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Decarbonized Cities and 6G Bridge programs, Quantum Computing campaign
Call for ideas, Info 20.6.2022

14:30 Opening
Arto Pussinen, Business Finland

14:40 Call principles
Esa Panula-Ontto, Business Finland

14:55 Short introduction to call content and selection criteria
Karin Wikman, Pekka Rantala, Outi Keski-Äijö, Business Finland

15:10 Q&A

Opening words

Arto Pussinen

20.6.2022

FINLAND DEFINING THE FUTURE
Our strategy for 2025

PROSPERITY

CUSTOMER

SOCIETY

-- PURPOSE ----------

We generate prosperity for Finland by accelerating our customers' sustainable growth globally.

-- VISION ------------

We excel at developing and refining the best of Finnish potential and matching it with global opportunities. We create world-class success stories.

	CUSTOMER	SOCIETY
Economic Growth ▶	Globally thriving companies	Productive economy
Sustainability ▶	Developers of new sustainable solutions and operations	Superpower in sustainable development
Competitiveness ▶	Bold reformers of business	Attractive and resilient business landscape

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Strategic priorities ▶

Value-adding and proactive partner for our customers

Strong and proactive actor in society

Change agent for sustainable business

Best workplace for leading-edge expertise

Operationally excellent and agile organization

Values

With passion

Think big

All together

With sisu

Call for ideas 2022

Background:
- Two missions: "Digital Native Finland" ja "Zero Carbon Future".
- Planning of 2 programmes and 1 campaign

Call for ideas providing support for program & campaign preparation - collection of ideas, screening of Finnish competencies
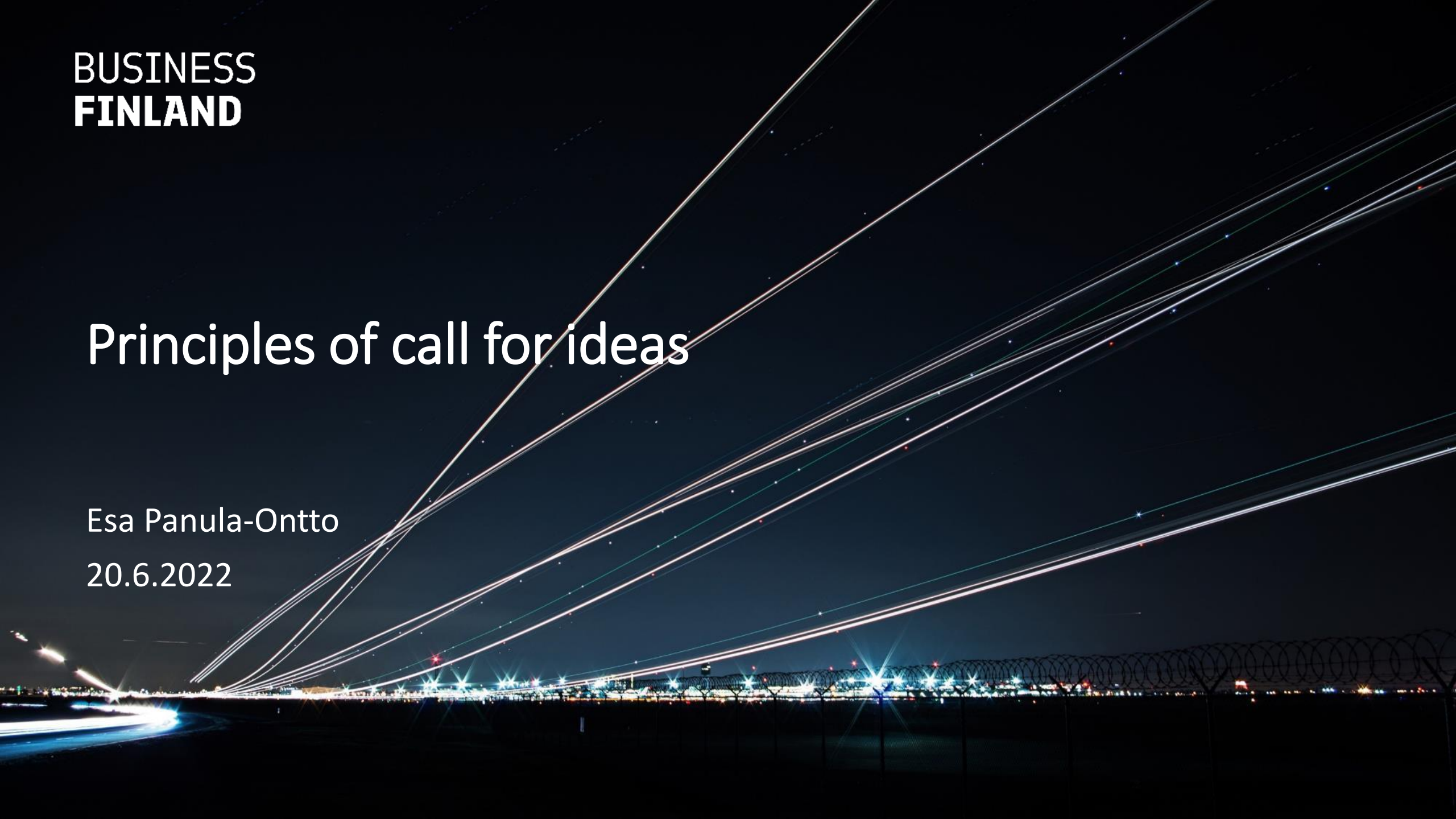
Solution
- Call for ideas (bottom-up, but some preferred topics described)
- Exceptionally funding also for research projects (+ all normal Business Finand funding instruments: Co-Innovation, Co-Creation and funding for single companies)

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Principles of call for ideas

Esa Panula-Ontto

20.6.2022

Call for ideas 2022

- Exceptionally funding also for **research projects** (without parallell company projects).

- We expect that the fundable project volume will be around
    - 25-30 M€ for Decarbonized Cities programme, out of this research project volume to be around 20 M€.
    - 25-30 M€ for 6 G Bridge programme, out of this research project volume to be around 20 M€.
    - 8 M€ for Quantum Computing campaign, out of this research project volume to be around 5 M€.

- Business Finland has not made a decision if this type of call procedure will be continued or if research funding will also be available in the future.

Time table and process

- **Template for ideas:** given headings must be used. Maximum 3 pages

- **Dead line** for idea papers **25.8.2022**

- Idea papers to be sent to **kirjaamo@businessfinland.fi** with subject-line:
  - "Name of applying org: Decarbonized Cities -ohjelman aiehaku **BFRK/2/35/2022**" or
  - "Name of applying org: 6G Bridge -ohjelman aiehaku **BFRK/3/35/2022**" or
  - "Name of applying org: Quantum Computing -kampanjan aiehaku **BFRK/4/35/2022**"

- Business Finland will evaluate and rank all the idea papers, give feedback to the applicants on whether a full proposal submission is recommended or not. Those project ideas that are recommended to be submitted as a full proposal will get more instructions and be sparred by Business Finlandin personnel.

- Full proposals 13.10 (tbc) via Business Finland proposal portal

Funding instruments (full proposals)

- In this call, research projects will exceptionally be funded

1. Research projects
- Funding 70%.
- The project has to be internationally networked and there must a vision on how the concept could be further developed and enlarged by utilizing EU funding
- No requirement for parallel company projects or even company funding for the research entity. Nevertheless, company/stakeholder funding for the research organization typically proves that the project theme is relevant and important
- Several company /stakeholder representatives expected to participate in project steering group. Company, end user and other stakeholder commitment are important selection criteria

Funding instruments (full proposals)

- **Funding for single company RDI projects and piloting loans**
  - Grants 40-50% or 50% RDI loans

- **Co-Creation**
  - Research organisation(s) and companies develop together a new research idea. Maximum funding 60 %, and size of project 100 000 euro.

- **Co-Innovation project with research organizations and companies**
  - Minimum one or more research organization(s) and three companies (out of which at least two must apply for funding from Business Finland.

Template for Idea paper

COVER PAGE	+ MAX 3 pages text

Project name:	
Organization of main applicant:	
Other participants (for collaborative projects):	
Name of contact person (name, phone, e-mail):	
Project preliminary budget (estimation of costs of all participants):	
Estimation of Business Finland funding (amount, loan or grant):	

Headings for the call for ideas paper

Decarbonized Cities / max 3 pages
1. Which need does the idea fulfill/which challenge does it solve?
2. Impact on cities GHG emissions/carbon handprint?
3. Export potential and markets? Research project: potential companies utilizing the results?
4. How will the challenge be solved, what is going to be researched or developed, how and when?
5. Competing/alternative solutions?

6G Bridge / max 3 pages
1. What are your client's needs? What is the estimated export revenue potential and relevant target markets? Research project: which and what kind of companies are potential customers?
2. What is the compelling solution to the specific client need? What kind of challenges are studied/developed, how and in which timeframe?
3. What are the client benefits in contrast to associated costs of using your approach?
4. Why are your benefits significantly better than the competition? What kind of alternatives are there already?

Quantum Computing /max 3 sivua
1. Need: Which need does the idea fulfill/which challenge does it solve?
2. Benefits: What kind of results will the research create for Finnish companies? What is the novelty value of results? How does this problem solving promote the business of Finnish companies in the long run?
3. Approach: How will the challenge be solved, what is going to be researched or developed, how and when?
4. Competition: Competing/alternative solutions?
5. Company participation: How do companies participate in the research? What role would companies play in it? What kind of projects could emerge in companies during or after the project? What are potential companies participating in the project and steering group?

Call information

- Call instructions now available in Finnish. English call description to be published later this week

- Call page:
  - https://www.businessfinland.fi/ajankohtaista/haut/2022/aiehaku-decarbonized-cities--ja-6g-bridge-ohjelmat-seka-quantum-computing-kampanja

    OR
  - TUTUSTU AIEHAKUUN

Decarbonized Cities program

- **Solutions for decarbonizing cities**, especially in the fields of energy (including buildings, construction and city planning) and transport, mobility and logistics

- **Focus on globally scalable solutions**. Cities can act as testing, demonstration and piloting platforms

- Program start in H2

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Decarbonized Cities – Themes

All ideas that reduce the **carbon footprint/increase the carbon handprint** of cities. Cross/multisectoral solutions utilizing **digitalization or circularity** are welcomed. Especially interesting topics:

- **Low carbon city planning/buildings:** How can the build environment increse positive carbon handprint? How can carbon handprint be used as a competitive advantage? Metaverse, dynamical digitial twins and XR and simulation tools supporting decarbonization, CO_2 capture and utilization in cities, wasteless construction, new low-emission materials

- **Energy solutions:** Virtual power plants, emissionless, local energy production, energy storage, flexible energy systems, sector-coupling, energy efficiency, energy positive buildings and districts, smart measurement and control

- **Mobility and transport:** New propulsion and modes of transport as part of cities infrastructure and energy system, emission reduction potential by digital, data and service based solutions

- **Behavioural change:** Motivation of consumers and inhabitans to participate in emission control actions, new living and mobility forms, distance work, flexibile spaces enhancing decarbonization

Decarbonized Cities – Selection criteria

- How does the solution reduce cities CO_2 emissions or improve the handprint?

- How big is the export potential / utilization potential of results

- The credibility of the applicant and executability of the preliminary project plan

- Research projects: connection to EU:s decarbonized cities policies, mission and networks, potential of utilizing EU funding for continued efforts

The steering group of reasearch projects should - in addition to companies - include representatives for cities and/or other relevant stakeholders or end users.

6G Bridge Program

The program aims to strengthen Finland's leading position in mobile network technology evolution and to pilot and apply technologies to solve societal challenges and to increase global competitiveness of Finnish companies.

Possible program launch Q3-Q4/2022.

6G Bridge Program

- 6G Bridge focuses on 2 mobile network technology categories

    I. Development and demonstration of <u>5G Advanced</u> related technologies and to apply them in different industries and society.

    II. Presentation of <u>6G</u> basic research results to companies and to foster transformation from basic research closer to industrial research. In addition to those the aim is to study different research paths and technological alternatives to match different use cases.

6G Bridge – Selection Criteria

- How the developed or researched solution relates to 5G Advanced/6G technologies or applying them in industry and/or in society.

- The foreseen export revenue potential in the relevant timeframe.

- The credibility of the applicant(s) and the feasibility of the proposed project.

- Research focused projects are recommended to pursue the targets of the EU Digital Decade in relevant context and relate to international relevant reserach and innovation networks.

6G Bridge – Some Inputs to Consider

- As its first action the program is conducting a national strategic research and innovation agenda (B5G & 6G) in relation to 5GA and 6G technologies (please send email to Jyrki.Huusko@vtt.fi or Kyosti.Rautiola@vtt.fi to have an access).

- This SRIA would act as a roadmap for fostering R&D and industrial collaboration within Finnish organizations. Additionally, it would guide the program in its R&D and funding activities.

- Key stakeholders have also identified some open research ideas (including but not limited to).

Quantum Computing -campaign

The Quantum Computing campaign accelerates the growth and internationalization of the Finnish quantum ecosystem, in particular by supporting the development and implementation of the necessary software stack, as well as by activating experiments and demonstrations to solve significant problems through quantum computing.

Quantum Computing Campaign will start in 2H/2022.

Quantum Computing – call descriprion

In this call Business Finland funds research that creates new information and knowledge:

- to develop a necessary quantum computing software stack,

- to create services that support quantum computing,

- to integrates traditional computing and quantum computing seamlessly,

- to optimize controlling operations of the hardware and hardware/software interface in quantum computing and

- to promote solving significant problems in Finnish companies through quantum computing.

Idea papers need to present how companies are actively participating in the research.

Q & A

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