



Valsts izglītības
attīstības aģentūra

Izsludinātie IKT tematikas konkursi

Andris Freimanis

andris.freimanis@viaa.gov.lv



NACIONĀLAIS
ATTĪSTĪBAS
PLĀNS 2020



EIROPAS SAVIENĪBA

Eiropas Reģionālās
attīstības fonds

I E G U L D Ī J U M S T A V Ā N Ā K O T N Ē

1.1.1. specifiskā atbalsta mērķa "Palielināt Latvijas zinātnisko institūciju pētniecisko un inovatīvo kapacitāti un spēju piesaistīt ārējo finansējumu, ieguldot cilvēkresursos un infrastruktūrā" 1.1.1.5. pasākuma "Atbalsts starptautiskās sadarbības projektiem pētniecībā un inovācijās" 1.kārtas, projekta Nr.1.1.1.5/17/I/001 "Atbalsts starptautiskās sadarbības projektu izstrādei un īstenošanai" ietvaros

Nacionālais kontaktpunkts un EDI

- ICT mailing list - <http://eepurl.com/gaTCHv>
- Kontakti
 - Andris Freimanis
 - andris.freimanis@viaa.gov.lv
 - 26382352
- Seminārs – Legal and Financial issues in H2020
 - 05.03.2019. 9:00 – 16:00
 - LU jaunākajā ēkā
- EDI (līdz 2018. decembra sākumam):
 - 7 projekti – 867'098.75 EUR
 - 14. vieta Latvijā pēc piesaistītā finansējuma (starp LLU un KĶI)

Uzsaukumi

- ICT-01-2019: Computing technologies and engineering methods for cyber-physical systems of systems
- ICT-03-2018-2019: Photonics Manufacturing Pilot Lines for Photonic Components and Devices
- ICT-05-2019: Application driven Photonics components
- ICT-08-2019: Security and resilience for collaborative manufacturing environments
- ICT-09-2019-2020: Robotics in Application Areas
- ICT-10-2019-2020: Robotics Core Technology
- DT-ICT-01-2019 Smart Anything Everywhere
- DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories
- DT-ICT-11-2019: Big data solutions for energy
- SU-ICT-02-2020: Building blocks for resilience in evolving ICT systems

Atsauce

- Darba programma ir vienīgais juridiski saistošais dokuments!!!

ICT-01-2019: Computing technologies and engineering methods for cyber-physical systems of systems

- Kopā call – **38M EUR**; termiņš – **28.03.2019**.
- RIA – 3 to 5M EUR projektam – TRLs 2-5 - katrā grupā 4 finansēti
 - Computing software and systems design for physically-entangled systems
 - Models, tools and methods for design-operations continuum of dependable CPSoS
 - **TRLs are fluid**. For software particularly, want something new
- CSA – 1 projekts tiks finansēts – 2M EUR
 - Activities will include constituency building, **clustering of related projects, liaison with related programmes** such as ECSEL and EUREKA, **impact analysis, communication of project results, pre-normative activities** and **road-mapping for future research and innovation**.
 - CSA must build community
 - Link to ECSEL (after 2021 under one umbrella for all industry linked activities)

ICT-01-2019: Ko Eiropa grib un negrib redzēt?

- Jā
 - **Computing technologies and engineering methods** for cyber-physical systems and systems-of-systems (**CPSoS**)
 - Focus on **dependable systems** which **interact with the physical world**. Industrial applications (any industrial sector)
 - **Radically new technologies** for the future autonomous and reliable applications, supporting the **complete lifecycle** of complex systems
- Nē
 - **Consumer** applications
 - Small **incremental improvements** over the state of the art
 - Technologies that **cannot be used in physically-entangled** applications
 - Theoretical research **not applicable to industry**

ICT-01-2019: Līdzīgi projekti un klasteri

- **AXIOM**: hw/sw for CPS at low cost, low power, easy programmability
- **OPERA**: low power, highly parallel systems leveraging both low power server-class processors and reconfigurable devices
- **LPGPU2**: performance analysis for low-power GPU programming
- **BONSEYES**: platform for Artificial Intelligence in low power IoT devices
- **CPSWARM**: engineering of swarms of heterogeneous CPS based on local policies and problem-solving behavior
- **Hipeac**: support action for computing
- **Platforms4CPS**: support action for CPS

ICT-01-2019: *Background* dokumenti:

- What you should know – submitting a proposal for ICT-01-2019
- **European Commission web site:**
 - <https://ec.europa.eu/digital-single-market/en/policies/advanced-computing>
 - <https://ec.europa.eu/digital-single-market/en/cyber-physical-systems>
- **HiPEAC vision:** <https://www.hipeac.net/publications/vision/>
- **ECSEL strategic research agenda 2018:** <https://ec.europa.eu/digital-single-market/en/news/first-ever-joint-electronic-components-and-systems-ecs-strategic-research-agenda-sra>

ICT-03-2018-2019: Photonics Manufacturing Pilot Lines for Photonic Components and Devices

- Kopā call – **30M EUR**; termiņš – **28.03.2019**.
- IA – **8 – 15M EUR** projektam – katrā grupā vismaz 1 projekts
 - Next generation free form optics
 - Advanced medical device technologies for medical diagnostics
- The aim is to **accelerate the design, development and uptake of photonics technology**, ... by providing low-barrier access to volume production of advanced photonics components
- Galvenie spēlētāji:
 - Leading players should be the **IT providers** who can put state of the art technologies at the disposition of others through the pilot lines,
 - **Photonics21 members**
 - **Physicians/Clinicians** etc should be included for the medical pilot line.
 - **End users**

ICT-03-2018-2019: Ko Eiropa grib un negrib?

- Jā:
 - They basically **plan to fund pilot lines providing access to manufacturing facilities to SMEs** principally.
 - Proposers should consider the **future sustainability** of the lines beyond the project lifetime.
 - **Development/application** of these pilot lines
 - Need to **align with user industry**, particularly SMEs.
- Nē:
 - **Research projects** to advance on the State of the Art of the technologies themselves
 - **Resubmissions from previous calls** that have not been updated accordingly, because these technologies advance quite rapidly

ICT-03-2018-2019: Saistīti projekti un org

- ICT 28 – 2015 : Cross-Cutting ICT KETs
 - **PIX4LIFE** www.pix4life.eu
 - **PI-SCALE** www.pi-scale.eu
 - **MIRPHAB** www.mirphab.eu
- ICT 29 – 2016: Photonics KET
 - **PIXAPP** www.pixapp.eu
- Innovation accelerator for SMEs called [ActPhast](#)

ICT-03-2018-2019: *Background* dokumenti

- [Photonics21 Strategic research agenda](#)

ICT-05-2019: Application driven Photonics components - RIA

- Terminš: **28.03.2019**. Budžets 45M EUR – 3 to 6M EUR vienam
- Grupas:
 - Photonics System on Chip/ System in Package for optical interconnect applications
 - Photonics systems for advanced imaging to support diagnostics driven therapy
- ... projects should **demonstrate advances** in terms of speed, energy efficiency, cost, reliability, etc.
- ... involvement of **clinicians and medical equipment manufacturers** is again **mandatory** in order to validate the future developments and **gender-issues** should again be taken into account during validation.
- **skin cancer is always excluded** as this area has already been widely covered by previously funded projects
- **Nē**: Projects not having a clear idea of the area of application then developing new technologies (RIAs)

ICT-05-2019: IA

- Budžets 30M EUR – 3 to 6M EUR vienam
- Grupas:
 - Photonics devices to support monitoring therapeutic progress
 - Sensor-Based Optimization of Production Processes
- IAs should necessarily **start from already developed and validated technologies** that are taken forward in projects correctly including industry and clinicians/users.
- IAs (i), actions **should be driven by industry** (although this does not necessarily mean industry should coordinate) and particularly **medical equipment manufacturers, clinicians** should be correctly involved, **small scale clinical studies** should be included (but not clinical trials) and **gender specificities** should be taken into account during validation
- **skin cancer is always excluded** as this area has already been widely covered by previously funded projects
- starting on **technologies not sufficiently developed or validated** at the time of the proposal (IAs) where an adequate initial TRL cannot be justified and constitutes a risk

ICT-05-2019: CSA

- CSA – 1.5M EUR – 1 to 1.5M EUR vienam
 - Fostering careers in photonics
 - Actions should help make STEM graduates/PhDs **more industry ready** and should **provide the appropriate training, encourage innovation and entrepreneurship**
 - Address gender issues

ICT-05-2019: Saistīti projekti un org

- Projekti, it sevišķi ar medicīnu saistītie, šajos call:
 - ICT26-2014 : Biophotonics for screening of diseases
 - ICT27-2015 : Optical communications for data centers
 - ICT29-2016 : Biophotonics: advancing imaging for in-depth disease diagnosis
 - ICT30-2017 : Application driven core photonics / imaging sensing for in-depth disease diagnosis / sensing for process and product monitoring and analysis
 - ICT04-2018 : Enabling automated mass-manufacturing of Datacom photonics products

ICT-05-2019: *Background* dokumenti

- [Photonics21 Strategic research agenda](#)
- [ICT-05-2019 prezentācija](#)
- [A bright future for the next 3 years of H2020 Photonics calls](#)
- [ICT-05-2019 FAQ](#)

ICT-08-2019: Security and resilience for collaborative manufacturing environments

- RIA – 11M EUR – 4 to 6M EUR projektam – 28.03.2019.
- Finansēs 2 – 3 projektus
- Proposals need to **develop tools and services** guaranteeing an adequate level of data security for digital collaboration between manufacturing environments and value chains.
- TRL 5 to 7 including **at least one use-case**
- ... measurable and significant **improvements over state of the art** tools and methods under real world conditions
- ... **usable in real manufacturing facilities**, taking into account the operational requirements needed for factory usage in real-world conditions, including reliability and resilience.

ICT-08-2019: Ko Eiropa grib un negrib?

- Jā:
 - **Practically usable solutions** (tools and services) which can guarantee an adequate and significantly increased level of **security (not only cybersecurity) and safety** in real manufacturing facilities without limiting the capability to exchange data and information both on the manufacturing floor and beyond the factory (other actors in the value chains).
 - **Semi-autonomous or fully autonomous solutions**, requiring little or no local supervision are encouraged.
 - SSH not at the core of the project, but of course **human behavior will have to be considered**.
- Nē:
 - Generic cybersecurity solutions
 - Small incremental improvements over the state of the art
 - Technologies that cannot be used in physically-entangled applications
 - Theoretical research not applicable to industry

ICT-08-2019: Saistīti projekti un organizācijas

- Gradiant (Valuechain 4.0 project)
- Innovalia (BOOST 4.0 project, AUTOWARE project, CyberBasque project) – Autoware CORDIS
- ATOS (COMPOSITION project)
- University of Applied Science Burgenland (SEMI4.0 project)
- Engineering (DEFENDER project) - CORDIS
- University of Murcia (ANASTACIA project) - CORDIS
- Institut Mines-Télécom (IT'M Factory)

ICT-08-2019: *Background* dokumenti

- [Workshop on Cybersecurity for Manufacturing Environments: presentations and report](#)
- Factories of the Future cPPP Multiannual Roadmap: "Factories 4.0 and Beyond"
 - <http://www.effra.eu>
- Cybersecurity cPPP (ECSO) Strategic Research Agenda (SRIA)
 - <https://www.ecs-org.eu/working-groups/wg6-strategic-research-and-innovation-agenda-sria>

ICT-09-2019-2020: Robotics in Application Areas - RIA

- Budžets 20M EUR – 3 to 5M EUR projektam - TRL 3 to 5
- Proposals are expected to enable **substantially improved solutions** to challenging technical issues, with a view of take-up in applications with high socio-economic impact
- We are looking for well focus action on a specific problem (**not looking for very basic research** as it must be connected to application area).
- Proposals will be expected to plan efforts to **connect and cooperate with the DIHs**, Platforms and other relevant activities of this work programme, as appropriate.
- The call is open to **all robotics-related research topics** and to all new application areas. **Except:** healthcare, inspection and maintenance of infrastructure, agri-food and agile production.

ICT-09-2019-2020 – IA

- Budžets – 28M EUR – 7 to 9M EUR projektam
- Through large-scale pilots, proposals are expected to make a significant step forward in **platform development** in the area of infrastructure inspection and maintenance. Starting from suitable **reference architectures**, ..., **tested via piloting**, ... being evolved over time into **standards**.
- Large scale pilots capable of demonstrating the use of robotics in highly realistic environments **of infrastructure inspection and maintenance**
- Pilots are expected to address **both technical and non-technical issues**, such as socio-economic impact, novel business models, legal and regulatory, ethical and cyber-security issues and connections to Big Data and IoT.
- To build one scale pilot use of robotics in real environment (railway, highway, etc..)

ICT-09-2019-2020: CSA

- Budžets: 2M EUR – 1 projektu par 2M EUR plāno finansēt
- **Robotic competition** in healthcare, inspection and maintenance of infrastructure, agri-food, and agile production
- ... address all aspects of running **competitions as public events**, and engage with the media and public.
- Proposals should seek to **mobilise external partners in sponsoring** and setting up the competitions.

ICT-09-2019-2020: Vispārīgi un saistītie proj.

- The actions sought this year should **focus on removing barriers** that prevent a more widespread adoption of robots.
- [AEROARMS](#)
- [Collaborative aerial robotic workers](#)
- [SecondHands](#)
- [AEROBI](#)
- [2016 H2020 projects](#)

ICT-10-2019-2020: Robotics Core Technology

- Budžets 42M EUR – 5 to 10M EUR projektam, TRL 3+
- Pieteikumi **vienā** no četrām pamata tehnoloģijām
 - AI and Cognition
 - Cognitive Mechatronics
 - Socially cooperative human-robot interaction
 - Model-based design and configuration tools
- Un **vienā** no četrām jomām:
 - Healthcare
 - Infrastructure Inspection and Maintenance
 - Agile production
 - AgriFood

ICT-10-2019-2020:

- The actions sought this year should **focus on the development of core technology modules and tool kits**.
- [Link with DT-ICT-02-2018 projects i.e. DIH](#)
 - The information contained in the specification of the [topic DT-ICT-02-2018](#) must be enough for planning the efforts to connect and cooperate with the DIH actions.
- Don't forget to **link with other projects** in matching topics like AI-on-demand platform (ICT-26-2018-2020), big data topics, IoT etc.
- Ethics should shortly be addressed. AI in combination with robotics could become lethal. This implies also technological solutions like including redundancy etc.
- Socially cooperative implies **natural communication** with people (understanding oral orders, moving together etc.) not the button solutions

ICT-10-2019-2020: Ko Eiropa negrib?

- Proposals not addressing at least one of the four core technologies indicated by the call
- Proposals **not addressing** one of the four prioritized application areas
- Proposals **not connecting with any of the DIH actions** arising from DT-02-2018
- Proposals developing **non-open or proprietary** modules and tool kits
- No resubmissions of previous topics (2017 call)

ICT-10-2019-2020: Saistīti projekti

- H2020-DT-ICT-02-2018
 - 825263 RODIN – CSA: coordinating the four DIH networks
 - 824964 DIH^2 – IA: DIH network on agile production
 - 825196 TRINITY – IA: DIH network on agile production
 - 825196 RIMA – IA: DIH infrastructure inspection and maintenance
 - 825003 DIH-HERO – IA: DIH network on healthcare

DT-ICT-01-2019 Smart Anything Everywhere

- Terminš: 02.04.2019.
- Help companies (SMEs) with their digital transformation
 - Focus on **innovation in products**
- **DIHs** forms a consortium
 - Šis *call* **nav universitātēm/institūtiem**, ja vien tās nenodrošina DIH funkcijas
 - Must involve SMEs – maybe through cascading grants (20k – 100k EUR)
 - Must link or involve investors
- 50% of the budget should directly benefit SMEs
 - Carry out experiments, test before invest etc.

DT-ICT-01-2019 - IA

- Budžets: 48M EUR – <8M EUR– vismaz 1 projekts katrā grupā (kopā 6)
 - 50% to develop consorcia strengths and services
 - 50% to highly innovative cross-border experiments - Help develop a product or improve a process
- Cyber-physical and embedded systems - more autonomos products
- Customised low energy computing powering CPS and the IoT
- Flexible and Wearable Electronics
- Widening Digital Innovation Hubs
 - For DIHs in underrepresented industrial regions (Eastern Europe)

DT-ICT-01-2019 - CSA

- Budžets 1M EUR –
- ... support the SAE network and help achieve **broad coverage in technological, application, innovation, and geographic terms** and **link up** with regional/national **innovation initiatives**, and other **Digital Innovation Hubs**.
- Its tasks and services shall include **maintaining a single innovation portal, sharing of best practices, dissemination, brokering**, leveraging further investment and training.
- ... **close cooperation with ECSEL, and other CSAs** funded under the Digitising European Industry focus area is looked for.

DT-ICT-01-2019 *Background* info un projekti

- [EK Prezentācija *Smart Anything Everywhere \(SAE\) Initiative*](#)
- <https://smartanythingeverywhere.eu>
- [Prezentācija ICT2018: DT-ICT-01-2019 - Smart Anything Everywhere](#)

DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories - IA

- Budžets: 45M EUR – līdz 16M EUR – vismaz 1 projekts katrā grupā
- Develop and establish platforms for the connected smart production facilities.
- Proposal should be driven by key **EU actors** in the area
 - The human factor: human competences in synergy with technological progress
 - Sustainable Value Networks: manufacturing in a circular economy
- “**Two industrial sectors**” should be addressed, as far as possible from one another (ex food and metallurgy). Minimum of **two use cases**.
- Since it's an IA, **strong industrial leadership** (or consortium coordination) is wished but **room for research institutes** in the consortium.

DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories - CSA

- Budžets: 2M EUR – 2M EUR projektam – tikai 1 finansēs
- ... supporting **the transfer of skills and know-how** between academia and industry in both directions
- ... allowing for easier **take-up of digital technologies from** ongoing and past **research projects to real-world use cases** ...
- Increased **cooperation between industrial and academic** communities; increased synergy and collaboration between projects.

DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories

- Advances are needed in digital manufacturing platforms that **integrate different technologies**, make **data from the shop floor and the supply network easily accessible**, and allow for complementary applications.
- ... *platform building, large scale piloting, ecosystem building and standardisation* **must** be part of the proposal (all four)
- Especially for mid-caps and SMEs
- Financial support to 3rd parties allowed (Maximum 20% of the EU funding, EUR 50 000 – 150 000 / grant).
- It is also important that these platforms **do not start from scratch and rebuild structures and activities already existing**, so cooperation with other related initiatives (that might be specific for each case) is welcome.

DT-ICT-07-2018-2019: Līdzīgi projekti

- QU4LITY
- Projekti no FOF-11-2016 - Digital automation
 - AUTOWARE
 - NIMBLE
 - COMPOSITION
 - SAFIRE

DT-ICT-11-2019: Big data solutions for energy

- Budžets: 30M EUR – ap 10M EUR – trīs finansēs
- The electricity sector, in particular, needs big data tools and architectures for **optimized energy system management** under these demanding conditions.
- All grants under both subtopics will be subject to Article 30.3 of the grant agreement (Commission right to object to transfers or licensing).

DT-ICT-11-2019: Big data solutions for energy

- ... **large-scale pilot test-beds** for big data application in the energy sector.
- The aim is to develop/pilot and **deploy a reference architecture** ... in the electricity sector and to **translate** this reference architecture **into** an open, modular **data analytics toolbox** for the safe and effective operation of grids and provision of **innovative** energy services.
- The analytics toolbox shall be able to handle a wide variety of data and **support the development of a wide range of energy services**
- Proposers should demonstrate that they **have access to** appropriate large-scale and realistic **datasets**

DT-ICT-11-2019: Big data solutions for energy

- A Consortium where industrial partners are represented by **professionals who work in core business operations** (as opposed to research laboratories)
- Develop a plan that is consistent with the business strategy of the industrial partners concerned pilot must **work in actual operating conditions**
- To explicitly evaluate/measure **changes** in the cost structure and in the technological constraints and performance (**at the end of the pilot**)

DT-ICT-11-2019: Saites un līdzīgi projekti

- Prezentācija
- DataBio – prezentācija
- TT: Transforming Transport

SU-ICT-02-2020: Building blocks for resilience in evolving ICT systems

- Terminšs: **19.11.2019** - Budžets: 47M EUR – 4 to 5M EUR projektam
- IA Līdz TRL 5
- Wish to see **one project funded per subtopic** but there is no obligations
- It does not have to be necessary a new project. **It can be the continuation of the results of a previous project.**
- A reference to the future Cybersecurity Competence Centre Networks might be good
- Ierobežojumi intelektuālajam īpašumam (Article 30.3 of the MGA)

SU-ICT-02-2020: Ko Eiropa grib?

- ... to develop mechanisms that measure the performance of ICT systems with regards to cybersecurity and privacy and (b) to enhance control and trust of the consumer .. to ensure the accountability of the security and privacy levels in the algorithms, in the software, and ultimately in the ICT systems, products and services across the supply chain.
 - Cybersecurity/privacy audit, certification and standardisation
 - Trusted supply chains of ICT systems
 - Designing and developing privacy-friendly and secure software and hardware

SU-ICT-02-2020: Ko Eiropa grib / negrib?

- Jā:
 - Want to **develop supply side**
 - The call is **completely open**
 - Look for **building blocks for the industry**
 - The components used can be non-EU
- Nē:
 - This is not a R&D project. **Build up on what is already existing**
 - No roadmaps
 - They don't want to have **project without end-users**
 - There is **no targeted application** and it doesn't have to be EU technologies.

SU-ICT-02-2020: Līdzīgi projekti

- [CIP-01-2016-2017 projekti](#)
- ICT-32-2014 projects
 - [HECTOR](#) - HARDWARE ENABLED CRYPTO AND RANDOMNESS
 - [ECRYPT-CSA](#) - European Coordination and Support Action in Cryptology
 - [HEAT](#) - Homomorphic Encryption Applications and Technology
 - [SHARCS](#) - Secure Hardware-Software Architectures for Robust Computing Systems
 - [SCISSORS](#) - Security In trusted SCADA and smart-grids
 - [SAFEcrypto](#) - Secure Architectures of Future Emerging Cryptography
 - [PRISMACLOUD](#) - PRivacy and Security MAIntaining services in the CLOUD
 - [PQCRYPTO](#) - Post-quantum cryptography for long-term security
 - [WITDOM](#) - empoWering prlvacy and securiTty in non-trustedD enviroNments
 - [TREDISEC](#) - Trust-aware, REliable and Distributed Information SEcurity in the Cloud.

Paldies par Jūsu laiku!