# Project Ideas from European brokerage events

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# ECSEL Brokerage 2019, Jan 15th Brussels

ECS BROKERAGE
EVENT 2019
15 & 16 January
Hotel Le Plaza, Brussels

- **Attendees: 415 participants at the Event.**
- All presentations given at the ECS Brokerage are accessible through the following deeplink: https://ecscollaborationtool.eu/d/bd3111c8
- **ECS Collaboration Tool**
  The ECS Collaboration Tool (ECT) is ready (upon registration) for posting project ideas, searching for project partners and joining consortia.

# Project pitches

**1. LAMP by EVG** a.poenninger@evgroup.com
Low cost micro and nano patterning replication technology
Objective : fully automated pilot line 200/300mm, down to 10nm geometry
Use case : photovoltaic surfaces (SunPartner), Optical components for 3D sensing (AMS)

Funding scheme: ECSEL RIA
Partners : EV Group, CEA Leti, SunPartner Applied Materials, Genes'Ink, AMS
Italian cluster status: AMAT (LC)
Needed profiles

- Use cases (Device design and manufacturers): Photonics; Bio-technology, MEMS, …
- End-users (system integration): Health, automotive, IoT, …

**2. CHESS (Eeva Viinikka, Spinverse Oy,** eeva.viinikka@spinverse.com **)**
Manufacturing in harsh environmental conditions
Targeting several industries, on their common issues
5 uses cases : mining, paper mills, solar cell manufacturing, gas manufacturing, hand held grinding tools

Funding scheme: ECSEL IA
Partners : AMAT, MIRKA, Valmet, Air Liquide, Sandvik
Italian cluster status: AMAT (LC), IUNET (ACA)

# Project pitches

**3. ENSICHV (Jose Domingo Salvany, NEXTER, j.domingo@nexter-group.fr )**

European network on HV SiC components (based on WInSiC4AP's results)
Improve environmental impact when using electricity
Provide EU components and modules (IPS & IPM)
Improve power converters and inverters using SiC components
Markets : Railways, MEA,, solar plants, air wind turbines

Funding scheme: ECSEL RIA
Partners : 52 contacts: SAFRAN, NEXTER, Thales DMS, ISL, FhG, ISD, ST-Italy, …
Italian cluster status: Global Wafer, MBDA (LC), AMAT (SME), IUNET (ACA)

**4. SANSEI (Stefano Tonetta & Marco Roveri, FBK, Italy) tonettas@fbk.eu**

System-level analysis of sensor information for model-based data-driven design-operation continuum. Dependability of data by model-based design and runtime data monitoring and analysis to design complex sensor based products. Data driven AI to learn models. Outcome : new platform to design systems with high number of sensors, with monitors for diagnosis/prognosis

Funding scheme: ECSEL RIA
Partners : Bosch, AIT, Intecs, … Still interested in additional use cases
Italian cluster status: FBK (ACA), ?

# Project pitches

**5. 3IOTech-reloaded by Madrid Univ. , Guillermo del Campo, UPM, gcampo@cedint.upm.es**

Interoperable IoT for data intensive services and control features.
IIoT architecture to cover the whole value chain, from data collection to data analytics.

Funding scheme: ECSEL RIA
Consolidated Consortium: 50 partners from 13 countries.
Italian cluster status: not mentioned

**6. MOBHEC (Dominique Défossez, NXP France, Dominique.defossez@nxp.com )**

Main topic: Promote a pragmatic adoption of the electric car and optimize the trip of an electric car using both internal vehicle data and data accessible from the infrastructure and the cloud.

Funding scheme: ECSEL RIA
Italian cluster status: AVL (LC), Kaitek (LC), Sesichips (SME), ENEA (ACA), IUNET (ACA), University of Parma (ACA)

# Project pitches

**7. Vindicate, by Eduard Enoiu, Malarden University, eduard.enoiu@mdh.se**

HW in the loop testing using automated test pattern generation, using virtualization in the cloud. Focus on ML test optimization, auto configuration setup.
Adherence to relevant standards : ISO26262, DO-178B, EN50128, EN50657
Virtualization of Ultra large systems. Target markets: aviation, autonomous cars

Funding scheme: ECSEL RIA
Italian cluster status: University of Aquila (ACA), Lfoundry (LC)
Needed profiles:

- Expertise: Cloud Technologies, Virtualization, Monitoring, Process Optimization, Data Analytics, Visualization, Hardware and Electronics, Prediction and Prognostics, Qualification and Certification
- Partner type: industry, sme, university

# Project pitches

**8. Cool CET GaN, by Cool Silicon (DE), Peter Rach, peter.frach@fep.fraunhofer.de**

Improve MOCVD (metalorganic chemical vapor deposition) restrictions (T > 1000°C) and associated cost. Reach deposition temperature < 800°C.

Develop an alternative sputter technology on 200mm then 300mm.

Funding scheme: ECSEL RIA

Current Partners: FhG FEP, SCcia ystems, X-FAB, Sindlhauser

Italian cluster status: not mentioned
Profiles for desired partners:

- Semiconductor processing for test-devices (power or rf): company or institute
- Device characterization: company or institute
- AIN/ GaN MOCVD experience: company or institute
- Template production: company

# Project pitches

**9. ViViFAI, by RISE research (SE), Behrooz Sangchoolie, behrooz.sangchoolie@ri.se**

Verification and validation of automated systems vs. non functional requirements such as safety, security, privacy using fault and attack injection.

Example: identify common test scenarios, then map them to verification and validation layers. Then implement the test attack and verify the impact's metrics.

Funding scheme: ECSEL RIA

Italian cluster status: University of Aquila (ACA), FBK (ACA), National Research Council of Italy (ACA), ESTE Technology (SME)

# Project pitches

**10. DigiClone (ERARGE, Alper Kanak, alper.kanak@ergtech.ch )**

Mitigation of cyber-physical threats. Reduced latency through an accountable blockchain.

Building information mode-based (BIM) or CAD.

Use of Digital twin for modeling and monitoring

Goal : online scalable platform for condition monitoring and maintenance.

Funding scheme: ECSEL RIA

Partners : BEIA, ETH Zurich, University of Tokyo (some not EU ?)

Italian cluster status: not mentioned (open to complementary proposals)

# Project pitches

**11. AFib by night , Tuomas Valtonen, tuomas.valtonen@utu.fi , University of Turku, Finland.**

Solution against Atrial fibrillation (detection and control)

Use of AI to monitor patients cardiac activity. Optimization to most effective processing mode (night/ day, patient's position).

Funding scheme: ECSEL RIA

Partners : Murata, Everon, …

Italian cluster status: not mentioned

- **Partners sought:** Other EU countries in addition to Finland. Preferably full consortium per country with IND, SME and UNI.

# Project pitches

**12. QUAI by IKERLAN, Leire Rubio lrubio@ikerlan.es, Lisandr Monsalve lgmonsalve@ikerlan.es**

Safety critical OS for complex SW. Support of multi-core platforms. Non-functional properties to be considered. SW : certify Linux with IEC 61508

Funding scheme: ECSEL Special RIA call

Partners from Spain & Germany
Italian cluster status: not mentioned
Partners desired

- Industrial/SME: end users; exploitation partners (tools)
- RTO/University: AI algorithm developers SW/FPGA
- Other project consortium's **:** We could merge project ideas into only one

**13. Trust2All (Thales NL Kies Nieuwenhuis, kies.nieuwenhuis@nl.thalesgroup.com )**

Increase trust in reconfigurable systems after a HW/SW change

Use cases : safety & security, automotive, healthcare

Partners : Thales IGT, AVL, NXP, Mobilaris, ESI, Offis, Lulea

Funding scheme: ECSEL RIA

Italian cluster status: not mentioned
Consortium open for additional industrial use cases and partners

  - Looking for small national consortia with clear industrial use case

# Project pitches

**14. Moore4Medical (Ronald Dekker, Philips, Ronald.dekker@philips.com )**

Better treatment, better therapy, to personalized care solutions.

Bioelectronics medicines: small, smart, selective!

However, the market is fragmented, small volumes, non standard, multi regulations, etc.

Technology platforms : organ-on-chip, bio-systems, technology for Piezo Ultra-Sound, remote monitoring, image diagnostics.

Funding scheme : ECSEL IA

50 partners.
Italian cluster status: consolidated.
Needed profiles:

- System integrators
- IDMs
- Pharmaceutical companies
- Relevant Medtec

# Project pitches

**15. LEMAN , IDA-Lab, J-M Lanting, IDA-lab@simplinext.com**

Local electricity grid management system
Managing a group of users on a local grid (dynamic priorities)
Modular solution from Add-on box to Energy control hub, cooperating with the main grid

Funding scheme: ECSEL RIA
Italian cluster status: not mentioned
Open for partners from

- R&D, incl. smartness and power electronics
- Manufacturing
- Energy distribution

# Project pitches

**16. ADACORSA by M. Larsen, AnyWI tecnology (NL), morten.larsen@anywi.com**

Create technology for drones to operate safe and autonomous, complete useful missions, with accurate data from on-board sensors, transmitted to ground stations and other users without significant losses. Regulatory, procedural, technical aspects will be dealt with.
Sensor precision and fusion, communication resilience, traceable operations

Radar, Lidar, camera based control, 5G based connectivity, cloud vs. edge computing.

Funding scheme: ECSEL 2019 RIA

Partners : AnyWI, Almende, Malarden University, University of Parma, RISE, NXP, Infineon, …

Italian cluster status: University of Parma (ACA), IUNET (ACA), National Research council of Italy (ACA), AITEC (SME)

Looking for a **large company** to close the cluster

# Project pitches

**17. HOME SENSE (Tayyab Waqar, Arcelik, tayyab.waqar@arcelik.com )**

Development of smart IoT devices for occupancy detection, localization (indoor), posture recognition, …

Use of UWB 3-10 GHz with efficient power management

Already submitted to EURIPIDES2 2018 call

Funding scheme: ECSEL RIA

Italian cluster status: not mentioned

Looking for industrial and academic partners

**18. OPC UA over TSN Auto-configuration by FhG FOKUS, florian.schreiner@fokus.fraunhofer.de**

Time Sensitive Network (TSN) configuration still manual, due do very diverse application domains

Standardization effort, joined by major actors : ABB, Molex, Intel, …

Funding scheme: ECSEL RIA

Italian cluster status: presence of academic partners (industry required)

Still looking for industrial partners

# Project pitches

**19. vPLC-Orchestration and Management by FhG FOKUS, florian.schreiner@fokus.fraunhofer.de**

SW based controllers, available from the cloud

Provide an orchestration and management system to Industry 4.0

Funding scheme: ECSEL RIA

Italian cluster status: academic partners (industry required)

Partners : academic as of today, industrial ones expected (Automation technology, Integrators)

**20. EVISION (Rihards Novickis, IECS/EDI, LV, rihards.novickis@edi.lv )**

Embedded vision systems : extending image sensor functionality by advancing SoC architecture with co-processors and accelerators.

Develop accelerators and co-processors for different image based applications, including deep artificial neural networks.

Funding scheme: ECSEL RIA

Partners : CSEM, FhG IMS, …

Italian cluster status: Techinova (SME), …

Looking for an industrial coordinator and supply chain.

# Project pitches

**21. anyFAC (Ahmet Yazici, ayazici@ogu.edu.tr )**

Autonomous system for sustainable digitalization in future factories

Based on a unique data model, with a translation tool if necessary

Re-use of FIWARE, vf-OS (virtual factory Operating System)

Funding scheme: ECSEL RIA

Italian cluster status: Cassioli (SME), Pitom (SME), Aitronik (SME), University of Pisa (ACA)

Needed profiles:

- Large Industry with Ecsel experience (open for leading the project)
- Factory Use cases; internal logistic & Autonomous Robots & AR applications & Predictive maintenance,
- Intelligent Sensor/system Company (focus on above use cases)
- Open Factory simulation platforms
- Data quality models & Big data

# Project pitches

**22. TRANSACT (Rob Ekkel, Philips, rob.ekkel@philips.com )**

Transform safety critical Cyber Physical Systems (CPS) from local to distributed solutions

Guarantee security & privacy

Architecture transition : from device architecture to distributed solution architecture

Major field : health (hospital resources management)

Funding scheme: ECSEL IA

Potential partners : TNO, AVL, NXP, LEONARDO

Italian cluster status: LEONARDO, others.

**23. METRONOME** (now **HiFIVE) by AMAT ISR, Ilan Englard, Ilan_englard@contractor.amat.com**

Metrology Novelties and machine learning for ECS industry. This is the incremental evolution w.r.t. MADEin4 (ECSEL 2018)

Metrology must support ALL process steps along the final product. Main criteria: sensitivity, speed of measure, repeatability, etc. Adopting AI techniques.

Goals: non destructive, nanometer scale, imaging, quantum probe microscopy, use of AI.

Funding scheme: ECSEL IA 2019

Italian cluster status: not mentioned

# Project pitches

**24. PERFSENS (Guillermo Bistue, CEIT-IK4, gbistue@ceit.es )**

Develop low cost smart sensing systems for automotive applications based on the combination of low cost sensors and real time signal post processing techniques such as deep learning, aimed to the improvement of the performance of electric vehicles

Funding scheme: ECSEL RIA 2019

Italian cluster status: National Research Council of Italy (ACA), Sensichips (SME)

# This is not the end!