NGI ZERO

Open calls on privacy and trust enhancing technology & improving search and discovery

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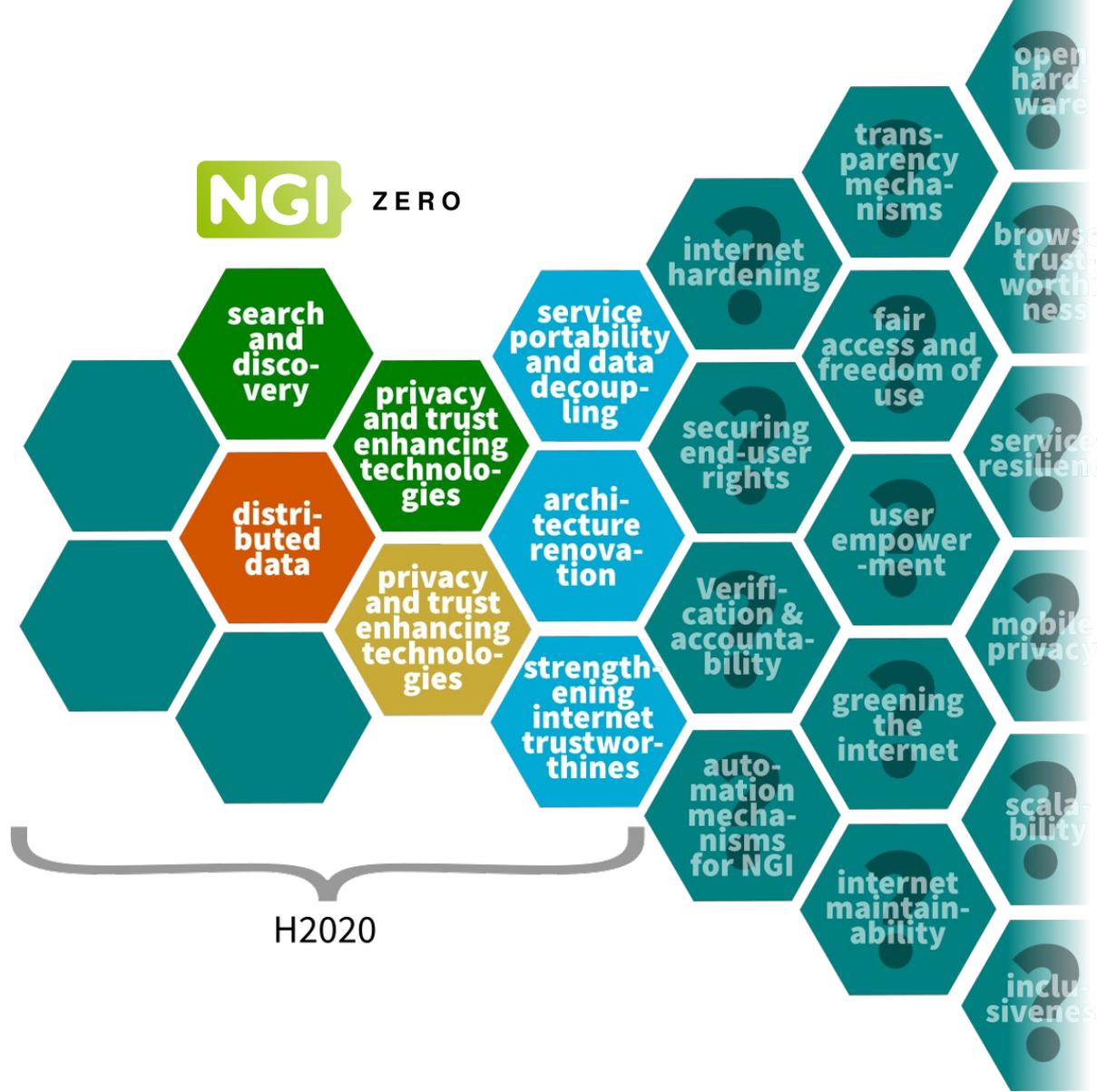Content and Technology**

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European Commission

2019-28-04

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Next Generation Internet
Research & Innovation actions

search and discovery

privacy and trust enhancing technologies

distributed data

privacy and trust enhancing technologies

service portability and data decoupling

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 resilien

mobile privacy

scalability

inclusiveness

H2020

Key characteristics

search and disco-very

5.6 million euro in small grants between 2018 and 2021

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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

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Welcome to NLnet Foundation

Zero-leak Search

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.

Search

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

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.
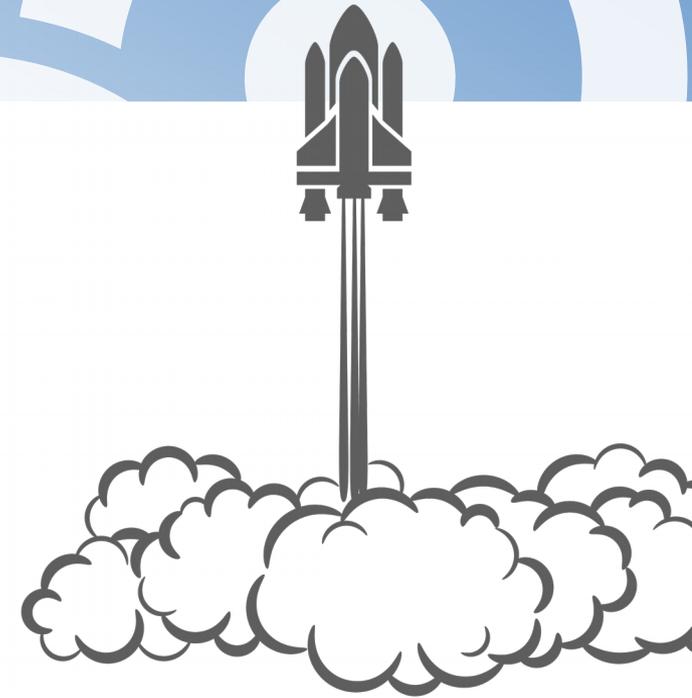
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Our approach

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

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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.

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Different layers

- End user applications
  - Searx, Plaudit, Blink RELOAD, Sonar, El Repo, Transparency Toolkit, CoinDiscovery
- Technical building blocks
  - GNU Name System, Software Vulnerability Discovery, IPFS Search, DID Resolver/Registrar
- Community infrastructure
  - StreetComplete, Fediverse.Space, SCION Geotagging, DeltaBot, In Common, SCION-SWARM, Fediverse Space
- Explorative search and discovery
  - Decentralized privacy preserving search

Some sample SME projects

Search and Displace

The goal of this project is to establish a workflow and toolchain which can address the problem of mass search and displacement for document content where the original documents are in a range of forms, including a wide variety of digital document formats, both binary and more modern compressed XML forms, and potentially even encompassing older documents where the only surviving form is printed or even handwritten.

In practical terms this involves the creation of an open source tool chain that facilitates searching for private and confidential content inside documents, for instance attachments to email messages or documents that are to be published on a website. The tool can subsequently be used for the secure and automated redaction of sensitive documents

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Some sample SME projects

Sonar

Sonar is a project to research and build a toolkit for decentralized search. Currently, most open-source search engines are designed to work on centralized infrastructure. This proves to be probelmatic when working within a decentralized environment. Sonar will try to solve some of these problems by making a search engine share its indexes incrementally over a P2P network. Thereby, Sonar will provide a base layer for the integration of full-text search into peer to peer/decentralized applications. Initially, Sonar will focus on integration with a peer-to-peer network (Dat) to expose search indexes securely in a decentralized structure. Sonar will provide a library that allows to create, share, and query search indexes. An user interface and content ingestion pipeline will be provided through integration with the peer to peer archiving tool Archipel.

Applicant statistics

Entity types

February 2019:
16% foundations, 29% individuals, 43% SME's

April 2019:
5% foundations, 25% individuals, 7% institutes, 46% SME's, 10% universities

June 2019:
7% associations, 10% foundations, 13% individuals, 50% SME's, 10% universities

August 2019:
43% individuals, 8% institutes, 38% SME's

October 2019:
56% individuals, 11% institutes, 33% SME's

Privacy & Trust Enhancing Technologies

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Privacy & Trust Enhancing Technologies

Privacy isn't dead, but we lack the right tools to protect our intimacy

Reliability, confidentiality, integrity and security should be the 'new normal' of the internet, something ordinary users should not have to worry about.

Trust is one of the key drivers for the Next Generation Internet, and an adequate level of privacy is a non-negotiable requirement for that.

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Different layers of trust

- New end user applications bringing Privacy and Trust to users
  - Conversations, Sylk, Briar, Autocrypt, Cryptpad, Manyverse, Wireguard

- Human-centric middleware/Enablers:
  - IRMA, node-TOR, ValOS, Replicant OS, Rocket CWMP, Mobile Nixos, SCIM, ARPA2 ACL/SASL

- New standards and protocols to solve critical issues "upstream"
  - DID*, GNU Name System*, IMSI Pseudonymisation, TLS-KDH, SASL XMSS, Reowolf

- Technical and fundamental building blocks for trustworthiness
  - e.g. Noise Explorer/Verifpal, Libre-RISCV SoC, IMSI pseudonymisation, Identity Based Encryption, Tor Padding, GNU Mes, ..

- Explorative
  - Distributed private trust, ValOS, Vframe

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Some sample SME projects

Sylk Client

Sylk is an open source videoconferencing tool that anyone can install anywhere for free. Businesses like the internet provider or the IT company around the corner can run it for their customers, and individuals can run it themselves from their home. Among other things, the project will add the last missing critical component, encrypted group chat, to Sylk.

It will not force a new standard, but instead uses internet standards to do so. This means it contributes to a richer ecosystem, where people do not have to use a single piece of software to communicate with others - and anyone can innovate. And by switching, people can regain their privacy and make communicating via the internet as secure and confidential as we all need it to be.

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Some sample SME projects

Cryptpad

Cryptpad is a real-time collaboration environment that encrypts everything clientside. The project will incorporate structured group interaction other than collaborative editing (e.g. gathering input through forms, polls) is a useful addition to this. This will replacing the current basic implementation of polls (like Doodle), and introduce surveys (like Google Forms). Authors will have exclusive control over the content and format of the polls and surveys, such as which questions are asked and the acceptable format of their answers. They'll also have control over the cryptographic keys which decrypt the submitted results, granting authors control over publishing. In addition, the project will develop an extension of its current notifications system to allow instance administrators to publish translatable messages visible to all their users.

Applicant statistics

Entity types

February 2019:
18% foundations, 37% individuals, 31% SME's

April 2019:
15% foundations, 35% individuals, 39% SME's, 10% unversities

June 2019:
24% associations, 20% individuals, 42% SME's, 6% universities

August 2019:
37% individuals, 9% association, 11% institutes, 33% SME's

October 2019:
39% individuals, 13% association, 46% SME's

join us and help discover and shape the next generation internet

and claim your spot in human history

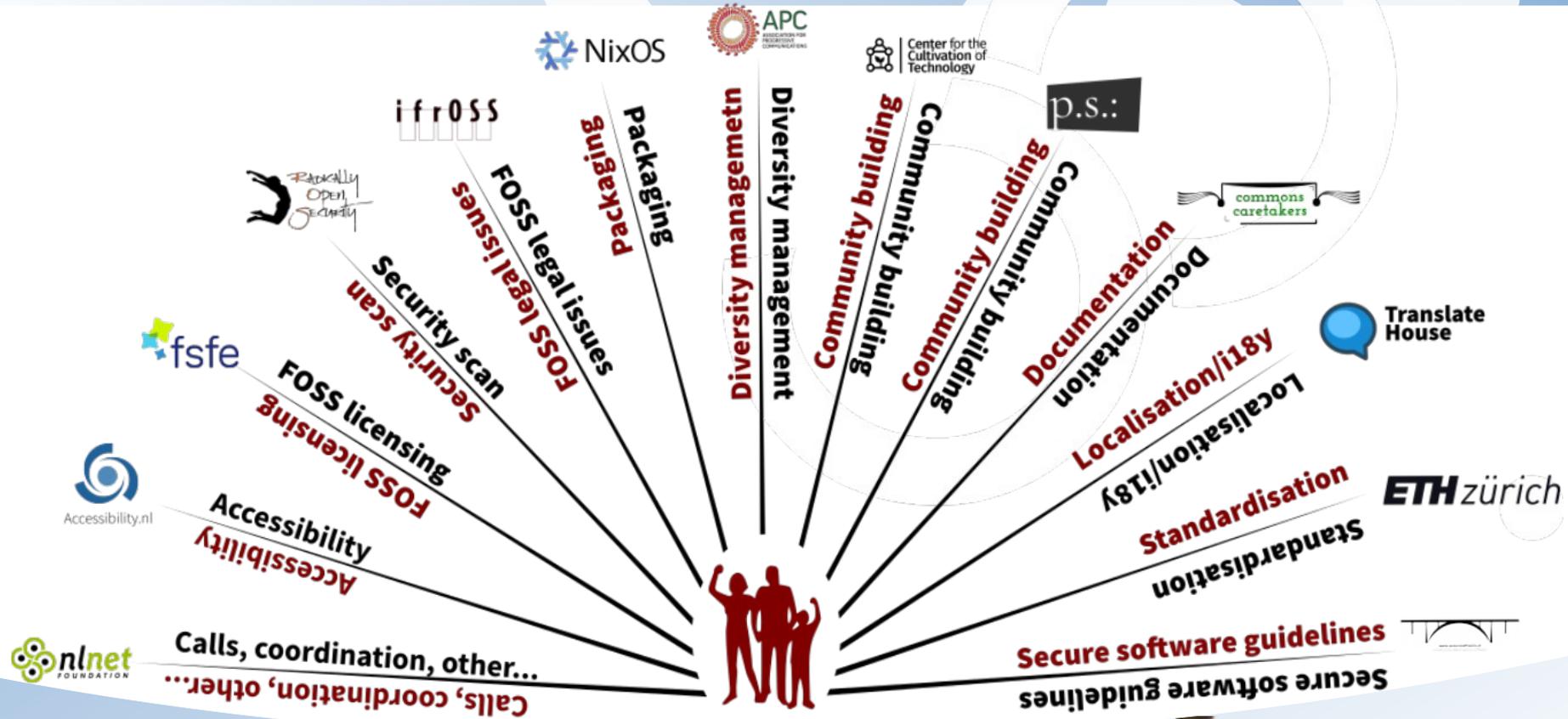**Full time and part-time paid and unpaid positions available.**

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

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We aim to be project-centric

TODAY WE CREATE THE

INTERNET

OF TOMORROW

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