOUNDATION

▶ home ▶ foundation ▶ people ▶ funding possibilities ▶ theme funds ▶ projects we support ▶ press ▶ contact

Help grow the future

Your donations make a difference:
Donate today or **Help fundraising**

Welcome to NLnet Foundation

When it comes to important ideas that can help improve our society, there really are no boundaries. The challenge is to turn those *opportunities* into *reality*. Great ideas just come, but they are gone in a breeze as well. Lets make good use of them.

Since 1997 NLnet foundation (after its historical contribution to the early internet in Europe) has been financially support-
ing organizations and people that contribute to an open information society. It funds those with ideas to fix the internet.

Zero-leak Search

Search

What do you mean with "Zero-leak
search"?

4

Our approach

Design a light-weight and confidential application procedure providing adequate insight into technical capabilities as well as the urgency, relevance and relative cost effectiveness of the projects proposed at a low cost to the **applicants**.

Weight	Criterion
30%	Technical excellence/feasibility
40%	Relevance/Impact/Strategic potential
30%	Cost effectiveness/Value for money
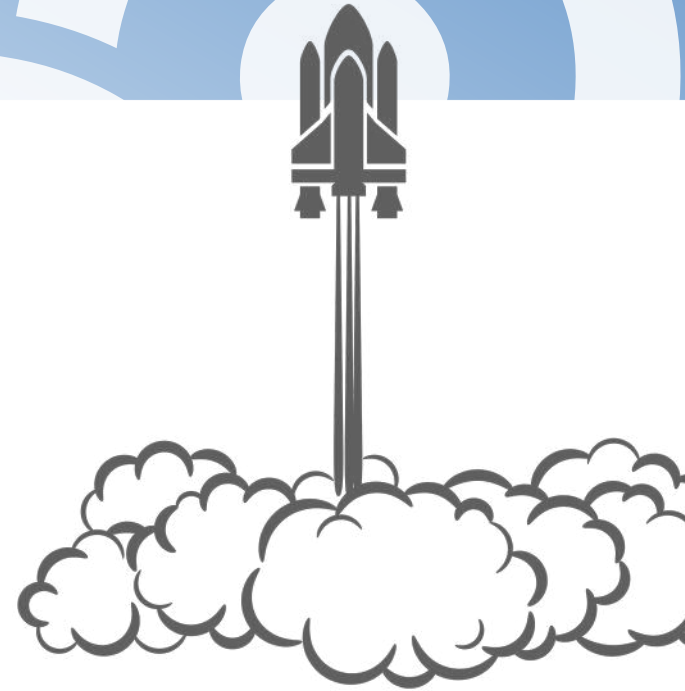
Next Generation Search & Discovery

The pen may be mightier than the sword, but how does it fare against the search button?

Search should not be a gatekeeper, a black box or a privacy nightmare. If the internet is the equivalent of a global brain, we need creativity and diversity in the pathways across that brain to unlock its true potential. Search and discovery are basic human needs for humans of all ages, and we would like to put powerful new technology in the hands of future generations as building blocks for a fair and democratic society and an open economy that benefits all.

Different layers

- End user applications
  - Searx, Plaudit, Pixelfed, Nextcloud, El Repo, XWiki, CoinDiscovery, Nyxt

- Middleware and identity, including DNS, authorisation, reputation systems
  - GNU Name System, Connect By Name, Namecoin, SCION

- Vertical use cases
  - StreetComplete, Fediverse.Space, Plaudit, DeltaBot,
    In Common, Transparency Toolkit, The Open Green Web

- Network infrastructure
  - MPTCP, PeerTube, neuropil, GNU Guix, fwupd

Some sample projects

Searx

Searx is a popular meta-search engine, with the aim of protecting the privacy of its users. In the typical use case, few users trust one instance. However, a third-party services can easily fingerprint the users using the IP address of the searx instance and the user's queries. The project aims to create a searx federation to solve this issue. First, a protocol needs to be defined to allow the instances to discover themselves. Then, each instance will be able to proxy the HTTPS requests through other instances, so the user only has to trust one instance. Also, each instance will spread the requests to other instance according to their response time, and make that IP addresses are evenly used, or at least in the best possible way. To ensure the latter, the statistics page will be enhanced and available through an API that other instances will use. The federation will make sure that bots can't abuse this pool of IP address.

Some sample projects

Ipv6 Scanning

Scanning is state of the art to discover hosts on the Internet. Today's scanning relies on IPv4 and simply probes all possible addresses. But global IPv6 adoption will render brute-forcing useless due to the sheer size of the IPv6 address space, and demands more sophisticated ways of target generation. Our team developed such an approach that generally allows to probe all subnets in the currently deployed IPv6 Internet within reasonable time. In this project, we will develop a data storage and analysis solution for high-speed IPv6 scanning. It will process the high amount of received data concurrently with scanning, and provide continuous results while scanning for long periods. This effort enables full scans of the IPv6 Internet.

Some sample projects

Librecast Live

The Librecast Live project project contributes to decentralising the Internet by enabling multicast. Multicast is a major network capability for a secure, decentralised and private by default Next Generation Internet. The original design goals of the Internet do not match today's privacy and security needs, and this is evident in the technologies in use today. There are many situations where multicast can already be deployed on the Internet, but also some that are not. This project will build transitional protocols and software to extend the reach of multicast and enable easy deployment by software developers.

nlnet
FOUNDATION

Applicant statistics

Entity types

April 2021:
7% higher education, 14% individuals, 13% SME's

February 2021:
5% non-profit, 20% individuals, 14% SME's

December 2020:
5% higher education, 16% individuals, 20% SME's

August 2020:
5% non-profit, 25% individuals, 20% SME's

CC BY 2.0, created by Jérôme Decq https://www.flickr.com/photos/lesphotosdejerome/5958094770

join us and help discover and shape the next generation internet

and claim your spot in human history

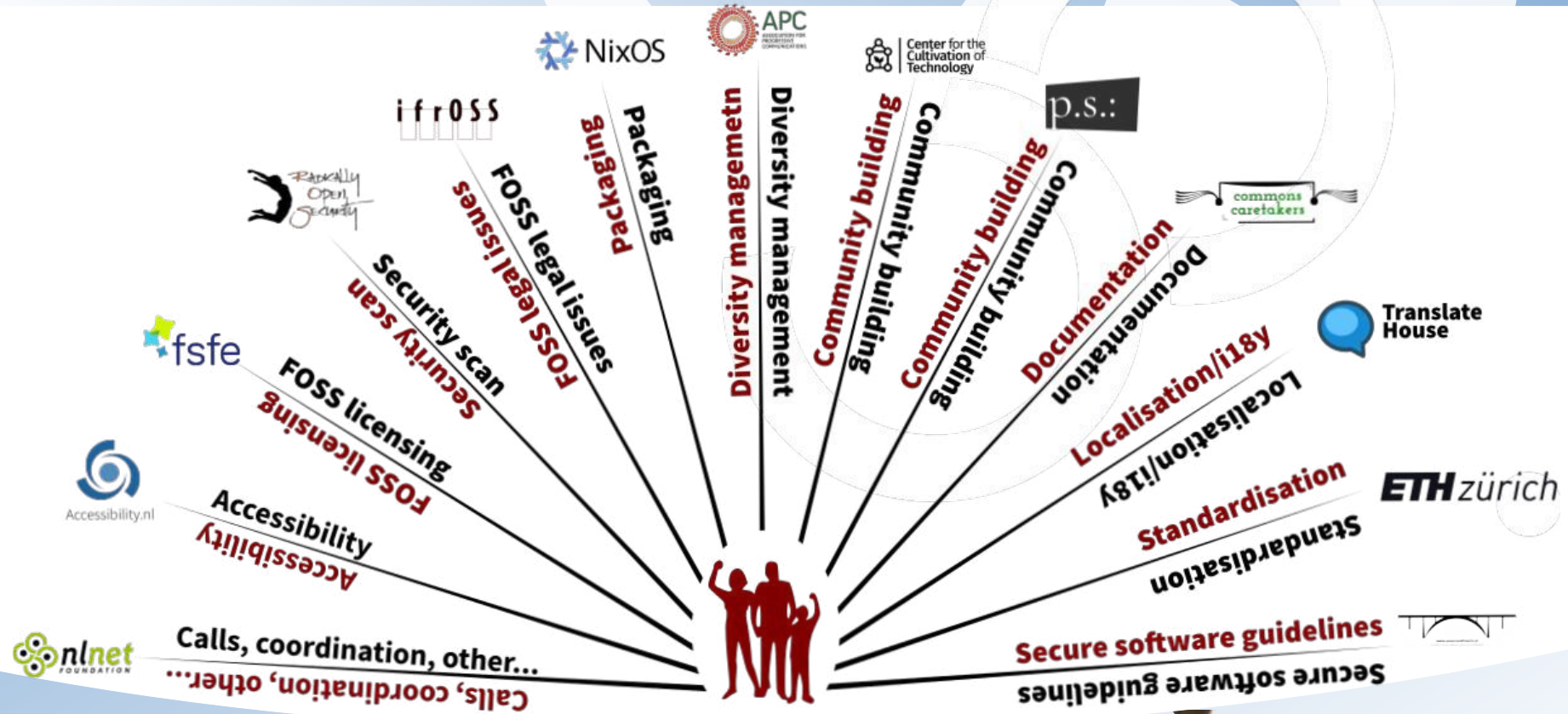**Full time and part-time paid and unpaid positions available.**

Read all about it on
☞ https://nlnet.nl/discovery
☞ https://nlnet.nl/PET
☞ https://ngi.eu

European
Commission

We aim to be project-centric

NGI Atlantic Webinar

TODAY WE CREATE THE

INTERNET

OF TOMORROW

nlnet
FOUNDATION