ESA BIC Finland and startups

Space Business Forum
18.9.2025

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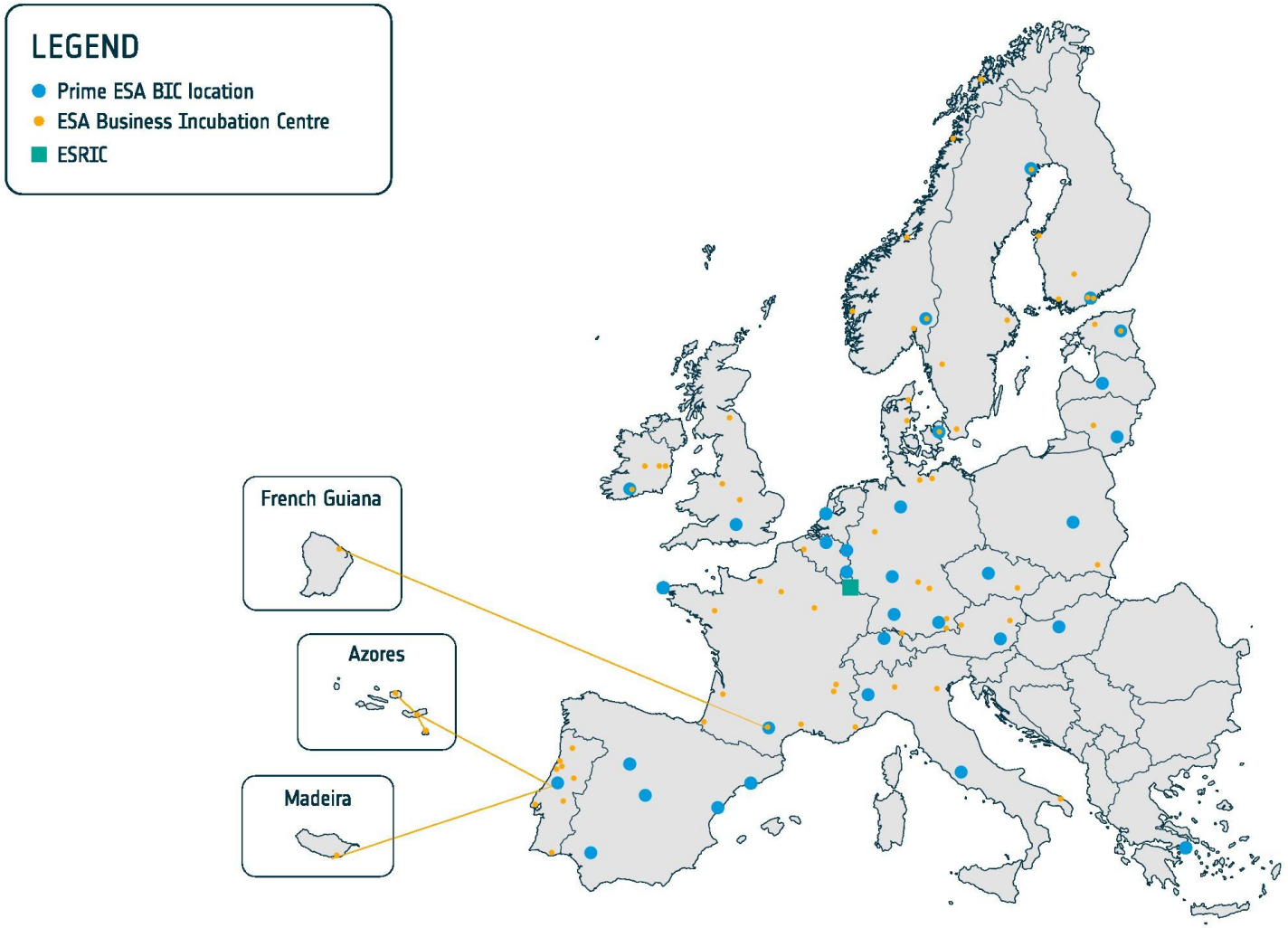
ESA BUSINESS INCUBATION CENTRES MAP



- 32 Incubation centres.
- 240+ Startups selected annually.
- 1,800+ Startups selected overall in 20 years.

ESA BIC FINLAND

ESA BIC FINLAND The European Space Agency's (ESA) Business Incubation Centre in Finland was founded in 2017 to support aspiring innovative entrepreneurs and young ambitious startups financially and technically to reveal their full space potential. ESA BIC Finland is a part of the wide European ESA BIC network. The objective is to help young startup companies to introduce new technologies to the ESA and its partner network or to transfer existing ESA space technologies from hardware to data such as satellite data to terrestrial uses, whether consumer, business or both. The startups work with upstream or downstream technologies or leverage space technologies on earth. 25 startups have graduated the incubation program. esabic.fi

COMPANIES CURRENTLY IN THE PROGRAM (STATE 06/2025)

coldXray
NORTHBASE
SHARPNAV
KOKO FOREST
Oinride
NORDIC NANO
SemiQon
MoniCardi
AAVUUS
NAVIGATE SPACE SAFELY WITH DEBRIS INTELLIGENCE

ALUMNI COMPANIES

Arctic Farming
broadbit
APS
COMPOSITES
FIBROBOTICS
Missing-Link
Wireless Security Solutions
SOLAR FOODS
iLu Space
YIELD SYSTEMS
ARCTIC ASTRO NAUTICS
Climatica
KUVA SPACE
Netradar
Mobile Analytics
Terramonitor
NINJALABO
FLEETONOMY
COLLECTIVE CRUNCH
AURORA
WINSE POWER
avoin map
awake.ai
ELFYS
KYOCERA Tikitin
SKYFORA
ZERO GRAVITY

ESA BIC Finland new startups

MoniCardi
Aavuus
SemiQon
Nordic Nano

MoniCardi: Monitoring Cardiac Health Made Simple

esa BUSINESS INCUBATION CENTRE Finland

MoniCardi

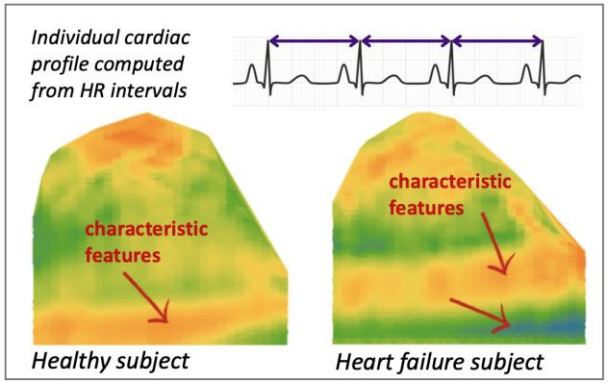
Mission

- Cardiovascular disease is the world's #1 killer with 32% of all deaths. Projected global costs reach $1 trillion by 2030.
- Current heart-rate (HR) wearables fall short in clinically-relevant insights for early intervention.
- We provide **clinically accurate** insights into heart conditions through **wearable tools, with low-power technology** tailored for space applications.

Product & Solution

Our HR analysis software enables:

- **Cardiac risk assessment** with 30-second HR measurement
- Early-stage detection of **heart diseases** such as heart failure
- Determination of **accurate training zones** in sports
- Assessment of **stress & recovery**



- Our **ultra-low-power** software **works in all HR devices** (ECG, watches, rings, clothing) and can be implemented in the chip level.

Investment Thesis

Impact:

- Strong R&D basis at Tampere University: >**1.5 MEUR** of public funding; **3 patents** & scientific validation in **20+ publications**
- Customer validation through **Suunto & Cardiolex partnerships.** *ZoneSense* in Suunto devices features MoniCardi technology.

SUUNTO

CARDIOLEX EASY TO USE ECG

Market Opportunity:

- Total Market: **$130B** In Cardiovascular Digital Health
- Obtainable Market **$1-10B**

Team Highlights:

Founded by 3 physicists with deep R&D expertise, supported by leading business and medical advisors.

Key Metrics

Founded:	2024
Location:	Tampere, Finland
Stage:	Early-Stage
Round:	Seed Round
Investors:	Self-funded through revenue, grants, and prizes; 100% founder-owned

Sub-sector:	**Medical technologies and software**

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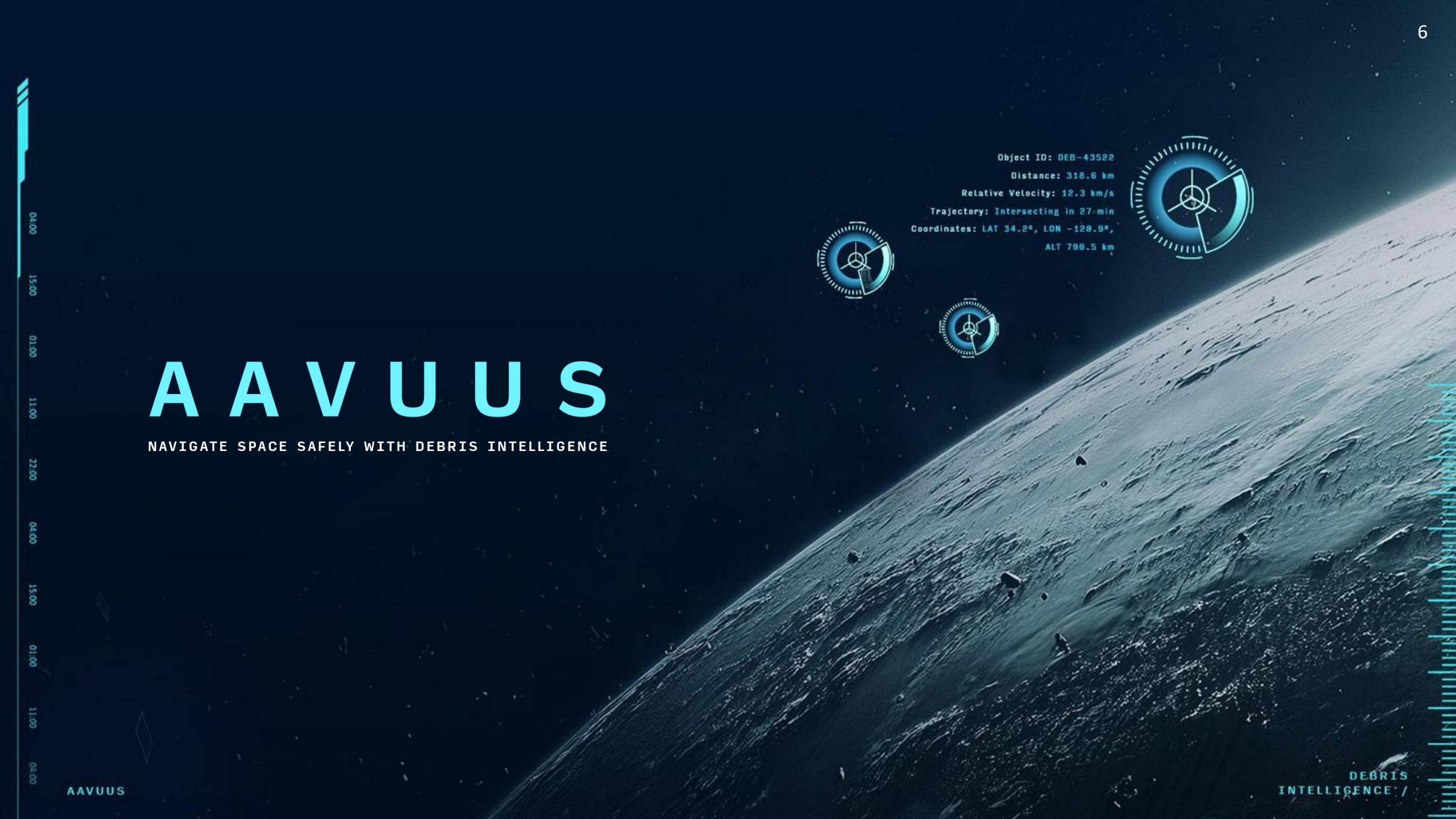

AAVUUS

NAVIGATE SPACE SAFELY WITH DEBRIS INTELLIGENCE

The problem

100M+ debris objects

40k tracked objects

10k+ near-misses/month

Inaccurate data

Unreliable decision-making

Crowded orbits

Space debris: biggest threat to space economy

One collision can endanger entire orbits

A single impact can generate thousands of new debris fragments. Each fragment increases the likelihood of further collisions, fueling a chain reaction that can render critical orbits unusable.

Without precise tracking and mitigation, the world’s satellites — and the billions who depend on them — are at risk.

Our solution

Ground-based space debris detection laser network

- Detects particles down to 1 cm
- Rich characterization enables precise orbital modelling
- 10x more data and up to 1000x better positional accuracy than current solutions

Space situational awareness service to safeguard satellite assets

- The most accurate collision avoidance service available.
- Collision warnings enable operators to protect fleets and maximize uptime.
- Less false alerts enable confident, data-driven decisions.
- Prioritizes the most mission-critical threats to satellites.

MEET THE TEAM

Joonas Jokela

CEO

MSc in remote sensing,10+ years of experience in geospatial sciences. Hands-on experience in business development

Jouni Peltoniemi

CSO

PhD in Physics, 40+ years of experience in astronomy, remote sensing, spectroscopy and geodesy

Arttu Raja-Halli

CTO

MSc in astronomy, 15+ years of experience in satellite laser ranging and geodetic data analysis

Niko Kareinen

Lead Geodetic Research

PhD in radio and space science, 10+ years of experience in space geodesy, data analysis, and engineering

Joona Eskelinen

Lead Engineer

MSc in physics, 25+ years of experience in research & development, engineering, and data analysis

NLS FINNISH GEOSPATIAL RESEARCH INSTITUTE FGI

THANK YOU

Contact

Joonas Jokela

CEO / Founder

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AAVUUS

SPACE NAVIGATION POWERED BY DEBRIS INTELLIGENCE

SemiQon™

Chips Optimized For Low Temperatures: Cryogenic CMOS for Space Applications

Yukihisa Tsuruta
Business Development Director

18TH SEPTEMBER 2025 | SPACE BUSINESS FORUM

COMPANY OVERVIEW

SemiQon in numbers

2023
Founded

Finland
Headquarters

25
Employees

13 & 7
Engineers & PhDs

>10M€
Fundings

8
Patents filed

10+
R&D kits delivered

1 000+
Quantum dots multiplexed with cryo-CMOS

SemiQon™

VALUE PROPOSITION

What the world is looking for?

DARPA

Broad Agency Announcement
Low Temperature Logic Technology (LTLT)
Microsystems Technology Office
HR001121S0019
March 10, 2021

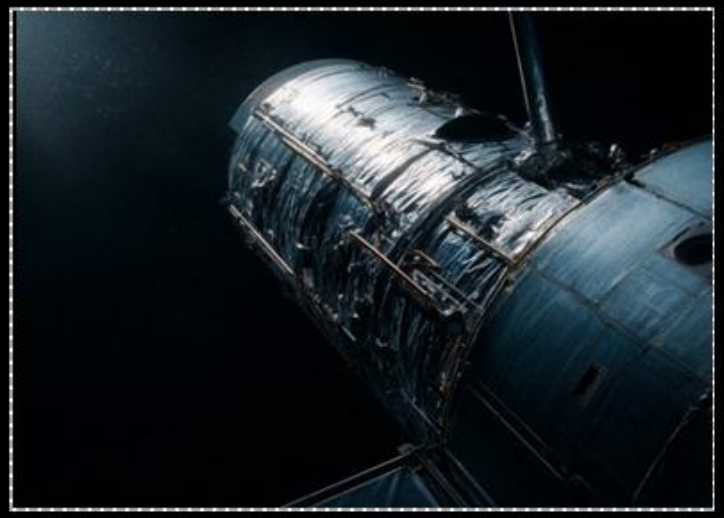
CESAR
Cryogenic Electronics
for Space Applications and Research

FP7 – SPACE – 2010 -1
Grant Agreement Number 263455

→ Cryogenic CMOS is *the solution*

THE AMBITION

Potential applications in Space domain



Telescope
(bolometer, infra-red, x-ray)

Lunar and Mars exploration

Image: ESA

5G communication
(Digital beam forming)

SemiQon™

SEMIQON'S SOLUTION

Cryogenic CMOS

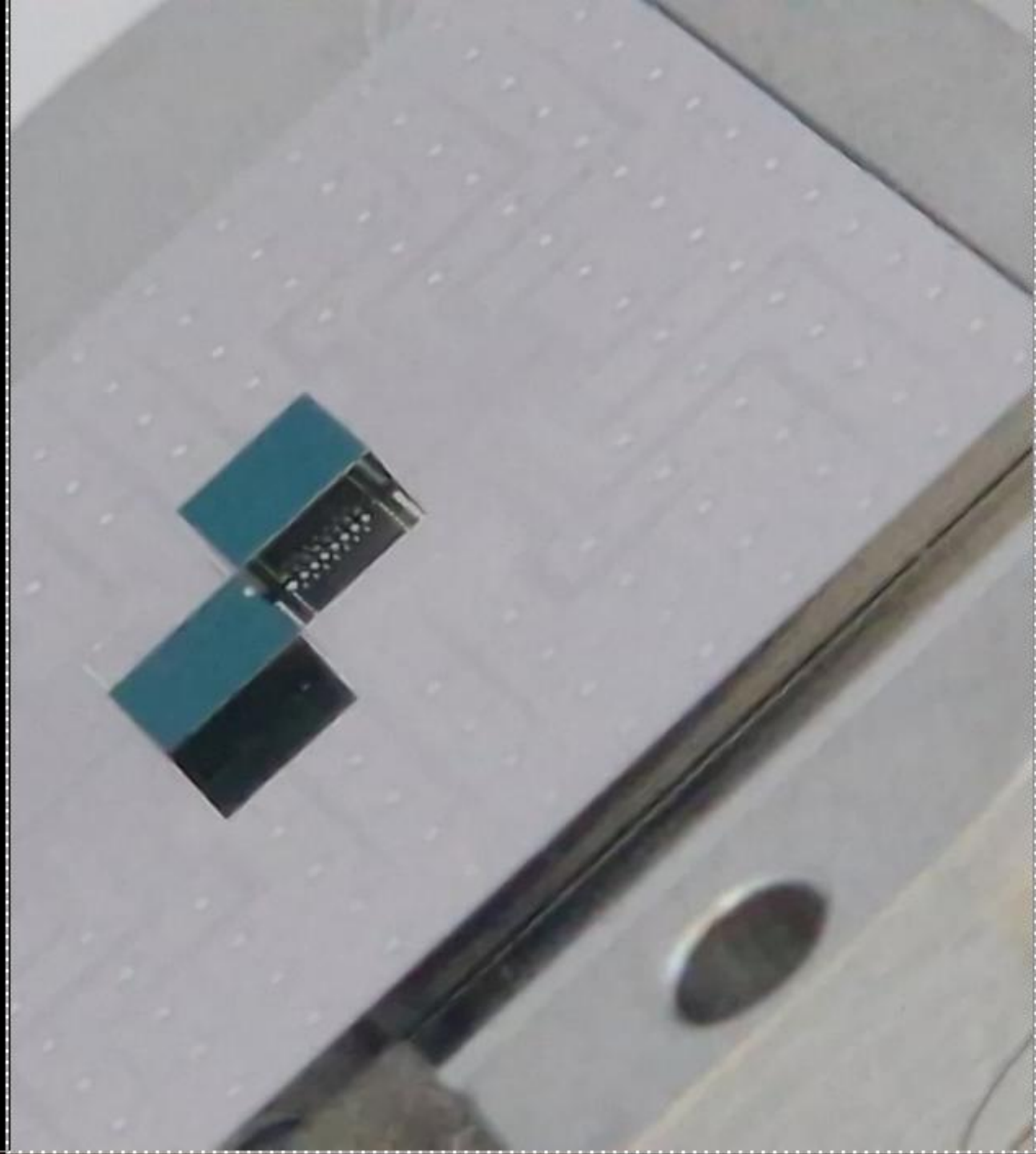
World's first fully optimized transistor for cryogenic conditions

Traditional electronics are *not* designed to perform well in extreme conditions. Our cryo-CMOS is.

Key benefits for space applications:

- High efficiency: 1,000x lower power consumption and lower hear load than traditional electronics
- Serves as multiple electronics functions:
  RF switch, (De-)Multiplexer, Comparator, Image sensor, Amplifier, Basic logic blocks, Memory elements
- Vertically integrated operation: All processes from design and manufacturing to testing are done in-house. Manufacturing at VTT's Micronova Centre, the laboratory at MIKES equipped with two cryostats.

SemiQon™



SemiQon™

Thank you for your attention!

More information available:

www.semiqon.tech
Cryogenic CMOS (brochure for download)

Yukihisa Tsuruta
Business Development Director

NORDIC NANO

Space Business Forum Sep 18, 2025
ESA BIC Finland & Startups
Pia Erkinheimo, Ville Jokelainen, Esa Parjanen


NORDIC
NANO

NORDIC NANO

In a nutshell

Founded Jan 2024, raised so far ca €8,8M /Q325

SUSTAINABLE SOLUTIONS FOR RENEWABLE ENERGY

OFFERING

Solar films and panels

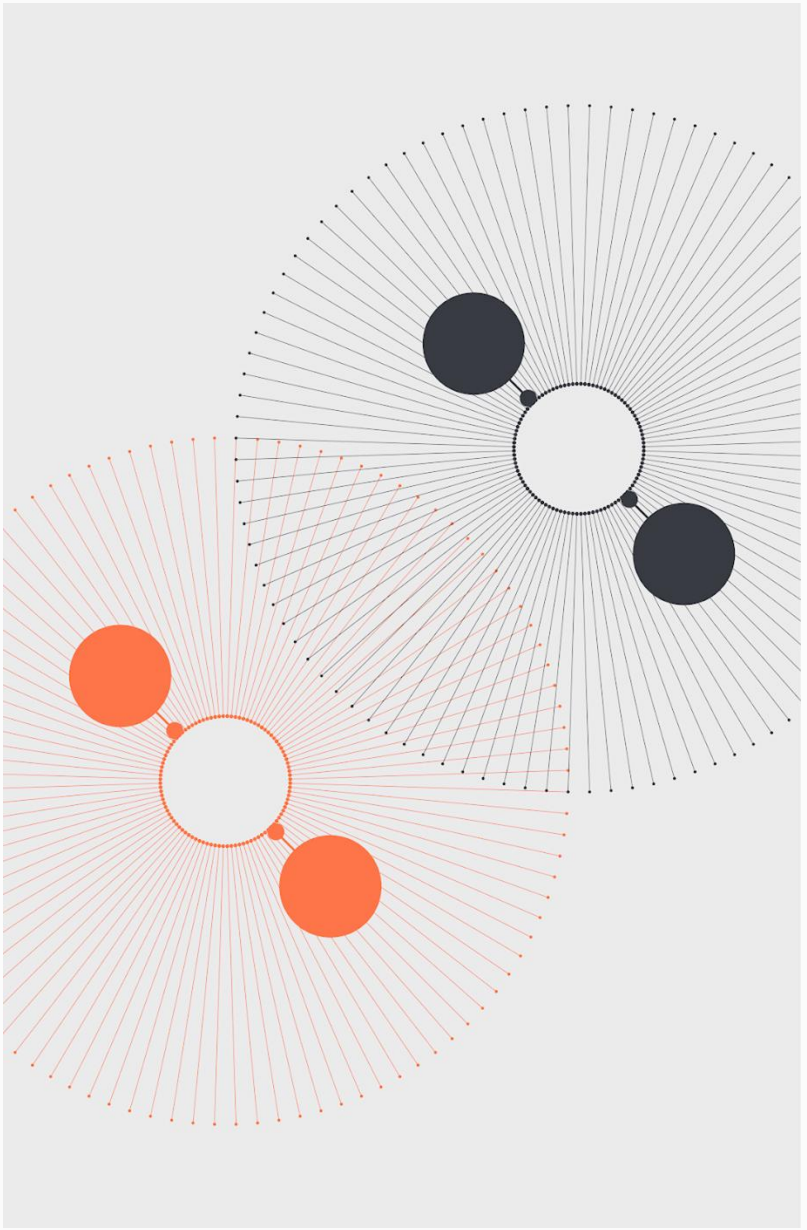
- Self-sustaining buildings with energy-generating roofs, ceilings, and windows
- Solar parks
- Space solutions e.g., satellites

Energy Storages

- Properties designed for energy self-sufficiency, incorporating advanced energy storage systems
- Smart energy storage systems for homes that automatically manage energy use by that help the balance the grid
- Automotive industry
- Space solutions e.g., satellites

Hydrogen production with artificial photosynthesis

- R&D on-going



NORDIC NANO

“Where the cutting-edge materials science know-how meets orbital ambition”

NORDIC NANO

WEIGHT - EFFICIENCY – CHARGING CYCLES - SAFETY

OUR SOLUTIONS

Nordic Nano specialises in next-generation renewable energy solutions, leveraging advanced nanotechnology and screen-printing techniques to **enhance solar energy harvesting and storage.** Designed for both terrestrial and extra-terrestrial applications, our technology is engineered to withstand the extreme conditions of space, ensuring reliable energy solutions for satellites and harsh planetary environments.

Our solutions deliver **a significant leap in energy efficiency—more than doubling performance— and replace the reliance on rare earth metals and toxic materials:** The sustainable energy harvesting and storage applications enhance system longevity, reduce environmental impact, and optimise power generation for satellites and planetary habitats. Besides space missions, our key customers include e.g., solar parks, roof and wall manufactures and electric mobility solution providers.

COMPETITIVE ADVANTAGE

Our thin-film solar energy harvesters, solar panels, and solid-state energy storage solutions are **exceptionally lightweight, non-explosive, and highly efficient in energy harvesting.** The solar film is mouldable, while the batteries can be printed into any shape. These features are of critical importance when designing equipment for various space missions, where extreme environmental conditions demand superior durability, adaptability, and reliability.

COMPANY

The company is established early 2024 with a jump start of securing first a robust clientele while ensuring technology development and commercial scaling capabilities. Headquartered in Helsinki, the company’s screen-printing production facility iis in Imatra, Eastern Finland, with pre-production starting in Q4 2025 and full-scale production in Summer 2026. **We source our partners and suppliers from ecosystems in EU and allied countries.**

NORDIC NANO

Founders and the core team

Esa Parjanen, B.Sc. Civil Eng., INSEAD, CEO, Founder
12 years in HealthTech, 17 in ICT (SAP, TDC, IBS), and 19 as a CEO, leading both a 600 FTE Nordic organisation and a 5 FTE startup. Experienced in global B2B and channel sales.

Mattipekka Kronqvist, B.Sc.BA, CTO, Founder, Chair
Over 15 years as an entrepreneur in cyber defence, data solutions, and communication technology. Founded multiple companies serving national security and industries. Holder of multiple patents in communication and data flow systems.

Jarkko Aro, M.Sc. Industrial Eng., INSEAD, COO, Co-Founder
With experience at P&G, Nokia, Microsoft, Metso, and FLSmidth, he is a founding HMD member skilled in scaling businesses and driving growth. Known for transformative strategies, he has also advised multiple startups.

Lauri Peltola, M.Sc. Economics, CCO, Co-Founder
Over 20 years as an entrepreneur in startups, imports, health tech, and software, with expertise in B2B sales, business development, and innovation.

Bela Dhananjay Bhuskute, D.Sc.(Tech). Partner, Chief Scientist
Physicist with 9+ years of research experience at NCL, India, and Tampere University, Finland. Expert in artificial photosynthesis, photocatalytic water splitting, electrochemistry, and surface science. Skilled in product development and scaling solar energy solutions. Founder and ex-CTO of Plasmonics Oy.

Ville Jokelainen, M.Sc. Eng, MBA, Partner, Supply Chain & New Product Introduction
Developed and led world class operations for Nokia, Microsoft, Capgemini & Cargotec. Scaling and transforming businesses. Commercialising innovations into tangible products and making things happen**.**

Pia Erkinheimo, PhD Studies ongoing in Industrial Mgmt & Strategy, Partner, Chief Corporate Relations and ESG Officer
Pioneer in climate and digital innovation, growth investment ecosystems, and ESG. Angel investor, board professional, EU innovation jury member, and LUT University board member. Passionate researcher and strategist with experience from The Finnish Climate Fund, Nordea, Nokia, Capgemini.

NORDIC NANO

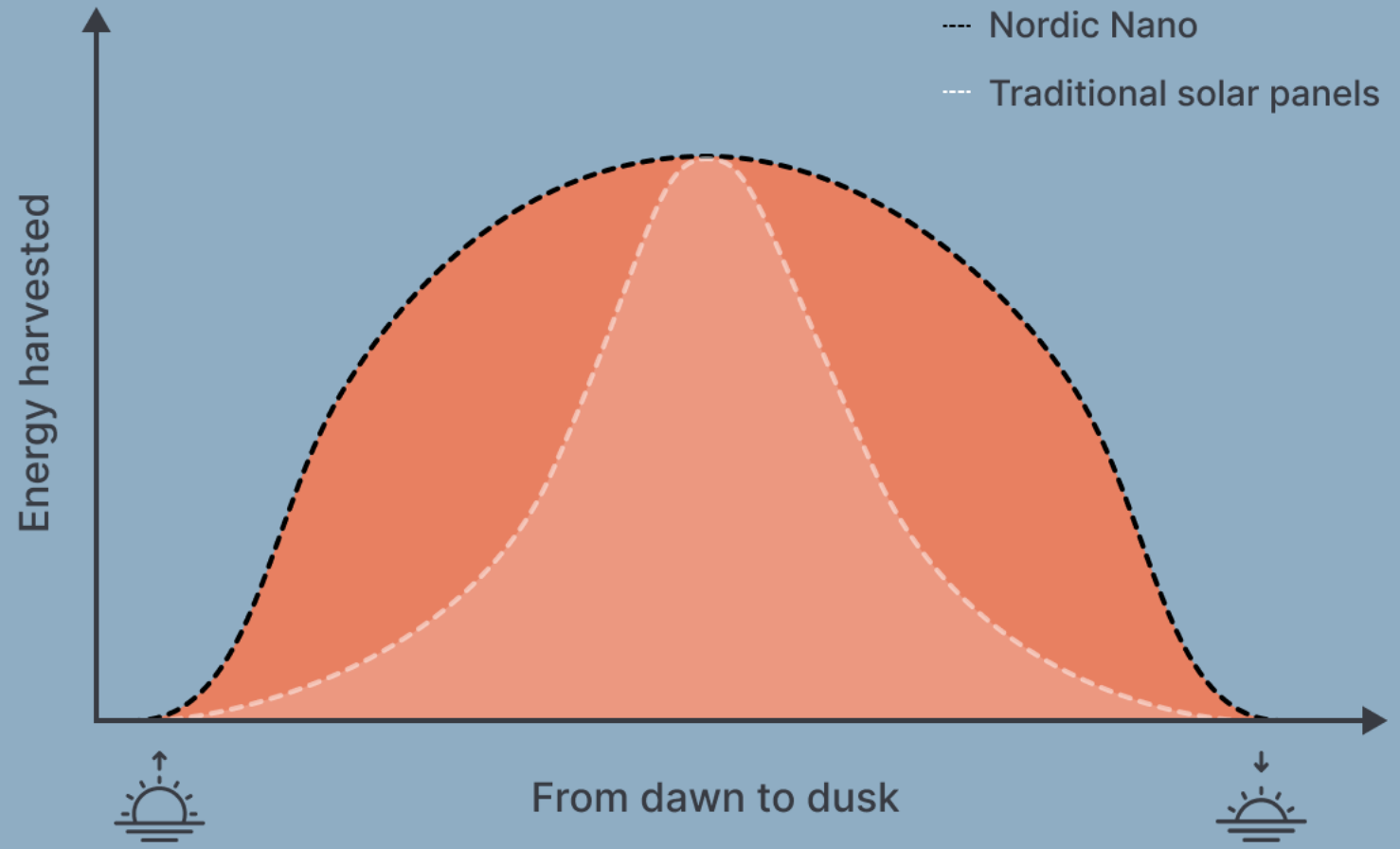
European satellite manufacturing market grows over 10% during the next 5 years

- The size of the European satellite manufacturing market is estimated to be **€10,45 billion*** in 2025 and is expected to reach €17,10 billion by 2030 (CAGR of 10.4% between 2025 to 2030).
  - 2849 Satellites launched 2024 (UN), market increasing rapidly. 3700 satellites to be launched in 2033
- **Future opportunity: Space-Based Solar Power (SBSP) Industry worth €5,7 billion by 2040 – there is a growing demand for green energy, coupled with a focus on sustainability****
  - SBSP represents a groundbreaking innovation in renewable energy technology, centred on harnessing solar energy directly from space and transmitting it to Earth. It leverages satellites or spacecraft outfitted with solar panels to capture solar radiation in the unimpeded expanse of space.

** https://www.marketsandmarkets.com/PressReleases/space-based-solar-power.asp
* https://www.mordorintelligence.com/industry-reports/europe-satellite-manufacturing-market

NORDIC NANO

Our solution harvests double the amount of solar energy due to its advanced nanomaterials and proprietary screen-printing technology



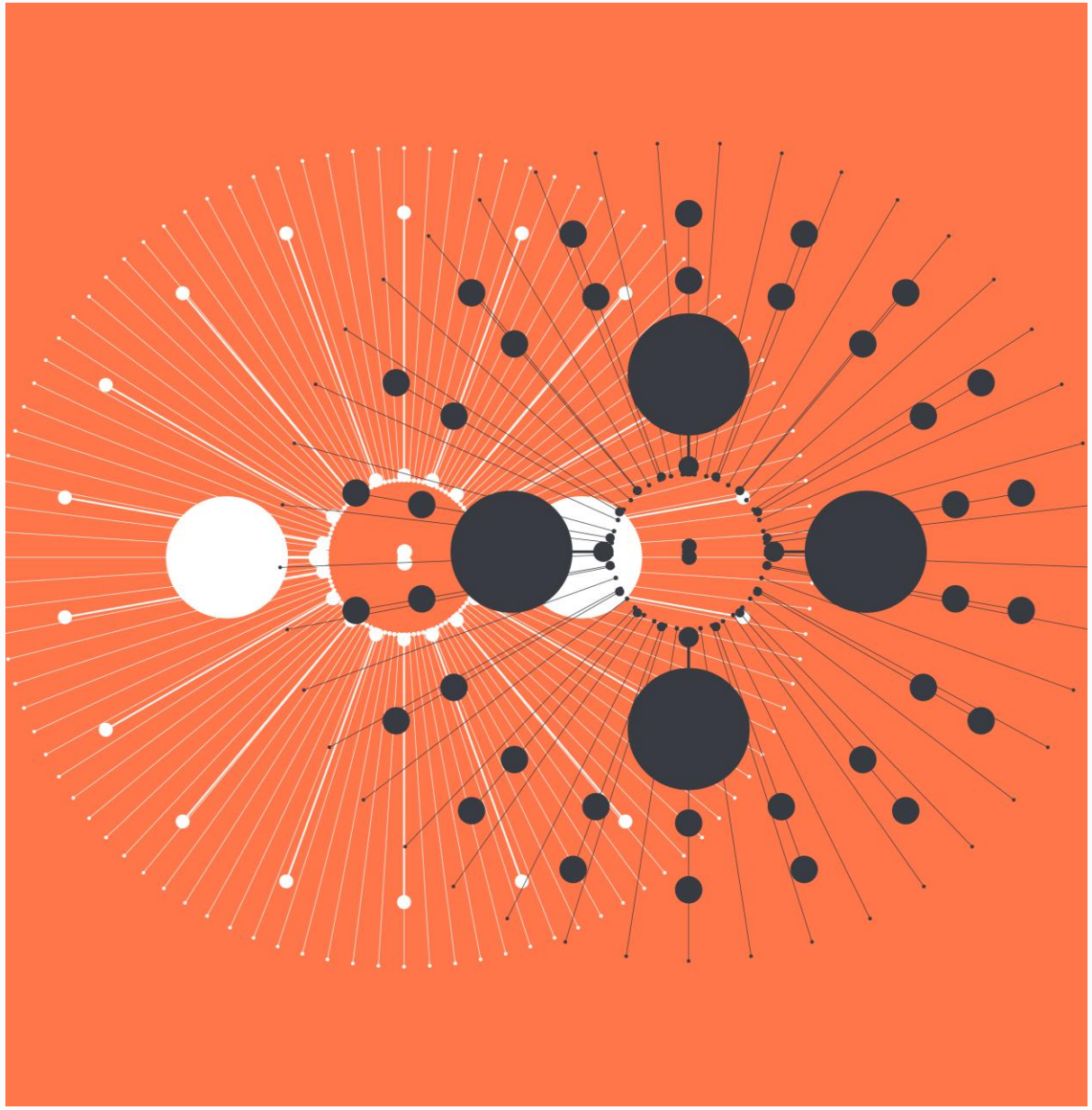
NORDIC NANO

Meeting satellite market demands: Nordic Nano’s competitive edge

- Longer lifetime
- Size and weight savings

Our organic materials and lightweight structures directly addresses key industry concerns

- the ozone layer and
- the risks posed by large satellite components that fail to fully burn during de-orbiting



NORDIC NANO

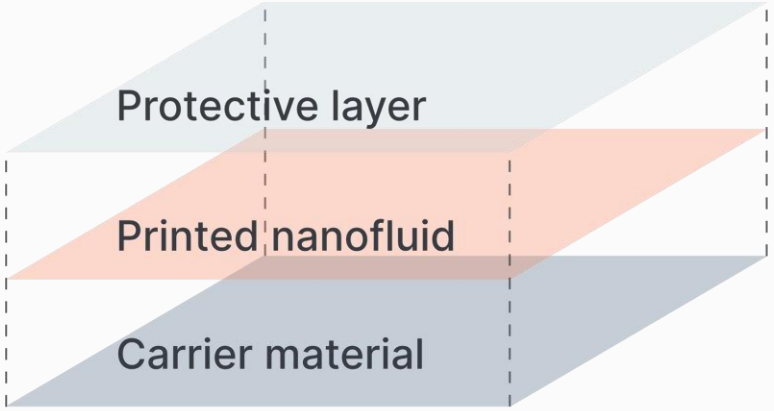
NN Solar™

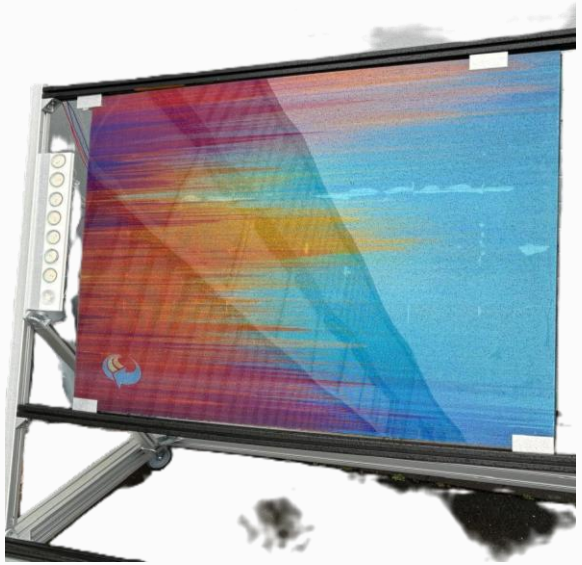
SOLAR PHOTOVOLTAGE

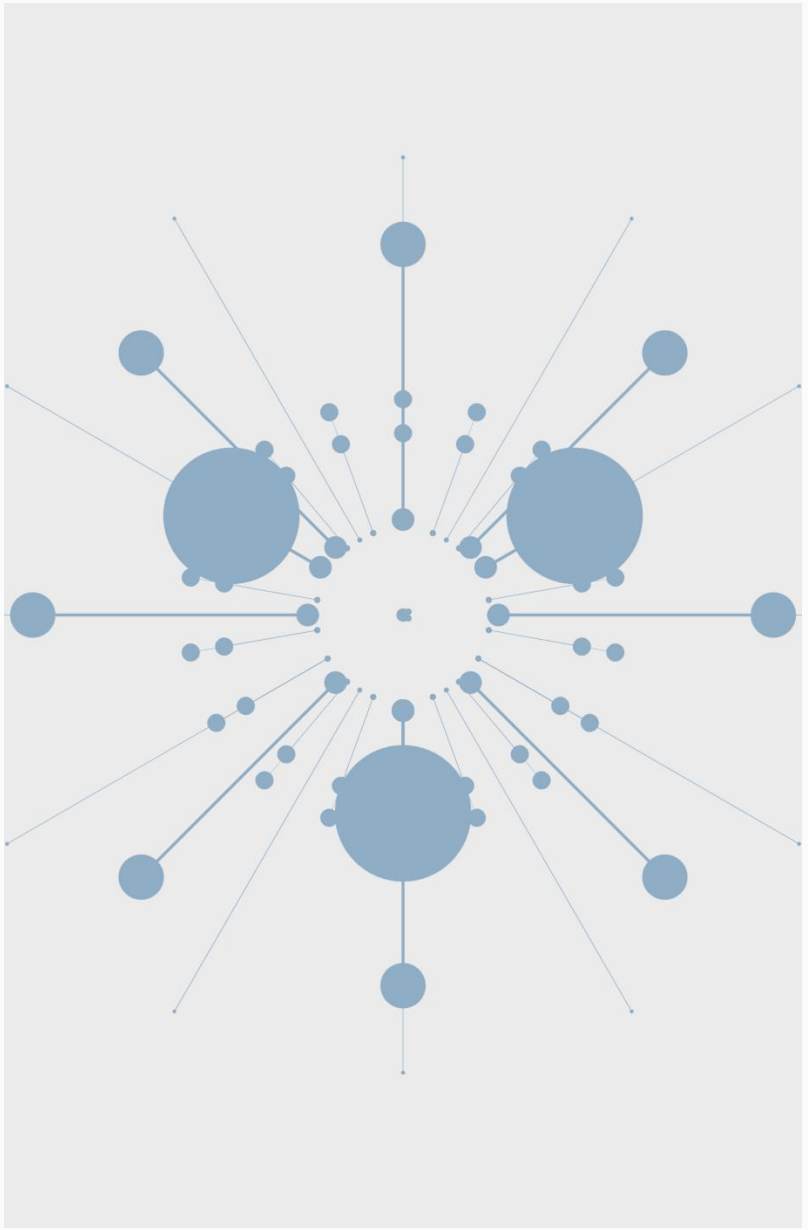
- The total output increases by over 90% due to improved utilisation of daylight compared to silicon-based panels
- Expected peak performance up to 240 W/ m2*

USE CASES

- Self-sustaining buildings with energy-generating roofs, ceilings, and windows
- Solar parks
- Space solutions e.g., satellites







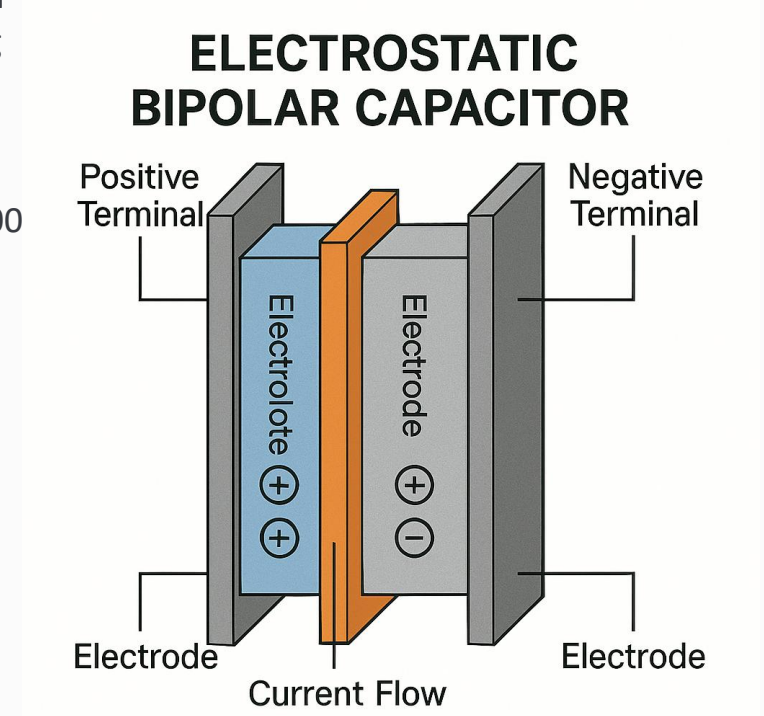
*Watt peak power per square metre

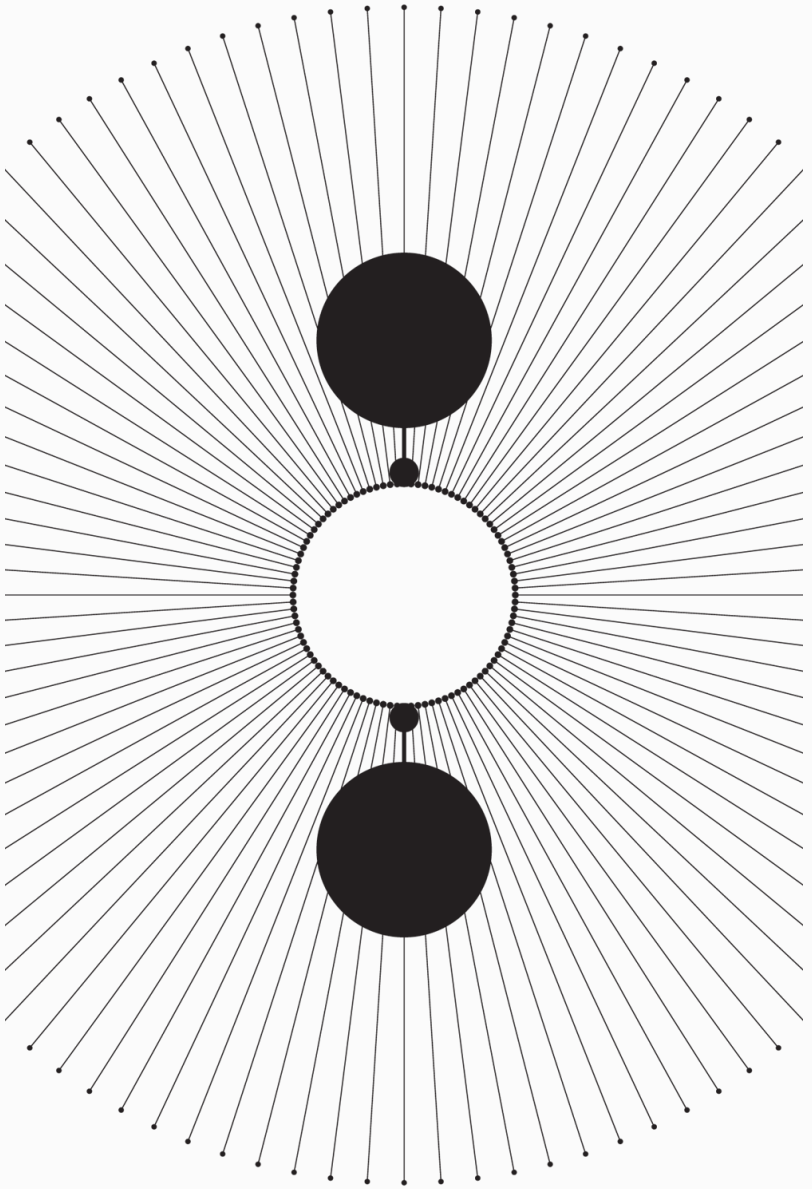
NORDIC NANO

NN Storage™

ENERGY STORAGE

Energy storage solutions implemented with Nordic Nano's technology are non-toxic, fire-safe and with a maximum production temperature of 65°C providing significant energy and cost savings in the production process. They feature advanced technical specifications, including a non-heating property. Additionally, they offer an energy density of up to 400 Wh/kg and support over 50,000 charging cycles.





USE CASES

- Properties designed for energy self-sufficiency, incorporating advanced energy storage systems
- Smart energy storage systems for homes that automatically manage energy use by that help the balance the grid
- Automotive industry
- Space solutions e.g., satellites

NORDIC NANO

Nordic Nano’s first production facility is in Imatra, Finland

At our manufacturing facility in Imatra, Finland, we will begin producing carbon-based solar film and solid-state super capacitators in 2026. The pre-production equipment will be installed during Q4/25 while the mass production kicks-off in H1/26.

Imatra is located a three-hour drive northeast of Helsinki. The facility is ideal for screen printing operations and requires no modifications. With Nordic Nano's growth, the premises (3850 m²) can support five production lines running simultaneously in three shifts. Imatra has rail connections to Hamina-Kotka Port, Finland’s largest general port for cargo, container, export, and transit traffic.

NORDIC NANO

Contribution to achieve the

UN's Sustainable Development Goals

7) Affordable and Clean Energy: Nordic Nano addresses the need for affordable, clean energy by offering solutions for the production and storage of green energy at more favourable costs compared to existing market options.

9) Industry, Innovation, and Infrastructure: Nordic Nano advances the development of clean energy infrastructure through industrially scalable innovations that enable sustainable methods of renewable energy production.

11) Sustainable Cities and Communities: Nordic Nano participates in building resilient and self-sufficient cities and communities by providing European and local solutions to ensure energy sovereignty.

12) Responsible Consumption and Production: Nordic Nano's solutions are non-toxic (carbon-based), free from rare earth metals and on the path to 100% recyclability.

13) Climate Action: Raison d'être of Nordic Nano is to combat climate change and its impacts.

15) Life on Land: By offering alternative solutions for manufacturing solar collectors and energy storage, Nordic Nano helps prevent the environmental damage and biodiversity loss associated with mineral mining and land use.

NORDIC NANO

Thank you!

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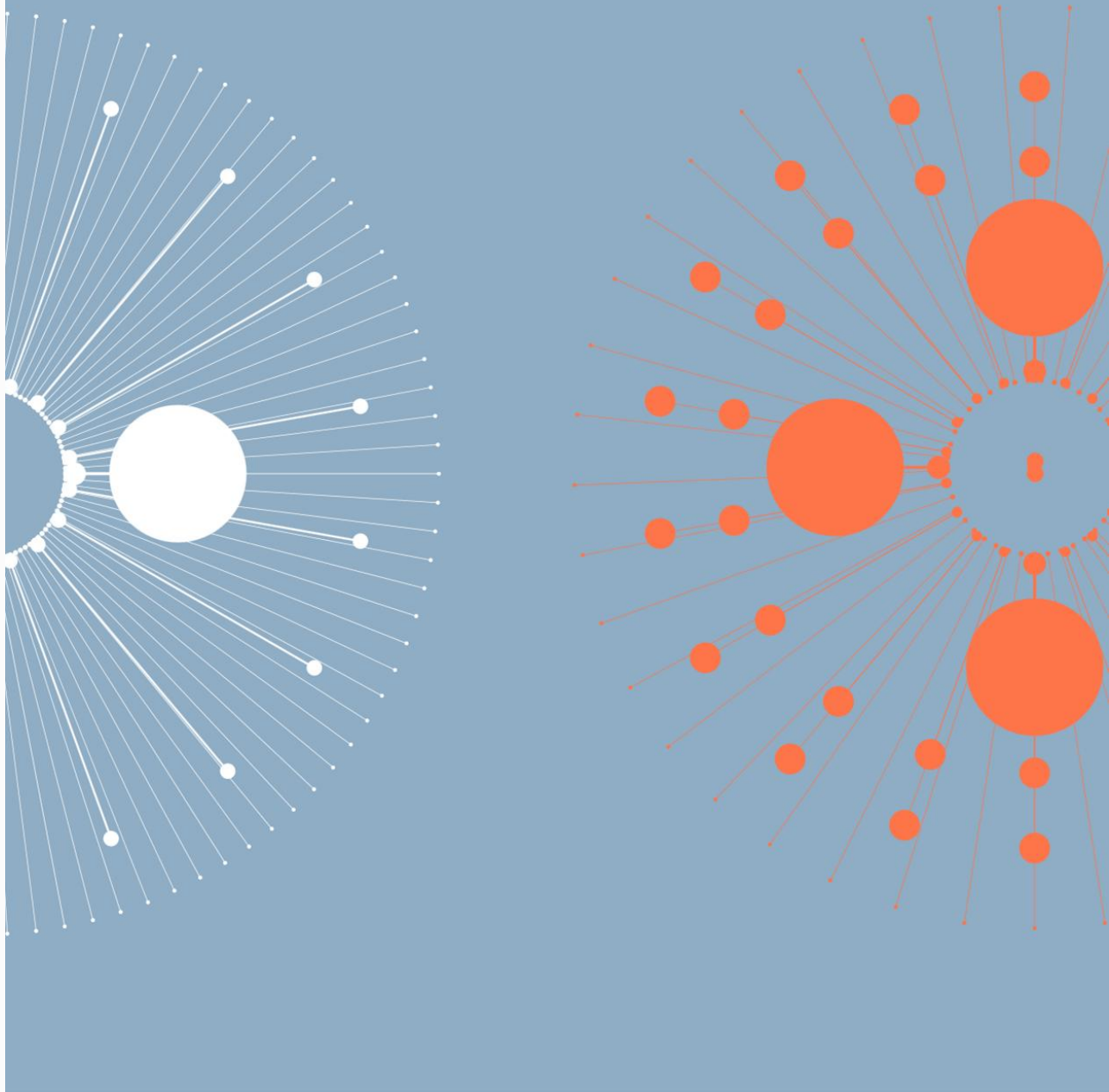

Thank you!

esabic.fi
linkedin.com/company/esa-bic-finland/