Business Tampere
Turvallisuuteen liittyvien EU-hankkeiden aktivointitilaisuus

- Käytännön kokemuksia hankepartnerina
- Evaluointiprosessi
- Konsultit apuna?

Marko Elo
2023-01-23

crosscontrol

CROSSCONTROL OY

KÄYTÄNNÖN KOKEMUKSIA HANKEPARTNERINA

CROSSCONTROL INTRO

crosscontrol

PROVIDING TECHNOLOGIES THAT MAKE MACHINES SMART, SAFE AND PRODUCTIVE

CENTROMOTION™
Advancing Actuation and Control Solutions

CrossControl software platform for applications

OPEN SOFTWARE PLATFORM AND COMPONENTS FOR WIDE SPECTRUM OF SOLUTIONS

Software Application Tools

UX Designer

Data Engine

Fieldbus Access

CODESYS

Qt

MATLAB

HTML

Protocols & Communications

ISOBUS

Automotive Ethernet

CANopen

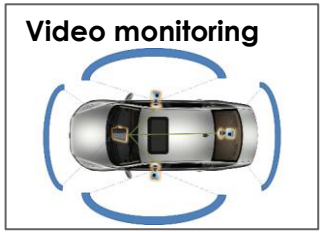
VNC

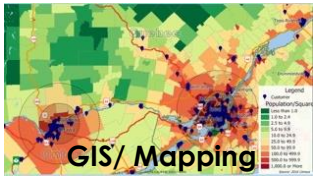
OPC UA

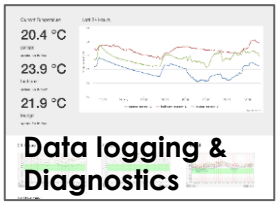
Core system

yocto PROJECT

docker







crosscontrol
making machines smart, safe and productive

CROSSCONTROL – TURVALLISUUSDIREKTIIVIT, CYBERSEC

Koneturvallisuus ja HMI

- CrossControl on kehittänyt ja valmistanut safety-HMI variantteja, täyttäen mm. geneerisen raideliikennestandardin EN 50155 vaatimukset
- Raideliikenteen kohdesegmentti: mm. metrot, alueellinen liikenne, high-speed, autonomiset sukkulat
- HMI on osa TCMS-järjestemää (Train Control and Monitoring System), johon kohdistuu safety-vaatimuksia
- Kokonaisjärjestelmä SIL2/SIL3-sertifioitu, lisäksi mahdollisia kansallisia vaatimuksia

Cybersec

- SW-platformi on osana toimintokriittisiä ohjausjärjestelmiä -> tietoturvavaatimuksia:
  - häiriöttömyys, autenttisuus, datan eheys, auktorisoinnit ym.
  - häiriötön liitettävyys muihin onsite-järjestelmiin, fleet managementiin ym.

CRAFTERS

CRAFTERS - ConstRaint and Application driven Framework for Tailoring Embedded Real-time Systems
2012-2015

Embedded **many-core systems**: marketable lead applications driving ecosystem development and benchmarking on the fields of **industrial applications**, intelligent transport systems, video and image processing, and wireless communications. Key challenges include guaranteeing secure, safe, reliable, and timely operation, back-annotation based forward system governance, tool-tool, **tool-middleware, and middleware-hardware exchange interfaces**, and energy management with minimal run-time overhead.

- 26 partneria, koordinaattori Technoconsult ApS (Tanska)
- Pääpartnerit Infineon Technologies AG, Tampereen Yliopisto (TTY), Thales Italia
- Suomi-konsortio: Tampereen Yliopisto (TTY), Mobisoft, CrossControl

Tulokset

+ laaja tutkimuksellinen sisältö (safety + realtime + many-core)
+ co-existence of safety & non-safety applications

- ei suoraa polkua tuotteistamiseen

PRODUCTIVE4.0

Productive4.0 - Electronics and ICT as enabler for digital industry and optimized supply chain management covering the entire product lifecycle
2017-2020

https://productive40.eu

Aihealue: digitalisaatio (Industrie 4.0), hajautetu järjestelmät, teollisuuden use caset, IoT, Arrowhead framework (avoin, yliopistotaustainen IoT-platformi)

- Partnerit: yhteensä 109, 19 maata edustettuna (EU + associated countries), 65% teollisuuden toimijoita
- Koordinaattori: Infineon Technologies AG
- Suomi-konsortio: VTT, Tampereen Yliopisto, Konecranes, Metso Outotec, Wapice, CrossControl

+ use caset
+ IoT-platformikehitys, applikaatiot

- Arrowhead IoT framework saanut rajallisesti kaupallista jalansijaa

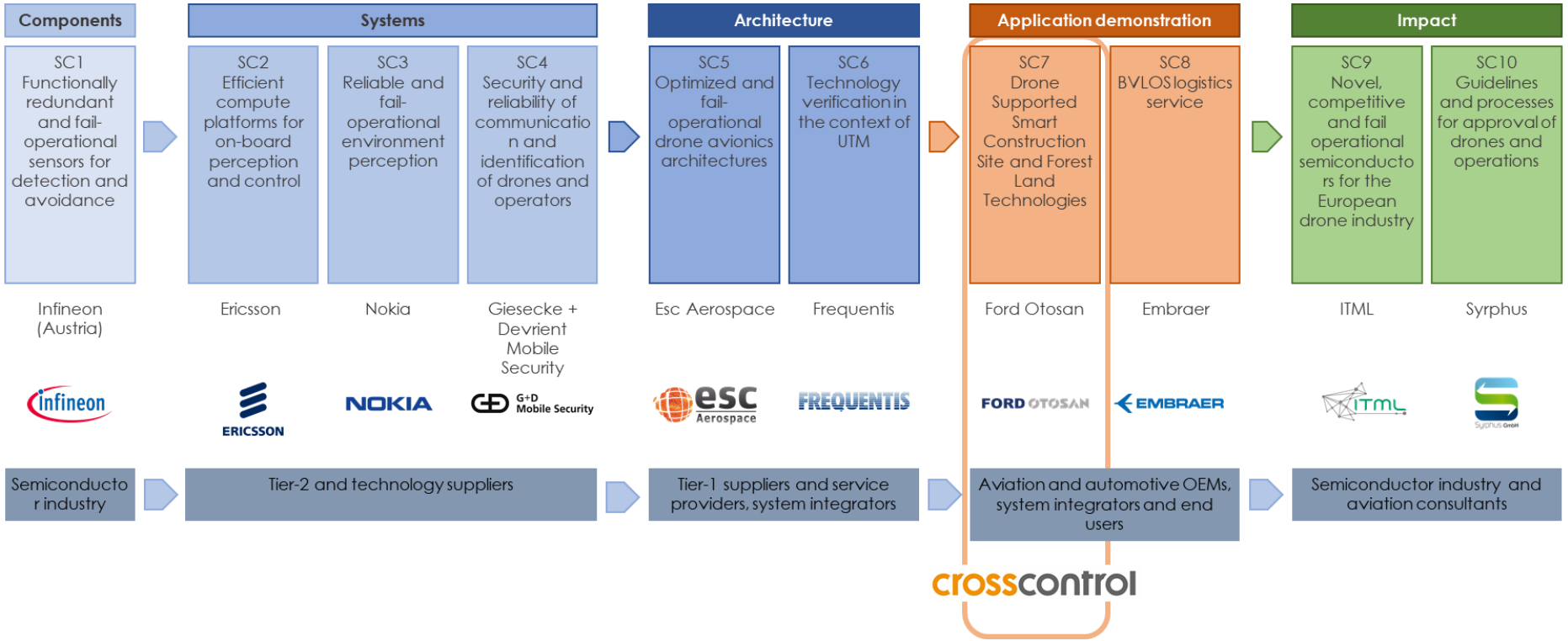
ADACORSA, VISIO JA PARTNERIT

ADACORSA - Airborne data collection on resilient system architectures
2020-2023
Vision: Provide European technology to render **drones** as a safe and efficient component of the mobility mix, with differentiated, safe and reliable capabilities in extended beyond visual line of sight (BVLOS) operations.

https://adacorsa.eu/

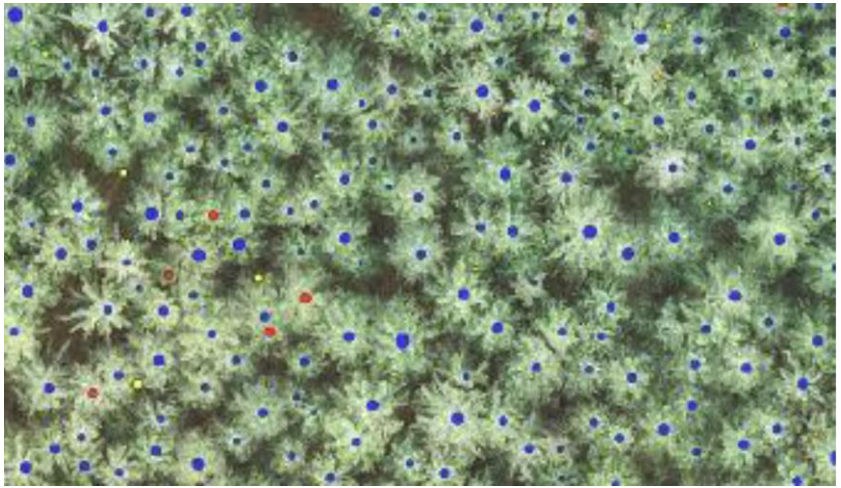
- 50 partneria
- Koordinaattori: Infineon Technologies AG
- Suomi-konsortiossa Tampereen Yliopisto, Nokia, CrossControl

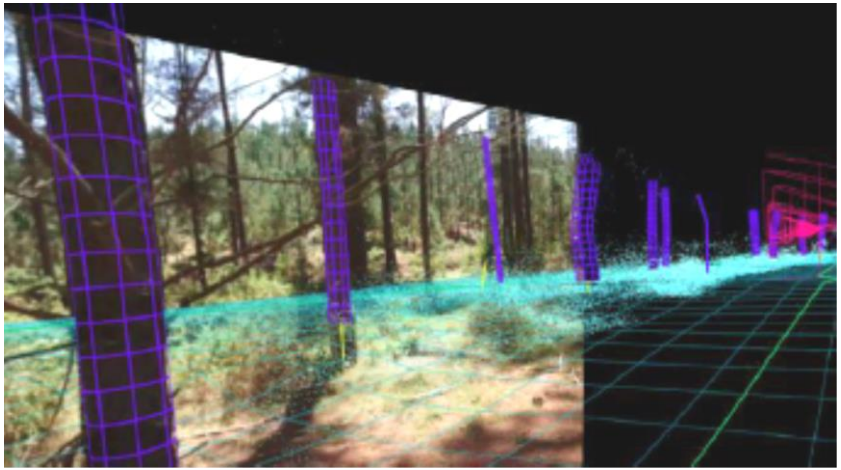
ADACORSA, PROJEKTIN ORGANISAATIO



ADACORSA, FORESTRY USE CASE

- Data feed (camera, LiDAR, other sensors) collected by the drone
  - Over the canopy: tree heights, locations
  - Terrestrial flight below the canopy: log width, species
- Drone and onboard computing by Avular (NLD)
- Algorithms by Katam (SWE) and University of Lund (SWE)
- Post-flight analysis at the edge computing platform by CrossControl
- Moving the analysis from cloud to the AI-powered edge at the field

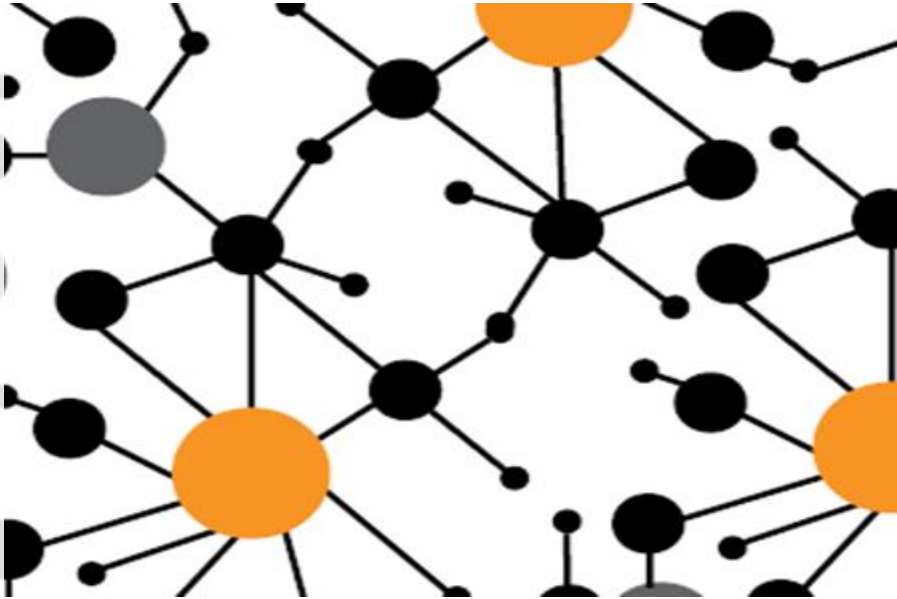




KOKEMUKSIA EU-KONSORTIOHANKKEISTA

- Olennaista: johdon tuki projektille ja aihepiiri yrityksen ytimessä
- Hankeaihioiden löytäminen:
  - Brokerage-tilaisuudet, LinkedIn-ryhmät
  - Business Finlandin ja Business Tampereen tarjoamat EU-rahoitusneuvontapalvelut
  - Tutkimuksen veturit: VTT, yliopistot
  - Oman segmentin kokeneet EU-hankeosallistujat (sulautettujen järjestelmien alueella esim. Infineon, NXP)
- Projektiaihiosta konsortion kokoamiseen, hakemusprosessiin ja projektin alkuun saattaa kulua jopa 1 vuosi. Jos hanke kestää 3 vuotta, odotukset markkinahorisonttiin pitää huomioida.
- Suurissa yhteishankkeissa usein ulkoistettu projektihallinto, joka laskuttaa partnereita kunkin budjettiosuuden suhteessa
- Hankkeissa saattaa olla kymmeniä partnereita. Yhteistyö keskittyy kuitenkin työpakettien ja taskien sisällä tyypillisesti n. 4-8 partnerin osaprojekteihin
- Riippuen hankeohjelmasta, PK-yritysten merkittävä osuus konsortiossa on yleensä eduksi
- EU-hankkeen raportointi ei juuri poikkea Business Finland –projektista, työmäärää ei kannata pelätä. Toki työpakettien ja taskien vetäjillä on lisävastuita.
- Jos hanke ei saa rahoitusta, konsortio saattaa jatkaa valmistelua yhdessä ja yrittää uudelleen. Jos projektisuunnitelma ei olennaisesti muutu, uutuusarvo tietysti laskee.
- Alihankinnan sisällyttäminen budjettiin on yleensä mahdollista. Pienemmille yrityksille yksi tapa osallistua onkin alihankkijana, ja usein rahoitusehtoihin kuuluu alihankintabudjetin suuntaaminen nimenomaan PK-sektorille.

EVALUOINTIPROSESSI



Evaluointikriteerit

EXCELLENCE, IMPACT, QUALITY OF IMPLEMENTATION PLAN

- Kriteerien pääotsikot yleensä samat kaikissa ohjelmissa, alikriteerit vaihtelee
- Evaluoinnin tulos, ml. kriteerit, tulee palautteena hakijalle/konsortiolle
- Tässä esimerkkinä EIC Accelerator:

Excellence
How relevant are the proposal objectives in contributing to the specific objectives of the chosen Challenge? Does the innovation have a high degree of novelty – compared to existing products, services and business models – with the potential to create or significantly transform markets?
Timing: Is the timing right for this innovation in terms of market, user, societal or scientific of technological trends and developments?
Technological feasibility: Is the innovation based on a technology or technologies that have been adequately assessed at least in a laboratory environment and relevant environments to characterize the potential and assess the level of risk (at least TRL 5/6)? Is the technology developed in a safe, secure and reliable manner?
Intellectual Property: Does the company have the necessary IPR to ensure freedom to operate and adequate protection of the idea?

Impact
Scale-up potential: Does the innovation have scale up potential, including the potential to develop new markets and impact on the growth of the company? Are the associated financial needs well assessed and realistic?
Scale-up potential: Does the innovation have scale up potential, including the potential to develop new markets and impact on the growth of the company? Are the associated financial needs well assessed and realistic?
Market fit and competitor analysis: Has the potential market for the innovation been adequately assessed, including conditions and growth rates? Has a competitive analysis been thoroughly performed, including identification of potential customers and relevant types of users, including women and men, definition of unique selling points and key differentiation from competitors?
Commercialization strategy: Is there a convincing and well thought-through strategy for commercialization, including regulatory approvals/compliance needed, time to market/deployment, and business and revenue model?
Key partners: Have the key partners required to develop and commercialize the innovation been identified and engaged, including their roles/competences and a sufficient level of commitment and incentivization?

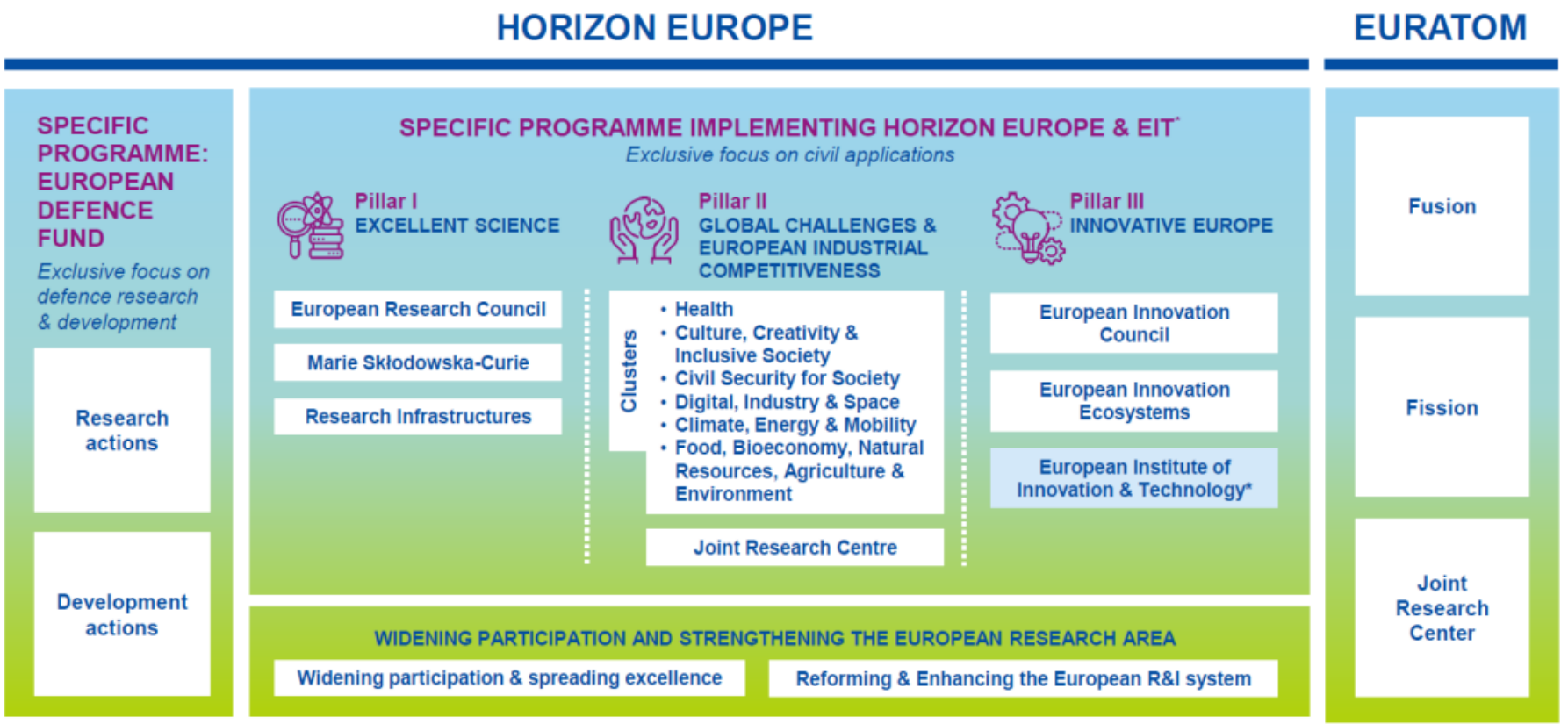
Evaluointikriteerit

EXCELLENCE, IMPACT, QUALITY OF IMPLEMENTATION PLAN

Level of risk, implementation, and need for Union support
Team: Does the team have the capability and motivation to implement the innovation proposal and bring it to the market? Is there a plan to acquire any critical competencies which are currently missing, including adequate representation of women and men?
Milestones: Is there a clear implementation plan with defined milestones, work packages and deliverables, together with realistic resources and timings?
Risk level of the investment: Does the nature and level of risk of the investment in your innovation mean that market actors are unwilling to commit the full amount alone? Is there evidence that European market actors would be willing to invest, either alongside the EIC or at a later stage?
Risk mitigation: Have the main risks (e.g. technological, market, financial, regulatory) been identified, together with measures to take to mitigate them?

- Palaute voi mennä evaluaattoreilta (4 kpl) suoraan hakijalle (esim. EIC Accelerator)
- … tai, yksi evaluaattoreista kirjoittaa konsensusraportin, hyväksyttää sen muilla evaluaattoreilla, jonka jälkeen raportti menee hakijalle (esim. Eurostars)
- … tai, erityisesti ohjelmissa joissa tyypillisesti suuret konsortiot hakijoina, evaluaattorit kokoontuvat paneelikeskusteluun jossa konsensusraportti tehdään yhdessä

SATOJA OHJELMIA, TUHANSIA CALLEJA, BUDJETTI 95 000 M€



PILLAR II: CIVIL SECURITY FOR SOCIETY CLUSTER

Cluster 3 focuses on security issues and has six destinations:

- Better protect the EU and its citizens against Crime and Terrorism
- Effective management of EU external borders
- Resilient Infrastructure
- Increased Cybersecurity
- Disaster-Resilient Society for Europe
- Strengthened Security Research and Innovation

Check out the latest Cluster 3 research calls on the Funding and Portals site.

EUREKA-HANKKEET

- https://www.eurekanetwork.org/
- Teollisuudelle relevantteja mm. Eurostars, SMART
- Uusien markkinoiden ja tuotantoketjujen evaluointiin: INNOWWIDE
- Clusters, Globalstars, … mutta kaikki ohjelmat ja callit eivät ole välttämättä auki Suomessa
- Evaluointi Eurekan toimesta, rahoitus kansallisista lähteistä
- Kiinnostava erityisesti PK-yrityksille, huomattavasti vähemmän kilpailua verrattuna EIC-ohjelmiin
- Esim. Eurostars-ohjelmassa hakijana muutaman partnerin konsortio, jossa voi olla mukana muitakin kuin PK-yrityksiä

EUREKA
innovation across borders

EIT, EUROPEAN INSTITUTE OF INNOVATION AND TECHNOLOGY

- https://eit.europa.eu/
- Communities:
  - Climate, Culture & Creativity, Digital, Food, Health, InnoEnergy, Manufacturing, RawMaterials, Urban Mobility
- Tarjolla myös palveluja erityisesti PK-yrityksille, koulutusta, verkottumista
- ”Cascaded funding”: vaiheittaista rahoitusta ja sparrausta startupeille ja PK-yrityksille

KIINNOSTAVIA TWITTER-TÄGEJÄ

- EU Research Results: @CORDIS_EU
- The EU Research & Innovation Magazine: @HorizonMagEU
- Enterprise Europe Network: @EEN_EU
- Horizon Europesta vastaava EU-komissaari: @GabrielMariya
- Horizon Europen ja European Innovation Councilin (EIC) viralliset kanavat: @HorizonEU, @EUeic
- EIC:n yläpuolella oleva hallinnollinen elin: @EU_EISMEA
- Eureka-ohjelmat: @EUREKA_NETWORK
- European Climate, Infrastructure and Environment Executive Agency: @cinea_eu
- KDT JU: @KDT_JU

BROKERAGE-TILAISUUKSIA

https://clustercollaboration.eu/event-calendar/matchmaking	European Cluster Collaboration Platform, European online hub for cluster stakeholders (cluster organisations, policymakers and other related stakeholders from the cluster ecosystem) and the reference one-stop-shop for stakeholders in third countries aiming to set up partnerships with European counterparts
https://een.ec.europa.eu/events	Enterprise Europe Network, support network for SMEs with international ambitions.
https://www.kdt-ju.europa.eu/events	Key Digital Technologies Joint Undertaking (successor of ECSEL), the public-private partnership for assuring world-class expertise in key enabling technologies, essential for Europe's competitive leadership in the era of the digital economy.
https://emmc.eu/events/emmc-horizon-europe-brokerage-event-jan-2023/	The European Materials Modelling Council considers the integration of materials and digitalization critical for more agile and sustainable product development.

Konsultit apuna?

MISSÄ VAIHEESSA ULKOPUOLISTA APUA?

- Sopivan konsortion löytäminen tai luominen
- Grant writing
- Projektin johto
- Raportointi
- Disseminaatio
- Audit

- Joissakin hankeohjelmissa lähes poikkeuksetta ainakin grant writing -vaiheessa
- Kirjavia hinnoittelumalleja

european association of innovation consultants

- EAIC: 56 jäsenyritystä
- Palvelut:
  - Collaborative projects (IA, RIA, CSA, PCP, PPI)
  - Other Horizon Europe (ERC, MSCA...)
  - EIC (Accelerator, Pathfinder, Transition)
  - Other European Programmes (LIFE, Erasmus+, Eureka, Innovation Fund, CEF...)
  - National Funding
  - Project Management Support
  - National Associations

Pugnax Oy

- Perustettu 2019, liikevaihto n. 40 k€ (2022)
- Käytettävissä: teknologiaevaluoinnit, grant writing, EU-verkostot, Keskuskauppakamarin hyväksymä tavarantarkastaja (HTT)
- Marko.Elo@Pugnax.fi

Joitakin yhteistyöreferenssejä

CARGO BEACON

Startupin teknologiastrategia, grant writing, seed VC

Investment and Development Agency of Latvia

Valtiollisen teknologiaohjelman evaluointi

Greentech PK-yritys Pirkanmaalla

Grant writing, seed VC

Vakuutusyhtiö Suomessa

HTT-tavarantarkastusprojekti

Akkuteknologiayritys Etelä-Suomessa

Teknologiaevaluointi

SPINVERSE

Grant writing -yhteistyö

KOKEILLAANPA MIHIN TEKOÄLY PYSTYY

- https://chat.openai.com/

Create an EU project idea in the field of societal security, specifically for Nordic countries. Quantify the impacts and outline the work package structure.

Project Title: NordicSecure – Developing Secure and Sustainable Systems for Nordic Societal Security

Objective: The objective of this project is to develop secure and reliable systems for Nordic societal security. This will be achieved through the research and development of secure protocols for communication between governmental organizations and other stakeholders in the Nordic countries, as well as the development of tools for monitoring and analysing data collected from these organizations. Additionally, this project will develop secure authentication methods to ensure the security of the data being collected and transmitted.

Impact: This project aims to improve the security of the Nordic countries by developing robust and secure systems for communication, data collection and analysis. This will help to ensure the safety and security of the citizens of the Nordic countries, as well as improve the efficiency of governmental organizations.

Work Package Structure:

WP1 – Research and Development of Secure Communication Protocols

WP2 – Development of Tools for Data Collection and Analysis

WP3 – Development of Secure Authentication Methods

WP4 – Evaluation and Testing of Developed Systems

WP5 – Deployment and Maintenance of Developed Systems