



Intake // Information package

"**NGI ZERO**" consists of a number of funds that invest in sustainable building blocks for the Next Generation Internet. The first two funds were established in 2018 with support from the **European Commission's Next Generation Internet** programme, under the aegis of **DG Communications Networks, Content and Technology**.

"**NGI ZERO**" is supported by an international coalition of partners, in alphabetical order: Accessibility Foundation, Association for Progressive Communications, Center for the Cultivation of Technology, Commons Caretakers, Eidgenössische Technische Hochschule Zürich, Free Software Foundation Europe, ifrOSS, NixOS Foundation, NLnet Foundation, Petites Singularités, Radically Open Security, TIMIT and Translate House.

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Thank you for granting my project! What happens next?

Congratulations, your project is one of the selected proposals that will receive a grant from the NLnet Foundation in our NGI Zero open calls. That means you are about to start working for the internet!

We are sure you are curious about the next steps. Well, here they are:

- Learn about the NGI initiative and about NGI Zero
- Receive a draft Memorandum of Understanding
- Write a project plan detailing milestones and time lines
- Create a Software Bill of Materials
- Sign the agreed Memorandum of Understanding
- Start your project!
- Benefit from the NGI Zero specialist support services

The Next Generation Internet initiative

The Next Generation Internet initiative is an ambitious effort that is being bootstrapped by the European Commission since 2016 with the eponymous mission of creating a Next Generation Internet.

We believe that the focus on *real-world outcomes* has the potential to make the Next Generation Internet initiative radically different from historical efforts undertaken in this area in Europe and beyond. Rather than merely stimulating isolated research and development in a number of interesting technology areas, the NGI initiative aims to be consistent in contributing to improve the whole of the internet - and intends to have an actual impact at the system level.

The core of the NGI initiative is the **NGI vision**, a one page document that puts the NGI into the larger societal context. NGI revolves around an **Internet of Human Values**, that is **resilient, trustworthy** and **sustainably open**. The overall mission of the Next Generation Internet initiative is to *re-imagine and re-engineer the Internet for the third millennium and beyond*. The vision identifies *major social and economic challenges* which need to be addressed urgently, and articulates a *powerful vision* for a new phase of the internet.

NGI Vision

Resilient. Trustworthy. Sustainable.

The overall mission of the Next Generation Internet initiative is to re-imagine and re-engineer the Internet for the third millennium and beyond. We envision the information age will be an era that brings out the best in all of us. We want to enable human potential, mobility and creativity at the largest possible scale – while dealing responsibly with our natural resources. In order to preserve and expand the European way of life, we shape a value-centric, human and inclusive Internet for all.

These important ambitions need a solid technical foundation to build on. The legendary robustness of the Internet must become actual reality in the Next Generation Internet. A massive global fleet of connected devices is on its way to enhance and control our homes, factories, offices and vehicles. Technology is embedded in concrete, circling in space and is increasingly entering the intimacy of our human bodies. The Next Generation Internet has to be both highly adaptive and unrelentingly **resilient**. Whatever companies or parts of the network go down by some natural or other disaster, the effects on the rest of us should be close to zero.

There is another essential dimension to trust, which lies above physical availability. We need a transparent technological environment, that is completely **trustworthy**. The architecture, governance and policies structure how entire societies and economies interact. By design it should protect free speech and private enterprise and much more. The Next Generation Internet is to be designed to avoid any bias or systematic abuse of global trust in the Internet. It shall be a true global commons, rising above international politics and competition. It will guarantee the safety of citizens and strengthen the health and autonomy of our markets and societies across borders.

The enduring success of the Internet lies in permission-free innovation, openness and interoperability. The Next Generation Internet is set up to empower, to unlimit our choices. It fosters diversity and decentralisation, and grows the potential for disruptive innovation. This extends far beyond the technical realm. The Next Generation Internet will achieve a **sustainably open** environment for our cultures and economies, celebrating our values and promoting creativity and well-being.

Let's re-invent Internet to reach the full human potential, for all generations.

NGI ZERO

NGI ZERO consists of a number of Research and Innovation Actions within the Next Generation Internet initiative. NGI Zero is led by NLnet Foundation, and is mostly fueled by grants from the European Commission.

The humble mission of NGI ZERO is to enable excellent researchers and developers to work on their best ideas in the best possible way, using short funding cycles and to iteratively mature the most promising ideas through an elaborate 'pipeline' of supporting activities. In other words, to best serve you as the human talent needed to create a next generation internet.

The organisations that comprise NGI Zero are:

- **Accessibility Foundation** - Center of expertise on accessibility of internet and other digital media for all people, including the elderly and people with disabilities
- **Association for Progressive Communications** - A global network and organisation that strives towards easy and affordable access to a free and open internet to improve the lives of people and create a more just world
- **Center for the Cultivation of Technology** - A charitable non-profit host organization for international Free Software projects
- **Commons Caretakers** - A not-for-profit service provider for the development of Commons
- **Network Security Group of Eidgenössische Technische Hochschule Zürich** - Academic research institute focused on building secure and robust network systems
- **Free Software Foundation Europe** - Association charity that aims to empower users to control technology.
- **ifrOSS** - Provides not-for-profit legal services and studies in the context of free and open source software
- **NixOS Foundation** - Foundation supporting development and use of purely functional configuration management tools, in particular NixOS and related projects
- **NLnet Foundation (NL)** - Grantmaking public benefit organisation founded by pioneers of the early European internet
- **Petites Singularités** - Non profit organisation working with free software and focusing on collective practices
- **Radically Open Security** - Not-for-profit open source security company
- **TIMIT** - Experts in secure software
- **Translate House** - Develops and implements open source localization solutions

As you may derive from our collective background, we have skin in the game in living up to high standards in terms of security, privacy, accessibility, open source licensing, standardisation, etc. What is the value of preaching about a future internet if you do not actually consistently 'walk the talk', and make it so. Obviously, we need your support in making that a reality for all of the NGI Zero projects as well.

What is a Memorandum of Understanding?

To formally start off the project, you and NLnet as the grantmaker will together establish a

Memorandum of Understanding (or MoU in short). A Memorandum of Understanding is a short document summarizing the work you intend to perform within this particular project, and our intention as funding body to donate you money for that work upon completion of different tasks within the project.

A memorandum is **not a contract**: neither NLnet or any other NGI Zero related organization is due to receive goods or services as a result of your project. As a logical consequence, VAT or other similar taxes do not apply.

NLnet is an acknowledged public benefit organisation, and will pay you and other partners you involve in your project in the form of **charitable donations**. These donations can be requested upon incremental completion of your contributions.

If you intend to collaborate with other people to perform part of the MoU, in many cases it is beneficial to **add them directly** to the MoU instead of routing the money through a single individual or legal entity. In a number of countries in Europe there are special (beneficial) arrangements for charitable donations like the ones made by NLnet. Please check with a knowledgeable tax specialist in your country whether or not this applies to your situation.

Landing the money directly with those doing the work prevents potential **tax issues** – if a charity donates directly to some person or legal entity performing a certain task in the public benefit, the charitable regime applies. If the donation from the charity touches other legal entities before it arrives at the right place, that means some or all of these benefits likely disappear and ‘normal’ economic rules apply.

The full intent and scope of your work and our method of paying are to be explained in the Memorandum of Understanding. The MoU consists of two parts. The first is more or less generic legal boilerplate, identifying the parties involved and their different roles and responsibilities. Note that you are voluntarily undertaking this work, all we do is support your intentions. Because it is not a contract, we will not and cannot force you to do anything. As an annexe to the MoU there are two documents or texts which are more specific to your project: the **project plan** and the **software bill of materials**.

Project plan detailing milestones

The first annexe to the Memorandum of Understanding is the Project plan. The project plan contains a high level overview of the project budget and timeline, and explicit goals and milestones. It has been a while since you made the proposal to us, and so perhaps there is progressive insight and certainly elsewhere in the world things may have also moved along.

The basic starting point is that you will deliver what you promised in your proposal, unless agreed otherwise. But perhaps we can together decide to replace some meanwhile outdated or less relevant tasks with other tasks. If your original project proposal did not properly address important dimensions such as security, accessibility, topics touched upon by the services, we can also jointly decide to add these to the scope of the project plan. If required, we can still adjust the budget.

You do not need to send us any report, instead focus on making your project successful

and engaging with your user and developer community. Unless there is an explicit reason not to, you publish all your results directly on the internet at your own website or a software forge of your choice, so as many people as possible can engage with your project.

Projects are suggested to divide their work in such a way that you can deliver meaningful results to the wider community. You can send us a request for payment after the public delivery of each result. In practical terms, many people choose to design the project plan in such a way that subsequent milestones are 4 to 6 weeks apart each – to ensure regular income. This is certainly not mandatory: others prefer larger or smaller milestones.

In either case, whatever the project plan looks like and whatever the frequency of payment requests, we encourage to take the open source mantra of ‘release often, release early’ to heart. Other than that, we leave the grand design of the project plan up to you – you manage your own productivity, essentially. All we care about is that the milestones and deliverables are verifiable, and you have enough food on the table to keep yourself going.

Software Bill of Materials

The Software Bill of Materials should show what existing technological components i.e. dependencies you use or are likely to use in your project. It is good to not reinvent the wheel, but at the same time every external piece of technology you use can impact the overall security of your project. The same of course holds for the software licence compliance: if there are licensing issues tied to some component, future adoption of the results of your project could be hampered. Being aware of this early can help avoid such issues.

The software bill of materials is a short, often rolling document, that informs amongst others some of the auxiliary services we provide, such as the accessibility and security audits, as well as the license compliance review.

Payment

The way payments are made, is very simple. You reach a milestone as described in the project plan you wrote. You send us a request for payment to rfp@nlnet.nl, with a reference to where we can find the work you delivered. We verify the deliverable, and the payment will be approved. Payment typically takes two weeks, although we strive to be faster when possible. We will send you a template for this after the MoU is signed.

We want all of the outcomes of our programme to be inclusive and secure. At the end of your project, there will be a **security review** by an independent security company. If you have a user interface, there will also be a **WCAG certification review**. The final payment of the last milestones may depend on you properly addressing the outcomes of these reviews. Ideally, this is already reflected in the project plan.

Specialist support services to help my project?

By now, you probably have gathered that for us your project fits into a much larger framework. We really buy into the ambition of the **Next Generation Internet** initiative “to re-imagine and re-engineer the internet for the third millennium and beyond”. The collective goal of NGI Zero is to make suitable building blocks for the **Next Generation Internet**.

But of course, we do not expect miracles from you. We understand you are a mere human, and the grasp of all relevant best practises one bring along initially is limited. The demands on technology that should actually run at scale on the modern internet today are huge, and continuously changing. Having a crazy idea that might just work, does not automatically mean that you know how to make your solution *accessible to blind people*, how to set up *continuous integration* and *reproducible builds*, how to orchestrate a *responsible disclosure* procedure, how to make sure that your application can be used with *different languages* and be properly *localised* to be compatible with different cultures, how to engineer *secure software* and what state of the art *attack vectors* you would better deal with, how to engage with *standards setting* organisations, how to nurture and grow a *developer community*, how to write *end user documentation*, which *software license* best fits the goals of the project, how to deal with *software patent trolling*, how to support *diversity* with regards to gender and social identity, what considerations to take into account for software to be *packaged* by distributions, etcetera.

We also realise that adding these requirements post-development is many times more expensive, and in some cases can be impossible. We aim to complement your knowledge and skill set with domain experts in the respective fields, to provide guidance and mentoring to tackle each of these topics. Through the support we provide, we hope to make your project more sustainable, scalable, secure, accessible, inclusive and legally sound.

We have the following services available to you:

Accessibility (* mandatory)

What: Accessibility best practices and tooling for self-tests
WCAG audit of project result

Who: **The Accessibility Foundation** is the official auditor for the Dutch government on accessibility. It is also a globally renowned knowledge institute on digital accessibility, and contributes to the Web Content Accessibility Guidelines of W3C.

Security quickscan (*mandatory)

What: Best practices software security
Quickscan project plan
Security audit project results

Who: **Radically Open Security** is the world's first non-profit computer security company. It donates its profits to a charitable cause (NLnet foundation). The company allows access all areas and provides clients step-by-step descriptions how to run audits themselves, and releases all developed tools as open source. Projects and clients include Google's Jigsaw uProxy and Mozilla.

Secure software best practices

* Mandatory: While all services are beneficial to free and open source software and standards, not all will be applicable to your project and in that case are optional. But because the Next Generation Internet should be inclusive and secure by design, the security review is mandatory. If your project has a user interface, the accessibility audit and certification is also mandatory. Nothing to worry about, the expert organisations will give you the tools and knowledge needed to be ready for these audits and ensure your project is actually inclusive, safe and secure.

What: best practices secure software / tooling resources secure software / intake phone meeting / on demand answer questions

Who: **Tim Hemel** is one of the co-authors of the Framework Secure Software and an experienced developer and security expert that has previously headed the Secure Programming certification track of SECO Institute.

Diversity and inclusion management

What: Diversity and inclusion best practices, and counselling

Who: **Association for Progressive Communications** (APC) is an international network of organizations pioneering the use of ICT for civil society across five continents, sometimes providing the first internet connection in certain local areas.

Internationalisation, translation and localisation

What: Localisation & internationalisation best practices

Who: **Translate House** develops and implements localization solutions. Translate House was birthed out of Translate.org.za, a South African non-profit that translated the first African language word processor. And that pioneered community localization of products such as Mozilla Firefox and OpenOffice.org into the 11 official languages of South Africa. Translate House takes skills and open source technology born out of this experience and brings them to other organisations. Its focus is on building systems that help localizers translate effectively and that help organizations get the best translation possible as they use local languages to take their products to new markets.

Mentoring

What: Best practices community building

Who: **Center for the Cultivation of Technology** (CCT) is a non-profit parented by the Renewable Freedom Foundation helping the open source community optimize for self-organization (budget management, asset stewardship, knowledge sharing)

Who: **Petites Singularités** is a non-profit that stems from a branch of the Dyne.org free software foundry that works with free software and focuses on collective practices on a community platform with more than 200 participants.

Copyright and license due diligence

What: Best practices copyrights & license compliance
Assist creating SPDX headers

Who: **Free Software Foundation Europe** is a charity that empowers users to control technology. Headquartered in Berlin, the organisation builds its work on over 1,500 volunteers and supporters throughout Europe. Founded in 2001, the FSFE considers software to be deeply involved in all aspects of our lives; and that it is important that this technology empowers rather than restricts. To this end, the FSFE pursues activities to educate, create networks and affect policy with the intent of making free and open source software viable options for individuals as well as for businesses and public administrations. The specific expertise of the organisation are seen in its principal work areas: policy, legal and public awareness. In the legal area, the organisations facilitates the world's largest network of over 380 lawyers and technologists with an interest in legal matters around free and open source software. In our policy work, we work primarily to enhance the rights of free and open source software users and developers and to abolish barriers to free and open source software adoption.

Legal compliance quick-scan and support

What: Assist with complex licensing issues (when necessary)

Who: **Institut für Rechtsfragen der Freien und Open Source Software** (IfrOSS) is a network of free and open source lawyers hailing from f.e. Berkley and Harvard fronted by Till Jaeger who was the legal representation in the first court case to lead to a court ruling enforcing the GNU General Public License.

Packaging

What: Best practices software packaging and support
Package projects

Who: **The Nixos Foundation** is a non-profit organization headed by the developers of Nix, a powerful vendor-agnostic package solution for Linux, Mac OSX and other Unix systems that provides atomic upgrades and rollbacks, side-by-side installation etc. The foundation supports development and use of Nix, NixOps and NixOS and other purely functional configuration management tools.

Standardisation

What: Best practices internet standardisation and support

Who: **Eidgenössische Technische Hochschule Zürich** (ETH Zurich) is a celebrated STEM university (10th university in the world 2018 QS World University Rankings) which Networked Systems and Network Security groups have or had seniors active in the Internet Architecture Board and the Internet Engineering Steering Group.

Responsible disclosure

What: Guideline responsible disclosure
Assist with setup of responsible disclosure procedure

Who: **NLnet** is a philanthropic non-profit foundation stemming from the first public wide area network in Europe and the first connection made to the open internet outside of the USA.