



ECSEL JU funding - an opportunity for Health companies

06/03/2020

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Spinverse

About Spinverse

Innovation for growth and a sustainable world

We are the Nordic leader in innovation consulting, specialised in open innovation, arranging funding and commercialisation of emerging technologies.

We believe in innovative solutions in industries such as health, electronics, ICT & security, bioeconomy & renewables, manufacturing and energy to tackle the major global challenges.

2004
Established

2.3 B€
Large scale
Innovation
Programs
coordinated

420 M€
EU funding for
our customers

400+
Companies
engaged in
ecosystems

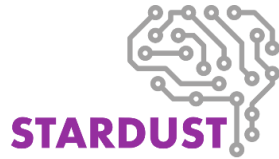
50
Team of Experts
in our offices in
Helsinki, Berlin,
Stockholm

Examples of Health projects Spinverse has helped to prepare



8.2 M€, H2020, 9 partners

Miniaturized energy harvesting device for leadless cardiac pacemakers and structural health monitoring



3.8 M€, H2020, 9 partners

Creating a miniaturised neurosurgical implant for a new treatment paradigm for Parkinson's



6.3 M€, H2020, 9 partners

A pilot plant for the production of polymer-based nanopharmaceuticals in compliance with GMP



37.3 M€, ECSEL JU, 31 partners

European expertise in advanced packaging & assembly for high volume mass manufacturing of electrical and optical components



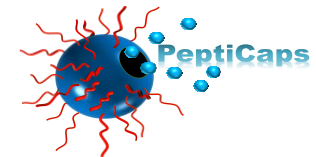
4.8 M€, H2020, 9 partners

Developing a new low cost manufacturing technology for tuberculosis and HIV tests with diagnosis within minutes

AXONE

2.7 M€, H2020 FTI, 4 partners

Commercial multiple electrode lead technology for cardiac disease - solution to patients that are difficult to treat



3.85 M€, H2020, 9 partners

Designing nanocapsules for cosmetics that comply with EU regulations

Why EU funding

Accessing Open Innovation Networks through EU R&I projects



Possibility to co-innovate with the best partners

EU-project is a way to create partnerships and share the risk of development
Create partnerships with researchers, customers and other stakeholders



Opportunities for piloting and commercialisation

Work together with your potential customers and suppliers



What kind of activities are funded?

Everything from ‘Basic principle observed’ “ to “actual system proven in operational environment”.

ECSEL-Joint Undertaking

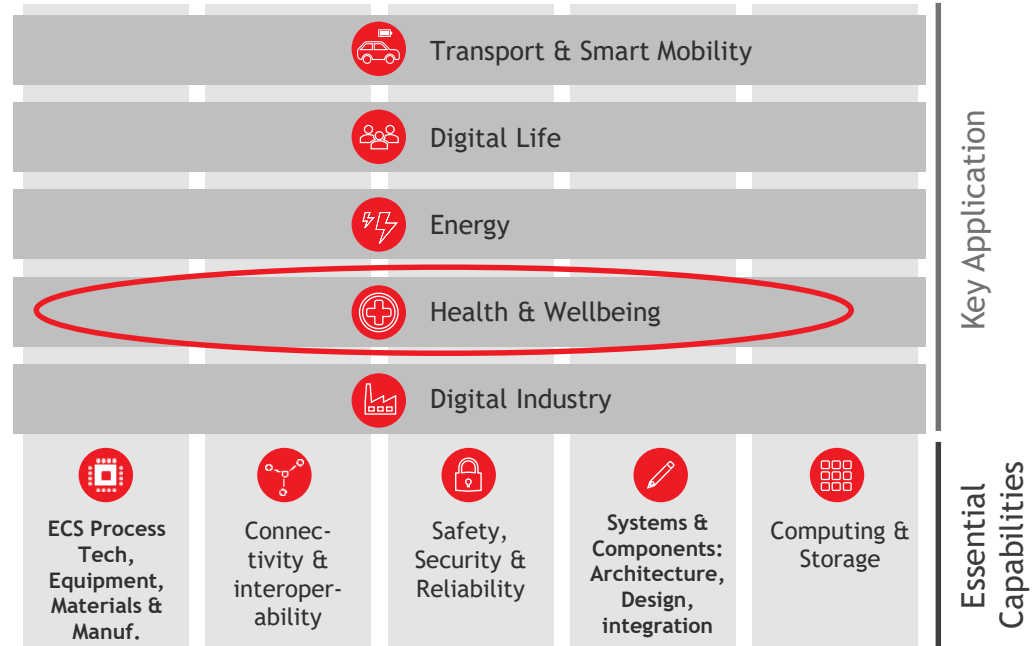
Electronic Components and Systems for European Leadership

ECSEL is a EU-driven, public-private partnership, funding innovation in electronic components and systems.

Electronic components and systems (ECS) are a pervasive Key Enabling Technology, impacting all industrial branches and almost all aspects of life

ECSEL JU offers funding for Research, Development and Innovation projects

<https://www.ecsel.eu/>



ECSEL basics

Compared to typical H2020 Research and Innovation Action (RIA) and Innovation Action (IA) projects

- Very large consortiums; typically 30-40 (12-109) partners
- Very big total budgets
 - In RIAs max EU contribution 15 M€ (25..35% of budgets)
 - In IAs max EU contribution 30 M€ (20-35%)
- Smaller funding rates
 - typically 40-70% depending on company type and country
 - EU share 20-35%
 - National share often the same, but depends on the country
- Essentially higher hit rates: 20-60% success
- Technology Readiness Levels: RIA 3-4; IA 5-8

CAPPING

IA

- The EU contribution per project is capped at 30M€
- The maximum EU funding per partner in a project is limited to 50% of the total EU funding for the project

RIA

- The EU contribution per project is capped at 15M€
- The maximum EU funding per partner is limited to 40% of the total EU funding of the project

Type	RIA	IA
For profit (non SME)	25%	20%
SME	30%	25%
University/Other	35%	35%

EU Contribution as % of the eligible cost according to H2020 (beneficiaries may ask for a lower contribution)
National contributions: vary per state, see the Annex of Work Plan 2017

Health topics in ECSEL Multi-Annual Strategic Plan

Game changers:

- Wearable and remote sensing technologies
- Bioelectronic medicines
- Smart minimal invasive instruments
- e-Health devices and applications
- Affordable point-of-care diagnostic tools
 - E.g. MEMS devices, ultrasound imaging & AI
- Organ-on-chip
 - E.g. microfluidics, microfabrication

Major challenges:

- Moving healthcare from hospitals into our homes and daily life requiring preventive and patient centric care
- Restructuring healthcare delivery systems, from supply-driven to patient-oriented
- Engaging individuals more actively in their own health and wellbeing
- Ensuring affordable healthcare for the growing amount of chronic, lifestyle related diseases and an ageing population
- Developing platforms for wearables/implants, data analytics, artificial intelligence for precision medicine and personalised healthcare and wellbeing

APPLAUSE

The project focuses on developing advanced packaging for photonics, optics and electronics for low cost manufacturing. The ECSEL Joint Undertaking project fosters the European semiconductor value chain by building new tools, methods and processes for high volume manufacturing.

<https://applause-ecsel.eu/>

31 project partners from 11 countries

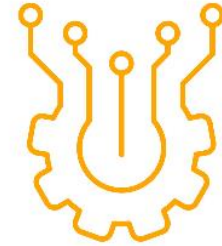


Research and Technology Organisations

Project Goals and Results

- Bring advanced packaging and high-volume manufacturing concepts to optics and photonics via six industrial use cases
- Develop new simulation and test methods, processes and related process equipment, as well as process control equipment
- Increase the competitiveness and global market share of European semiconductor industry

APPLAUSE



Key Project Characteristics

- The 34M€ total budget is co-funded by Horizon 2020 and national funding agencies and industries, as a part of the Electronics Components and Systems for European Leadership Joint Undertaking (ECSEL JU).
- 31 partners from 11 European countries
- Project duration from 2019 to 2022

Spinverse role

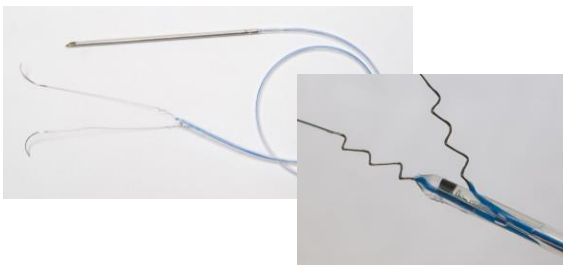
- Spinverse assisted in project planning and funding proposal preparation
- Spinverse collected and formulated texts to the proposal, and actively worked to ensure the overall quality of the project proposal



APPLAUSE Use Cases and roles

Use Case Title	Use Case Leader	Participants
Substantially smaller 3D integrated ambient light sensor for mobile and wearable applications	AMS	Afore, APC, BESI AT, BESI NL, Disco, EVG, FhG ENAS, ICOS, imec BE, JSR, PacTech, RoodMicrotec, Semilab
High performance, low cost, uncooled thermal IR image sensor for automotive and surveillance applications	IDEAS	BESI AT, CSEM, EDI, EVG, FhG ENAS, FhG IMS, FhG IZM, ICOS, imec BE, PacTech, RoodMicrotec, USN, WE
High speed datacom transceivers with reduced manufacturing costs	DustPhotonics	Albis, Almae, BESI NL, FhG IZM, RoodMicrotec
Cardiac monitoring concept based on multimodal sensing on a flexible patch	Precordior	AMS, APC, Everon, FhG ENAS, FhG IZM, imec NL, Nuremedia, RoodMicrotec, UTU, WE
Miniaturized invasive cardiac sensors with advanced monitoring capabilities	Osypka	FhG IMS, Cardiaccs, RoodMicrotec
Optical humidity measurement modules with cost-effective packaging of components	Vaisala	Aalto, Afore, Almae, BESI AT, Disco, FhG ENAS, RoodMicrotec

Health companies!



InFormMed- An integrated Pilot Line for Medical Devices

- The pilot line includes micro-fabrication, assembly and even the fabrication of smart catheters
 - At facility of Philips Innovation Services, which will be qualified for small/medium-scale production of medical devices
 - Pilot facility will be open to other users for pilot production and product validation
- <http://www.informed-project.eu/>



Project coordinator:

Sieger Swaving
sieger.swaving@philips.com

Website:

<http://informed-project.eu>

Institution:

Sieger Swaving

Start date: 06/2015

Duration: 36

Total investment: M€ 58.02

Participating organisation: 39

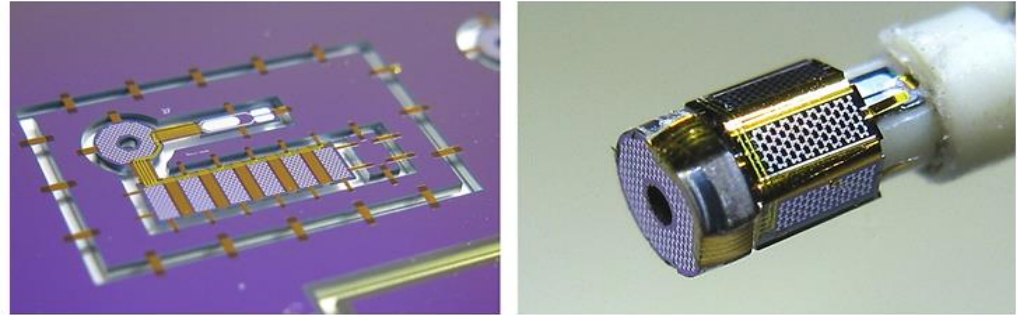
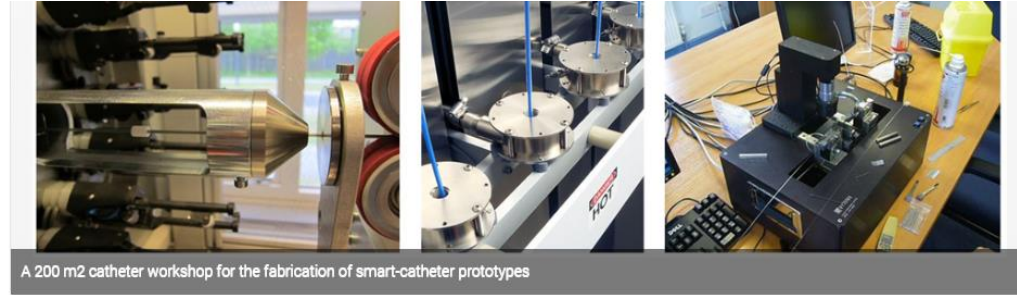
Number of countries: 10



InForMed- An integrated Pilot Line for Medical Devices

Demonstrators:

- Smart ablation catheter with optical shape sensing
- Advanced devices for electrophysiology
- Photodetectors for spectral CT
- Steering deep brain stimulation
- Bacterial detection platform
- Smart body patches
 - Smart bandages to monitor wound healing
 - On body toxic gas monitoring
 - Unobtrusive heart rate monitoring
 - A shoe inlay to map foot pressure.



ENABLE-S3 European Initiative to Enable Validation for Highly Automated Safe and Secure Systems

- **Aim:** to substitute cost-intensive verification & validation efforts by more advanced and efficient methods
 - Pure simulation cannot cover physics in detail due to limitations in modelling and computation.
 - Real-world tests are too expensive, too time consuming and potentially dangerous.
 - ENABLE-S3 aims at developing an innovative solution capable of combining both worlds in an optimized manner.
- **Health domain application:** Autonomous robotic movement and x-ray imaging automation
- <https://www.enable-s3.eu/domains/health/>



Project coordinator:

Andrea Leitner
enable-s3@avl.com

Website:

<http://www.enable-s3.eu/>

Institution:

AVL LIST GMBH

Start date: 05/2016

Duration: 36 months

Total investment: M€ 16.2

Participating organisation: 71

Number of countries: 16

POSITION II - Next generation of smart catheters

- Accelerate innovation in smart medical instruments by working towards of open technology platforms
 - **Use open platform technologies** accessible to multiple end-users that are steered by roadmaps enabling end-users to focus on their applications;
 - **Bring digitization at the tip** to reduce wires and thus assembly cost and pave the way towards standardization and wireless connectivity to “unclutter” the cath lab;
 - **Enable a better diagnosis** by using state of the art sensors and (ultra-sound) MEMS devices, and signal processing directly at the tip of the instrument;
 - **Streamline the work-flow in the cath lab**, resulting in a more intuitive work environment for the surgeon, resulting in less errors and a more efficient workflow.
- <http://position-2.eu/about/>



Project coordinator:

Ronald Dekker
Ronald.dekker@philips.com

Institution:

Philips Electronics Netherlands BV

Start date: 06/2018

Duration: 36 months

Total investment: M€ 41.3

Participating organisation: 45

Number of countries: 12

Health.E ECSEL JU Lighthouse Initiative

- **Vision:** Enabling “Moore for Medical”
- **Mission:** Motivate the ECS community to work towards **open technology platforms** for medical devices on a **device, system, and data level**
 - Translate the needs of medtech and pharma into ECS opportunities
 - Introduce the open technology platform model for the next generation smart catheters and extend to other medical domains
 - Funnel innovation for medical devices (reduce fragmentation).
 - Make Europe the innovation hub for medical devices.
 - Creating a sustainable ecosystem consisting of technology suppliers, device manufacturers and end-users
 - Connect to other European initiatives and communities

Health.E lighthouse projects (provisional):

- **POSITION-II** (ECSEL - cornerstone project)
 - Open technology platforms for smart catheters and implants
- **ULIMPIA** (PENTA)
 - Development of an open technology platforms for smart body patches
- **InForMed** (ECSEL)
 - A pilot line for micro-fabricated medical devices
- **ORCHID** (H2020)
 - European roadmap for Organ-on-Chip



Opportunities for the ECS industry



HEALTH.E



Diagnostics



traditional



continuous monitoring



point-of-care
diagnostics



non-radiative imaging



Organ-on-Chip

Data



e-health



digital twin



Big data and cyber security

Therapy



interventional
cardiology



drug
administration



wound care



cath lab suite



implantables



bioelectronics

ECSEL project preparation process

- Multi-Annual Strategic Plan (MASP) outlines the topics and focus areas
 - These are relatively stable - for example Health technologies are expected to be one of the Key Application Areas
 - https://ec.europa.eu/research/participants/data/ref/h2020/other/legal/jtis/ecsel-multi-stratplan-2020_en.pdf
- ECSEL JU Work Plan is published yearly
 - gives the details of funding and national rules
- Calls open in February
 - .. But the game opens already in October (EPoSS meeting), brokerage events held in Oct-Feb
- Project Outline deadline in May
 - Results come in end of June
- Full proposal to be submitted in September
 - Results known in November
- Grant preparation takes time - projects usually start in April-June



NewLife proposal idea for the current ECSEL call

- Spinverse is building a proposal called NewLife for ECSEL IA 2020 Call
 - The project idea was initiated by University of Turku
- On 25.2.2020, there are 5 user cases in discussion and about 30 organisations interested to join the consortium

Target Project: ECSEL IA

- 4-6 user cases defined by large enterprises
- Consortium of 25-35 partners from 7-12 countries
- Total budget 20-30 M€
- Project duration 36 months
- Focus in TRL5-8, starting from demo level

Project scope

- **New solutions for foetus/pregnant mother/newborn home monitoring**
- **Electronics components and systems R&D, e.g. from electronics packaging up to IoT, AI and cybersecurity**
- The technology needs are defined by user case owners
- Collaborative R&D to deliver a demonstrator for testing in relevant environment in each user case

Process: from proposal building to project

- PO phase F2F meeting 03/2020
- **PO phase proposal DL 5.5.2020**
- PO phase results in June 2020
- FPP phase F2F in 06/2020
- FPP phase DL in 17.9.2020
- FPP phase results in 12/2020
- Grant negotiations in Q1/2021
- Kick off in 04..06/2021
- Project execution 06/2021..06/2024

Use Cases

- **Non-invasive home monitoring of foetus**
- **Non-invasive home monitoring of pregnant mothers**
- **Non-invasive home monitoring of newborns**

Partners welcomed

- Companies with relevant technologies for home monitoring of pregnancy/newborn related issues
- **RTO partner list is full**

Expected success rate & cost model

- Compared to normal H2020 projects, the success rate of ECSEL IA calls so far has been 20-60% of proposals above threshold
- Spinverse has created 3 successful ECSELS
 - ECSEL 2016: EuroPAT -MASIP
 - ECSEL 2018: APPLAUSE
 - ECSEL 2019: Charm in grant negotiations
- Cost model: Invoicing in proposal building phase + success fee

ECSEL and IMI are launching a new joint call

CALL 2020-3 JOINT ACTION WITH IMI



■ PRELIMINARY INFORMATION

- Grafts on the IMI JU Project: Trials@Home
- According to RIA conditions
- Late call launch: September ?
- Topic: **Next Generation Digital Technologies for Clinical Trials at Home:** This project should address the issues and gaps to bring all the scattered activities, technologies, platforms to a higher TRL level by addressing the technical, regulatory, compatibility and acceptability issues that at the moment block endorsement by pharma and hospitals:
 - Lack of accuracy (compared to clinical instruments)
 - Data integration (into the workflow of hospitals and pharma)
 - User friendliness (should be straightforward for non-technical staff and elderly)
 - Data security and Privacy (most hospitals don't want to have data outside the hospital)
 - Patch to patch communication (how to prevent latency)

ECSEL JU CALLS 2020, EFECs HELSINKI 21 November 2011



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