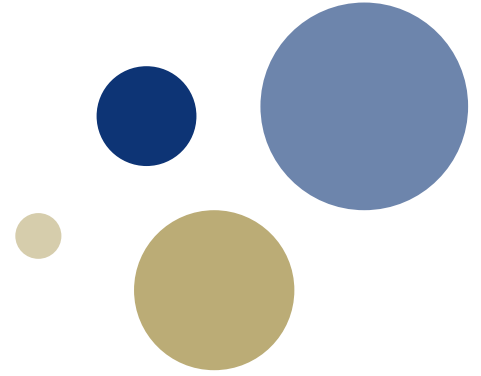




NTNU – Trondheim
Norwegian University of
Science and Technology



Work Programme 2018-2020

Information and Communication Technologies

Next Generation Internet

NTNU Digital

Torbjørn Svendsen

Vilija Balionyte-Merle

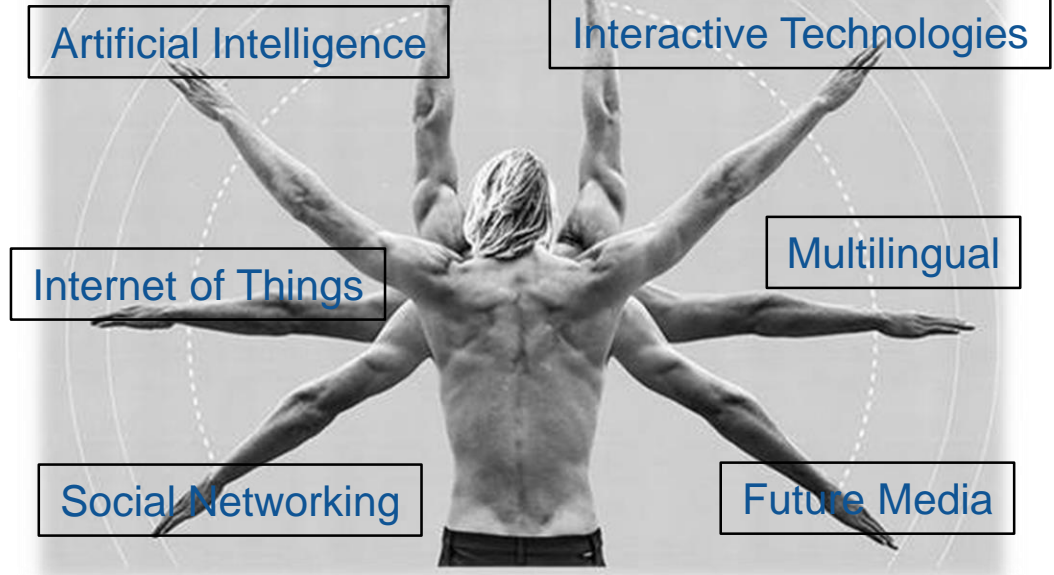
Session agenda

Time	Presentation	Presenter
13:00 – 13:30	NGI calls in ICT Work Programme	NTNU
13:30 – 13:40	IoT in the NGI	NTNU
13:40 – 13:50	Telenor reflections	Telenor
13:50 – 14:00	UiO reflections	UiO
14:00 – 14:10	SINTEF reflections	SINTEF
14:10 – 14:30	NGINO overview	NTNU
14:30 – 15:00	Q&A	
15:00	End of session	



Next Generation Internet

The Next Generation Internet initiative aims at developing a more **human-centric Internet**, supporting values of openness, decentralisation, inclusiveness and protection of privacy and giving the control back to the end-users, in particular of their data.



Calls of proposals open in 2019-2020 by the EC



- **ICT-55-2020: Interactive technologies - 17 mEUR (13 Nov, 2019)**
- **ICT-54-2020 Blockchain for the NGI – 20 mEUR (16 Jan, 2020)**
- **ICT-56-2020: NGI of Things – 48.5 mEUR (16 Jan, 2020)**
- **ICT-44-2020: Next Generation Media – 17.5 mEUR (16 Jan, 2020)**
- **ICT-57-2020: An empowering inclusive NGI – 7mEUR (April, 2020)**

ICT-55-2020: Interactive technologies

IA: Budget: **17 Mio €** per proposal **1-2 Mio €**

- Scope: development of tools for automated interactive content creation or the development of solutions in key sectors or in sector where the use of this technology is not mainstream
- Proposals that focus on the development of **richer virtual environments, new user interfaces and improved immersion** in selected **industrial and societal domains**
- Targeted industries have a leading role in the design of solutions and guarantee the take up of the technology
- **Very short duration projects: 12 - 24 months, relatively small budget projects: 1-2 Mio €**

ICT-55-2020: Interactive technologies

What the European Commission does **NOT** want?

- Actions focused on research rather than **innovation**
- **Weak coordination** or concept
- Unclear idea of impact and sustainability
- Incremental product development

What the European Commission **WANTS**?

- Increase in the **use** of Interactive Technologies in the industrial and societal domains
- Increase in the number of European SMEs and start-ups who benefit from **technology transfer**
- Increase in **market opportunities** in the Interactive Technologies sector for European SMEs.

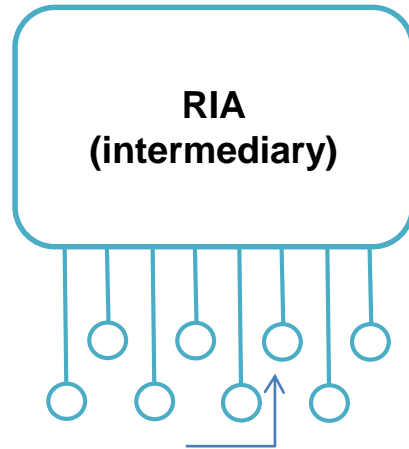
ICT-54-2020 Blockchain for the NGI - 20 Mio €

- i. **Advancing research** on Blockchain and Distributed Ledger Technologies (8 Mio €)
- ii. **Fostering trust** in internet information exchange and content with blockchain (6 Mio €)
- iii. Bringing forward the emergence of **collective intelligence on the Internet** (6 Mio €)

Funding innovators through sub-granting

Project submitted to EC call:

- Run by organisations in the ecosystem
- Leadership in the research area
- Euro 6-8 million, 2-3 years
- **70% for sub-grantees, pan-European**
- Procedures adapted to stakeholders



Sub-grantee:

- Agile and focused specific project
- **Internet innovators: hi-tech startups and SMEs, researchers, developers, ...**
- Carry out the actual R&I work
- 50.000 – 200.000 Euro, 9 – 12 month

Activities include:

- Provide programme logic and vision for third-party projects
- Definition of the calls for projects
- Attracting and selecting top Talents/teams
- Monitoring, Mentoring, Coaching, Sharing
- Provide the necessary technical support
- Managing the full life-cycle of the open calls transparently

ICT-54-2020 Blockchain for the NGI

i. Advancing research on Blockchain and Distributed Ledger Technologies

Conducting research, proofs of concepts, piloting, testing and benchmarks to improve and further develop advanced blockchain technologies, **for example...** regarding energy efficiency and sustainability, consensus protocols, security, privacy, robustness, interoperability, cryptography, smart contracts, governance, compliance to regulatory frameworks...



ii. Fostering trust in internet information exchange and content with blockchain

Develop decentralised blockchain-based solutions that can be scaled & combined with the use of trustworthy electronic identification, authentication and verified pseudonyms, to preserve the integrity and reliability of information and content.

Two use cases:

- a) develop and implement **new transparent and accountable reputation-based** models to increase trustworthiness of the information exchange on the internet & social networks
- b) provide solutions for **transparency, trustworthy transactional content handling**, on the internet and social networks

ICT-54-2020 Blockchain for the NGI

iii. Bringing forward the emergence of **collective intelligence** on the internet

Develop approaches for scientific understanding and technology-based stimulation of **collective intelligence on social media** and the internet to foster trustworthy knowledge and information sharing, and to enhance social inclusion.

Two use cases:

- a) develop **new community-based service models** on social networks that exploit collective intelligence to provide enhanced **community services**, and increase the availability of trustworthy content and,
- b) develop and implement **new concepts for connecting people** and smart objects/agents/AI on social media.

ICT-56-2020: NGI of Things

RIA. Budget: 46.5 Mio € per proposal 5-8 Mio €

30% to cascading calls

- **Scope:** develop and demonstrate novel IoT concepts - predicting future events, trigger actions and moving decisions
- **Challenges:**
 - **Next generation IoT architectures** with a focus on real-time capabilities, self-aware, semi-autonomous IoT systems, make use of distributed AI, decentralized topologies and governance.
 - **Interoperability** for connecting vast number of devices, data sharing combined **with contractual arrangement** (e.g. DLT).
 - **Next generation IoT devices** drawing on applicable results in micro-nano-bio integrating novel computing at the edge, new (mesh, 5G) topologies
 - At the edge: **the Tactile Internet** will be enabled by IoT, AR/VR and contextual computing

ICT-56-2020: NGI of Things

CSA. Budget: 2 Mio €

Challenges

Support further development of IoT ecosystems, partnerships, stakeholders networking, contribution to pre-normative activities & standardisation, development of business models, innovation activities & skills

Liaise also with NGI and other initiatives of the work programme that are relevant to IoT related research and innovation activities

Expected Impact

User at the Center

- Improved privacy and security

- Contribution to human-centered IoT evolution improving usability and user acceptance

Future and emerging standards and pre-normative activities

Evolution of **next generation of IoT infrastructure service platforms**

- Scientific progress enabling future semi-autonomous and real-time IoT applications

- Decentralised architectures and governance

- Automating Processing at the edge

New disruptive business models

- Opportunities for SMEs, innovators and start-ups

ICT-57-2020: An empowering inclusive NGI

RIA. Budget: **7 Mio €** per proposal **2-4 Mio €**

- Develop novel mobile applications **translating between speech and sign languages** to assist people with hearing impairments



- The projects should leverage on current state-of-the-art in **translation between all official spoken and sign languages of the EU and associated countries** for efficient and effective use on **mobile devices**

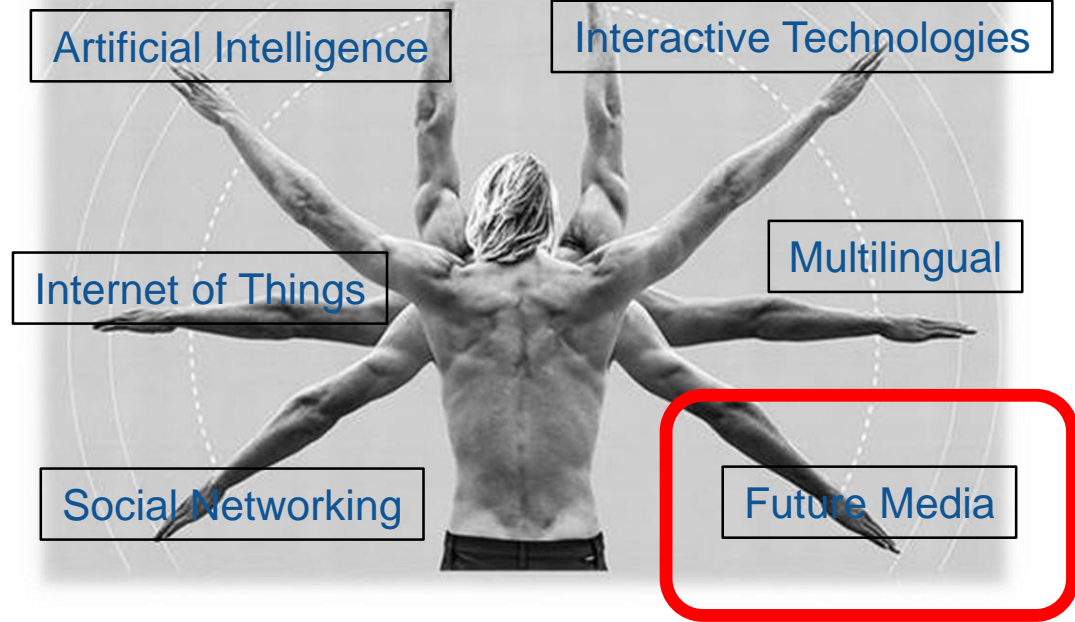
ICT-57-2020: An empowering inclusive NGI

- **how** end-users can **best interact and cooperate** with the application
- **how** the system **adapts to users in real-life conditions** and **prevents unintended gender bias** in translation.
- The applications should be **open source**, robust, cost-effective and validated across a wide spectrum of users.
- Priority to projects addressing a **wide range of languages**, in particular under-resourced languages.



Next Generation Internet

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Specific Challenge

- Traditional Media boundaries are blurring, end-user generated content offered by internet platforms has become an important part of the overall Media ecosystem.
- To meet quickly changing expectations of the audience, the European media sector needs to overcome traditional boundaries by rapidly embracing next generation technologies.
- Exploring the future of media should involve artists, influencers and other creatives.



Imagesource:Shutterstock/violetkaipa

ICT-44-2020: Next Generation Media – 17.5 Mio €

- i) **Business Innovation Ecosystems:** Develop new business innovation ecosystems by using approaches, such as a sandbox, for technology-driven innovation in media
 - Includes open cascading calls - **70% of budget** - 50.000- 350.000EUR
 - Two incubators - two projects - will be funded
- ii) **New User Driven and Enriched Experiences in Future Media:** user driven, fair, sustainable and technologically advanced media ecosystem by the development, demonstration and validation of new services and solutions
- iii) **Starts – Technology and Arts Alliance as Driver for Next Generation Media**

Project size: i) **5.5 Mio € (IA)**, ii) **5.0 Mio € (IA)** and iii) **2. Mio € (CSA)**

What is STARTS

STARTS is an initiative of the European Commission for integrating the Arts as a catalyst for the conversion of scientific and technological results into novel products and services, and disruptive approaches.

STARTS has four pillars for linking art and technology:

STARTS Prize - giving visibility to successful art technology collaboration

STARTS Residencies - embedding artists in technology institutions

STARTS Lighthouse pilots - projects tackling concrete industrial challenges

STARTS Academy - teaching digital skills to artists and citizens

Proposals are invited to build on activities developed as part of the STARTS initiative in DG CONNECT (www.STARTS.eu)



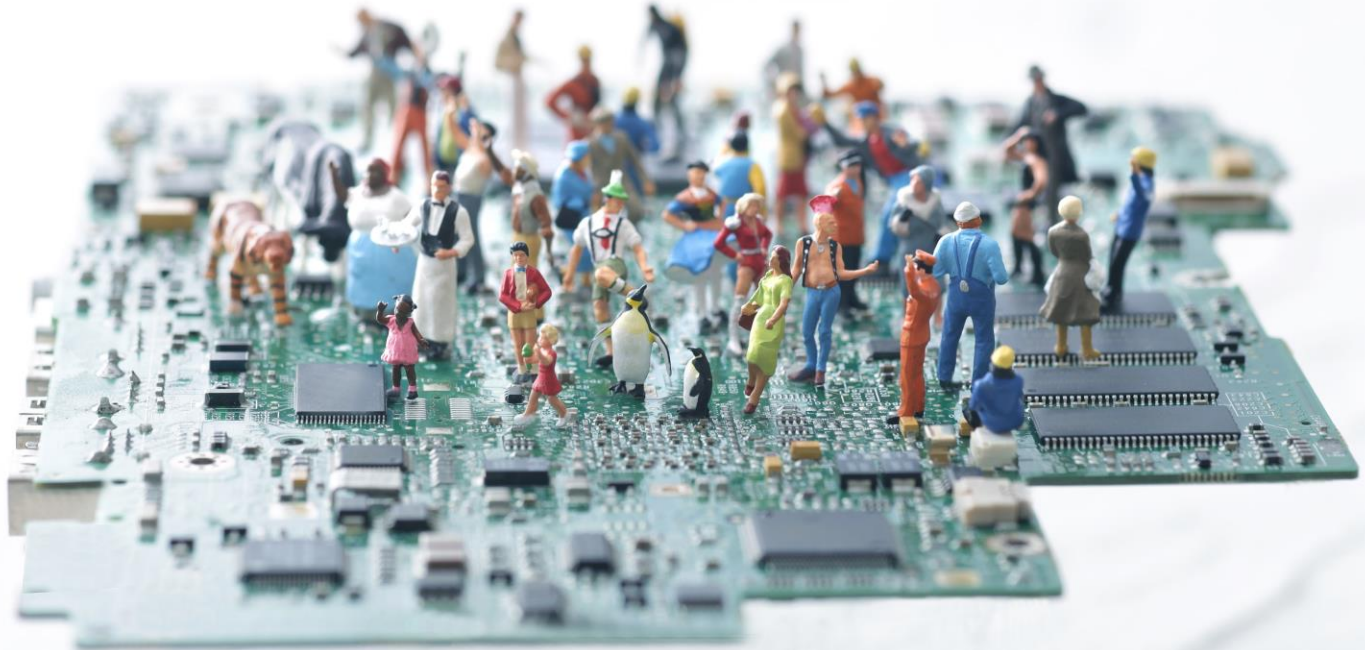
Andrew Perkis, NTNU IES
Director



NTNU
ARTEC



Vision: Enabling technology Center for Artistic Research at NTNU



Strategy

- Build an **ARTEC platform** for Artistic Research & Experimental Methods-based PhD
- Internationalize NTNU ARTEC using the **AiR scheme - connecting to STARTS**
- Broaden the scope of **Innovation and commercialization** at NTNU through external funding (**ICT-44**)
- Disseminate NTNU ARTEC work, train future transdisciplinary scholars, artists, and technologists, build inclusive NTNU creative communities, & enable broad outreach using the **NTNU ARTEC Seminar Series**
- Promote **research & dissemination** of the societal impact of art and technology

Calls of proposals opened by the funded projects



Open cascading calls - more financial support opened

[NGI Zero PET](#)

[NGI Zero Discovery](#)

[LEDGER](#)

[NGI Trust](#)

+ 20,0
mEUR



NGI open cascading projects (1)



- [NGI Zero PET](#) – privacy and trust enhancing technologies, 7 MEUR, 80% to third parties
- **Deadline 1 October 2019**
- <https://nl.net.nl/PET/>
- Project size 5.000- 50.000 EUR, **scaled- up if successful**
- Topic: Privacy and trust enhancing technologies
- **Open source licenced outcomes**
- **Very easy application**

NGI open cascading projects (2)



- [NGI Zero Discovery](#) – the next generation search and discovery – 7 MEUR, 80% to third parties
- **Deadline 1 October 2019**
- <https://nl.net.nl/discovery/>
- Project size 5.000- 50.000 EUR, **scaled- up if successful**
- Topic: Improving Internet search and discovery
- **Open source licenced outcomes**
- **Very easy application**

NGI open cascading projects (3)

- [NGI Trust](#) - partnership for innovative technological solutions to ensure privacy and enhance trust for the human-centric Internet
- **Scheduled to open in October 2019**
- **Project size – 100.000 EUR - 200.000 EUR depending on type of the project**
- **Type 1 (viability):** up to € 100,000, no matching funds required. Explore and assess the technical feasibility and/or commercial potential of a breakthrough innovation. Conceptual development, risk assessment, market study or IPR management
- **Type 2 (execution):** up to €180,000 from NGI_Trust and matching funds of up to €90,000 (2/3 – 1/3 model). Funding of R&D or technology development projects underpinned by a strategic plan and feasibility assessment
- **Type 3 (transition to commercialisation):** up to €200,000 from NGI_Trust and the equivalent in matching funds (50/50). These projects should pursue the commercialisation of a privacy and trust enhancing innovation for the NGI
- **The requested technology topics have been listed.** Application form is lengthy -12 pages

NGI open cascading projects (4)

- [LEDGER](#) – decentralised data governance for the NGI
- **Deadline not specified for 2nd call**
- Project size – **up to 200.000 EUR** - 32 projects will be funded
- Mandatory **3 natural persons from a team** – academic researcher, IT developer and business developer
- Verticals: **health, economy, mobility, public services, energy, sustainability and open innovation**
- Length of application: **10.000 characters – 3 pages and a video**
- No legal papers at the submission stage

Questions?
Ideas?

