

Ethical, Legal and Societal Aspects of AI

ELSA

Labs Magazine

The massive impact of artificial intelligence (AI) as a system technology on people and society comes with a very special responsibility. That is why the ELSA Labs are leading the search for ways of learning and discovering what the best and most desirable AI solutions are.

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Ministerie van Binnenlandse Zaken en Koninkrijksrelaties

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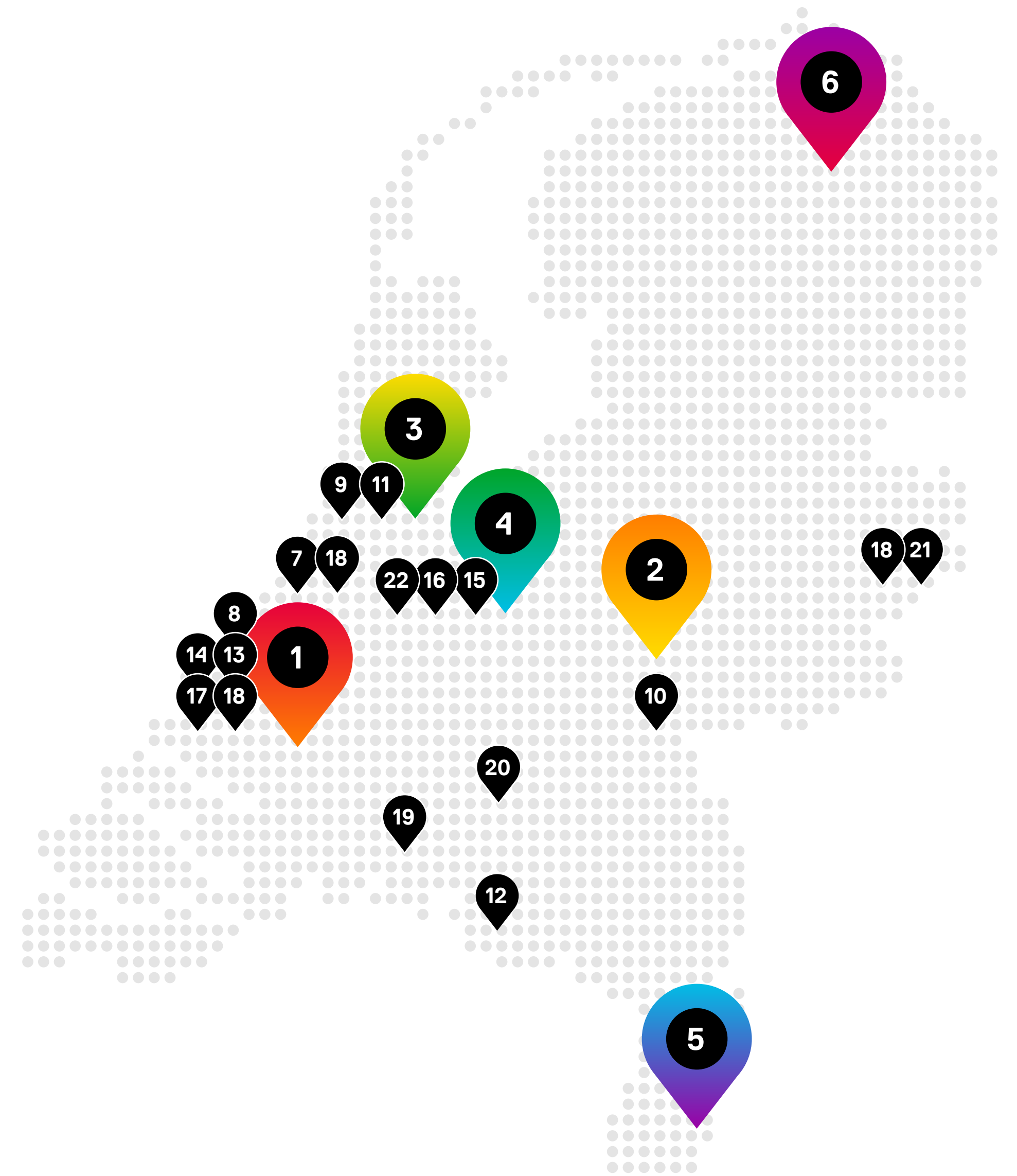
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1 ELSA Lab AI MAPS

Location	Rotterdam
Area of subject	Public Safety
Project lead	Erasmus University Rotterdam
Sustainable Development Goal	

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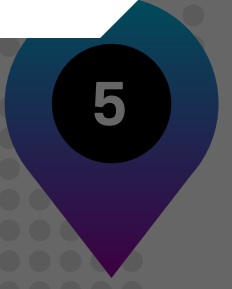


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ELSA Lab AI 4 Sustainable Food Systems ✕

Location	Wageningen
Area of subject	Agriculture and food
Project lead	Wageningen University & Research

Sustainable Development Goal 

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ELSA Lab AI, Media & Democracy

Location Amsterdam

Area of subject Culture & Media

Project lead University of Amsterdam

Sustainable Development Goal

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4 ELSA Lab Defence

Location Soesterberg

Area of subject Defence

Project lead TNO

Sustainable Development Goal



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ELSA Lab Poverty & Debt

Location	Heerlen
Area of subject	Public Services
Project lead	Maastricht University
Sustainable Development Goal	

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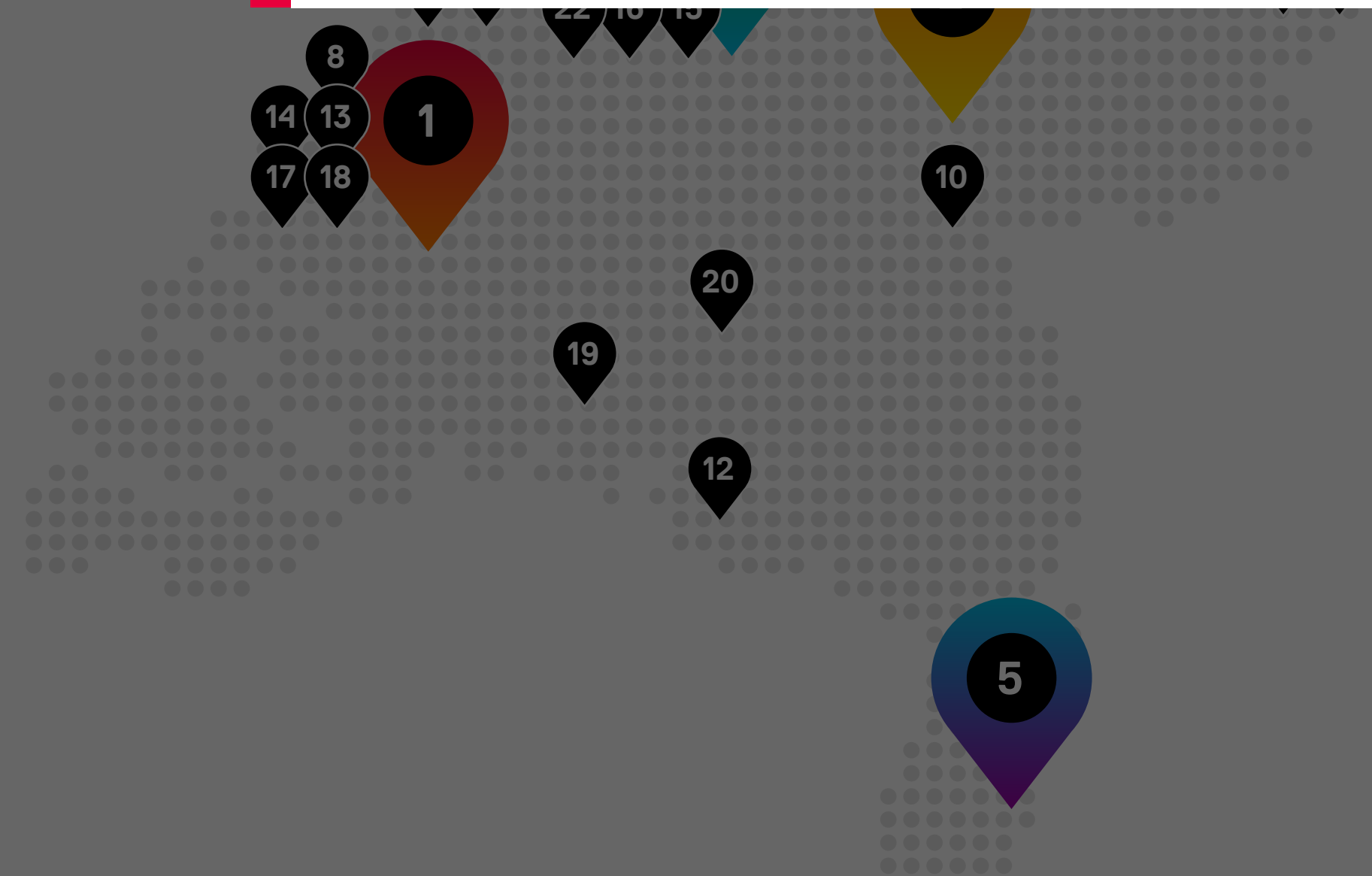
ELSA Lab Northern Netherlands

Location	Groningen
Area of subject	Health & Healthcare
Project lead	UMC Groningen
Sustainable Development Goal	

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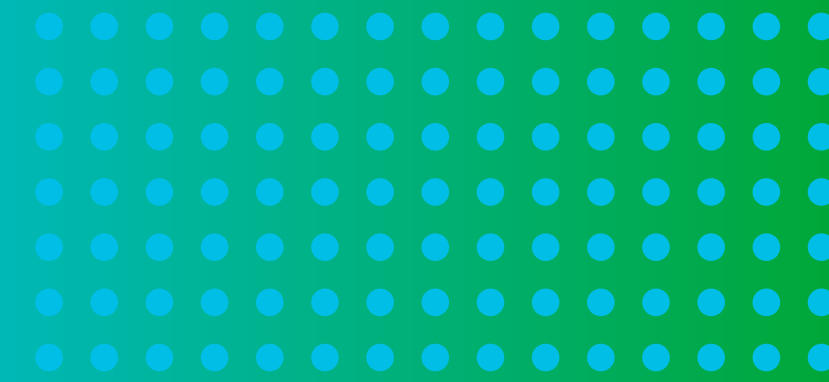
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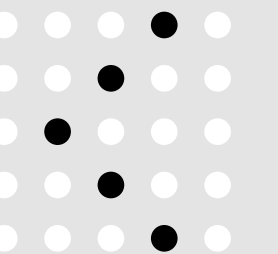
ELSA Labs are a citizen science approach to human-centric innovation. The ELSA (Ethical, Legal, and Societal Aspects) concept is rooted in the belief that sustainable socio-economic innovation can be achieved by applying data analytics techniques and smart artificial intelligence algorithms in a quadruple helix setting, thus contributing to society's 21st century wicked problems.

of objectives, solutions, and methods. This approach also allowed a proper assessment of the portfolio enabling the identification of duplications and white spots in the ELSA Labs landscape. New initiatives were evaluated based on the reference framework and those who were assessed positively received a formal label from the NL AIC.

In 2021 a first set of six ELSA Labs received public funding; five of them through an NWO/NWA grant and one ELSA Lab with directly funded by the Dutch Ministry of Internal Affairs (BZK). In the meantime, the number of ELSA Labs in the portfolio grew into a grand total of 23.

This interactive magazine describes the ELSA Labs journey in more detail. Using the six funded labs as a basis, it features various aspects of the portfolio development over the past three years. The various articles are supported with infographics and a rich variety of interactive links.


Happy readings,
Emile Aarts
Emeritus professor and rector magnificus of Computer Science at Tilburg University



Building on early ideas developed within the Digital Society Program (DiSa), commissioned by the Universities of the Netherlands association (UNL), the ELSA concept and the corresponding ELSA Labs were elaborated further by the Netherlands AI Coalition (NL AIC) as part of its Human Centric AI approach to innovation, starting in 2019.

After a short initialization phase, the concept grew mature from 2021 on. It was supported by a [manifesto](#) and a [position paper](#) explaining the role of ELSA Labs in human-centred AI innovation. At the same time, a portfolio of ELSA Lab initiatives was built addressing a broad variety of societal problems. The portfolio development process was supported by a seven-item reference framework with an accompanying [canvas](#), which serves the purpose of explaining the value proposition of each individual ELSA explicitly in terms

'ELSA Labs will contribute to the solution of wicked societal problems'

 **Contact**
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Introduction

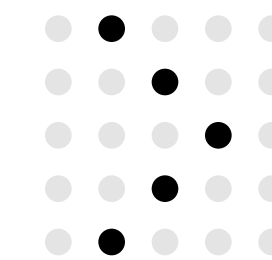
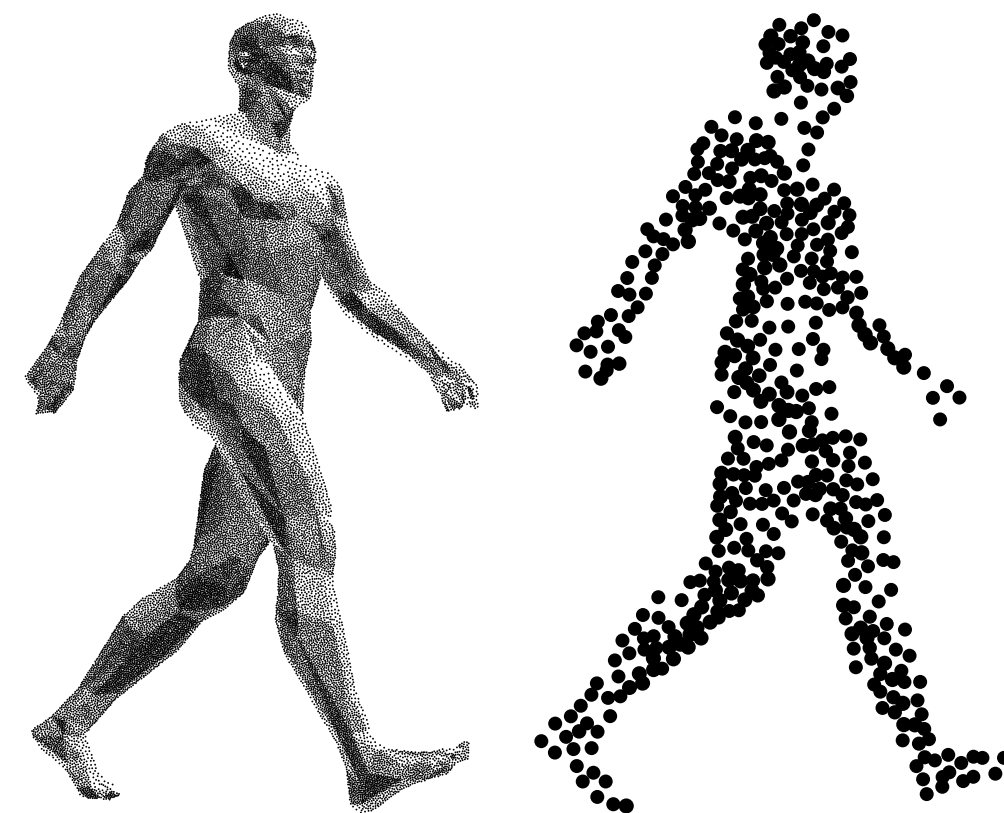
Artificial Intelligence (AI) is a disruptive technology which affects people and organizations in all dimensions of our society. Consequently, AI is a social development quest. A task in which man and machine - or society and technology - cannot be considered in separation; they are mutually connected. When people speak about social acceptance, they are essentially talking about raising awareness of the social aspects of AI as part of the technology development. The objective of social awareness and responsibility - term we prefer to social acceptance - can be defined as: creating a shared and transparent way to arrive at digital solutions, in which residents structurally benefit from the developed solutions.

The context

When raising social awareness of AI, attention must be paid to those factors that create a distance between man and machine. These include the threat of being 'outsmarted' by AI resulting in a digital divide, social discrimination, unethical applications, fake news, job losses, and ultimately a loss of human values as we know them.

New tools are needed to shape AI in an innovative, social, safe, fair, and empathetic way and to make it part of our society and future.

To this end the concept of social co-creation environments was developed, which identifies, studies, explains, shapes, and explores digital AI concepts that iteratively improve solutions to wicked societal problems and issues. Because these environments mainly focus on Ethical, Legal & Societal Aspects, as opposed to the technical and digital aspects that often predominate in AI, we call them ELSA Labs.



On February 16, ChatGPT returned the following text upon the query 'Explain Ethical Legal and Societal Aspects Labs in AI'¹:

'Ethical, legal, and societal aspects (ELSA) Labs in AI are research initiatives that focus on exploring the ethical, legal, and social implications of artificial intelligence (AI) technologies. These labs aim to identify and address potential risks and benefits associated with the development and deployment of AI, and to promote the responsible use of this technology.'

One of the primary concerns addressed by ELSA Labs in AI is the potential impact of AI on society. For example, they may examine issues related to privacy, bias, accountability, and transparency in AI systems. They may also consider the impact of AI on employment and the workforce, as well as the ethical implications of using AI for decision-making in areas such as healthcare, criminal justice, and national security.'

¹ As of June 2023, ChatGPT no longer replies texts to queries referring to subjects for which no information is available prior to 2021. Consequently, this reply is a rather unique piece of text that unfortunately cannot be verified.



Obviously, the ChatGPT text explains the concept of an ELSA Lab quite well as it captures the basic properties. It, however, does not account for the more subtle aspects of the subject such as providing information about more existential questions like ‘how did the ELSA Labs journey start?’ and ‘how are ELSA Labs developed and operated in practice?’. To answer these and other questions, we felt the need to publish a magazine that describes the origin of the ELSA Labs concept and explains how the resulting social innovation instrument was developed and managed as a portfolio of research initiatives.

The ELSA ‘Lab’ way of working should be collaborative, enabling a dynamic learning process that is essential for a rapidly developing technology such as AI.

The essentials

In their position paper Van Zoonen, Van Veenstra and Helberger address the developments of the ELSA concept within a historical perspective, putting emphasis on the following two essential properties.

1

The notion of ‘human-centred’ AI frames the goals and approaches of designers and developers of AI towards individuals and consumers but leaves civic goals and public values somewhat unaddressed. Movements like AI for public good express similar objectives as human-centred AI, but focus on a societal context in which the human is constituted. Thus, they pursue different projects, draw different coalitions and engage in different governance. Hence, ELSA Labs for human-centred AI should capture both human and public values.

2

The notions of Societal Readiness Level and the Pathways to Impact recommended by the Growth Fund, are somewhat behind the current, state-of-the-art descriptive and prescriptive articulations of technology and society, which are converging around notions of joint construction, contestation and iteration (in other words: continuous learning), rather than assuming linear growth (readiness) and impact (pathways). This togetherness is captured in concepts like mutual shaping (from science and technology studies), co-creation (from design studies), quadruple helix innovation (from innovation studies), actor-network-theory (from sociology) and contestable, participatory, or value-inclusive design (from Human-Computer Interaction studies). Thus, the ELSA ‘Lab’ way of working should be collaborative, enabling a dynamic learning process that is essential for a rapidly developing technology such as AI.

We will build on these insights and disciplines to elaborate the purposes, practices, and partners of the ELSA Labs, in a way that produces both societally relevant and responsible AI, and cutting-edge usable knowledge about the way it should come about, be contested, governed and adjusted.

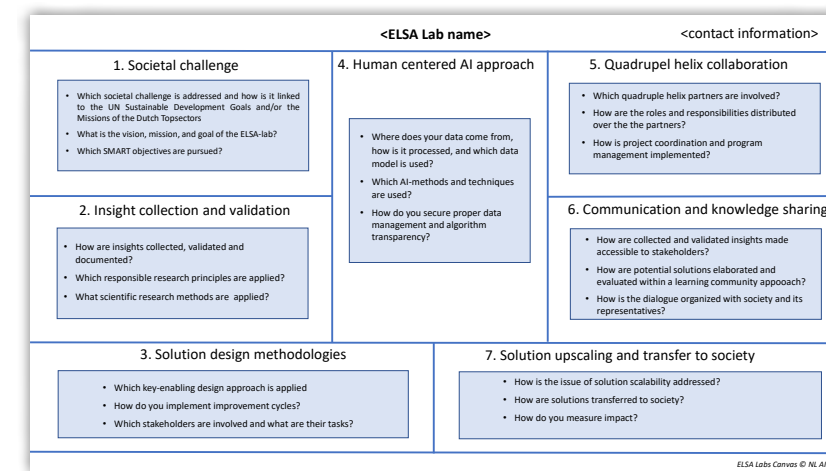


The origin

In brief, the concept originates from the early developments initiated by the Digital Society (DiSa) program. This nation-wide initiative was launched in 2016 by the Association of Dutch Universities (UNL) with the attempt to set up a cross university research program that would focus on societal issues related to the digital transformation. This program attracted quite some attention among university researchers, but it failed to raise the financial resources needed to support it for a longer period which was considered necessary to generate scientific impact.

In 2019 the Netherlands AI Coalition (NL AIC) was setup as a public-private partnership to support the nationwide developments and take-up of artificial intelligence technology. The NL AIC put a strong emphasis on the concept of human-centred AI, as described in their corresponding manifest, to leverage the European AI innovation space. The resulting NL AIC ELSA Labs program activities were financially supported by the kick-start funds of the NL AIC that were made available by the Ministry of Economic Affairs and Climate Policy. The corresponding program call was commissioned by NWO, the Dutch Research Council, which carried out the responsible task to properly select the best projects and distribute the financial resources over the projects based on a

number of well-chosen strategic selection criteria. Several ELSA Labs calls will be issued in the future by the AiNed Foundation and NWO to build a network of public-private social innovation partnerships.



VIEW THE VALUE PROPOSITION CANVAS

Portfolio development

To stimulate and support the development of new ELSA Labs initiatives in the quadruple helix, NL AIC designed a reference framework with seven main constituents describing a mature ELSA Lab. Each of the seven constituents referred to an innovation dimension that was considered of particular interest to turn the initiative into a successful enterprise. The reference framework was accompanied by a [value proposition canvas](#) that could be used to describe the operational processes, required resources, and generated output for each individual lab. ELSA Labs that successfully completed the instantiation of their value proposition canvas were

given the so-called NL AIC label. For the time being, this has led to more than twenty labeled ELSA Labs which are developed and managed through concerted action. A concise overview of the portfolio setup can be found on the NL AIC website.

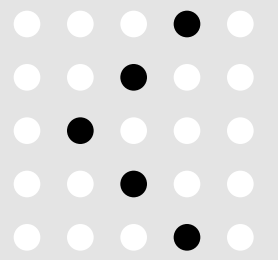
This publication explains our approach to this most interesting approach to set up an ELSA Labs portfolio in more detail. Basically, we distinguish three steps in the ELSA Labs development process which can be formulated as the following three elementary questions: ‘what is an ELSA Lab?’, ‘why do we need ELSA Labs?’, and ‘how are ELSA Labs organized?’.



READ THE POSITION PAPER

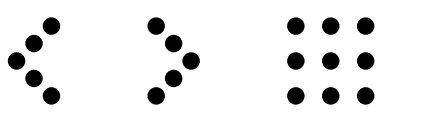


READ THE MANIFESTO



To answer the first question, the NL AIC wrote a [manifesto](#) explaining the concept of human-centred artificial intelligence in the Netherlands. To answer the second question, we published a [position paper](#) reflecting on the role of ELSA Labs as a societal approach to human-centred AI. The third question is addressed by the ELSA Labs reference framework and the accompanying ELSA Labs Value Proposition Canvas.

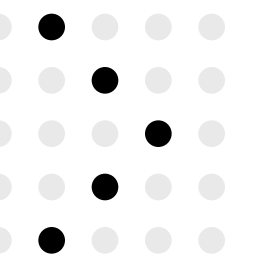
In this magazine the NL AIC present the documents mentioned above. Moreover, we present for each individual ELSA Lab that is currently existing, its corresponding value proposition canvas instantiated for the societal problem at hand. In this way, we hope that you as a reader will develop a clear picture of what the Dutch approach to the concept of an ELSA Lab entails and what we have managed to obtain so far.

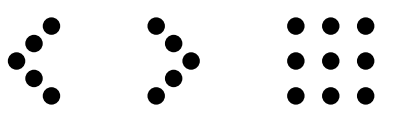



1 AI Multi-Agency Public Safety Issues




What is ethical and responsible artificial intelligence ('AI')? The Covid pandemic and unrest around forced migration or farmers' protests illustrate the significance of public safety. Ensuring public safety is a constant challenge in the pursuit of the delicate balance between freedom and security.





 Watch the video


1.1 Societal challenge

 Our ELSA Lab consortium is specifically designed to comprehend and engage with the multi-agency, multi-level, and contextual nature of public safety issues in contemporary knowledge-based societies.

AI algorithms for pattern recognition in video images can automatically detect divergent patterns in neighborhood gatherings.

AI algorithms for semantic pattern recognition in text can detect rising tensions in certain social media groups and algorithms for decision support can guide local authorities to scale up intervention activities. These are two examples of existing AI approaches in Dutch cities represented within the Impact Coalitions Safety and Security within our consortium. It is therefore timely to focus on both the normative and the social aspects, thus the ELSA (ethical, legal, societal), of AI development and deployment - to prevent that the solution is worse than the problem from the perspective of freedom and social wellbeing. Pure techno-social engineering would be problematic in many ways, to start with that the people would not have any reason to trust that their benefit is the goal. With AI-MAPS we provide the framework for a collective learning process which allows the variety of needs and values to be respected.

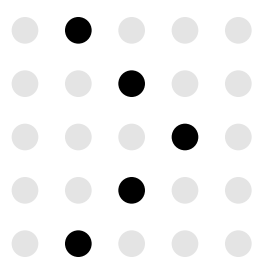
1.2 Insight Collection and Validation

 We make our research work scalable and applicable to different situations by applying abductive method. To understand how people react to the challenges we study, we choose the best explanations based on comparing our data with existing theories from different fields. We involve various teams to help us with this process.

We also take inspiration from different design approaches. Participatory Design helps us involve and empower future users so they can have a say in what we create. Human-Centred Design puts people and their experiences at the center of our development process, making it a collaborative and iterative effort. Value Sensitive Design involves many actors and encourages innovative discussions to make sure we consider all perspectives.

Additionally, we follow the principles of Responsible Innovation, which means we think ahead and adapt our work to be inclusive, diverse, and responsive to the needs of society.

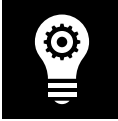
[READ THE NWO ARTICLE](#) 



'We believe that AI-MAPS can make a real difference. Our hope is to jointly create powerful tools and insights with hybrid intelligence solutions for public safety. We work towards innovative, truly inclusive community approaches, targeting the root causes of social unrest. In this, we aim to contribute to a free and safe society for all.'

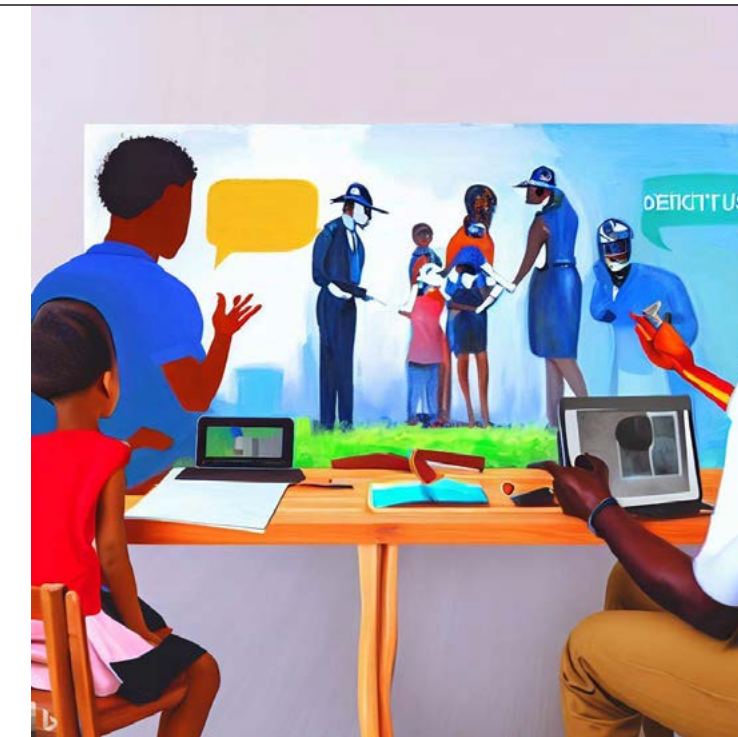


1.3 Solution design methodologies

 We will draw from various domains of knowledge to promote transdisciplinary innovation in a series of workshops to foster effective collaboration between people from different disciplines. We aim to advance the field of transdisciplinarity not only practically (doing these workshops), but also theoretically (analyzing workshops' outcomes and engaging in reflexivity). Specifically, we aim to contribute to the intersection of design thinking and systems thinking, and to innovation management, from a process or relational view, which is relevant for Quadruple Helix innovation or Innovation Eco-systems. Early in our research work, we decided that to account for non-human actors and more-than-human concerns, a fifth helix is needed that encourages inter-species thinking, transdisciplinary application of interdisciplinary knowledge and multi-species justice. This contribution will be disseminated through four PhD projects and at least four scientific publications, addressing and describing other outputs from the project's collaborations which will encompass checklist tools for designers and engineers, guides to implementation, a proof-of-concept conversational agent, and various forms of knowledge transfer with partner organizations.

1.4 Human-centred AI approach


 Erasmus University Rotterdam adheres to Open Access, FAIRness and FACTness of data, and research integrity as main guiding principles. The principles for responsible data management, internal ethical review process, and principles for dealing with personal data together create a baseline for top-quality research. The data gathered during this project's research is in the first instance stored securely in the EUR Document Vault. We will act in compliance with the General Data Protection Regulation, The Netherlands Code of Conduct for Research Integrity, and the EUR RDM policy. However, for other less sensitive material the EUR has several different safe storage possibilities in place. Choices will be made in close collaboration with the EUR data steward. Ensuring our data are stored safely and made available for re-use, the coordinator (EUR) has one task in the project; to develop a Data Management Plan in the first 2 months of the project, which will be done in collaboration with a data steward from the EUR.

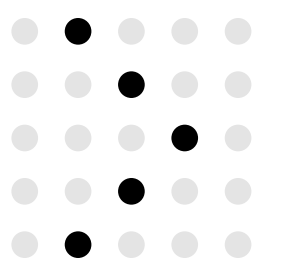


A painting created with DALL-E, showing an ELSA discussion (workshop) supported by virtual agents (foreground; background shows the AI-supported police action.



1.5 Quintuple helix collaboration

 We are very proud of our unique and broad consortium of over 20 partners. It shows how relevant our stakeholders find it to engage with each other in order to unleash the emancipatory potential of AI in public safety. A mutual-learning ecosystem of quadruple helix agents is very much needed to responsibly guide the growing use of AI applications. Municipalities and decision makers need ELSA guidelines to best cater to diverse citizen needs and entrepreneurs need an investment framework proving guidelines on what kind of AI applications are worthwhile investing in. As mentioned about, we also added the environmental element to our helix. Our AI-MAPS consortium is capitalising on the LDE convergence alliance 'AI, Data & Digitalisation' between Erasmus University Rotterdam (EUR), Technical University Delft (TUD), and Leiden University (LeidenU). Mid-level researchers of LU/TUD/EUR are contributing relevant interdisciplinary expertise on the ethical, legal, and/or social aspects of AIs and Public Safety as well as expertise in the Philosophy of Technology, Science & Technology Studies, and Media- & Cultural studies. The networks of our multi-level consortium cooperation partners and advisory board members enable dissemination and societal impact across the quintuple helix and on local, regional, national, and supranational levels.



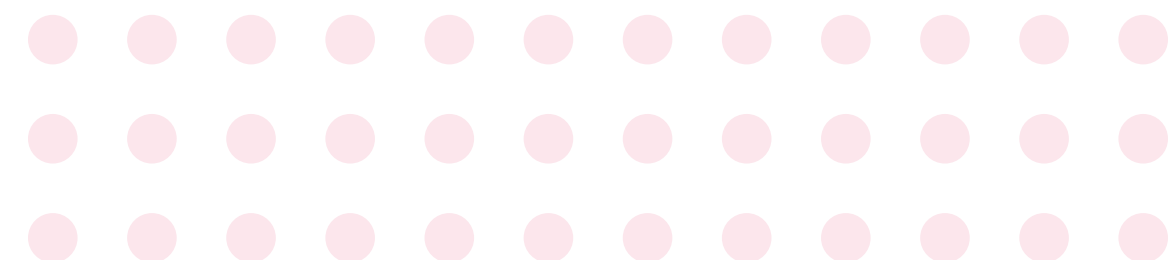


1.6 Communication and knowledge sharing



Our output is oriented towards long-term, sustainable impact. Scientific publications will breed more transdisciplinary research, applying the ELSA logic. Erasmus University has with Erasmus Centre for Data Analytics, member of the Netherlands AI Coalition and the Erasmus Initiative ‘Societal Impact of AI’ created an environment where AI-MAPS will be housed and be able to inspire work for the future. The Erasmus Data Collaboratory was also recently opened. The ELSA Lab will also be able to tap into the ecosystem of the Convergence which is a living lab and collaborates with a large number of public and private partners in South Holland and beyond on research and education. The connection to this current energetic ecosystem will also establish pathways for preserving results of AI-MAPS for a wider dissemination among the upcoming generations of professionals in their full variety. We also keep a lively blog with updates on our research and collaboration on our website.

[GO TO EUR.NL/AIMAPS](https://eur.nl/aimaps)



26 organisations work together in the field of public safety and AI

1.7 Solution upscaling and transfer to society



The AI-MAPS consortium has a loyal participation within the Network Project, in which they organise activities with their own contribution. Two two-day symposia will be hosted at the Erasmus Data Collaboratory, where all other ELSA Lab project members will convene. One day devoted to sharing results, insights, best practices, the other day devoted to connecting and growing the AI ecosystem. The focus of this day is to expand the

quintuple helix networks. Traditional interdisciplinary knowledge valorisation and dissemination (scientific output) is coupled to impact-oriented transdisciplinary valorisation and dissemination by the applied scientific expertise of our consortium partners TNO, The Hague School of Applied Sciences, and the Willem de Kooning Academy in the form of workshops, toolboxes, user manuals, legal frameworks, and educational programmes.

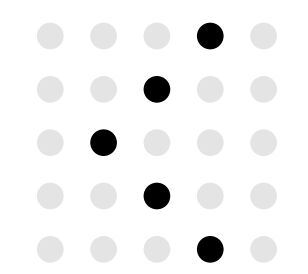
Gabriele Jacobs

Gabriele Jacobs is Professor of Organisational Behaviour and Culture at the Erasmus University Rotterdam. Her research interests include: Organizational change and leadership, culture, justice and identity, multi-stakeholder management, civic engagement and co-creation. She focusses in her research mainly on the context of public safety, where she coordinated and conducted several EU-projects in the field of safety and security. Next to this she is involved in national research projects.

The AI-MAPS consortium has a loyal participation within the Network Project, in which they organise activities with their own contribution.

‘To invite a lively discussion among all our stakeholders, we started a blog’

Gabriele Jacobs



[VISIT OUR WEBSITE](#)



Contact
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[INTERVIEW WITH GABRIELE JACOBS](#)

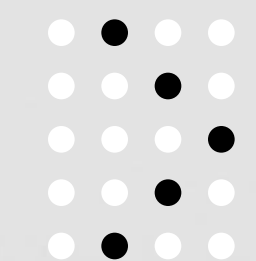


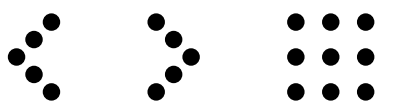
The Science of ELSA

While the relation between society and technology has been a longstanding object of academic research and public debate, the notion of ELSA is relatively young and can be accredited to the researchers of the human genome project of the 1990's, who felt a need to include societal aspects and implications into their biological research project. These needs can be characterized by a strong interdisciplinary approach, a focus on future developments, and public agenda building around emerging technologies, thus stimulating participatory (inter)action among different stakeholders.

While this description seems relatively straightforward, a closer look at the meaning of ELSA reveals, however, that there are often rather different, sometimes even conflicting, forms of society-technology interactions that must be considered. This multi-faceted ELSA nature became even more pronounced from the many other emerging technology research projects that were carried out since the start of first studies in the human genome project. Examples include defence technology, bio- and neuro technology, nanotechnology, and robotics. From this, ELSA research has matured as a genuine scientific discipline.

The structural inclusion of ELSA in the design and production of emerging technologies, is thought to be a considerable improvement in comparison to past practices in which technology was said to be merely driven by engineers. While this is, evidently, part of the legitimating discourse of ELSA and a somewhat stereotypical representation of the past, ELSA knowledge deserves a much wider recognition than it received in earlier days because of the growing societal need to be involved in technical developments and deployment that impact our daily lives, wellbeing, and prosperity.





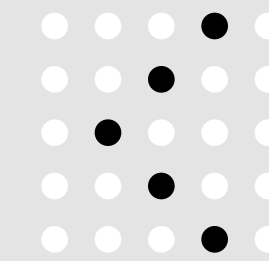
Vincent Blok is a professor in Ethics at the Wageningen University and Research and one of the lead scientists in the ELSA Labs community. We interviewed him to explain the science of ELSA research and the corresponding challenges.



What are the long term scientific questions studied in ELSA research?

‘Traditionally, the strength of ELSA research is the focus on ELSA issues that concrete cases of AI raise, while new developments in AI also raise broader societal concerns regarding surveillance by Big Tech companies, the reduction of life to computational data, the hidden environmental impact of AI etc. In future ELSA research, also these broader concerns should be taken into account. A first domain of future research is the tension between ELSA requirements

Vincent Blok
Professor philosophy of technology and responsible innovation at Wageningen University and scientific director at 4TU centre for ethics of technology.



of AI and economic considerations. Traditional ELSA research focused mainly on public funded research like the Human Genome Project, while contemporary AI research focusses much more on innovations in AI in which also private sector actors are involved. This provides a new dynamic context for ELSA research, in which for instance ELSA requirements compete with economic requirements. A second domain of future research concerns the integration of anthropological questions in AI research. Current ELSA research focusses on human-centred AI but assumes a rather naïve understanding of the human-technology relation, and requires anthropological research on the human condition that can inform a proper concept of human-centred AI. A third domain of future research concerns the tensions between the claimed contribution of AI to sustainable development, and the environmental impact of the data storage, processing and computations that the development of AI applications require. Future ELSA research has to integrate environmental concerns, for instance by researching under which conditions the CO₂ emissions accompanying AI development and application is legitimate, and in which cases the use of Human intelligence is more appropriate.’

What are the challenges for the near future?

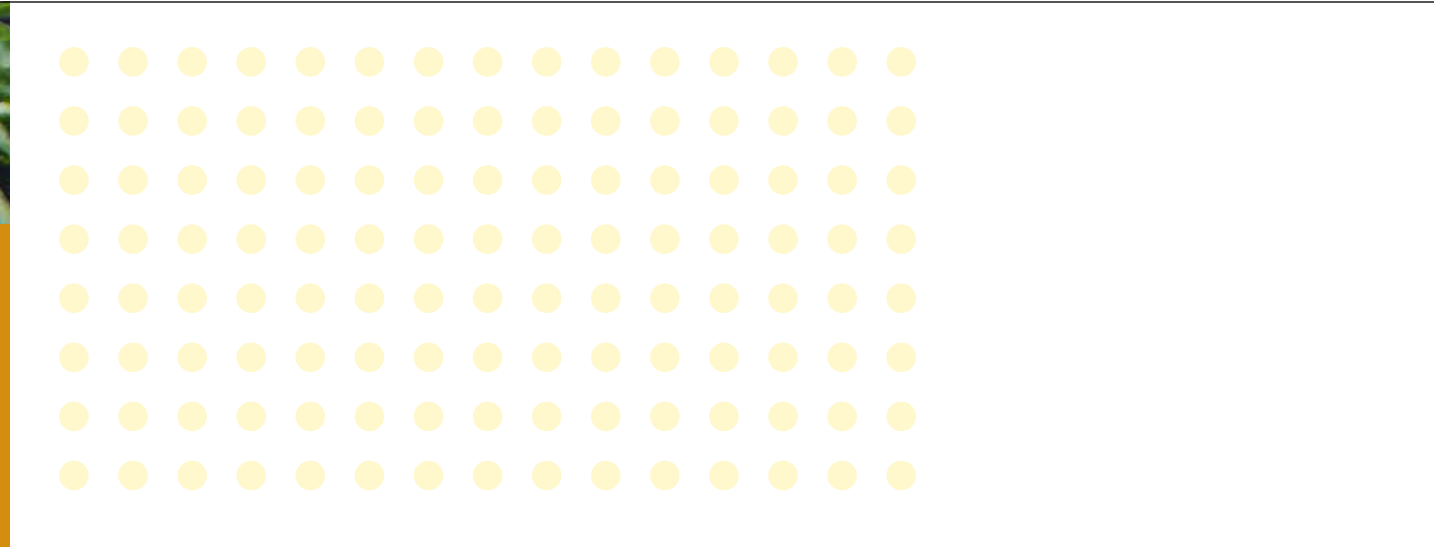
‘An important challenge is the development of an empirically informed governance framework to integrate ELSA research and technical AI research. Currently, a lot of the research is dedicated to identifying and addressing ELSA in cases of AI, but what are the mechanisms that explain why engineers are motivated to engage in ELSA research, what are appropriate interventions to adopt ELSA in AI (re)design etc. There is already a strong research tradition in ethics of technology and responsible innovation that provides many leads, but the challenge is to develop a systematic governance framework that is evidence based, and also takes the plurality of the domains of application into account.’

How can the ELSA Labs approach contribute to these challenges?

‘The ELSA Labs approach is of utmost importance in the development of such a governance framework, as the ELSA lab projects all research elements of such a governance framework while the network project enables the projects to learn from each other and to develop such a governance framework together for the community.’



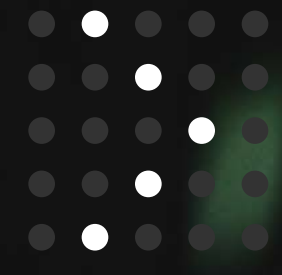
12 RESPONSIBLE CONSUMPTION AND PRODUCTION



There is still a long way to go if we are to achieve a climate-neutral and circular food system in Europe. But that transition is very much needed and artificial intelligence can play a major role in it.

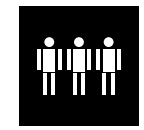
2

AI 4 Sustainable Food Systems





2.1 Societal challenge



The goal of this lab is in line with SDG 12, to ensure sustainable production and consumption patterns. Our vision is that AI can contribute to the transition to sustainable food systems if technological developments and societal concerns are integrated. The objective of the project is to develop, test and apply a methodology for (re)designing AI for Sustainable Food Systems (SFS) by: 1) developing insights in Ethical, Legal and Social Challenges and opportunities related to AI applications for SFS; 2) Designing ELSA lab methodology (including tools, services, guidelines) for responsible AI for SFS; 3) Conducting multiple case studies of responsible AI.

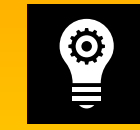
2.2 Insight Collection and Validation



We collect and validate insights via the ELSA methodology, the social lab methodology, Quadruple Helix Value Creation methodology and the Product Impact Tool. We will also apply the principles of responsible social labs with quadruple helix stakeholders in the ELSA pop-up lab configuration and constitute the test environment to test and improve the integration of technological and ELSA requirements in responsible and human-centred AI (re)design. We will also use beta, gamma, and alpha research.

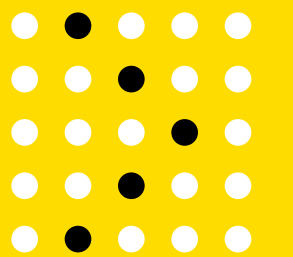


2.3 Solution design methodologies

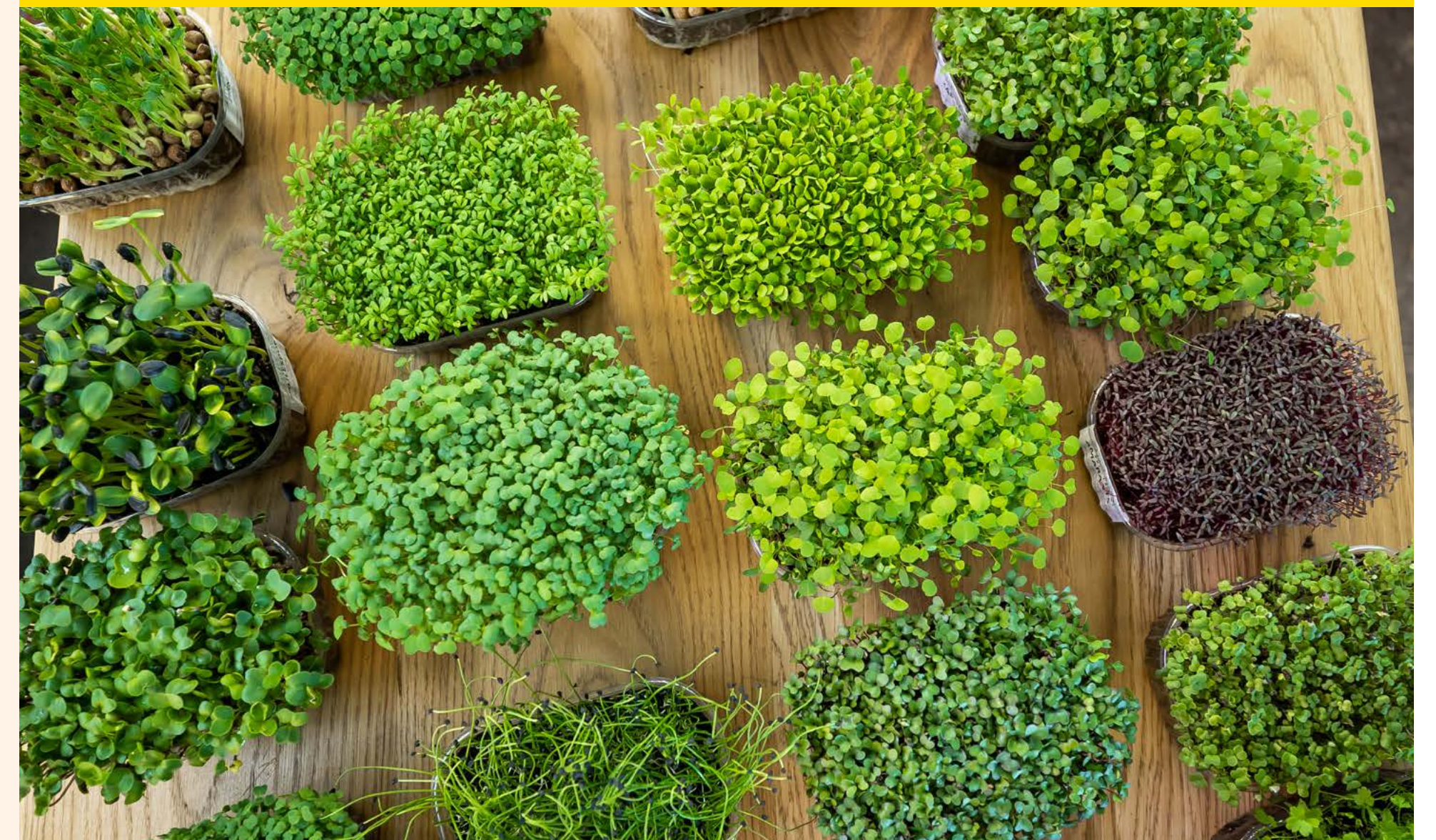


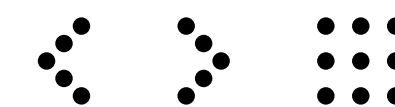
We will use the ELSA methodology, Responsible Research and Innovation and the Social lab methodology. We also strive for incremental research process of integrating ELSA aspects in technological (re)design. The Quadruple Helix stakeholders representing the private sector (Noldus, Vicarvision etc.), policy (Ministry of Agriculture, Province of Gelderland etc.), Research (Wageningen University & Research, Aeres Hogeschool) and civil society (food valley etc.) are all involved in the solution design as well.

VISIT OUR WEBSITE

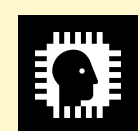


'The goal of this lab is in line with SDG 12, to ensure sustainable production and consumption patterns





2.4 Human-centred AI approach



Beta, gamma, and alfa research builds on various data sources, ranging from animals and farmers to consumers and stakeholders. Decision support systems, sensors, facial recognition, behavioural monitoring systems. Data management plan and ethics assessment on a case-to-case basis. We extend the focus on the human-technology interaction in concrete applications to the impact of AI on society as a whole. We also believe a philosophical anthropological perspective is needed to substantiate notions like human-centred AI in a legitimate way.

‘Beta, gamma, and alfa research builds on various data sources, ranging from animals and farmers to consumers and stakeholders’

2.5 Quadruple helix collaboration



Quadruple helix stakeholders representing the private sector (Noldus, Vicarvision etc.), policy (Ministry of Agriculture, Province of Gelderland etc.), Research (Wageningen University & Research, Aeres Hogeschool) and civil society (food valley etc.) represent the quadruple helix collaboration.

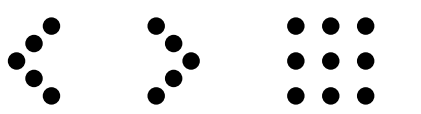
At the project level, we divide QH partners in ‘collaborators’, i.e. partners in the stakeholder board who steer the project in the right direction, ‘co-funders’, i.e. partners in the private sector who develop an AI application which is assessed, monitored and improved by the ELSA lab. For each case, a separate group of QH partners will be invited.



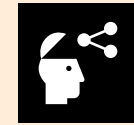
Consumers spent €9.5 billion on sustainable food in 2021.

Source



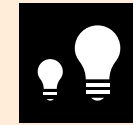


2.6 Communication and knowledge sharing



We will communicate and share knowledge created via scientific publications, case studies, policy advise, a hub with services, websites and social media. We will also organize three monthly learning community events. In the first two years, these workshops are internal within the project, and later external via the stakeholder board, i.e. an advisory board of the ELSA lab project that helps to steer the project towards the societal impact it aims for.

2.7 Solution upscaling and transfer to society



We only select scalable technologies with potential high impact. We designed an impact pathway plan in which we describe the transition from scientific impact (e.g articles/dissertations) to outcomes (e.g design of an independent AI4SFS Hub) to impact (e.g. adopting ELSA in the development of standards).



Vincent Blok

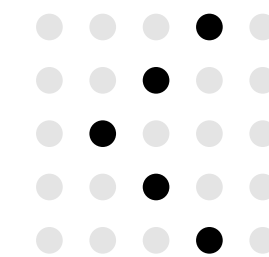
Vincent Blok is a Dutch philosopher working as professor at the Wageningen University. He is the scientific lead of the ELSA Lab AI 4 Sustainable Food Systems, as well as the scientific director of the 4TU Centre for Ethics of Technology, a collaboration of the four Technical Universities in the Netherlands. Throughout his career he has specialised in philosophy of technology, and has published over a hundred articles in disciplinary philosophy journals like Environmental Values, Business Ethics Quarterly, Synthese and Philosophy & Technology, as well as many others.



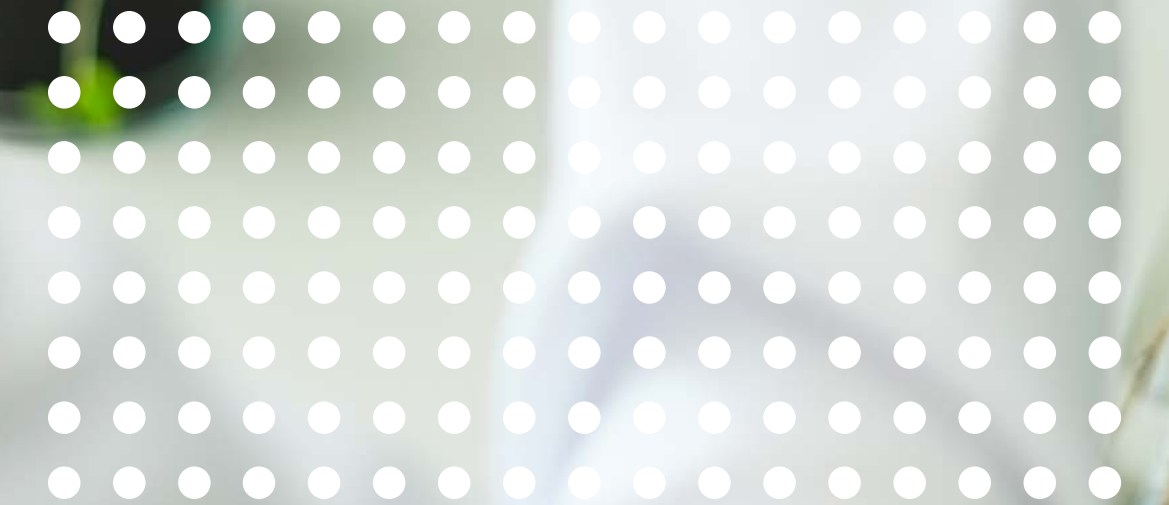
Contact Vincent
vincent.blok@wur.nl



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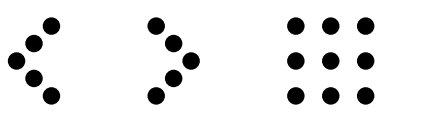
We only select scalable technologies with potential high impact



14%

Supermarkets did show an increase in purchases of sustainable food of 14% in 2021.

Source



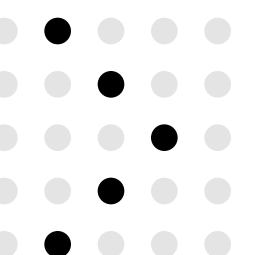
Why The Netherlands?

Artificial Intelligence (AI) is a global disruptive technology-driven development that will have a major impact on the way people interact with digital systems. The possibilities of AI technology are almost unlimited, and to provide as a country a significant contribution to the broad spectrum of challenging options, it is necessary to choose a clear strategic profile. Following Europe, the Netherlands has opted for a human-centric AI approach; a profile in which people and society take a central position. This approach, which is reflected by the recently endorsed EU AI Act, differs from that of other global players such as China and the US who choose a more centralist and capitalist profile, respectively.

'How do we guide and confine the almost limitless power of smart algorithms and data analytics in such a way that they comply with our fundamental human values?'

The central issue that is addressed by the EU AI act relates to the question how society wants to respond to the digital transformation driven by AI technology and the accompanying socio-economic changes? How can we understand and learn what is coming our way and what is possible? What type of society do we want to be part of and from what human standards and values do we approach AI developments? How do we guide and confine the almost limitless power

of smart algorithms and data analytics in such a way that they comply with our fundamental human values? How do we safeguard equal treatment, human dignity, and autonomy? What new power relationships are emerging between companies and consumers, companies, and governments, and between residents and governments, and how do we ensure the right balance?





The Netherlands has a long-lasting tradition as a country that values individual rights of its citizens supporting not only their freedom but contributing at the same time to a high standard of democracy, wellbeing, and prosperity. At the same time, we have a world-wide reputation in scientific research and a long-lasting tradition in public-private partnerships when it comes to high-impact, technology-driven ecosystems. Consequently, The Netherlands is well-equipped to assume a leading role in the development of human-centric AI innovation.

Over the past four years, the the Netherlands AI Coalition (NL AIC), has committed itself to the responsible use of AI, supporting socio-economic benefits for everyone. Collaborative networks have been set-up by stakeholders, including private companies, governmental organizations, knowledge institutions, social organizations, and citizens to enhance collaboration on the development of human-oriented AI that can help us tackle social problems. Naturally, the instrument of the ELSA Labs fits perfectly into this quadruple-helix networked innovation approach.

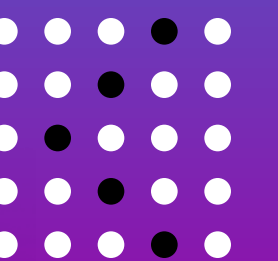
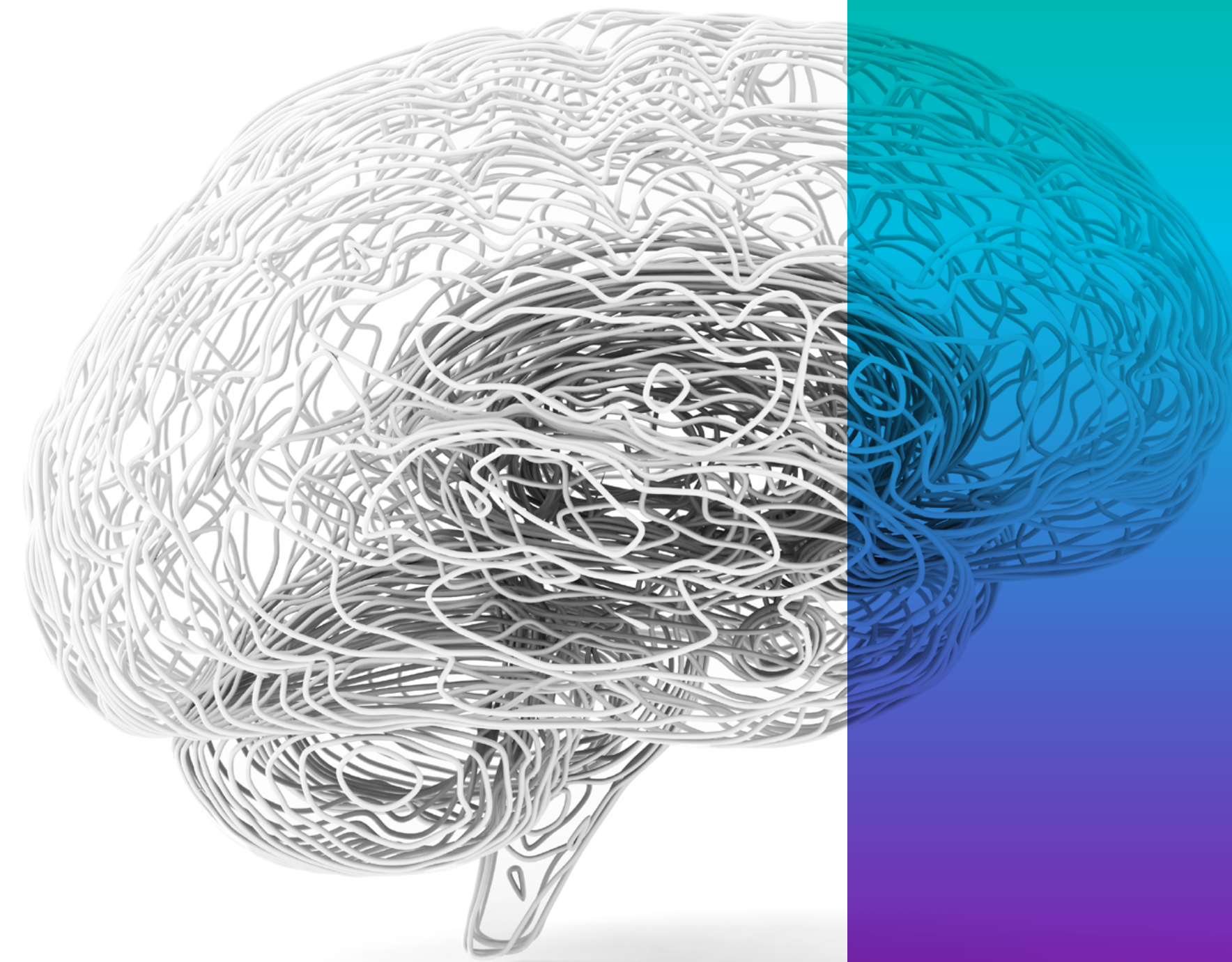
A joint approach in which citizens actively participate may sound logical, but in current AI practice this rarely happens. Citizens are usually only involved at the very

end of a development process, where there is often no more room for major adjustments. To overcome this issue, the Dutch ELSA Labs program puts a special emphasis on the participation of citizens in the study of the ethical, legal, and societal aspects.

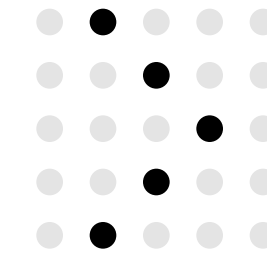
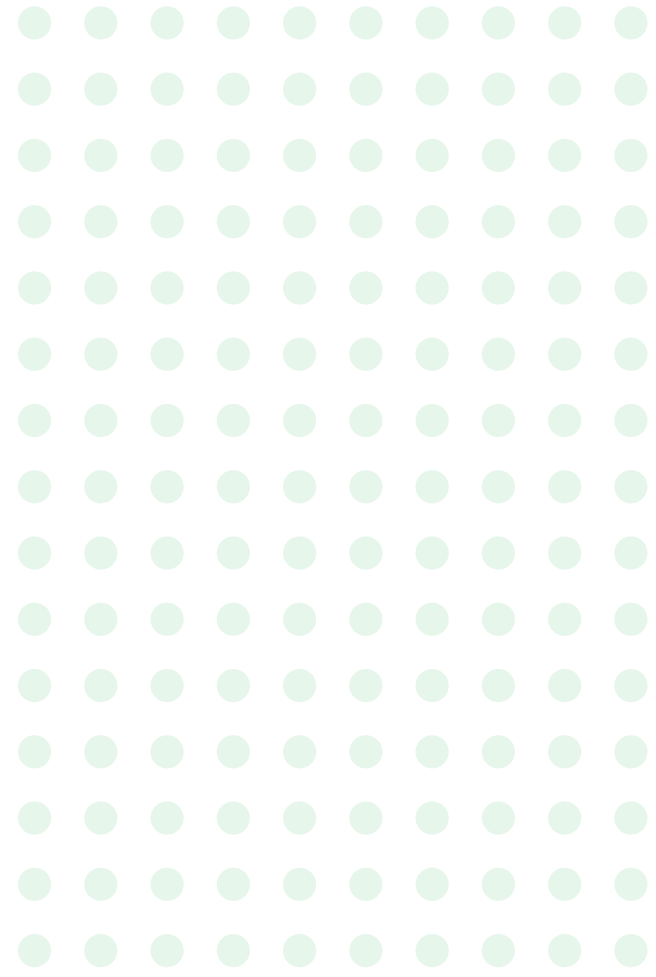
As of the start in 2019, the ELSA Labs program received a lot of positive reactions and enthusiasm, leading to commitment and support to put the concept into practice. The allocation of the available financial resources for the ELSA Labs is done in a transparent and inclusive manner, and is supervised and executed by NWO, the Dutch organization for scientific research funding. The selection of the submitted proposals for ELSA Labs is based on a few criteria, including the position of the involved quadruple helix consortium, the focus on socially relevant issues and their solution, and the route to impact. Evidently, it should all apply human-centred AI techniques and methods.

So far, the Dutch ELSA Labs approach has gained a lot of traction which allows us to conclude that the Netherlands is one of the international front runners with this approach.

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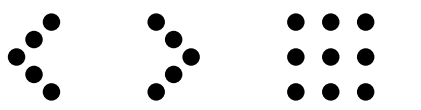


3 AI, Media & Democracy



Machine learning and data analysis can play a role in the entire media production chain. AI systems throughout the chain need to be both transparent and explainable, not merely to comply with regulations but also to boost user confidence.





3.1 Societal challenge



A stable democracy relies on a sustainable (news) media ecosystem.

AI creates new opportunities for the media, from smart tools for researching and fact-checking to the (semi-) automated production of news. Increasing polarisation and circulation of disinformation demonstrate a need for value-driven AI tools for content detection and moderation. SDG 16.10, to ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements, is the main UN goal this Lab addresses and works toward.

LAB OPENING

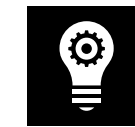


3.2 Insight Collection and Validation



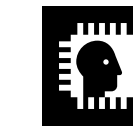
Insights are collected through desk research, literature reviews, legal interpretative methods, workshops, expert interviews surveys, citizen-panels, sandboxing, and more. Theoretical groundwork is instrumental in defining, respectively realising ethical, social and legal requirements for our developed and tested solutions. Short-cycled cases are interconnected through more fundamental multi-year research lines which aim to extract general findings and principles from the individual cases as well as learnings of the innovation process of trustworthy AI in the media and the impact of AI solutions. These fundamental learnings may in turn influence the practical innovations in the cases. This way, cross-pollination and synergies between academic research and practice-based research is achieved.

3.3 Solution design methodologies



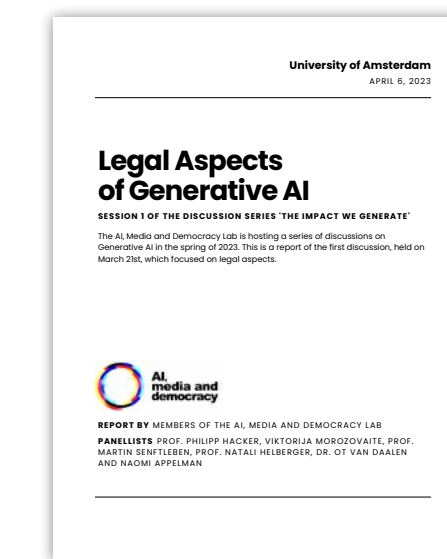
Design methods are combined with the software development methodology of sandboxing, to collaboratively identify and select the challenges in the media ecosystem and co-create AI solutions. For each iteration, we first organise design sessions to identify which challenge(s) to work on. We then use design sessions to envision, explore and understand alternative solutions and their potential impact, among other scenario-analyses, future wheel, speculative design and 'provocatypes' will be used. To ensure that solutions are human-centred and inclusive, we build upon participatory design and value-sensitive design. Our goal is to work towards prototypes for AI solutions, which can potentially be built further in next iterations.

3.4 Human-centred AI approach



In our lab, we (co)-create new ethical and legal frameworks for responsible uses of AI that align with fundamental rights, public values and the European regulatory framework. Our findings on questions such as how to translate normative concepts such as transparency, agency or diversity into algorithmic and organisational design and on how to use new participatory methods to this end contribute to making AI innovation more human-centred.

Discussion Series on Generative AI



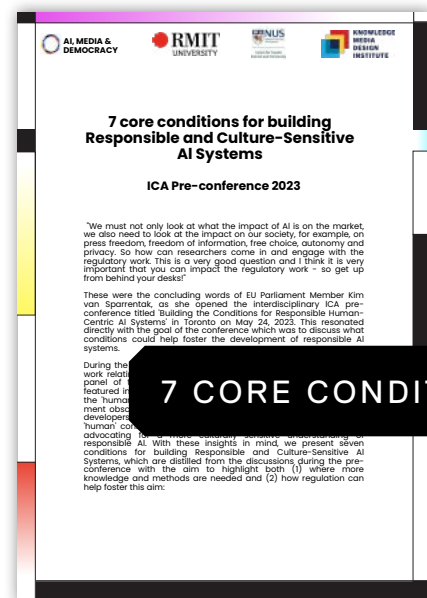
PART 1: REPORT



PART 2: VIDEO



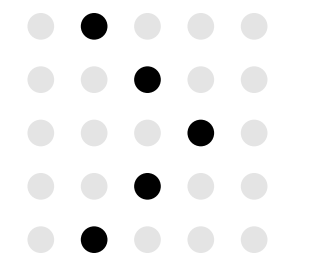
PART 3: VIDEO

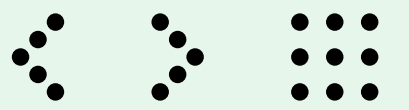


7 CORE CONDITIONS FOR RESPONSIBLE AI SYSTEMS

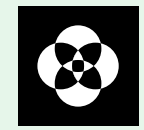


'Developing theoretically sound conceptual frameworks and methodologies that underpin the way factually based, independent media operate, plus broader awareness among media professionals of the capabilities of AI and the objections to it, and how such technology can be used to reinforce the democratic function of the media'



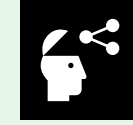


3.5 Quadruple helix collaboration



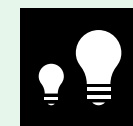
Our lab follows an action research approach, where new tools, protocols, guidelines, and applications are developed and tested in a lab environment with the actual users and stakeholders of these tools and applications. The university and applied sciences, media industry partners, public regulators and municipality and ministries, civil society and citizens are all part of the collaboration.

3.6 Communication and knowledge sharing



Our method of communicating and knowledge sharing follows a cycle of understanding, designing, prototyping, evaluation in practice, reflection, and dissemination. We send out internal and external newsletters, update our website, publish dedicated blogs, and more. This in addition to academic publications. To facilitate the dialogue we hold seminars, during which we ask our stakeholders for feedback.

3.7 Solution upscaling and transfer to society



By joining forces in the Network Project, the first 5 NWO-funded ELSA Labs work on common insights that are scalable. Reaching a critical mass in uptake of human-centred solutions will ensure a change in the ratio of uptake of these solutions versus large commercial solutions. We also aim to provide impetus to policymakers, to draw up guidelines and steer media companies to use human-centred and value-driven AI solutions. We assess the impact of the co-developed solutions as they are introduced in the media companies that are part of our consortium.



Natali Helberger

Natali Helberger is Distinguished University Professor of Law and Digital Technology with a special focus on AI at the University of Amsterdam and a member of the board of directors of the Institute for Information Law, one of the leading information law institutes worldwide. She is the co-director of ALGOSOC: Public Values in the Algorithmic Society (a 10-year national research program, 2022-2032 and the AI, Media & Democracy Lab. Helberger is actively shaping AI research in the Netherlands and has been invited to co-author the Dutch AI research agenda.




Claes H. de Vreese

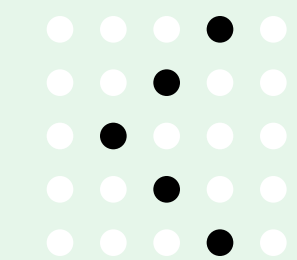
Claes H. de Vreese is University Professor of Artificial Intelligence and Society (2021-), with a special focus on media and democracy at the University of Amsterdam. He holds the Chair in political communication (2005-) at the Amsterdam School of Communication Research ASCoR. He is the co-director of ALGOSOC: Public Values in the Algorithmic Society (a 10-year national research program, 2022-2032) and the AI, Media & Democracy Lab. He is also the founding inaugural scientific director of the Digital Democracy Center at SDU.

‘Our method of communicating and knowledge sharing follows a cycle of understanding, designing, prototyping, evaluation in practice, reflection, and dissemination’

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 **Contact**
s.e.spaargaren@uva.nl





Putting ELSA into practice

The acronym ELSA refers to the scientific study of the Ethical, Legal & Societal Aspects that play a role when society is confronted with technological innovations. The term dates back to 1988 and was used in the context of research into the social impact of developments in genomics and nanotechnology. The four main aspects of ELSA studies and activities can be formulated as follows¹.

- 1 Participate**
Being involved in large-scale research into technological innovations.
- 2 Anticipate**
Early spotting of social consequences and potential controversies.
- 3 Interact**
Encouraging active involvement of residents.
- 4 Monitor interdisciplinarity**
Bridging differences between disciplines.

These four aspects are of equal importance and must be actively endorsed by all parties participating in an ELSA Lab. ELSA Labs are based on participatory innovation environments in which AI and data applications are mapped and validated in a way that ensures that relevant groups of residents accept and appreciate the applications experienced. After validation in an ELSA Lab, it is important that the insights and solutions can be scaled up to socially relevant proportions in a broad context. Furthermore, ELSA Labs provide space for cyclical design and evaluation of technology concepts by using design-thinking methods to include ethical, legal, social and governance aspects in the innovation process.

To embed the above aspects in a systematic approach, ELSA Labs follow the multi-helix reference model² describing interactions between multiple stakeholders, with a combination of cooperation between universities, industry, governments and society, in the context of a knowledge economy. The most well-known model is the Triple Helix model³, which has been in use for more than 25 years to shape public-private partnership constructions. The Quadruple Helix model⁴ extends the triple helix model with the society helix by introducing the concept of ‘democracy and participation’. For example, this fourth helix includes sociological and behavioral elements, including lifestyle, culture, creative industries, media, and social interaction and social values.

These elements must ensure that public values and needs are included from the start of the development of new AI applications and that these applications have sufficient social value and support. In this context we speak of value-based design.

- ¹ Zwart H., Nelis A. (2009), *What is ELSA genomics? Science and Society Series on convergence research, EMBO Reports 10 (6), 1-5.*
- ² Peris-Ortiz, Marta; Ferreira, João; Farinha, Luís; Fernandes, Nuno (2016), *Introduction to Multiple Helix Ecosystems for Sustainable Competitiveness, Springer Berlin, pp. 1–14.*
- ³ Galvao, Anderson; Mascarenhas, Carla; Marques, Carla; Ferreira, João; Ratten, Vanessa (2019), *Triple helix and its evolution: a systematic literature review, Journal of Science and Technology Policy Management 10 (3): 812–833.*
- ⁴ Carayannis, Elias G.; Campbell, David F.J. (2009), *‘Mode 3’ and ‘Quadruple Helix’: toward a 21st century fractal innovation ecosystem’, International Journal of Technology Management 46 (3/4): 201.*

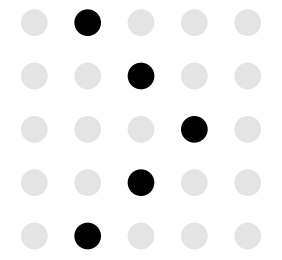


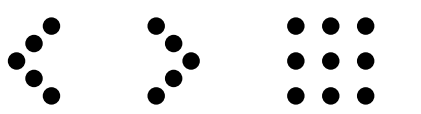


4 Defence

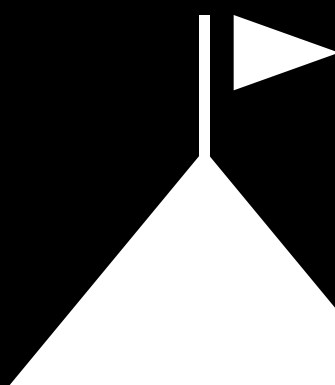
16 PEACE, JUSTICE
AND STRONG
INSTITUTIONS

When improving the efficiency, effectiveness and security of the Dutch armed forces, AI technology is needed for dealing with new challenges in both peacekeeping and warfare.

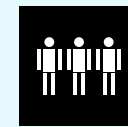




‘The Defence ELSA Lab will become an independent advisory agency that makes recommendations about ELSA aspects when using military systems with AI-based technology. As ELSA is very context-dependent and the technology is constantly developing, this will not give standardised answers. Instead, there should be regulatory authorities that give tailored advice’



4.1 Societal challenge



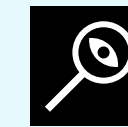
The rise of artificial intelligence (AI) within the defence domain brings challenges like misleading or false information, coping with our enemies using AI, and handling the processing of large amounts of data. At the same time, the military application of AI brings with it serious ethical, legal, and societal challenges such as risks concerning meaningful human control, biased decision-making, and decreasing humanity in warfare. Thus, to enable the optimal and responsible adoption of AI in defence, ELSA Lab Defence will develop an ELSA methodology. This methodology will ensure the Ministry of Defence stays strategically competitive and at the forefront of military innovation, while also respecting ethical, legal and social values.



Watch the video



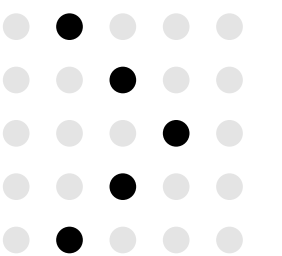
4.2 Insight Collection and Validation

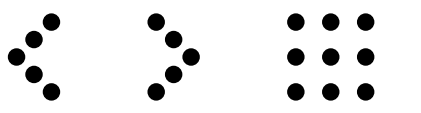


Insights are collected from sources like literature studies, designed workshops, engagement with the public, and monitoring global developments. They are validated by being implemented in realistic case studies, which show how feasible and applicable collected insights are in practice. The insights will be documented through publications in journals and through internal interim

reports. Both fundamental and applied scientific research are used. The research done by this Lab is grounded in deep knowledge of existing design techniques (such as value sensitive design), ethics and legal frameworks, public perception, and socio-cognitive engineering, and extends these methods to be applicable to military AI-based systems.

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4.3 Solution design methodologies



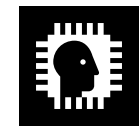
The ELSA Lab Defence project will follow a cyclic process of research, co-design, testing, evaluating, and refining in collaboration with the partners in the consortium:

- [Leiden University](#)
- [Asser Institute](#)
- [TU Delft](#)
- [The Netherlands Defence Academy](#)
- [The Hague High School](#)
- [Tilburg University](#)

to develop the ELSA methodology. The Hague University of Applied Sciences contributes to this methodology with a yearly public opinion survey. In the evaluation phase, the external stakeholders of the consortium (Ministry of Defence, Hague Centre for Strategic Studies, and The Hague Security Delta) come together with TNO to evaluate the developed methodology and advise the ELSA Lab Defence for further improvements.



4.4 Human-centred AI approach



The data generated by the ELSA Lab Defence may originate from public opinion surveys, monitoring global developments, case studies, and workshops. All data is stored in Microsoft's SharePoint Online service with controlled access and MFA. Data will be published and archived in an online repository (Zenodo), in accordance with FAIR Guiding Principles and the GDPR. The ELSA Lab Defence upholds an 'as open as possible, as closed as necessary' policy for confidentiality. These guiding principles are also upheld for any algorithms built under the ELSA Lab Defence, which will revolve around the concepts of explainable AI and human-machine teaming.



Source: First national ELSA Congres, December 2022

4.5 Quadruple helix collaboration

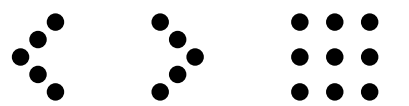


Within the ELSA Lab Defence the academic partners are:

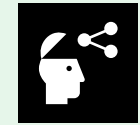
- Delft University of Technology
- Leiden University
- Netherlands Defense Academy
- The Hague University of Applied Sciences
- Asser Institute.

The Dutch Ministry of Defence, the Hague Centre for Strategic Studies, and the Hague Security Delta currently form the advisory board of the lab. They provide domain knowledge and advise. The Hague Security Delta is additionally involved in the dissemination of project insights and provides connections to potential relevant MKB. Finally, TNO is responsible for project management and coordination.

'The ELSA Lab Defence upholds an 'as open as possible, as closed as necessary' policy for confidentiality'



4.6 Communication and knowledge sharing



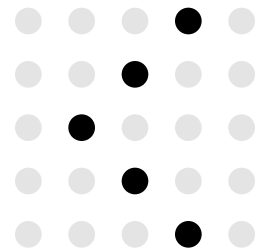
Collected and validated insights are made accessible throughout the project and at a yearly level in a general meeting (together with the advisory board) in which we evaluate the project results. Findings will be disseminated to the public through publications, local events, and (international) conferences and workshops. These methods are also used to engage with the public and receive feedback from them.



4.7 Solution upscaling and transfer to society



Within the network project, findings are generalised and shared nationally with the other ELSA Labs. The lab also aims to exchange best practices at an international level, with partners such as the NATO, GPAI (Global Partnership on Artificial Intelligence) and JAIC (Joint Artificial Intelligence Center). Results are further disseminated through talks, cafés, workshops, and (inter-)national conferences that engage both the general public and other defence experts. The ultimate impact of the ELSA Lab Defence will be evaluated through dialogue with the advisory board. If the solutions are viable, implementable, and effective, and the advisory board accepts them into practice, the lab can be considered a success.



Mark Neerincx

Mark Neerincx is Principal Scientist at TNO and Professor at TU Delft on human-agent/robot teamwork. Collaborating with different disciplines, he is developing and applying a socio-cognitive engineering (SCE) methodology for artificial, virtual or physical, agents (ePartners) that show social, cognitive and affective behaviors to enhance value alignment, performance, resilience, health and/or wellbeing.



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International ambitions

The Netherlands is very consciously opting for a different route than America and China with the ELSA Labs. We do not pursue single economically driven AI objectives or put our efforts on a state-controlled AI approach. The Netherlands has adopted a human-centric approach that is supported by governmental organizations and economically viable, following the working hypothesis: what is good for the Dutch society, is good for the economy. And it is believed that this not only holds for the Netherlands, but for the whole of Europe.

To support the international ambitions, Dutch representatives participate in global expert networks like the Global Partnership on Artificial Intelligence (GPAI), the EU AI Forum, and the UNESCO's World Commission on the Ethics of Science and Technology (COMEST). Since the start, the ELSA Labs concept has received international attention. Exploratory meetings were set up with the Belgian AI Academy FARI in Brussels and with the Canadian Institute for Advanced Studies CIFAR in Montreal to investigate and explore options for international collaboration. Marloes Pomp is in charge of the Dutch international AI chapter on behalf of the ELSA Labs community and was interviewed to shed some light on the international developments.

Which international organizations are in your portfolio to discuss the ELSA Labs approach?

'We speak both with European collaborations, such as the European AI Forum, and bilaterally with countries such as Belgium, France and Canada. In addition, discussions have been held with GPAI (Global Partnership on AI) and we regularly talk about the ELSA approach at international conferences. The beauty of the ELSA approach is that you don't compete with each other on this topic. We really need each other to get these human-centred solutions in daily practice and make them standard.'

What would you say is the unique selling point of the Dutch ELSA Labs proposition?

'Many countries and organizations are currently looking at the EU AI Act. In it, human-centred AI is also a key topic. But the Act must be fleshed out by bottom-up, day-to-day experiences. The ELSA Labs always take a very concrete social problem and use it as a basis to find out in concrete terms what the ethical, legal, social and sometimes economic aspects are. And in this way, you can build concrete human-centred AI solutions from scratch, with a multidisciplinary team.'

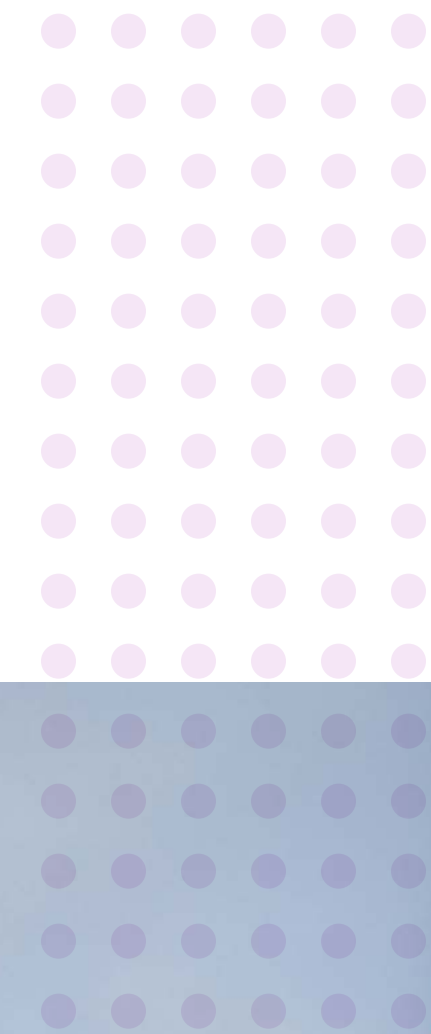
What would you like to achieve at a short notice?

'Peace on a sustainable earth ;-). With regard to the ELSA Labs, we need to start sharing the experiences for each lab internationally. For each lab the international ambitions and desired partners differ. But it would also be nice to have a European network of labs. The challenge is to find the right financial instruments. Hopefully we can make a move in that direction. Because the enthusiasm to cooperate internationally on ELSA is certainly there.'

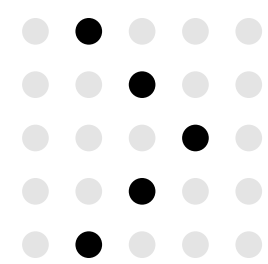
Marloes Pomp
Chairman working group
International Netherlands AI
Coalition and Vice President
of the European AI Forum

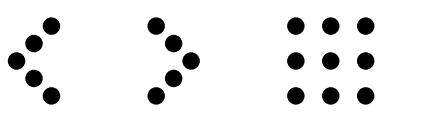


5 Poverty and Debt

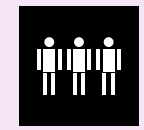


The ELSA Lab for Poverty and Debt aims to use data science and AI to help reduce or prevent poverty and problematic debts among the inhabitants of the Netherlands. Data science and AI are used in an ELSA-by-design approach in which the ethical, social and legal aspects are leading, from the idea through to its implementation.





5.1 Societal challenge



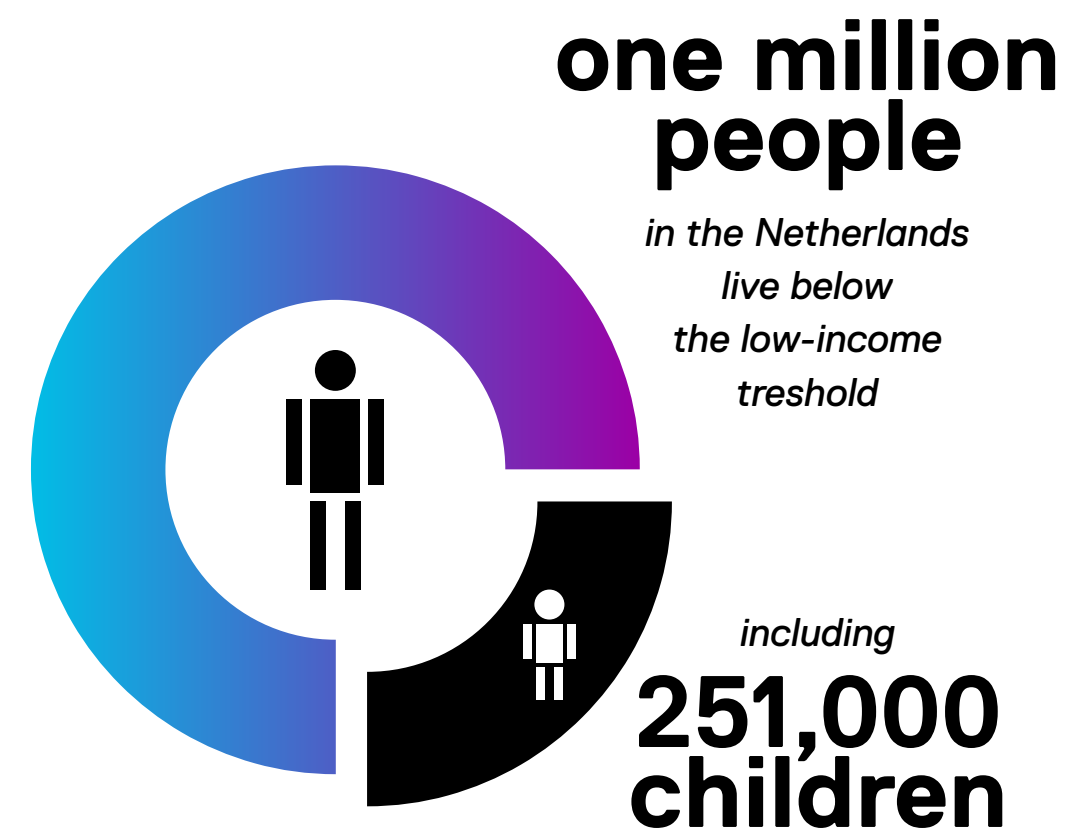
Our vision is a future where artificial intelligence is implemented ethically, legally, and socially responsibly, leveraging its power to reduce and prevent poverty and problematic debts.

The ELSA Lab Poverty and Debt exists to ensure that AI applications relating to remediating poverty and problematic debt are designed and implemented diligently, taking into full account the Ethical, Legal, and Societal Aspects (ELSA), and the risks of bias inherent to this vulnerable group of citizens.

People in poverty and debt can potentially win a lot from AI applications but are also at a disproportionately large risk of becoming the victim of biased AI systems. They often live in disadvantaged areas, interact with many complex organizations characterized by comprehensive procedures and legislation, have below-average support resources available, and often deal with additional problems such as unemployment, lower literacy, loneliness, and mental and physical health issues.



The deck is stacked against them, and AI applications that are developed without sufficient attention to ethical, legal, and societal aspects have the potential to stack this deck further. However, with careful consideration and development, AI has the potential to be a powerful tool for preventing and reducing poverty and problematic debts, by providing access to financial education and services, identifying and addressing systemic inequalities, and improving efficiency and effectiveness in support programs.

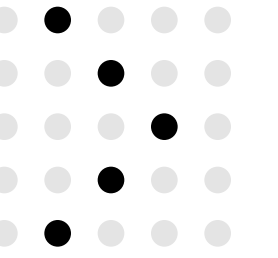


5.2 Insight Collection and Validation



The current work of this ELSA Lab is divided into several projects:

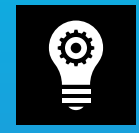
- ELSA by Design establishes theoretical frameworks for the ethically and legally sound development of AI solutions to prevent poverty and debt and translates these into an ELSA Methodology that includes guidelines, principles, tools, and good practices.
- Citizen Engagement aims to address gaps in understanding the experiences of people in poverty, particularly those facing energy poverty. The focus is on practical, research, and policy aspects.
- Data Sharing for Prevention focusses on early signaling of problematic debts and poverty-related issues and testing algorithms to predict problematic debts.
- Explainable Decisions links governmental decisions to laws and regulations and explains this linkage in understandable terms to citizens and businesses. It uses law analysis techniques and large language models to achieve those goals.
- Citizen Empowerment involves setting up an open-source infrastructure for AI to develop interventions that encourage desired behavioral changes among citizens. It uses proven concepts from Just-in-Time Adaptive Interventions (JITAs) in mobile health to stimulate behavior change to prevent poverty and problematic debts.
- Experience Poverty Yourself aims to raise awareness among policymakers by making them experience poverty's situational and emotional aspects using immersive virtual reality experiences.



'The mission of this ELSA Lab is to contribute to preventing and combatting debt or poverty'



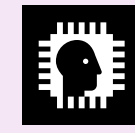
5.3 Solution design methodologies



We apply a broad range of methodologies to design our solutions, including:

- Social Labs, a method to address complex societal challenges. Their objective is to conduct a social experiment involving a diverse team to identify issues faced by people in poverty, recognize barriers hindering their improvement, propose feasible solutions, and develop practical pilot projects.
- Cultural Probe, a method involving collecting data to understand citizens' habits, routines, and values. This method aims to provide insights into their lives.
- Emerging technologies falling under the category of "Privacy Enhanced Technologies" (PET) – such as secure MultiParty Computation (MPC) and Federated Learning (FL) – distributed identity techniques, particularly Self Sovereign Identity (SSI) based on Distributed Identities and Verifiable Credentials (DIDs/VCs).

5.4 Human-centred AI approach



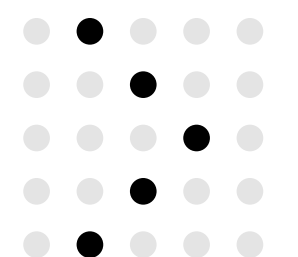
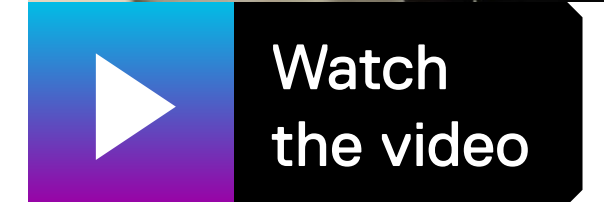
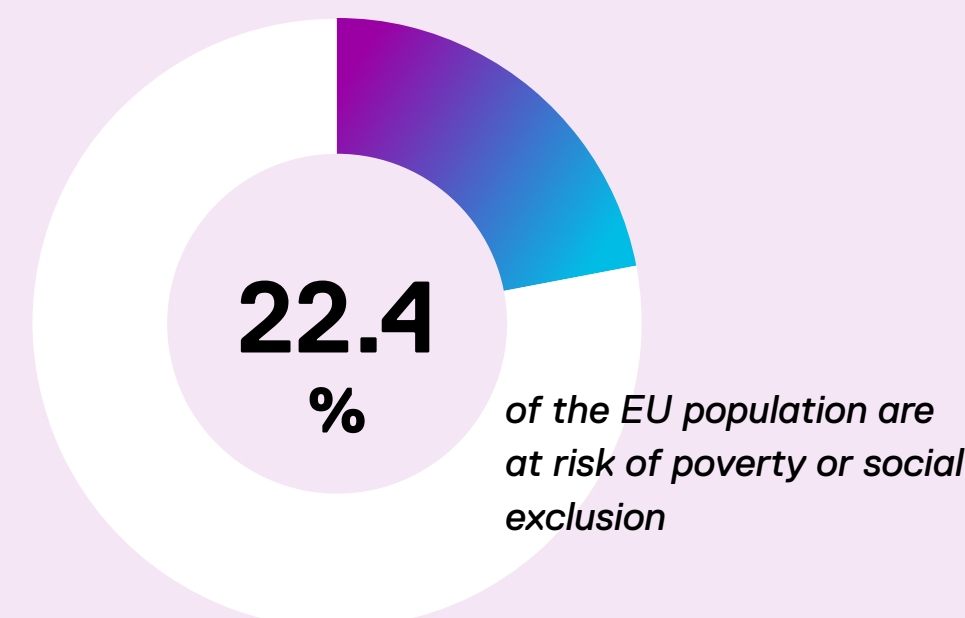
Rather than develop interventions based on assumptions, we conduct research to assess the target group's lived experiences and determine their needs. Benefits of such a citizen-centered approach to AI include:

- Citizens in poverty have firsthand experience navigating the challenges and realities of living in impoverished conditions. Their deep understanding provides unique insights into the complexities of poverty that researchers cannot replicate alone.
- Citizens hold contextual knowledge of their local communities, including social dynamics, cultural nuances, and systemic barriers. This knowledge helps researchers gain a more comprehensive understanding of the specific challenges individuals and communities face.

- Individuals living in poverty oftentimes develop innovative and resourceful coping strategies to navigate their circumstances. Their expertise in adaptive solutions can inform the development of effective interventions and policies.
- Citizen experts understand the unmet needs and gaps in support systems within their communities. By listening to their insights, researchers can identify crucial areas for improvement and drive more targeted initiatives.

Challenges and complexities in citizen-centered AI include:

- Overcoming barriers to accessibility and inclusivity
- Building trust and managing expectations
- Balancing power dynamics and ensuring meaningful participation



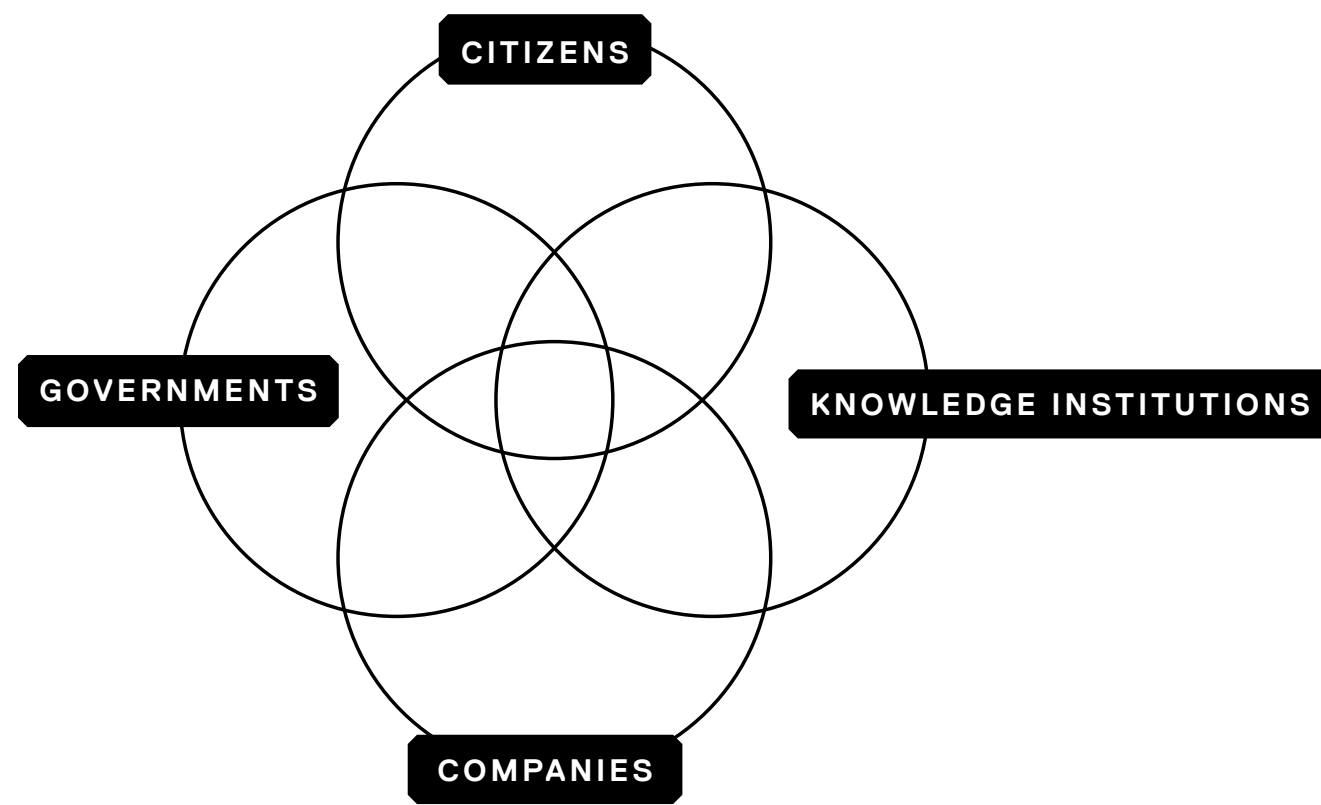
‘Our approach is society pull instead of technology push’



5.5 Quadruple helix collaboration

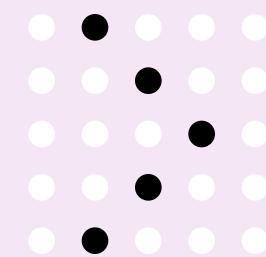
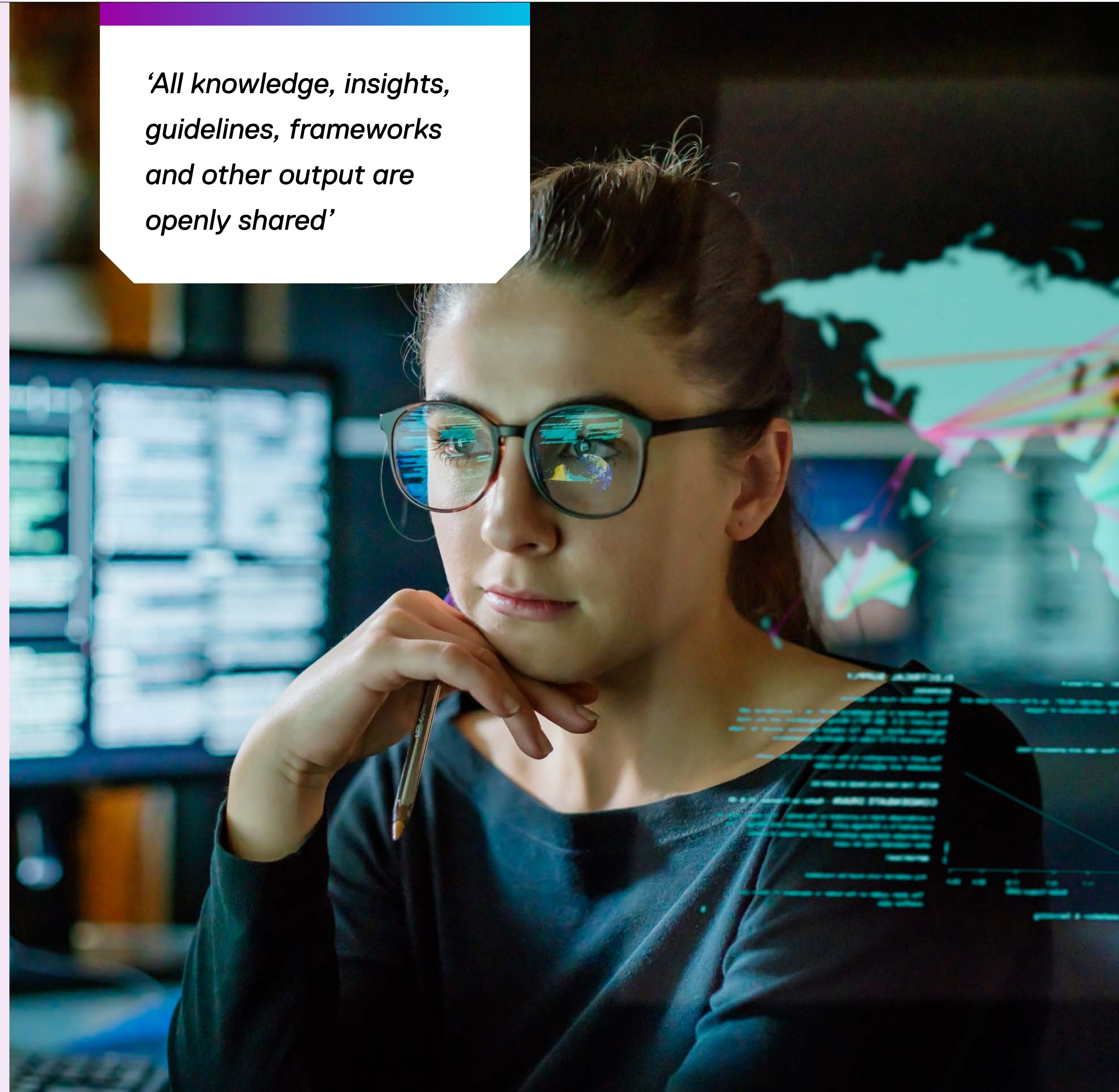


We involve stakeholders from four key sectors: knowledge institutions (e.g. Maastricht University, Open University, and Hogeschool Zuyd), public sector organizations at the national and local level (e.g. Ministry of the Interior and Kingdom Relations (BZK), Ministry of Social Affairs and Employment (SZW), Regio Parkstad, Municipalities of Heerlen, Kerkrade, and Sittard-Geleen), private organizations (e.g. financial services providers) and, last but not least, citizenry (civil society organizations and experts by experience). We involve stakeholders based on their competency and willingness to contribute to specific work packages.



Quadruple helix collaboration

'All knowledge, insights, guidelines, frameworks and other output are openly shared'





5.6 Communication and knowledge sharing

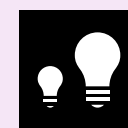


We share our findings and insights with the broader community through publications, conferences, and other public forums, to raise awareness and generate support for our work. We work closely with policymakers, NGOs, and other stakeholders to help shape the regulatory and policy landscape for AI-powered solutions to poverty and debt. Publish findings and insights from the research in academic journals and other publications, and present at conferences and public forums. The following principles apply to our communication and knowledge-sharing strategies:

- ♦ **Transparency and accountability.** We aim to be transparent on every level. All our documentation is shared publicly on our website or linked to from our website. This includes this document as well as more concrete operationalizations. If documents or resources are not made publicly available, we will communicate about the argumentation behind this decision. We are at all times accountable for our products and actions.

- ♦ **Dissemination.** We will actively invest in disseminating information about our projects and products. This includes sharing knowledge gained and lessons learned in our project to relevant audiences in the Quadruple Helix so that they can benefit.
- ♦ **Open Science and Open Source.** We will follow the adage ‘as open as possible, as closed as necessary’. This includes data sharing as well as code and other resources.

5.7 Solution upscaling and transfer to society

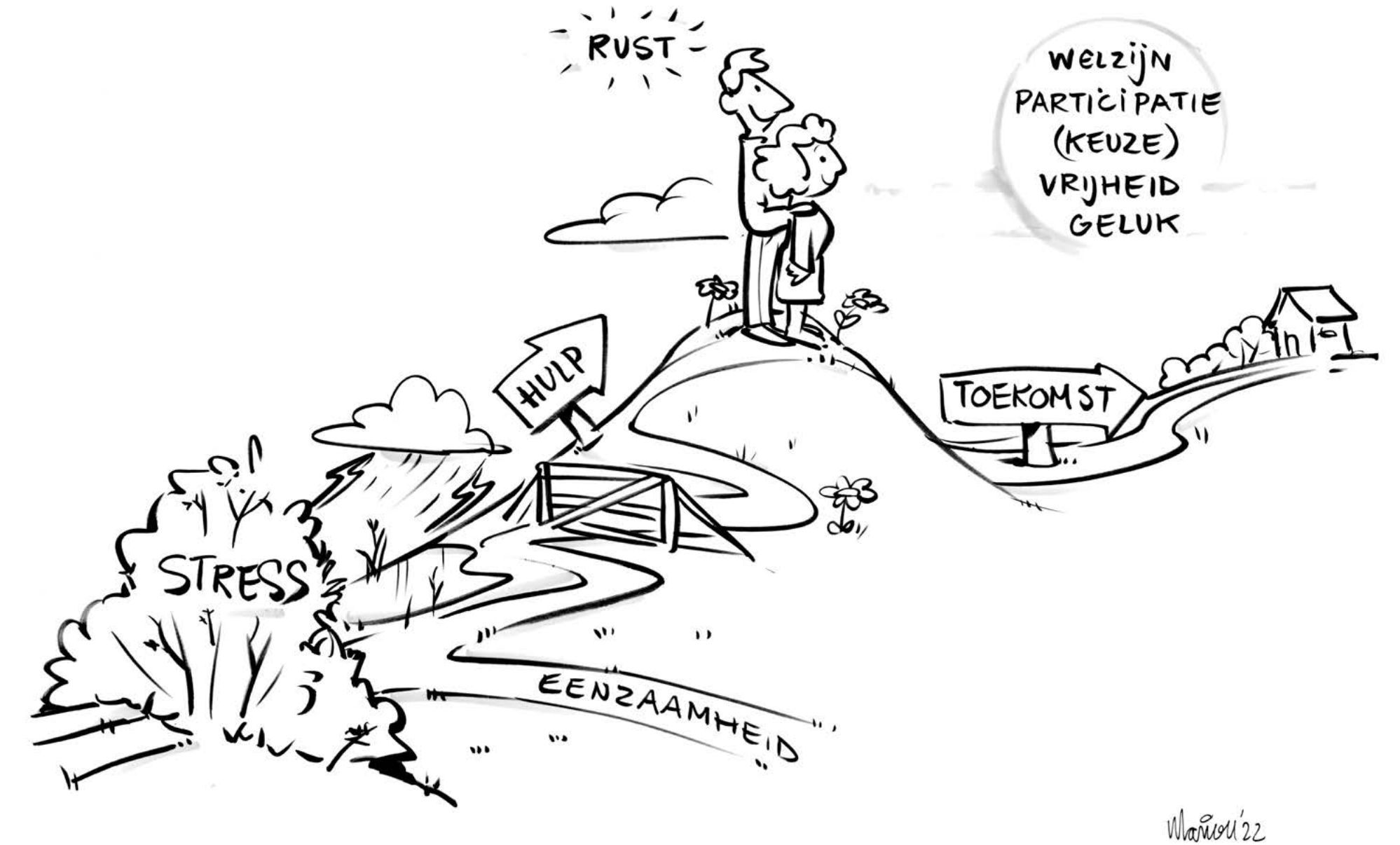


To ensure that our solutions are scalable and transferable to society, we seek broad representation from stakeholders involved in reducing and preventing poverty and problematic debts in defining, developing, and evaluating our solutions.

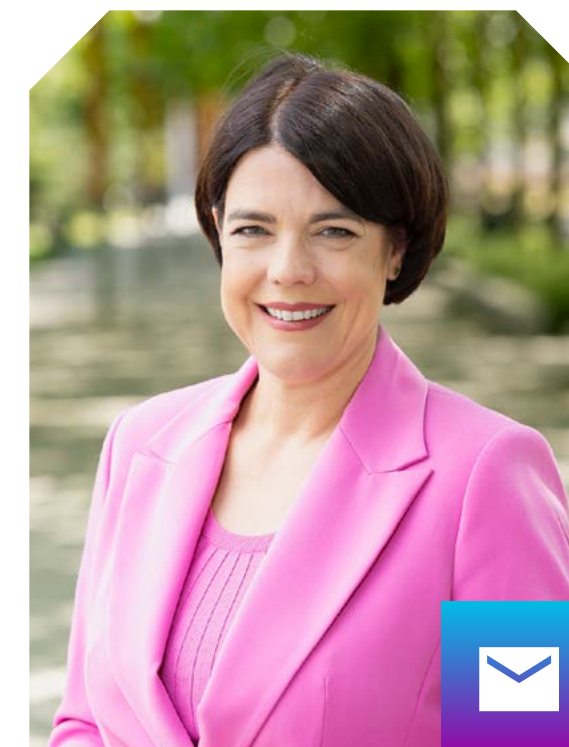
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Contact Lab
olaf.simonse@brightlands.com



Source: First national ELSA Congres, December 2022



Lisa Brügger
Prof. Dr. E.C. Brügger is director of Netspar, professor of financial services at Maastricht University, School of Business and Economics (SBE) and Principal Investigator at BISS, the Brightlands Institute for Smart Society. She is also a member of the Supervisory Board of NIBUD and a member of the pension policy committee at SPMS.



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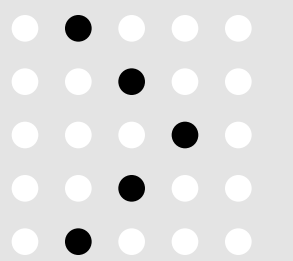


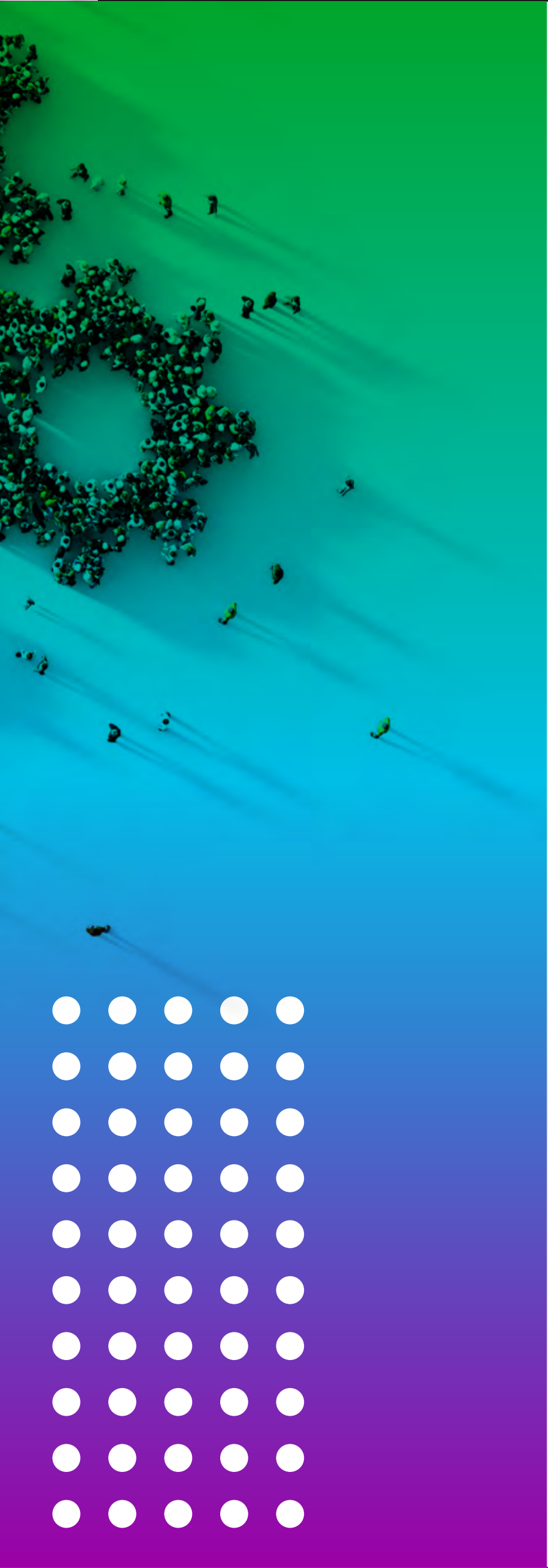
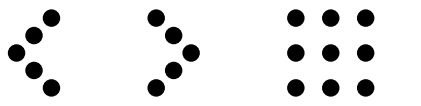


NWO/NWA ELSA Lab Network Project



In 2021 NWO, the Dutch organization for scientific research funding launched the first ELSA Labs call under the umbrella of their NWO/NWA Synergy Program Artificial Intelligence. After careful selection, five ELSA Lab projects received funding to explore their research objective. To safeguard and leverage the collaboration among the five selected ELSA Labs, a so-called Network Project was initiated.





According to the formulation in the original NWO call text, ‘the Network Project will be a living partnership in knowledge production methodologies and follow the social lab approach in which knowledge production and dissemination will be facilitated and the lessons learned from the construction and first developments of the ELSA Labs will be investigated. The lessons learned will be translated into an ELSA Lab blueprint, consisting of a set of guiding principles regarding the following themes: ELSA Lab collaboration, ELSA Lab methods, ELSA Lab impact and ELSA Lab sustainability.’

The Network Project is currently up and running and it has established several mechanisms to meet the original objectives. The project is led by the principal investigators of the five selected ELSA Labs and is supported by an operational manager. Mirjam Plantinga is the acting prime investigator. In addition to the five NWO-funded labs a sixth lab has joined the network consortium. This ELSA Lab on Poverty & Debt is funded directly by the Ministry of Internal Affairs and for that matter has the same status from a financial point of view. The Network Project receives additional public funding to support its activities and is supervised by an external board whose members are representatives of the involved stakeholders.


Present network activities are centered around the organization of an ELSA Academy through several community building sessions. (Inter) national ELSA Labs conferences are organised to discuss and develop the ELSA lab concept by showcasing successful methodologies and outcomes. Furthermore, dissemination sessions are organised to engage with the general public.

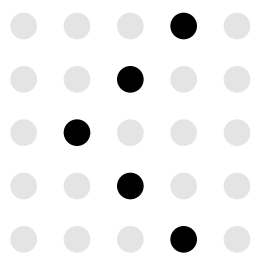
This network project focuses on collective learning across individual ELSA Labs. It identifies common understandings in search of cross-domain objectives and solutions. It develops a vibrant learning community, thus enabling fast and effective dissemination of findings. Finally, it combines the various findings into an ELSA Labs blueprint that enables proper management of the ELSA Labs portfolio in terms of removing duplications and identifying blind spots.

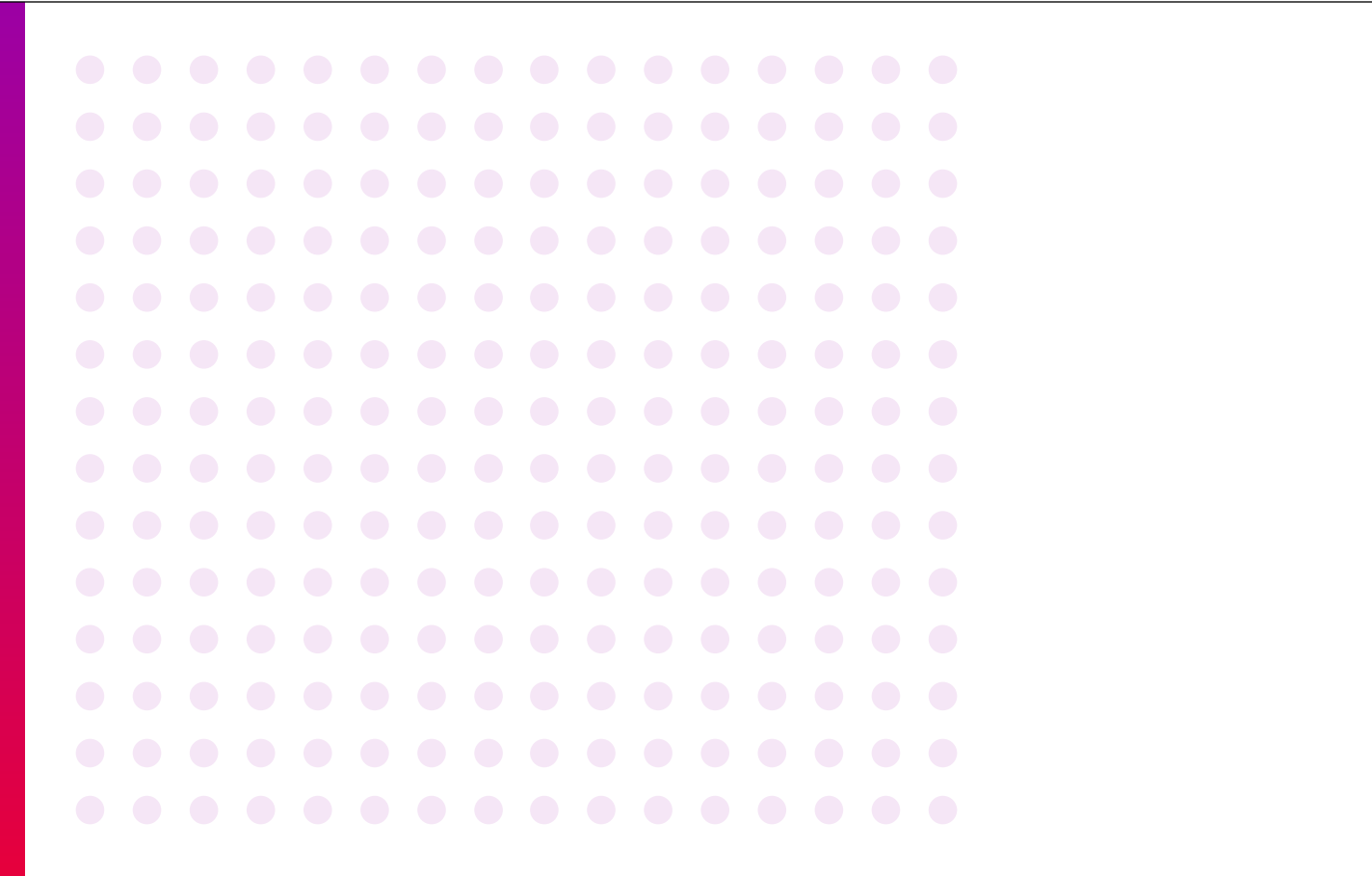
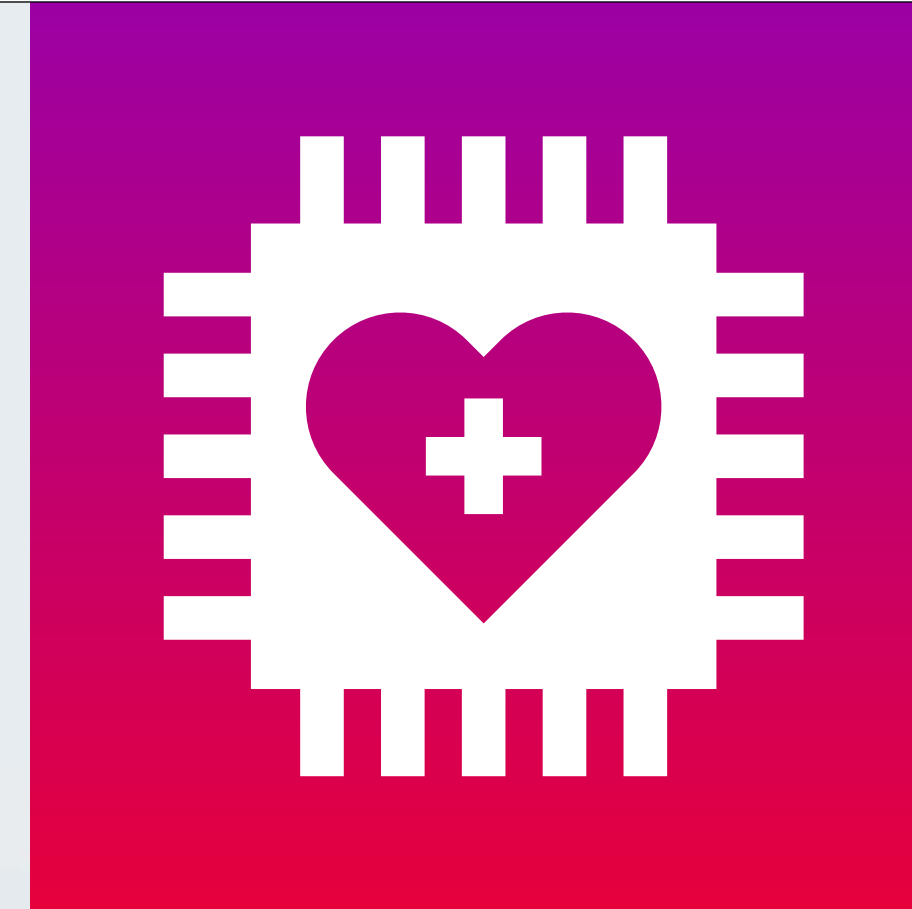
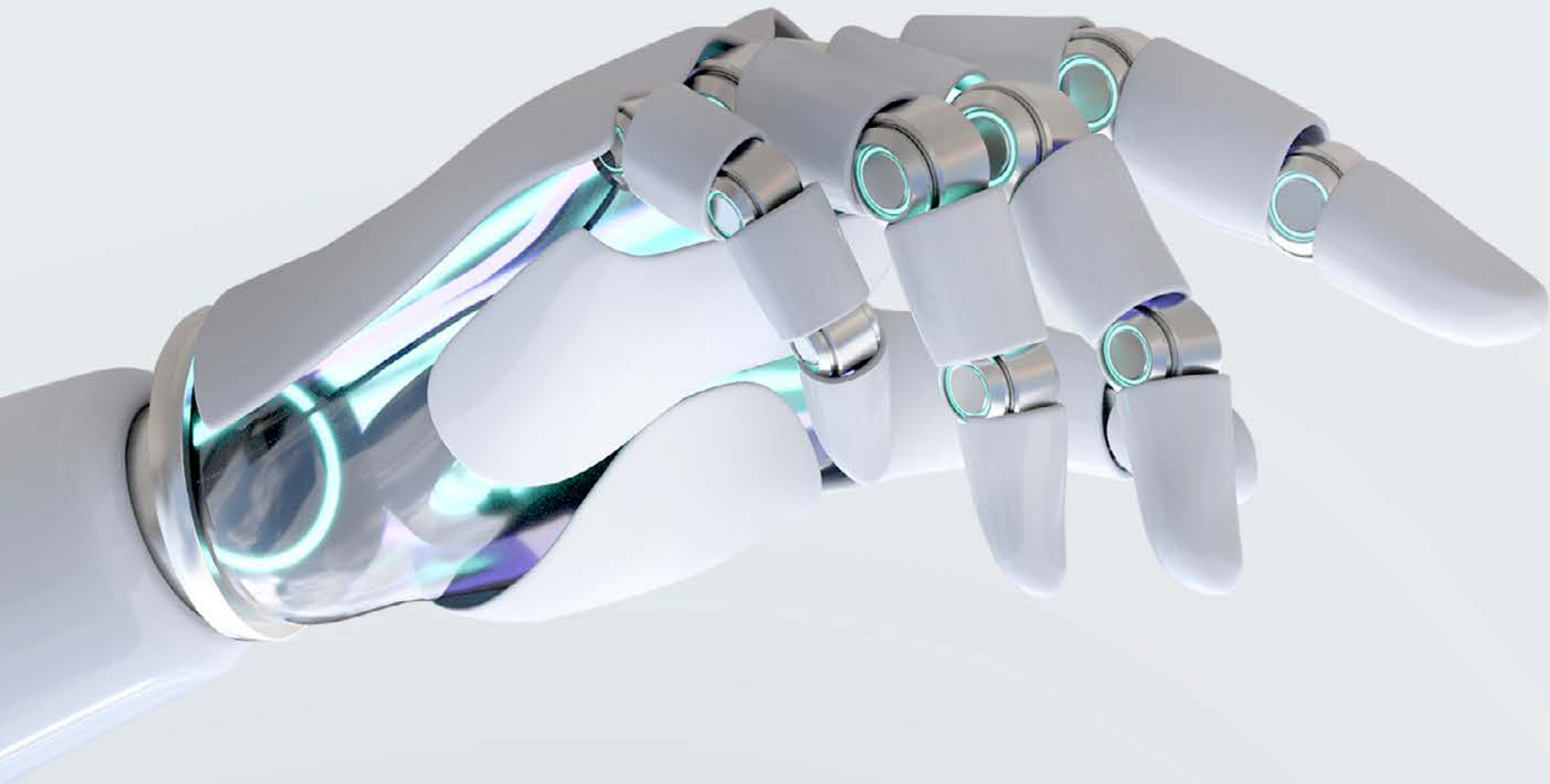
The ELSA Lab Network is open in nature, which means that parties can freely join as a collaboration partner in different project phases. Through this ecosystem approach, quadruple helix partners can work together in co-creation and co-design of human-centred AI-solutions.

‘The ELSA Lab Network is open in nature, which means that parties can freely join as a collaboration partner in different project phases’

 Watch the video

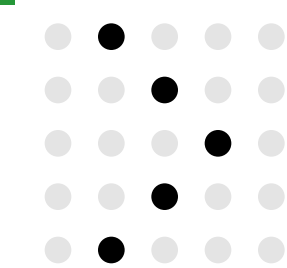
 Contact Mirjam
m.plantinga@umcg.nl





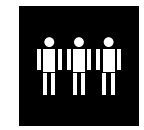
The Northern Netherlands ELSA Lab focuses on developing knowledge that is important for developing and applying AI responsibly in the care context, by investigating cultural, ethical, legal, socio-political and psychological aspects of the use of AI in various decision-making contexts.

6 Northern Netherlands





6.1 Societal challenge



The challenge concerns healthy living, working and ageing in the Northern Netherlands. Good health and well-being is one of the UN Sustainable Development Goals and a primary focus of this Lab. The vision, mission and goal are to contribute to responsible development and implementation of AI in health. A specific focus will be on investigating low social economic status (SES) perspectives.

6.2 Insight Collection and Validation



This ELSA Lab focuses on developing and mapping ELSA knowledge around three concepts (availability, use, performance) with use case research and stakeholder assessments and using qualitative and quantitative research methods. Patients/public (including low SES and migrant groups) and professionals form important stakeholders as part of the solution design process.



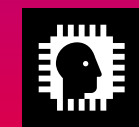
Watch the video

6.3 Solution design methodologies



The knowledge generated in ELSA-NN will be integrated into an online ELSA tool for trustworthy human-centric innovation in AI that will guide users through the process of AI and ELSA-aspects in different decision-making contexts in the fields of healthy living, working and ageing. The ELSA tool will be developed iteratively and in co-creation with stakeholders and intended end-users.

6.4 Human-centred AI approach

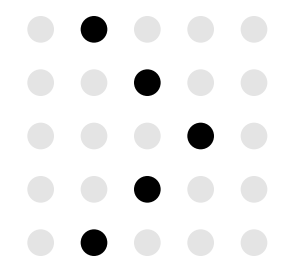
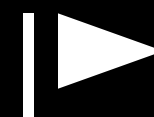


The concepts availability, use and performance will be explored by an in-depth investigation of four use cases: genetic data, monitoring data, personal health data and synthetic data. The use cases apply different forms of data and types of AI in different healthy living, working and ageing decision-making contexts.

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‘The Northern Netherlands ELSA Lab is aiming to become a key player in developing knowledge about responsible development and implementation of AI in healthcare, and making that knowledge available. Additionally, the ELSA Lab wants to become the regional centre of expertise for ELSA-related issues and to promote health technology and AI development in the north of the country by sharing that knowledge.’






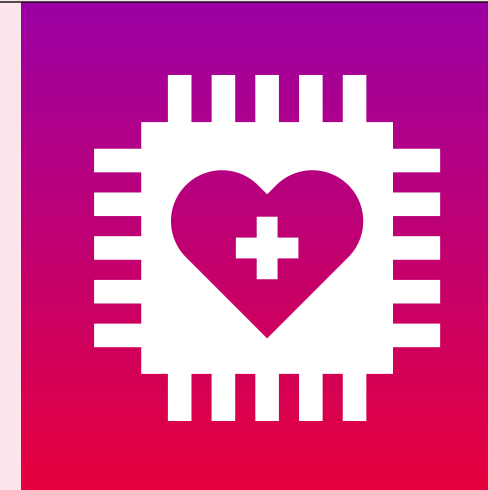
6.5 Quadruple helix collaboration

 This ELSA Lab consists of applicants from different knowledge institutes in the Northern region (UMCG, RUG, Hanze University of Applied Sciences). Cooperation partners are patient and public representatives, societal partners and private companies. Together with these partners ELSA-NN forms a quadruple helix consortium.

6.6 Communication and knowledge sharing

 This ELSA Lab will be set-up as a learning health system in which much attention will be paid to dialogue, communication and education. Dissemination is done by a website, developing educational materials for professionals, public and patients, and organising educational meetings for societal partners in the region.

This ELSA Lab will be set-up as a learning health system in which much attention will be paid to dialogue, communication and education.



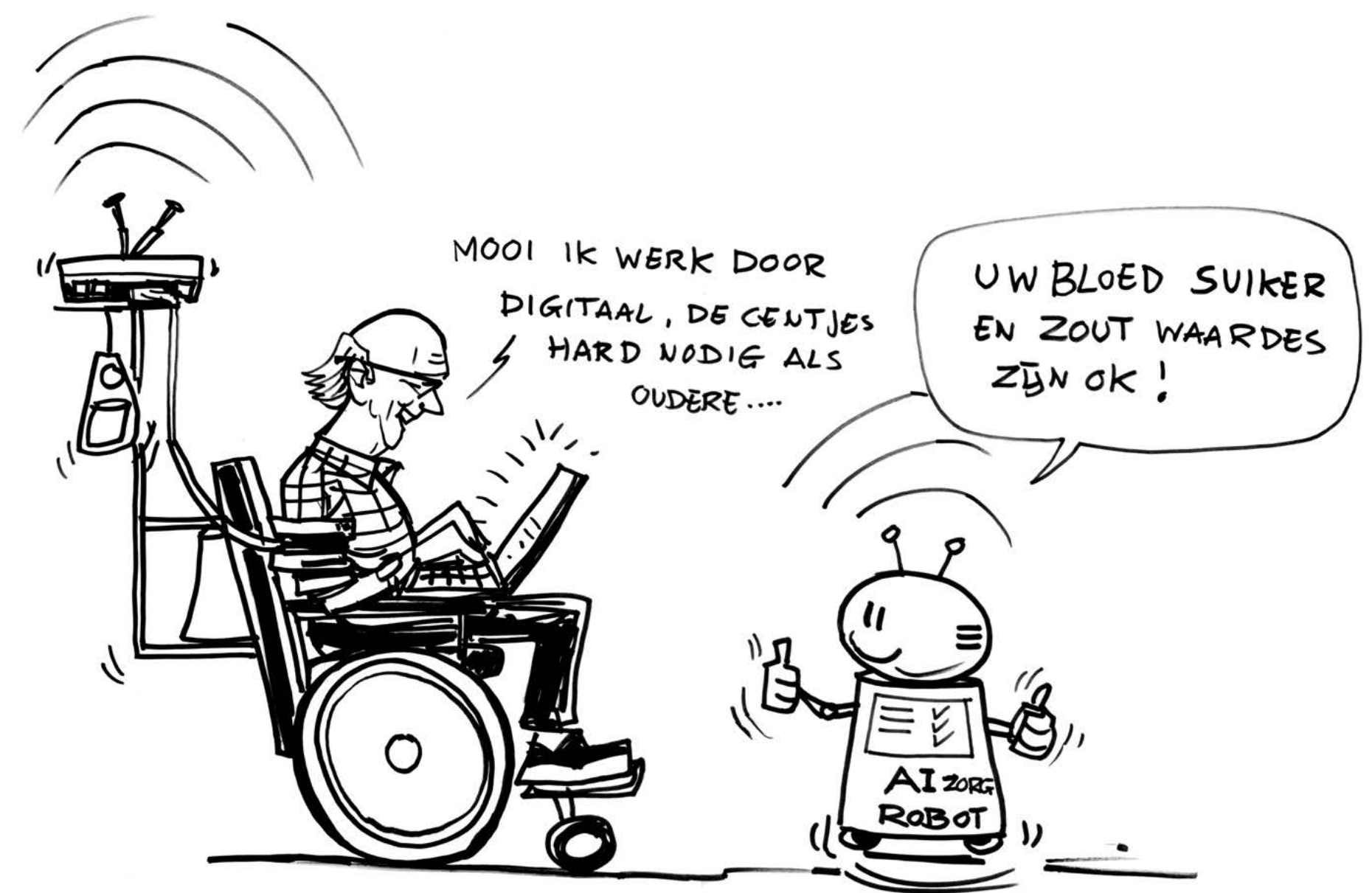
6.7 Solution upscaling and transfer to society

 This ELSA Lab aims to develop into a sustainable network organisation (integrated within Data Science Center in Health, Northern Netherlands AI hub and Health Technology Research & Innovation Cluster) that conducts research on ELSA aspects and provides advice on responsible implementation of healthcare technology for the Northern region.



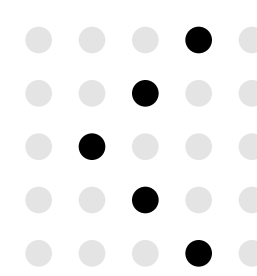
Mirjam Plantinga
Mirjam Plantinga is PI of ELSA-NN, the ELSA Lab Network Project and has a background in economics, philosophy, and sociology.


Mirjam is member of the NL AIC working group human-centric AI and has ample experience with research on responsible development and implementations of innovations in healthcare, public engagement and patient involvement.




Source: First national ELSA Congres, December 2022

HUGO



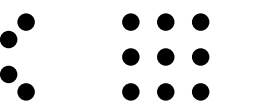
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SDGs

One key aspect that connects all ELSA Labs to one another, but also to the wider context of AI for good, is that they are all connected to at least one Sustainable Development Goal (SDG). Aligning their individual missions with a collective goal not only helps maintain and encourage drive, but also provides additional opportunities for collaboration and reinforces the relevance of each Lab's activities.





Colophon

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The full ELSA Labs Portfolio

We cordially invite you to visit the NL AIC web page to learn more
of the interesting and challenging initiatives of the other ELSA Labs.

- 7 [ELSA Lab Healthy Society and AI](#)
- 8 [ELSA Lab Contestable Urban AI](#)
- 9 [ELSA Lab Public Policy](#)
- 10 [ELSA Lab Learning with AI](#)
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ALL LAB LOCATIONS



SUSTAINABLE DEVELOPMENT GOALS



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