Annual // Report 2019

Since 1997 NLnet foundation (after its historical contribution to the early internet inside and outside of Europe) has been financially supporting organizations and people that contribute to an open information society. It funds those with ideas to fix the safety, robustness and privacy of the internet.

The articles of association for the NLnet foundation state: *"to promote the exchange of electronic information and all that is related or beneficial to that purpose"*. Stichting NLnet is a recognised philantropic non-profit foundation according to the Netherlands Tax Authority (Belastingdienst)

The internet has no borders, and neither does NLnet. It operates internationally, and is driven by donations from individuals and from private and public organisations. NLnet is independent, and all projects are based on open standards, open source software, hardware and content.

Introduction

Dear reader,

thank you for your interest in NLnet Foundation. The annual report you are reading describes how in 2019 NLnet managed to keep at the cutting edge of technology with a wide array of exiting projects. One important milestone was that we trailblazed the Next Generation Internet inititative, with support from the European Commission. Together with a coalition of skilled and knowledgable partners within NGI Zero PET and Discovery, we were able to launch almost 150 projects in many different technology areas – from ethical search to open hardware. NGI Zero shows how public funding can actually serve a public infrastructure like the internet in an efficient, impactful way – taking into account higher goals such as accessibility and diversity.

 In 2019 we received grants and donations from other foundations like Vietsch Foundation, various international research networks, from NCSC and from Radically Open Security, the not-for-profit security company that volunteered to act as a fiscal fundraising entity for NLnet. Work also continued within the Internet Hardening Fund, supported by the Netherlands Ministry of Economic Affairs. We continued our fruitful cooperation with The Commons Conservancy, together with the European association of research networks GÉANT (and its members) and our subsidiary The Commons Caretakers B.V. This work would not be possible without many volunteers, from inside and outside of the Commons Conservancy and its programmes.

To help cope with the growing amount of work, we were delighted to convince Jos van den Oever to join the NLnet bureau as a senior policy & technology advisor. He brings along a wealth of experience and skills. In size we remain a small foundation but our ambitions are bigger than ever. We believe the funding from NLnet adds value because of its technical depth and strategic focus, as well as well as the flexibility and simplicity for applicants. We go out of our way to enable talented individuals and organisations of any type to work on important ideas that contribute to a better internet for everyone. As a public benefit organisation, we are able to direct money to worthwhile efforts because of incoming donations of normal citizens, as well through support from a number of public and private organisations. That support is vital to the continuity of our work. Our strength and inspiration lies in the amazing organisations and people we work with. Thank you for the energy and commitment you bring to our shared mission of making a better internet for tomorrow, for everyone. We hope you enjoy this annual report.

On behalf of the NLnet team,

Bob Goudriaan   Michiel Leenaars
Managing Director,   *Director of Strategy*
Chair Governing Board

Table of Contents

1   NLnet organisation

History

NLnet's history started in April 1982 with the announcement of a major initiative to develop and provide network services in Europe. The Netherlands Local Unix User Group (NLUUG) played a major role in raising the so-called pan-European "UNIX" Network, EUnet; to support these activities the NLUUG members founded NLnet. NLnet was formally established by the NLUUG as a "stichting" (Dutch for foundation) on February 27, 1989.

Funding source

In November 1994, NLnet Holding BV was formed by the foundation in order to create a commercial base for its internet activities. NLnet Holding BV was the very first commercial Internet access provider in the Netherlands. The sale of NLnet's Internet Service Provider (ISP) activities to UUnet (now part of Verizon) in 1997 provided Stichting NLnet with the means to actively stimulate the development of network technology and to make this freely available to the community in its broadest sense.

More and more funding for NLnet activities comes from external sources. Other commercial and non-for-profit organisations donate to NLnet when they see that the technology being fostered by NLnet is in line with their mission and market development expectations. Stichting NLnet is a recognized public benefit organisation (Algemeen Nut Beogende Instelling or ANBI) according to Netherlands legislation.

Domicile

NLnet Foundation holds offices at Science Park Amsterdam, a technology hotspot with a long history of pioneering in network technology R&D in The Netherlands. It is opposite the road of the location where the first regular connection to the public internet outside of the United States of America was made in 1988 (CWI), where the NLnet activities were located at the time.

Supervisory Board

In 2019, the Supervisory Board (Raad van Toezicht) of Stichting NLnet consists of:

▶   Maarten Botterman

▶   Frank van Rijn

▶   Hanneke Slager

These positions are non-remunerated positions in accordance with the NLnet Statutes, except for a financial compensation for time spent ('vacatiegeld'). In 2019 the Supervisory Board in its entirety has received a total compensation of € 4 500,-.

Governing Board

The Governing Board of Stichting NLnet in 2019 consisted of:

- ▶   Bob Goudriaan, chair

- ▶   Harm Rietmeijer, treasurer

- ▶   Simon Hania, secretary

These positions are non-remunerated positions in accordance with the NLnet Statutes, except for financial compensation for time spent ('vacatiegeld'). In 2019, the Governing Board, with the exception of the chair, received a total compensation of € 10 000,- .

Operations

For daily operations the NLnet Bureau was staffed in 2019 with the following people, totaling the staff to 4,2 fte (Full Time Equivalent), all are remunerate positions:

- ▶   Bob Goudriaan, general director (1,0 FTE);

- ▶   Patricia Otter, administrator for NLnet, NLnet Labs and OpenNetLabs (0,6 FTE);

- ▶   Michiel Leenaars, strategy director (1,0 FTE);

- ▶   Joost Agterhoek, policy & technology advisor (0,9 FTE).

- ▶   Jos van den Oever, senior policy & technology advisor as of May 7, 2019 (0,9 FTE).

Total actual FTE costs in 2019 for 4,2 fte: € 411 281,-

Total budgeted FTE costs in 2019 for 3,5 fte: € 365 500,-

Operations support

For external (financial and legal) advice and consultancy, Stichting NLnet is supported by:

- ▶   Koningsbos Accountants (accountancy)

- ▶   Bourquin Business Lawyer (legal advice)

The NLnet website https://nlnet.nl is supported by Mark Overmeer (MARKOV Solutions) and TNX.

Independent Review Committee Internet Hardening Fund

An independent review committee consisting of three experts from the technical and academic internet community review the outcomes of the selection procedure of the Internet Hardening Fund based on criteria of eligibility and efficacy. The review committee may set additional conditions for granting. Members of the committee, their employers, colleagues and family members are disallowed for submitting projects to the *Internet Hardening Fund*. The members of the committee are not linked to NLnet in a role as employee, member of the board of directors or supervisory board.

In 2019 the independent review committee for the Internet Hardening Fund consisted of:

- ▶   Leon P. Kuunders, CISA CISM CISSP

- ▶   Niels Sijm

- ▶   Bert Wijnen

Independent Review Committee NGI Zero

An independent review committee consisting of nine experts from the technical and academic internet community review the outcomes of the selection procedure of the NGI Zero programmes, based on criteria of eligibility and efficacy. The review committee may set additional conditions for granting. Members of the committee, their employers, colleagues and family members are disallowed for submitting projects to the *Internet Hardening Fund*. The members of the committee are not linked to NLnet in a role as employee, member of the board of directors or supervisory board.

In 2019 the independent review committee for NGI Zero consisted of:

- ▶ Guido Aben
- ▶ Sudha Bhuvaneswari
- ▶ Lucien Castex
- ▶ Marcin Cieślak
- ▶ Tommi Karttaavi
- ▶ Tessel Renzenbrink
- ▶ George Sadowsky
- ▶ Niels Sijm
- ▶ Bert Wijnen

Here are biographies of the members of the review committee.

Guido Aben

Guido Aben is director of eResearch at **AARnet**, the Australian educational and research network. He joined AARNet in 2005, having previously had similar roles in European R&E networking. A generalist more than a specialist, he has been involved across the range of the "buy-or-build" spectrum, in projects ranging from the rolling out of a national dark fibre footprint, running cloud services procurements through to the deployment of complex niche builds such as an Internet voting system during national elections. In his current role at AARNet, Guido is responsible for developing services useful to researchers. He holds an MSc in physics from **Utrecht University**.

Sudha Bhuvaneswari

Dr. N. Sudha Bhuvaneswari is an academician holding a PhD degree in Computer Science and holds a designation as Associate professor with a work experience of more than 20 years. She has authored 2 books on "Integrating SOA and Web Services" and "Combating Cyber Threat through Cyber Security Intelligence". She has also authored many chapters in IGI Global and with other publishers. She is an active member in ISOC and a fellow in APNIC 42, APrIGF 2017, APNIC 44, inSIG 2017 and inSIG 2018. Dr.N.Sudha Bhuvaneswari is also a reviewer for a number National and International Conferences and Peer Reviewed Journals.

Lucien Castex

Lucien Castex is the Secretary-General of Internet Society France and a researcher at **Université Sorbonne Nouvelle**. Policy strategist and Internet law expert, Lucien works at the intersection of law and technology with a focus on trust, cybersecurity and internet governance. He is a member of the

French national consultative commission on human rights (**CNCDH**), and one of the Expert Advisors of the IoT Security Policy Platform of Internet Society. He is member of the board of Ile-de-France Region's key research sector on digital humanities and new knowledge. He is co-chair of the French Internet Governance Forum and member of the Multistakeholder Advisory Group (**IGF MAG**) at the United Nations' Internet Governance Forum.

Marcin Cieślak

Marcin Cieślak is an an information technology consultant working with customers internationally on systems integration, project management, internetworking technologies. In addition to his work in the enterprise, he is researching various applications for a decentralized Web. He was one of the founders of **ISOC Poland**, and currently still its president. He is also a technical volunteer for Wikipedia and a contributor to the MediaWiki software. He organized the world-wide Wikipedia community gathering in Gdańsk, Poland in 2010. He commutes between Warsaw, Poland and Frankfurt am Main, Germany.

Tommi Karttaavi

Tommi Karttaavi is the Director for Information Society issues at the **Association of Finnish Local and Regional Authorities**. He has previously worked for the Finnish Ministry of Finance, Ministry of the Interior, teleoperator Elisa Communications and the Helsinki University of Technology (Aalto University) among others. He is a member of the Internet Society since 1998 and has served as Board Member and the President of the Finnish ISOC Chapter. He has also worked for the **Internet Society** as an European Chapters Develoment Manager. He has a MSc in Computer Science from the **University of Helsinki**.

Tessel Renzenbrink

Tessel Renzenbrink is board member of Internet Society Netherlands, and secretary of the board of **Gr1p**. Gr1p strives for broad civic participation in the shaping of digital society. She is a professional freelance writer and web editor focusing on the impact of technology on society, particularly on the internet and information technology and on renewable energy technologies. Her publications regularly appear in **Elektor magazine** and **Energieoverheid.nl**. She is co-founder Tessel holds an MA in Philosophy from the University of Amsterdam.

George Sadowsky

Dr. **George Sadowsky** (**Wikipedia**) is an American computer scientist who was inducted into the **Internet Hall of Fame** in 2013. On behalf of the United Nations, UNDP, UNFPA, USAID, Sida, and other organizations he has worked in more than 50 developing countries on issues interrelating economics, technology, management and policy. He is the former Executive Director of the GIPI, the **Global Internet Policy Initiative**, with projects in many transition countries to bring multiple sectors of society together to evolve Internet policy, regulation and legislation for the benefit of the country. He founded and directed the **Internet Society**'s series of network technology workshops for students from developing countries, which resulted in thousands of students being trained in Internet fundamentals, network creation, content provision, and national network management. He is the editor of and lead contributor to the World Bank's **Information Technology Security Handbook** that has been distributed worldwide, as well as the editor and lead author of the World Wide Web Foundations recent seminal publication, **Accelerating Development Using the Web: Empowering Poor and Marginalized Populations**.

Niels Sijm

drs. ing. **Niels Sijm** is the system engineer of the **System and Network Engineering** Master's program at the **University of Amsterdam**, and a freelance web technologist under the name of **IT Doesn't Matter**. He has been building web applications for over ten years, with special interest in and care for web standards and interoperability. Niels has been working with a wide variety of people, both inside and outside IT, ranging from artists and hackers to startups, small businesses, and academia, favouring projects that contribute to society. Apart from engineering, Niels has been teaching (web) technology at various educational institutions.

Bert Wijnen

Bert Wijnen is a highly experienced and active participant in the **Internet Engineering Task Force** (IETF), where he has chaired various Working Groups. He has served as an IETF Area Director (in OPS and SUBIP). He is credited as an author on **30 RFCs**. He is a former member of the **Board of Trustees** at **Internet Society**. He is a former board member of NLnet. His working experience includes Research engineer at the **RIPE-NCC**, Senior Manager Internet Standards at Alcatel-Lucent and Senior Consulting IT Specialist at IBM (where he worked for 28 years).

2 Overview

Statutory goal and Mission

NLnet financially supports open development of information society technologies. NLnet strives to facilitate shock waves of innovation.

The articles of association for the NLnet foundation state: *"to promote the exchange of electronic information and all that is related or beneficial to that purpose"*.

This is done through stimulating strategic technology research and development in the area of computer networking and the internet. NLnet looks at impact, so while projects may revolve around new technologies they can also focus on improving existing technology, encouraging new applications of existing technology or dissemination of relevant knowledge.

The current focus is twofold: on strenghtening the position of the individual user on the internet and on improving the overal security of the internet.

NLnet actively stimulates the development of open network-related technology and making this technology freely available to the community in the broadest sense of the word. The technology should support and contribute to a better exchange of information.

Free Software, Open Source, Open Content, Open Hardware

Throughout the years, NLnet has supported a wide range of Internet and technology related projects. A precondition for all funding is suitable 'open' licensing conditions - such as GNU GPL, BSD license, Apache License, CERN Open Hardware License, Creative Commons and such. NLnet wants the projects it supports to reach as far and wide as possible, and to have a broad future that is open to continued development well beyond its originators or originating context.

Not-for-profit

NLnet Foundation does not derive any financial benefits from projects or their results.

Any future possible benefits will be used to meet the statutory goals of NLnet.

Co-operation

NLnet maintains a warm relationship with other institutes and foundations:

- Accessibility Foundation
- AMS-IX
- Association for Progressive Communications
- Bits of Freedom
- Center for the Cultivation of Technology
- CWI
- Free Software Foundation
- Free Software Foundation Europe
- GEANT
- ICANN
- iFROSS
- Internet Society Netherlands
- Internet Society
- ISPConnect
- LOT Network
- OpenDoc Society
- OpenForum Europe
- Petites Singularités
- RIPE/RIPE NCC
- SIDN/SIDN Fonds
- SURFnet
- Software Heritage
- The Commons Conservancy
- The Hague Security Delta

- ▶ DDA
- ▶ Digital Infrastructure NL
- ▶ DHPA
- ▶ EDRi
- ▶ NixOS Foundation
- ▶ NLnet Labs
- ▶ NLUUG
  Open Invention Network (OIN)
- ▶ Translate House
- ▶ USENIX
- ▶ Vietsch Foundation
- ▶ W3C

Their regular activities, technical conferences, programs and occasional actions are being seen by NLnet as major forums to make its plans public, to encourage cooperation between information technology professionals and to obtain feedback from them. In addition, NLnet regularly interacts with several academic and public institutions, such as the European Commission (in particular DG CNECT), Forum Standaardisatie, Netherlands Cyber Security Center and various Netherlands ministries (Ministry of Economic Affairs, Ministry of Justice and Security, Ministry of the Interior and Kingdom Relations, Ministry of Education, Culture and Research and Ministry of Foreign Affairs) and similar organisations inside and outside of Europe.

Finance

In 2019 NLnet sponsored projects, programs and other activities to the sum of € 912.752, compared to € 4.338.333 in budget 2019. The total expenditure was € 1.393.212, compared to € 4.809.099[2] in budget 2019, excluding loans. The total loss equals - € 193.535, compared to - € 151.766 in budget 2019.

The 2019 loss is calculated before the release of appropriated reserves which were formed for future funding obligations (to the sum of € 199.565). After adding this amount to the result, the total increase in equity in 2019 is € 6.030.

For 2020 NLnet has allocated € 4.268.333 for financing of projects, programs and other sponsoring. The total budgeted expenditure in 2020 is forecast to be € 4.785.000. The total budgeted decrease in capital in 2020 is forecast to be - € 234.067.

---

2   In June 2018 our foundation was selected to lead NGI Zero, a coalition of partners that will coordinate two of the four first Research & Innovation Actions within the Next Generation Internet initiative if the European Commission. The topics of these two actions are privacy and trust enhancing technologies on the one hand, and search, discovery and discoverability on the other. Between 2018 and 2021 we are able to grant a total of 11.2 million euro to independent researchers and open source developers working on these topics. In the budget this sum is evenly divided over three years that the project will run. The actual income and expenditures may/will differ over the years. This explains the differences between the budgets and the actual financials in this regard.

3   Strategy and working methods

Strategic Themes

NLnet maintained and expanded focus in 2019 on the following areas of attention through thematic funds:

▶ NGI Zero Search and Discovery Fund	▶ Open Document Format
▶ NGI Zero Privacy & Trust Fund	▶ Real-time communication
▶ Cryptocurrency Fund	▶ Research & Education Fund
▶ DNSSEC	▶ Software Quality Fund
▶ Data Delivery Fund	▶ Technology Awareness Fund
▶ Honeypot Technology Fund	▶ VPN Fund
▶ Infrastructure & Hosting Fund	
▶ Internet Hardening	
▶ Internet Measurement and System Stability Fund	

See for more information: https://nlnet.nl/themes

Third parties willing to donate to NLnet may choose to dedicate their donations to one of these themes, or to a new theme, or to NLnet in general.

Donations and Loans

NLnet offers three types of support:

▶ **Project donations** – projects requiring not more than € 50.000 with a duration typically of eighteen months or less. If successful, follow-up projects can be submitted.

▶ **Standalone donations** – one-time sponsoring of conferences, workshops, hackathons, seminars, contests and financial compensation of travel costs for participants of these events.

▶ **Loans** – for efforts with a significant likelihood that funds spent can be returned to NLnet.

Project donations

NLnet sees a major role for itself (and has a strong preference for) supporting strategic projects in the earlier phases of (re)development. Project budgets typically range between € 1000 and € 50.000, and have a duration of eighteen months or less - but that is decided on a case by case basis. This class of project is suitable in particular for establishing new technologies, as well as for proving the need to sunset legacy technologies. NLnet's funding allows projects to deliver break-throughs in their fields, as well as do technology reconnaissance and critical investigation.

For more details on projects sponsored in 2019 see Annex 1.

Standalone donations

NLnet may choose to provide standalone donations to organisations and individuals, in order to support and stimulate their activities - assuming these are in line with the NLnet mission and philosophy. Standalone donations also encompass incidental support for community building in the

form of workshops, hackathons, conferences, setup of legal entities, and other efforts.

More details on standalone donations sponsored by NLnet in 2019 are provided in Annex 1.

Loans

Projects funded by NLnet result in free software, open content, free hardware designs and other intangible assets which are given away *gratis*, which in many cases makes it unlikely they will make enough money to return the funds allocated and make them sustainable/revolving. In some cases, however, this is different. For instance when there is a cash flow issue as other sources of income (like a grant from another funding agency or public instition) operate too slow, putting an organisation at risk. Or when there is a suitable business model. When project proposals fit with NLnet's mission and the applicants can be reasonably confident that the funds requested are likely to be returned, they can ask NLnet for a loan. Loans have the advantage that the same money can be re-used over and over again for other relevant projects within NLnet's mission.

Distinctive investment

NLnet derives its yearly budgets from the available capital, the interest gained from banking of (a part of) this capital, from donations and subsidies, and some revolving activities. The challenge is or course to make sure that in the long run sufficient funding strength remains to continue its beneficial work.

Therefore NLnet decided to experiment with investing a part of our assets in technologies we understand, in people we trust and in concepts we believe will change the world to the better. And to gain money with this which can be used to accomplish the mission of NLnet.

For this purpose a few investments were made since 2012:

▶   Appcache Ltd ('5apps') in 2012 (currently 37,5 % equity)

▶   Rockstart in 2014-2016 (currently convertible loans in GAYR4 BV, GAYR5 BV, and GAYR6 BV)

4   Finances

Fiscal Status

Stichting NLnet finances its projects and activities from donations by individuals and organisations, inheritances and subsidies, as well as the annual return and interest as received on its invested capital and other assets. NLnet actively solicits donations from third parties to finance project activities, and co-sponsors projects with other organisations. A non-negotiable condition is that the independence of NLnet in choosing and financing projects is assured, and that its mission is respected.

Stichting NLnet does not derive any financial benefits from the supported projects or their results.

Since 1999, Stichting NLnet has had a non-profit tax status (so-called Article 24 status, "Algemeen Nut Beogende Instelling").

In accordance with ever changing legislation NLnet in 2007 obtained and in 2009 was confirmed its non-profit tax status (ANBI-regeling) with the Netherlands Tax Authority.

Administration

Salary administration was contracted to Cent Lonen in Haarlem.

Koningsbos Accountants in Amsterdam has been charged with compiling and auditing Stichting NLnet's Annual Accounts 2019 and have given an unqualified opinion. The accountancy report is a separate document. The figures are incorporated in this annual report.

Cost of activities in 2019

The Actual costs and Revenues of activities in 2019 is summarized below, and compared with Budget 2019, and compared with Actual 2018 and Budget 2020:

	Budget 2020	Actual 2019	Budget 2019	Actual 2018
Cost of programs and projects	4.268.333	912.752	4.338.333	1.065.593
Cost of staff	438.651	411.281	365.500	291.448
Cost Rental Office	15.400	13.428	14.850	12.948
Office costs	5.100	8.686	8.500	5.588
Advisory costs	5.000	3.912	5.000	0
Remuneration Mgt & Supervisory Board	17.500	18.529	17.650	17.650
Miscellaneous costs	35.016	24.471	59.266	31.602
Depreciation of inventory & equipment	0	153	0	101
Total	4.785.000	1.393.212	4.809.099	1.424.930

Revenue of activities

	Budget 2020	Actual 2019	Budget 2019	Actual 2018
Income and returns	4.200.933	1.201.147	4.657.333	1.540.452

Balance Sheet 2019 (2018)

	2019		2019	
	debit	*credit*	*debit*	*credit*
Assets				
Equipment	2.086		0	
Financial Fixed assets	246.892		436.250	
Total fixed assets	**248.978**		**436.250**	
Current assets	10.752		31.943	
Liquid assets	8.840.148		9.796.140	
Total Assets	**9.099.851**		**10.264.333**	
Liabilities				
Capital		2.509.869		2.503.839
Appropriated reserves		748.505		948.070
Total Reserves		**3.258.374**		**3.451.909**
Current and accrued liabilities		5.841.477		6.812.424
Total Liabilities		**9.099.851**		**10.264.333**
Total Balance	**9.099.851**	**9.099.851**	**10.264.333**	**10.264.333**

In June 2018 our foundation was selected to lead NGI Zero, a coalition of partners that will coordinate two of the four first Research & Innovation Actions within the Next Generation Internet initiative. The topics of these two actions are privacy and trust enhancing technologies on the one hand, and search, discovery and discoverability on the other. Between 2018 and 2021 we are able to grant a total of 11.2 million euro to independent researchers and open source developers working on these topics. In the budget this sum is evenly divided over three years that the project will run. The actual income and expenditures may/will differ over the years. This explains the differences between the budgets and the actual financials in this regard.

In 2018 we received an advance payment from the EC these projects. This payment is reported as "current and accrued liabilities" in the balance sheet.

Spread of liquidity

	2019	2018
Bank 1	6.538.486	7.483.202
Bank 2	2.050.113	2.048.605
Bank 3	142.385	201.668
Bank 4	106.739	61.588
Bank 5	2.425	1.077
Total	8.840.148	9.796.140

Budget for 2020

The budget for 2020 (excluding loans) as approved by the board, is as follows:

	Budget 2020
Cost of programs and projects	4.268.333
Cost of organisation including staff	516.667
Depreciation of inventory & equipment	0
Total	4.785.000

Programs in 2019

NLnet Labs

NLnet Labs is the Research, Development, and Expertise center for those technologies that turn a network of networks into one Internet. Established by the NLnet Foundation in 1999, NLnet Labs contributes innovative ideas to open source software and open standards. NLnet Labs is recognized for its work on DNSSEC and BGP security, as well as being the home of high-quality DNS software and tools, training and engineering efforts. NLnet Labs is led by Dr. Benno Overeinder.

Anno 2019, NLnet Labs Foundation is a fully independent and sustainable organisation that can stand firmly on its own feet. NLnet Labs has been officially recognised as a not-for-profit (ANBI, Algemeen Nut Beogende Instelling), with its own independent governance which has no overlap with that of NLnet Foundation. It collaborates with other organisations such as Verisign Labs, ICANN, SIDN and USC/ISI. NLnet Labs' work is funded by contributions from users who support its mission and want to see the maintenance and development of its software continued for everyone. An addditional source of income are software support contracts through its subsidiary Open Netlabs B.V. which also provides software development, training courses, audits and consultancy.

NLnet Foundation sponsors NLnet Labs by providing free administrative services.

The Commons Conservancy

NLnet actively contributes to The Commons Conservancy through a joint Memorandum of Understanding with NLnet and Géant. The Commons Conservancy provides a lightweight organisational structure for open projects. Its mission is to strive towards a stable democratic and open global information society in which individuals can collectively scrutinise, reconfigure and improve upon any technology they depend on - unleashing and empowering human innovation at the widest possible scale, with the express intention to empower any individual to participate in all facets of social, cultural, economic and private life under conditions of his or her own choosing and with secure and reliable technology they can have full control over themselves. The Commons Conservancy is an independent foundation.

NLnet supports The Commons Conservancy with logistics, insurance for its board members and recurring costs such as domain name registration for the foundation and its programmes.

NGI Zero

As of December 1st 2018 NLnet was selected to coordinate two of the four first Research and Innovation Actions to kickstart the Next Generation Internet, an initiative by the European Commission to help shape a trustworthy, resilient and sustainable internet as part of the Horizon 2020 research and innovation program. Between 2018 and 2021 a total of 11.2 million euro will be granted by NLnet to independent researchers and open source developers. Project proposals in line with the NGI vision and the call topics can request between €5.000,- and €50.000,- with the potential to scale up after

succesfully finalizing an initial project. The call topics focus on privacy and trust enhancing technologies and search and discovery.

Projects funded through these two Next Generation Internet calls are supported by a unique coalition of not-for-profit organizations organized in the NGI Zero coalition. Together with NLnet these partners provide researchers and developers with expertise and guidance on security and code quality, accessibility (making technology available to everyone, including people with disabilities), localisation/ internationalisation (to increase language diversity on the internet), packaging and reproducible builds, responsible disclosure, diversity, community building and more essential dimensions for any technology that aims to run at internet scale.

Received proposals

In 2019 NLnet has received in total 743 project proposals (compared to 141 in 2018), whereof 162 requests were (partially) granted (against 26 in 2018).

Projects supported in 2019

Theme fund description and project summary

Hosting the NGI Zero grant calls as part of the Next Generation Internet initiative allowed NLnet to fund an unprecedent amount of projects in 2019. We are proud and humbled to have so many significant and innovative open source software and open hardware projects consider our support. To make sure we showcase each of these projects while avoiding unnecessary long descriptions, below we summarize each initiative funded by NLnet in 2019 grouped per grant program with stable links to more in-depth project descriptions.

NGI Zero Discovery

NGI Zero Discovery is a 5.6 million euro grant that will award projects intending to improve and further develop open search and discovery technologies, summarized in the Next Generation Internet outline "to search and access large heterogeneous data sources, services, objects and sensors, devices, multi-media content, etc. and which may include aspects of numbering; providing contextual querying, personalised information retrieval and increased quality of experience."

A Distributed Software Stack For Co-operation	Facilitating easy ad hoc cooperation
Blink RELOAD	Secure P2P real-time communications with RELOAD
Decentralized privacy preserving search by mathematical design	
DeltaBot	Social discovery over mail-based chat
Discover and move your coins by yourself	A safe way to explore and work with cryptocurrency forks
elRepo.io - Resilient, human-centered, distributed content sharing and discovery	?
Explain	Deep search on open educational resources
Extending PeerTube	Adding advanced search capabilities to PeerTube
FairSync	Simplify aggregation and discovery of places and events
fediverse.space	Find your way in the Fediverse
ForgeFed	Federation for software collaboration tools
Free Software Vulnerability Database	A resource to aggregate software updates
Funkwhale	ActivityPub-driven audio streaming and sharing
Geographic tagging and discovery of Internet	?

Routing and Forwarding	
GNU Guix	Discovery of service configurations in a declarative setup
GNU Name System	Authenticated naming system for the internet from GNU project
Handling Data from IPv6 Scanning	Scanning tools for scaling up IPv6 scans
IN COMMON	Public platform to map and act together for the Commons
Interpeer	Collaboration infrastructure with near real-time p2p data synchronization
ipfs-search.com	Search engine for the Interplanetary File System
Librecast Live	Live streaming with multicast
Lizard	E2E Rendez-vous and discovery
Mailpile Search Integration	Personal email search engine
Meta-Press.es	A press search engine in your browser
Minedive	P2P search over webRTC
Mynij	Portable indexing and search engine for mobile
neuropil	Privacy by design P2P search including IoT
Nextcloud	Unified and intelligent search within private cloud data
Nyxt	A programmable browser with advanced search integration
openEngiadina	Platform for creating, publishing and using open local knowledge
Openki.net	Make local events and meetups discoverable
P2Pcollab	Decentralised social search and discovery
Personal Food Facts	Privacy protecting personalized information about food
Pixelfed	ActivityPub driven decentralised photo sharing platform
Plaudit	Make good science discoverable through endorsements
Poliscoops	Make political news and online debate accessible
Practical Decentralised Search and Discovery	Search and discovery inside mesh/adhoc networks

Private Searx	Add private resources to the open source Searx metasearch engine
SCION-Swarm	Secure and reliable decentralized storage platform
Search and Displace	Find and redact privacy sensitive information
searx	A privacy-respecting, hackable metasearch engine
searx	Federating self-hosted search hubs
SensifAI	AI driven image tagging
Simmel	A wearable contact tracing beacon/scanner
Software Heritage	Collect, preserve and share the source code of all software ever written
Software vulnerability discovery	Automating discovery of software update and vulnerabilities
Sonar: a modular peer-to-peer search engine for the next-generation web	Modular peer-to-peer search engine
StreetComplete	Fix open geodata with OpenStreetMap
Tantum Search	Context-enhanced search driven by schema.org
The Open Green Web	Ethical meta-search filter on green hosted websites
Transparency Toolkit	A decentralized hosted archiving service with search
variation graph (vgteam)	Privacy enhanced search within e.g. genome data sets
Web Annotation	Building blocks for interoperable annotation systems
WebXray Discovery	Expose tracking mechanism in search hubs

NGI Zero PET

NGI Zero PET is a 5.6 million euro grant that will award projects intending to privacy and trust enhancing technologies, summarized in the Next Generation Internet outline "as sensors, objects, devices, AI-based algorithms, etc., are incorporated in our digital environment, develop robust and easy to use technologies to help users increase trust and achieve greater control when sharing their personal data, attributes and information"

A proof of concept of identity-based encryption	Make email encryption simpler with the attribute-based identity platform IRMA.
Accessible security	Integration effort of independent security

	efforts like Qubes, Heads, coreboot and more.
Adopt improvements in Email Encryption in KMail	Integrate Autocrypt and Encrypted Headers in Kmail for simpler email encryption.
ARPA2 LDAP Middleware	Privacy enhancing middleware from the ARPA2 project including a privacy enhancing middleware for LDAP.
ARPA2 resource ACL and HTTP SASL modules for NGINX	Extend consistent access control to NGINX webserver from the ARPA2 project.
Autocrypt for Thunderbird	Thunderbird extension for single click email encryption using the Autocrypt specification.
Balthazar	Design and deliver an innovative and technically advanced open hardware (RISC-V/ISA) based, European made, inexpensive, FOSS laptop as a personal computing device.
betrusted	A protected hardware device for your private matters.
Betrusted OS	An embedded OS for cryptographic devices like betrusted.
Betrusted software	Virtual environment for betrusted (e.g. QEMU / RISC-V) to develop and test software as close to target as possible.
Bitmask	Zero-configuration and user-friendly VPN client that connects to providers following the LEAP platform specification.
Briar	A secure messaging app with offline capabilities.
Build Transparency (Trustix)	A tool that compares build outputs across a group of providers.
Chips4Makers ASICs	Manufacturing a development version of the Libre RISC-V SoC combined with development on open source tools and open source chip building blocks.
Conversations	Adding voice and video calls to a secure mobile XMPP-messaging Android client.
CryptPad	Real-time collaboration with client-side encryption with improved encrypted shared folders.
CryptPad for communities	Improving user experience for community management in collaborative web editor with client-side encryption.

CryptPad: Project Dialogue	Add secure surveys and polls to collaborative web suite with client-side encryption.
Dat Private Network	Self-hosted server with web-based control and on-disk encryption using DAT-protocol for peer-to-peer sharing.
DCnets	Implementation of Dining Cryptographers Network for untraceable communication.
dhcpcanon	DHCP client implementing new standard for minimizing information disclosure.
Distributed Private Trust	Prototype of a decentralised trust and reputation system that does not rely on a centralized trusted party.
DNSSEC Key Signing Suite	Set of tools, scripts and guidelines to facilitate simple key signing ceremony for DNSSEC .
EGIL SCIM client	System for cross-domain identity management.
EteSync - iOS application	Encrypted synchronisation for calendars, addressbook, etc.
EteSync - protocol and encryption scheme enhancements	Redesign EteSync protocol and encryption scheme.
Finish porting Replicant to a newer Android version	Alternative, free software version of Android.
Fix the Pitch Black Attack in Freenet friend-to-friend routing	A decentralized distributed platform for private communication.
GNU Mes	Help create an operating system we can trust.
GNU Mes	Trustworthy bootstrap for operating systems on ARM ISA.
GNU Taler	Advanced electronic payment system for privacy-preserving payments.
GoatCounter	Privacy-friendly web analytics for small websites.
Graphics acceleration on Replicant	Free software graphics drivers for mobile phones.
Implement sound support in the Hurd	Add audio capabilities to the multiserver microkernel from GNU.
Improve usability of Linux firewall userspace tools	Userspace tooling for Linux kernel Netfilter.
IMSI Pseudonymization	Better privacy protection for subscribers to 2G-5G-networks.

IRMA made easy	Usability research of attribute based authentication platform IRMA.
Katzenpost	Observation resistant secure messaging layer.
KWin and Wayland input	Secure windowing system for Kwin.
Langsec in Pectore	A secure pacemaker created from formal grammars.
Libre Silicon compiler	Produce legal and efficient silicon layouts from digital netlists.
LibreSilicon	Reduce entry barriers to full custom application-specific integrated circuit (ASIC) design and regain trust in their computing devices.
LumoSQL	Create more reliable, distributed embedded databases.
Maemo Leste	An independent mobile operating system focused on trustworthiness.
Manyverse	An offline capable privacy-centric social messaging app.
MEGA65 Phone	A phone simple enough to understand in full.
mobile-nixos	NixOS for mobile phones and tablets.
Nitrokey	Open hardware for encryption and authentication.
node-Tor	Implementation of Tor protocols for inside webpages.
Noise Explorer-VerifPal	Automated proofs and code generation for secure protocols.
Off-the-Record messaging version 4	Advanced protocol for secure messaging.
offen	Ethical site analytics, controlled by the user.
OnBaSca	Improve new Tor network bandwidth scanner.
Opaque Sphinx	Secure password-based authentication with state-of-the art cryptographic Opaque and Sphinx protocols.
Opaque Sphinx Server and Clients	Server and tools for modern authentication using new and secure approaches to privacy and security protection.
Open Source DRTM implementation with TrenchBoot for AMD processors	Unified framework for dynamic RTM to verify the security of computer systems.
OpenPGP Certificate Authority	Managing OpenPGP keys for communities and organisation.

Padding Machines for Tor	Protect metadata in the Tor onion routing network.
pcb-rnd	Modular printed circuit board editor.
PGP4civiCRM	Add email encryption to CRM.
Port of AMDVLK/RADV 3D Driver to the Libre RISC-V SoC	Adapt Vulkan Drivers to the Libre RISC-V SoC.
Privacy Enhancements for PowerDNS and DNSdist	Make it easier to deploy private DoT/DoH resolvers.
Qubes OS	Bring the security of Qubes OS to people with disabilities.
Redwax	Standardisation of client side PKI interfaces.
Reowolf	Rip and replace for BSD socket insecurity
Reproducible Builds	Make the build processes behind software distributions reproducible
Ricochet Refreshed	Anonymous, meta-data free secure messaging.
Robur privacy-enhanced DNS resolver and DHCP server	Secure network configuration and DNS resolution
Rust Threadpool	Improve privacy of Rust threading library
SASL Works for the InternetWide Architecture	Integrate new authentication mechanisms into SASL
SASL XMSS	Make SASL work with XMSS protocol
Secure User Interfaces (Spritely)	Usability of decentralised social media
Securing PLCs via embedded Open-Source protocol adapters	Open hardware protocol adapters for industrial automation
SOLID Data Workers	Toolkit to ingest data into SOLID
Spectrum	A security through compartmentalization based operating system
Standard Cell Library	Open Standard Cell Library with automated dimensioning of transistors
Suhosin-NG	Harness PHP 7 applications
Sylk Client	Secure multiparty videoconferencing application
Sylk Mobile	Secure real-time mobile communications
The Libre RISC-V SoC, Formal Correctness Proofs	Mathematical unit tests for open hardware System-on-Chip
The Libre RISC-V SoC, Formal Standards Development	Formal Standards for RISC-V extensions from Libre RISC-V SoC

The Libre-RISCV SoC	A fully open hardware System-on-a-Chip
The Libre-RISCV SoC, Coriolis2 ASIC Layout Collaboration	Open tooling for ASIC Layout
The Libre-RISCV SoC, Video Acceleration	Optimised video acceleration instructions for Libre RISC-V SoC
Thunderbird - native EteSync integration using TbSync	Add encrypted sync to Thunderbird
TLS-KDH mbed	Implement TLS-KDH into mbed
Tracking the Trackers	Automated scanning for spyware in mobile applications
Universal DID Resolver and Registrar	Tooling for decentralized identifiers
ValOS Cryptographic Content Security project	Cryptographic Content Security for ValOS
Verified Differential Privacy for Julia	Proving sound privacy guarantees through a type system
Verifpal	Prove soundness of verification in Verifpal
VFRAME: Visual Defense Tools	Use computer-vision to shield privacy in video
video box	Affordable open hardware video-to-network
Video chat privacy	Add privacy features to video chats
Virtualizing device firmware	Creating digital twins for auditing and testing appliances
Vita	A high performance IPSEC implementation
Web Shell	Desktop and security environment for web apps
Wireguard	Take modern network tunnels to the next level
Wireguard Rust Implementation	Implementation of WireGuard in a type safe language
Wireguard Windows client	Native Wireguard protocol client for Windows
Wishbone Streaming	Add Streaming capabilities to Wishbone
YunoHost and the Internet Cube	Solutions for DIY-ISP's and self-hosters
Zerocat Chipflasher Flashrom Interface	Hardware to flash alternative/libre firmware to BIOS chips
ZSipOs	Open hardware for telephony encryption

Open call

Annex 2: Presentations, contributions and initiatives in 2019

NLnet and its employees actively participate in various fora and projects regarding the open and free internet, cybersecurity, and the implementation of open standards and open source. A selection of the most prominent contributions:

▶   Internet New Year – January 17th 2019

▶   FOSDEM – February 3 2019

▶   NGI Communication training - April 15th 2019

▶   Ledger Jury Days – May 27-28th 2019

▶   IoT Week 2019 – June 17/21 2019

▶   EuroDIG European Dialogue on Internet Governance – June 19/20 2019

▶   Cities for Digital Rights - June 19 2019

▶   Tetra workshop – July 16-17th 2019

▶   Akademy – September 7/13 2019

▶   NGI Forum – September 24/26 2019

▶   One Conference – October 1/3 2019

▶   RIPE Meeting – October 14-18 2019

▶   Open Search Symposium – October 23/24 2019

▶   NixCon 2019 – October 25/27 2019

▶   Rustfest Barcelona 2019 – November 9/12 2019

▶   Linux App Summit – November 12/15 2019

▶   New Horizons in Search Expert workshop – November 13 2019

▶   Open Source beyond 2020 – November 14/15 2019

▶   NLUUG conference – November 21st 2019

▶   Chaos Communication Congress – December 27-30 2019

'Radically Open Security' (ROS) is a company around ethical hacking and security founded in 2014 by dr. Melanie Rieback. ROS will donate at least 90% of its proceeds to NLnet foundation for at least the first five years. In 2018 the company continued to build its portfolio of projects and clients, hauling in big names from telecoms, banking, academia and critical infrastructures. The company takes a principled approach which puts transparency, open source, responsible disclosure and ethics first – which together with its idealistic and non-hierarchical model has attracted a talent pool of ethical hackers. Sofar NLnet provided them with two loans to help them grow more rapidly.

In 2019 NLnet continued its membership of Digital Infrastructure Netherlands. DINL is a group of seven institutes, associations and foundations (SIDN, DHPA, DDA, AMS-IX, ISPConnect, Surfnet, Nederland-ICT, VVR and NLnet) that collectively works on important topics in the Netherlands Digital Infrastructure community: promotion, education, cybersecurity, and laws & policy.

NLnet supports the Open Invention Network. Organisations and non-formal organisations like FLOSS communities benefit from the defensive patent pool and from the collective legal support to shield themselves and their users against patent offenses. Open Invention Network has made several donations to NLnet in recognition of its contribution to this initiative.

During 2019 NLnet continued to support Stichting Accessibility. The mission of the Accessibility Foundation is to improve the accessibility of internet and other digital media for all people, including the elderly and people with disabilities. The Foundation was established in 2001 and has about 20 people working in their office in Utrecht. Accessibility has always been funded by the Bartiméus Institute for the blind in the Netherlands. Since early 2016 Accessibility operates entirely independent and is economically healthy, NLnet provided them with a bridging loan to make this possible.