



2nd ECSEL Italy Day and Brokerage Event

Idea collection for coming ECSEL Call Forum 2018

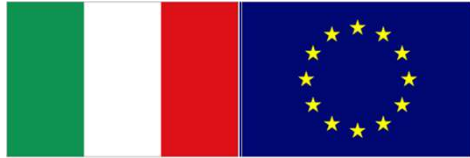
Roberto Zafalon

Livio Baldi



Agenda

- General introduction L. Baldi
- Ideas from ARTEMISIA Brokerage R. Zafalon
- Ideas from EPOSS Brokerage L. Baldi
- Proposers pitches:
 - FIDIA, Leonardo, OSAI, University of L'Aquila, ...
- Discussion and collection for ECSEL Call Forum



Quale spazio per proposte?



Chiusura call per Project Outlines: 26 Aprile 2018.

Per nuove proposte:

***only** proposals submitted at the PO phase will be allowed to proceed to the Full Project Proposal phase (FPP)*

Ma è possibile aggiungersi anche dopo nella Full Proposal:

changes in partners, change of coordinator, new partners, changes in budgets, (tra PO e FPP) etc. are all possible.

Per Italia, e' obbligatoria la predominanza industriale

Costi IND > Costi RTO



ECSEL JU CALL FORUM 2018

& Consortium Building Sessions

6 -7 March, Warsaw

CONSORTIUM BUILDING SESSIONS

Wednesday 7 March 2018

9.30 - 9.45	Introduction by the three Associations AENEAS, ARTEMIS-IA, EPoSS
9.45 - 10.00	ECS-SRA introduction
10.00 - 12.00	Project ideas presentations
12.00 - 13.30	Networking lunch & posters
13.30 - 15.00	Parallel sessions

ECSEL Italy può presentare proposte per partner Italiani



ECS Collaboration Tool



At: <https://ecscollaborationtool.eu/>



LOG INTO YOUR ACCOUNT

Log into your account

Sign In



Register on ECS tool



Registration is free and easy

REGISTER A NEW ACCOUNT

Register a new account

Already Signed Up? Click Sign In to login your account.

First name

Middle name

Last name

Email address

Verify email address

Register



What can you get



- You can upload your project ideas (left)
- You can also browse already loaded projects (right) and contact them

The screenshot shows the ECS Collaboration Tool interface. At the top, there is a dark blue navigation bar with the logo and name 'ECS COLLABORATION TOOL' on the left, and user information 'LIVIO BALDI' and a menu with 'PROJECT IDEAS', 'PARTNER SEARCH', 'MESSAGE BOARD', and 'HELP' on the right. A 'PUBLIC | COMMUNITY' indicator is also present. Below the navigation bar, a red heading reads 'WELCOME TO THE ECS COLLABORATION TOOL'. A short introductory paragraph follows. The main content area is divided into two columns. The left column, titled 'My Ideas', contains a table with two entries: 'BIOIMAGO' and 'THERADD', both marked as 'Visible' and having '0 pending join request'. Below the table are buttons for 'Idea list' and 'New idea'. The right column, titled 'Idea invites', shows a light blue message box stating 'No idea invites found'. Below this are buttons for 'Retrieve idea invitation', 'Partner Search', and 'Message board'.

My Ideas		
BIOIMAGO	Visible	0 pending join request
THERADD	Visible	0 pending join request

Idea invites	
No idea invites found	



Creating new ideas



CREATE A NEW PROJECT IDEA

Use the form below to create a new project idea

Idea acronym
Give the acronym for your project idea

Title
Give here a brief title for the idea

Description
Enter your idea description here

Chapters

- Transport & Smart Mobility
- Health and Well-Being
- Energy
- Digital Industry
- Digital Life
- Systems and Components: Architecture, Design and Integration
- Connectivity and Interoperability
- Safety, Security and Reliability
- Computing and Storage
- ECS Process Technology, Equipment, Materials and Manufacturing

Select the chapters that your idea is involved in



Browsing for ideas



IDEAS

+ New idea Message board

Ideas

Search Reset

24 items on 3 pages

Fav	Project idea	Acronym	Keywords
☆	Brainbedded AI	Brain-Derived Neural Networks for Artificial Intelligence and Learning in Embedded Applications	
	Brainbedded AI Brain-Derived Neural Networks for Artificial Intelligence and Learning in Embedded Applications Apply neural networks in low-power embedded applications that require offline on-chip execution. In particular, develop new brain-derived neural network architectures in a close hardware/software co-design process		
☆	CPS4EU	Cyber Physical Systems for Europe	Connectivity · Computing · Tools · Value chain · Cyber security
	Title Cyber Physical Systems for Europe Acronym CPS Project Description CPS4EU aims at helping CPS subsystem providers (mainly SMEs) to be integrated in the global value chain of European digitized industry. The key CPS modules targeted are computing, connectivity and sensing. To accelerate and secure the development of CPS, a set of open architecture platforms to enable and accelerate CPS design are needed. Additionally a continuous chain of tools from system engineering to...		
☆	Smart Software	In this project, it is aimed to develop algorithms, to apply optimization techniques, to develop sof	Unmanned · Surface · Maritime · Swarm · Software
	Title Acronym Project Description		

Chapters

- Systems and Components: Architecture, Design and Integration [24]
- Safety, Security and Reliability [22]
- Transport & Smart Mobility [21]
- Digital Industry [18]
- Health and Well-Being [18]
- Connectivity and Interoperability [16]
- Digital Life [11]
- Energy [10]
- Computing and Storage [8]
- ECS Process Technology, Equipment, Materials and Manufacturing [8]
- Electrical Energy [0]
- Transportation & Smart Mobility [0]

Events

- ARTEMIS Brokerage Event 2018 [10]
- ECSEL JU CALL Forum 2018 & Consortium Building Sessions [4]

Keywords

- Artificial intelligence [4]
- Connectivity [3]
- Cyber physical syste [3]
- Blockchain [2]
- Communications [1]



Inserting competence offers

The screenshot shows the ECS Collaboration Tool interface. At the top, there is a dark blue header with the logo and text "ECS COLLABORATION TOOL" on the left, and navigation links "PUBLIC | COMMUNITY" on the right. Below the header, there is a "MESSAGE BOARD" section with a "+ POST NEW MESSAGE" button. The main content area is divided into two columns: "Looking for ideas?" and "Looking for partners?".

Looking for ideas?

Image/Video Processing system design expertise

Idler Yaelim offers project development and consultation services in "Image/Video Processing" and "Digital Design" domains. We have extensive knowledge in image/video processing algorithm development on CUDA/FPGA platforms. We also offer digital design services for audio/video real-time processing needs and compute acceleration. When combined, our deep knowledge in these two key areas, results in unique solution offerings for our customers, optimizing system performance, power and cost.

-Posted by Ismail Gerceci on 19-12-2017

[Invite contact for idea](#)

Offer expertise in development and production of FPGA-based systems/board

PRO DESIGN is expert in the development, PCB layout and assembly of FPGA-based boards and systems. We are interested in participating in German and European joint projects where FPGA-based hardware is needed.

-Posted by Philipp Amptzer on 26-10-2017

[Invite contact for idea](#)



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Ideas from EPOSS events

Livio Baldi



Ideas
from



EPOSS Brokerage Events

- ICT Proposers' Day 2017 in Budapest on November 9 2017
- EPoSS Proposers' Day & inSSight Brokerage Event 2018 in Berlin on February 8 2018
- A total of 11 project ideas (3 from Italy) and 36 competence offers (4 from Italy)
- One additional project idea from ECSEL Mirror Group Sweden
- Proposals and competences at:

<https://www.smart-systems-integration.org/public/documents/presentations>



EPOSS Brokerage



Proposer	Title	Topics	Consortium
Dr. E.M Pechlivani OE Technologies epechlivani@oe-technologies.com	LUPO	Demonstration & Validation of prototype flexible wearable products based on OLAE devices & antennas.	2 Greek partners (OE Technologies e LFTN); + materials and data analysis (not mentioned). Looking for: end users, wireless integration
T. Kaimakamis Univ. Thessaloniki tkaimaka@physics.uth.gr	BIOSMART	Cost-effective Point-of-Care (POC) smart diagnostic tools for the early detection and monitoring of cancer and cardiac biomarkers	3 Greek partners (Lab LTFN, OET, BL (Greci); Looking for: end users, SW developers, system integrators.



EPOSS Brokerage



Proposer	Title	Topics	Consortium
S. Kurth Fhg ENAS Steffen.kurth@enas.fraunhofer.de	EFE4IoT	Compostable sensor system for plant monitoring, using technologies for environmental friendly micro sensors.	Infineon, different SMEs, Fraunhofer ENAS. Looking for: printing, biodegradable substrates and construction materials, compostable solar cells, and system integrators (commercialization).
A. Tonoli Politecnico Torino andrea.tonoli@polito.it	CHASSIS CONTROL FOR AUTONOMOUS DRIVE	Realization of active shock absorbers automatically regulated according to road conditions using ADAS sensors.	Politecnico di Torino, Magneti Marelli. Looking for: Vehicle OEM, internet cloud service, SW for image processing and interface with AD system. Artificial intelligence SW



EPOSS Brokerage



Proposer	Title	Topics	Consortium
Christian Hedayat FhG ENAS christian.hedayat@enas-pb.fraunhofer.de	ARTENOR	Stable long-term energy storage for wireless systems /IoT/5G based on mechanical storage.	Only German academia. Looking for: Academic and industrial partners involved in sensor networks, manufacturers.
Gerd Jungmann Swissbit gerd.jungmann@swissbit.com	ESiPAT	Develop electronics packaging solutions in photonics and optics	Mainly German + imec and AMS. Looking for: end users
L.Orozco Barbosa Univ.Castilla la Mancha luis.orozco@uclm.es	Wearable Methodology	Develop collaborative and educational games to improve the learning, motivation and integration among the students, based on wearable devices	Only proposer. Looking for: partners capable of developing: low-power/low-cost wearables, user cases.



EPOSS Brokerage



Proposer	Title	Topics	Consortium
Pablo Gay Univ. Girona pablo.gay@udg.edu	E-SENSE	Cost-effective Smart System technologies to integrate current mobile EEG platform for Epilepsy prediction.	Two Spanish Universities. Looking for: : Coordinator, Electronics, Security, Clinical, Application development
Santi Ristol Worldline	WEARLUMB	A Smart elastic "T-Shirt" equipped with motion sensors to prevent back pain	Only proposer. Looking for: manufacturers of Smart textiles, specialist in printed electronics for smart textiles
M. Salter RISE-Acreo michael.salter@ri.se	NextGaN	Develop low-dislocation density Ga(Al)N wafer technology. Design, fabricate and demonstrate vertical III-N power devices	ON Semiconductor, ABB (LE), SweGaN, Hexagem (SME), Linköping, Lund, Chalmers (University), RISE (RTO). Looking for: Power device manufacturers, Power electronic subsystem companies, Power equipment and Energy OEM.



EPOSS Brokerage



Proposer	Title	Topics	Consortium
F. Palma Univ. Roma- La Sapienza fabrizio.palma@uniroma1.it	THERADD	Direct Detection of THz Radiation by rectenna integrated inside CMOS imaging system	Uni Roma, Lfoundry. Looking for: EM design, System integrator, end users.
F. Palma Univ. Roma- La Sapienza fabrizio.palma@uniroma1.it	BIOIMAGO	CMOS sensors for real-time imaging of living cells, by nanowire integration of top of CMOS imaging system	Uni Roma, Lfoundry. Looking for: Bio-compatible packaging, Measurement instrument integration, Bio-medical end users



Contacts



Project	Partner	E-mail
LUPO	Dr. E.M Pechlivani	epechlivani@oe-technologies.com
BIOSMART	T. Kaimakamis	tkaimaka@physics.auth.gr
EFE4IoT	Steffen Kurth	STEFFEN.KURTH@ENAS.FRAUNHOFER.DE
Chassis control for ADAS	Andrea Tonoli	ANDREA.TONOLI@POLITO.IT
ARTENOR	Christian Hedayat	CHRISTIAN.HEDAYAT@ENAS-PB.FRAUNHOFER.DE
ESiPat	Gerd Jungmann	GERD.JUNGMANN@SWISSBIT.COM
	Eeva Viinikka	EEVA.VIINIKKA@SPINVERSE.COM
Wearable Methodology	Luis Orozco Barbosa	luis.orozco@uclm.es
E-SENSE	Pablo Gay	pablo.gay@udg.edu
WEARLUMB	Santi Ristol	@Worldline
NextGaN	Michael Salter	michael.salter@ri.se
THERADD	Fabrizio Palma	fabrizio.palma@uniroma1.it
	Andrea del Monte	andrea.delmonte@lfoundry.com
BIOIMAGO	Fabrizio Palma	fabrizio.palma@uniroma1.it
	Giovanni Margutti	giovanni.margutti@lfoundry.com



Competence offers (I)



Partner	Topics	Contact
3D-Oxydes, FR	Thin oxide film deposition	giacomo.benvenuti@3d-oxides.com
AMAT, IT	Printed electronics, fab automation	Giorgio_Cellere@amat.com
AMBER, IR	Nanomaterials	coelhoj@tcd.ie
APC, NL	MEMS packaging	marcokoelink@APCenter.nl
CNM, ES	Paper based Fuel Cells/Batteries	Neus.Sabate@imb-cnm.csic.es
CNM-CSIC, ES	GAS sensors	cane@cnm.es
CSEM, CH	Machine learning	Andrea.dunbar@csem.ch
CSEM, CH	SiC sensors/HT package	alexander.steinecker@csem.ch
CSEM, CH	Flexible electronics	alexander.steinecker@csem.ch
FIDIA, IT	End user, Milling Machines	a.focareta@fidia.it
Fraunhofer ENAS, DE	EMC/EMR services	christian.hedayat@enas-pb.fraunhofer.de
Fraunhofer ENAS, DE	Micromechanic energy conversion	christian.hedayat@enas-pb.fraunhofer.de
Fraunhofer IPMS, DE	Chemical, gas sensors	olaf.hild@ipms.fraunhofer.de



Competence offers (II)



Partner	Topics	Contact
IMB-CNM, ES	Ion sensors	Antoni.baldi@imb-cnm.csic.es
IMB-CNM, ES	Sweat chemical sensing	Antoni.baldi@imb-cnm.csic.es
IMB-CNM, ES	Thermoelectric MEMS	luis.fonseca@imb-cnm.csic.es
ISD, GR-FR-IT	Design	papadas@isd.gr
LICT, BE	HW, System design	greet.bilsen@kuleuven.be
microTEC Südwest, DE	Network, Smart System fabrication	christine.neuy@microtec-suedwest.de
OSAI, IT	Sensor testing, Equipment assembly	a.tori@osai-as.it
RDG-CNM, ES	Radiation sensors	miguel.ullan@csic.es



ARTEMIS-IA Brokerage



Roberto ZAFALON, ST

- EF ECS 2017 pre-Brokerage, Brussels, Nov 20-22, 2017
- ARTEMIS-IA Brokerage 2018, Berlin, Feb 6-7, 2018



- More than 300 attendees, 21 pitches presented (none for AI special topic)
- All presentations available:
 - <https://artemis-ia.eu/d/648d0605>
 - <https://ecscollaborationtool.eu/community/idea/list.html>



ARTEMIS-IA Brokerage 1/4



Proposer	Title	Topics	Consortium
Tuomas Valtonen, Turku Univ (FI) tuomas.valtonen@utu.fi	Cardiac Twist	Remote monitoring to prevent heart failure at home. Goal: non invasive personal device to anticipate heart failure. Based on PPG, IMU sensors, ultra-low power. Exploiting Cardiac-1 project	Turku Univ (FI), SME (NL), ITA,...
CEA LIST Reda.nouacer@cea.fr	Comp4 drones	CPS for custom and autonomous drones: Composability & Modularity for Customized and Autonom. Civilian Drones, dependability, low power and low cost	Thales, Atechsys, Scalian, shark robotics ...French
Malardalen Univ (SWE), aida.causevic@mdh.se	SECRA	Security Case Run-Time Adaptation: dynamic Structured security of SoS, run-time adaptation	TNO, NXP, TUE, VTT, LETI, Sintef, Valeo, CISC, Philips



ARTEMIS-IA Brokerage 2/4



Proposer	Title	Topics	Consortium
TNO, Sven.Jansen@tno.nl	SEDAPINS	Solutions for the service economy: Mobility as a service and traffic management. Secure, reliable data provision for interoperable networked systems	TNO (NL), NXP, TUE, VTT, LETI, Sintef, Valeo, CISC, Philips,
Magilem Vaumorin@magilem.com	Star Wars	Std. resilient workflow for reliable systems: Enable digital transformation for heterogeneous data management, certification and traceability	Magilem, Leti, FhG, Philips, TU Dresden, Univ. Aquila, Univ. Parma
Malardalen Univ. (SWE) Gunnar.widforss@mdh.se	Trasit	autonomous heavy vehicles: Revamping of last year. Transport and robotics merging. Coop driving, platoon organization of vehicles, co-bots in full safety. HMI for operators in/out vehicle	MDH, AnyWi (SWE),
Spinverse eeva.vinikka@spinverse.com	ESIPAT	packaging for optics and photonics, optics wafer level integration, fiber integration use case	FhG, Besi, Atotech, APC, AMS, gerd.jungmann@swissbit.com project leader



ARTEMIS-IA Brokerage 3/4



Proposer	Title	Topics	Consortium
University of Jyväskylä (FI) Pekka.abrahams@jyu.fi	VRIDE	virtual reality SW for CPS , Open source virtual-reality based SW develop. Environment. Increase SW productivity, reliability.	partners from FI, IT, DE, IR, SP, NL
VTT (FI) Johan.plomp@vt.t.fi sven.Jansen@tno.nl reinder.haakma@Philips.com	Beyond Sensing	Unleashing the potential of smart sensors , intelligence in the sensors and the systems to build simpler, more versatile, more robust systems and innovative services.	Large consortium, including ITA (Leonardo, ST, Eurotech, CRF, AITEK, IUNET....)
VALEO (FR) Jean-baptiste.burtscher@valeo.com	CPS4EU (IA)	CPS for Europe : helping the subsystem providers (mainly SMEs) to join the global value chain of European digitized industry. Targets domains are computing, automotive, connectivity, sensing.	Valeo leads a large French consortium. Only French so far.
EURECAT (ES) Ana.villacampa@eurecat.org	EMERY	nEw platforM for personalised wEaRables , new multimodal wearable sensor system that prevents musculoskeletal disorders and physical overload.	ND



ARTEMIS-IA Brokerage 4/4



Proposer	Title	Topics	Consortium
ABO (FI) joohan.lilius@abo.fi	SITECH	Secure Wireless Technologies at Sea , Create support for safe secure and trustable V2I connectivity for vessels, under harsh weather conditions	Finnish consortium only so far....
SOITEC (FR) Francois.brunier@soitec.com Erkan.isa@emft.fraunhofer.de	Element5 (IA)	RF SOI for 5G & RF , 28 and 22nm FDSOI Tech and components for Application in 5G RF, Automotive, Aeronautics. Continuation of proj FOSTER, ECSEL 2014	FR, DE, Turkey, BE, FI SOITEC leader
RISE SICS (SWE) Jonas.gustafsson@ri.se	RITIESI	reliable IT for energy systems , secure and reliable operation among datacenters, by integrating IT with the facility, machine learning methods to identify early stage failures	Competence offer
ENAC (FR) Georges.mykoniatas@enac.fr	SMART4PAX	Smart solutions to improve Passenger experience , Mobility as a service for enhancing passenger experience	ENAC (FR), Sintef (NO),



Coming Events

- ECSEL Call Forum in Warsaw – March 6-7
- SSI 2018 - International Conference and Exhibition on Integration Issues of Miniaturized Systems in Dresden – April 11-12
- The 1 st IEEE International Conference on Industrial Cyber-Physical Systems in Saint Petersburg – May 15-18
- ECSEL Symposium in Bruxelles - June 19-20
- Meeting of Società Italiana di Elettronica in Napoli – June 22-24
- International Conference of Electrical and Electronic Technologies for Automotive in Milano - July 9-11
- AEIT annual conference in Bari – October 3-5
- EF ECS: European Forum for Electronics Components and Systems in Lisbon – November 20-22, 2018

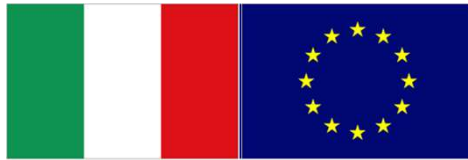


Thank you

For more details on proposals:

<http://www.ecsel-ju.eu/web/events/ECF2017outcomes.php>

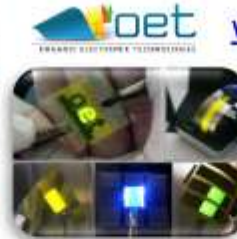
baldi.livio@gmail.com



LUPO BASED ON

Unique R2R Printing Pilot Production Line for OLAE devices & Antennas

- **R2R Printing Stations:** Gravure, Slot die, Inkjet, Screen Printing
- **In-line Metrology** (*Ellipsometry, Raman, Photoluminescence, Reflectometry, Interferometry*) & **Quality Control tools** (*Eddy Current, Vision Inspection*)
- **In-line ultra fast pulsed Laser** for Micro-precision patterning & Complex design
- **Robust Encapsulation Methods & Materials**



www.oe-technologies.com



	Partner	Role
1	LTFN	S2S Development & Characterization of printed OE devices & antenna
2	OET	Upscaling OE devices & antenna on large area by R2R printing processes with in-line metrology and quality control
3	Partner Confirmed	Materials
4	Partner Confirmed	Design, development & Integration of textile devices
5	Missing Partner	Data analytics
6	Missing Partner	Wireless System Integration – IOT Development
7	Missing Partner	End user for safety & sport cloths
8	Missing Partner	End user for smart pants
9	Missing Partner	End user for smart thermometer

Objectives

- ✓ Closed-loop fabrication of printed OLAE devices & Antennas, that will enable better manufacturability and increased device reproducibility, yield and productivity
- ✓ Wireless System Integration – IOT Development
- ✓ Demonstration & Validation of prototype flexible wearable products based on OLAE devices & antennas

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EPOSS PROPOSERS' DAY 2018, BERLIN

epechivani@oe-technologies.com

4



BIOSMART PROJECT

CONCEPT

BIOSMART aims to develop cost-effective Point-of-Care (POC) Smart diagnostic tools for the early detection and monitoring of cancer and cardiac biomarkers, integrating low-cost digital manufacturing processes (R2R or S2S) of Organic and Printed Bioelectronics (OPBs) with Hardware and Software technologies



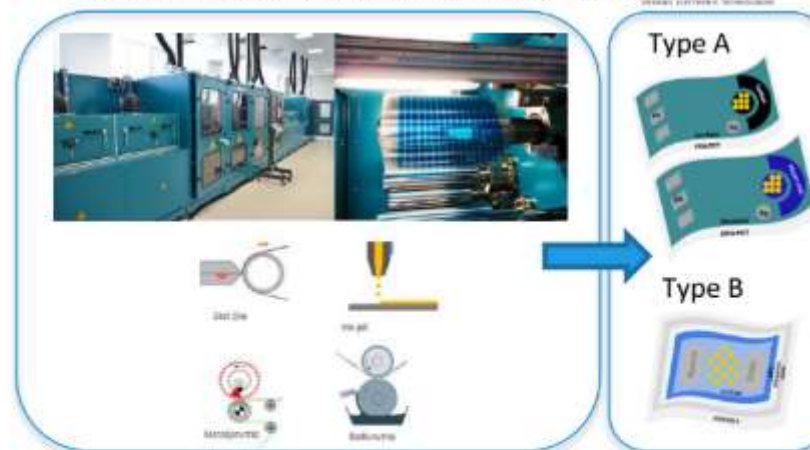
OBJECTIVES

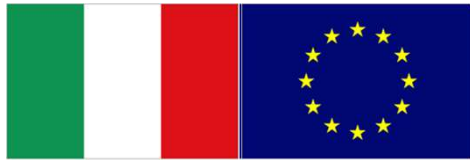
- Enhancement the capabilities of low-cost digital manufacturing for OPBs for cancer and cardiac biomarkers
- Manufacture miniaturized and high performance organic and printed Electrochemical Biosensors and OFET-based Biosensors
- Consideration the portability, wearability and biocompatibility of the manufactured Electrochemical Biosensors and OFET-based Biosensors
- Develop interface for integration with data processing software and transmission electronics
- Demonstrate a bio-electronic smart system (biosensor+electronics) with connectivity for data logging for application in POC medicine

CHALLENGES

BIOSMART project will face challenges regarding the Performances of bioelectronics smart systems including functionalities, cost, size, reliability, manufacturability, thus addressing the needs of users and Market cases

OET will develop low-cost digital manufacturing OPBs





ENAS Compostable Sensors



EXPECTED RESULTS AND PROJECT SET-UP



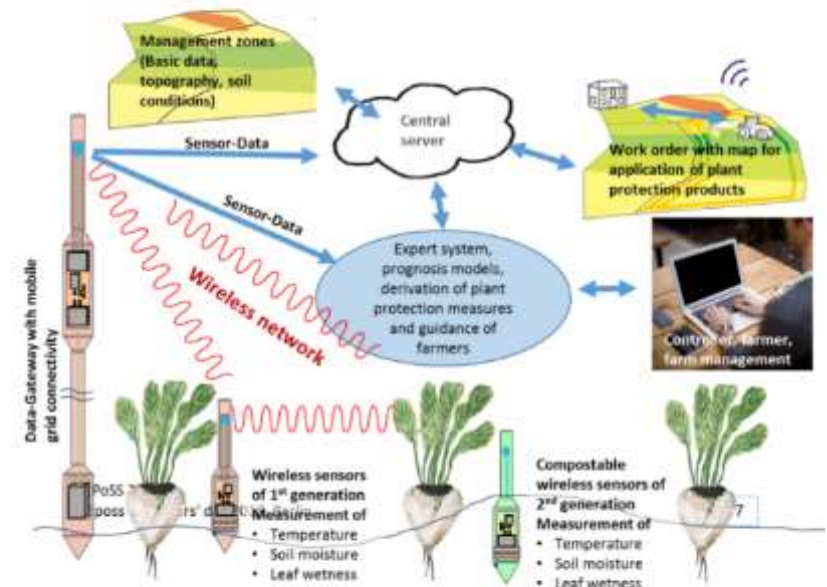
Products: Plant condition monitoring sensors for smart farming and horticulture (highly valuable crop, vegetables and fruits). Generates data for substantially higher precision of the prediction of plant infection probability and countermeasure within management zones. Exploitation to other very different use-cases.

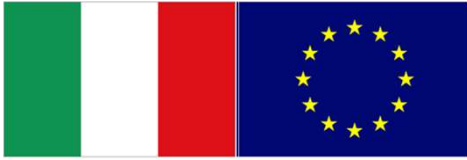
Expected impact: Technologies (full process chain) for environmental friendly micro sensors (IoT) will become effective.

Partners wanted: Seeking for technology partners (printing, biodegradable substrates and construction materials, compostable solar cells) and for system integrators (commercialization).

Benefits: Be among the early players on this huge market and benefit from direct access to the project results!

Calls: ICT-02-2018 (also ICT-07-2018, CE-SFS-24-2019, CE-SFS-25-2019, SFS-05-2018/2019, or other if applicable)





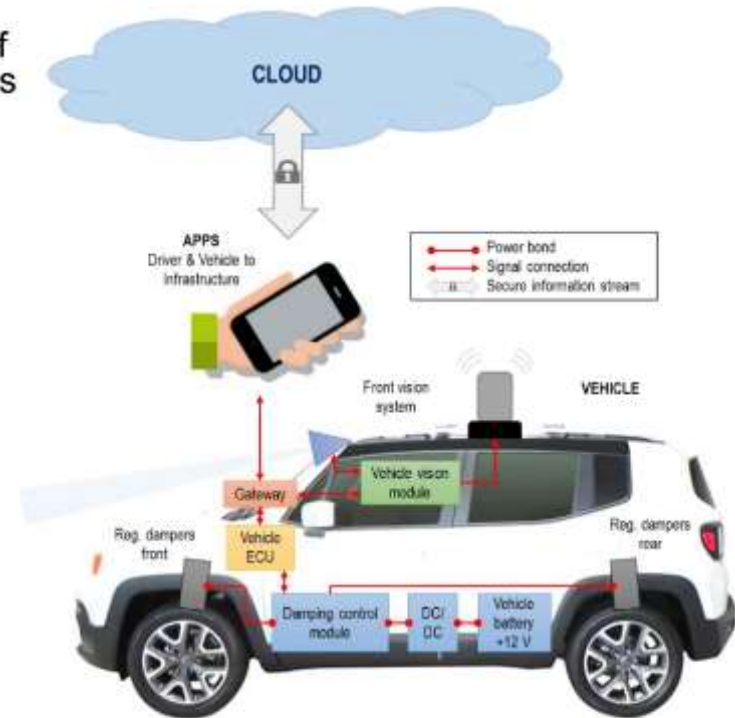
Active Chassis for ADAS

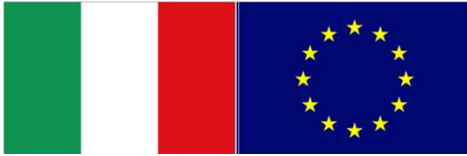


ELEVATOR SLIDE 1/2



- **Rationale**
Autonomous drive (SAE level > 3) allows exploitation of travelling time provided that maneuvering and vibrations are adequately attenuated.
- **Objectives**
Extensive use of active chassis systems driven in feed forward mode exploiting AD system.
Exploit synergies with AD system to minimize cost and adapt to low segment cars for commuters.
- **Why is the project necessary**
Improving driving comfort enables full exploitation of SAE level > 3 AD.
- **Application fields**
Commuters vehicles, buses.
- **Involved technologies**
Regenerative and adaptive suspensions, roll control systems, AD sensing systems.

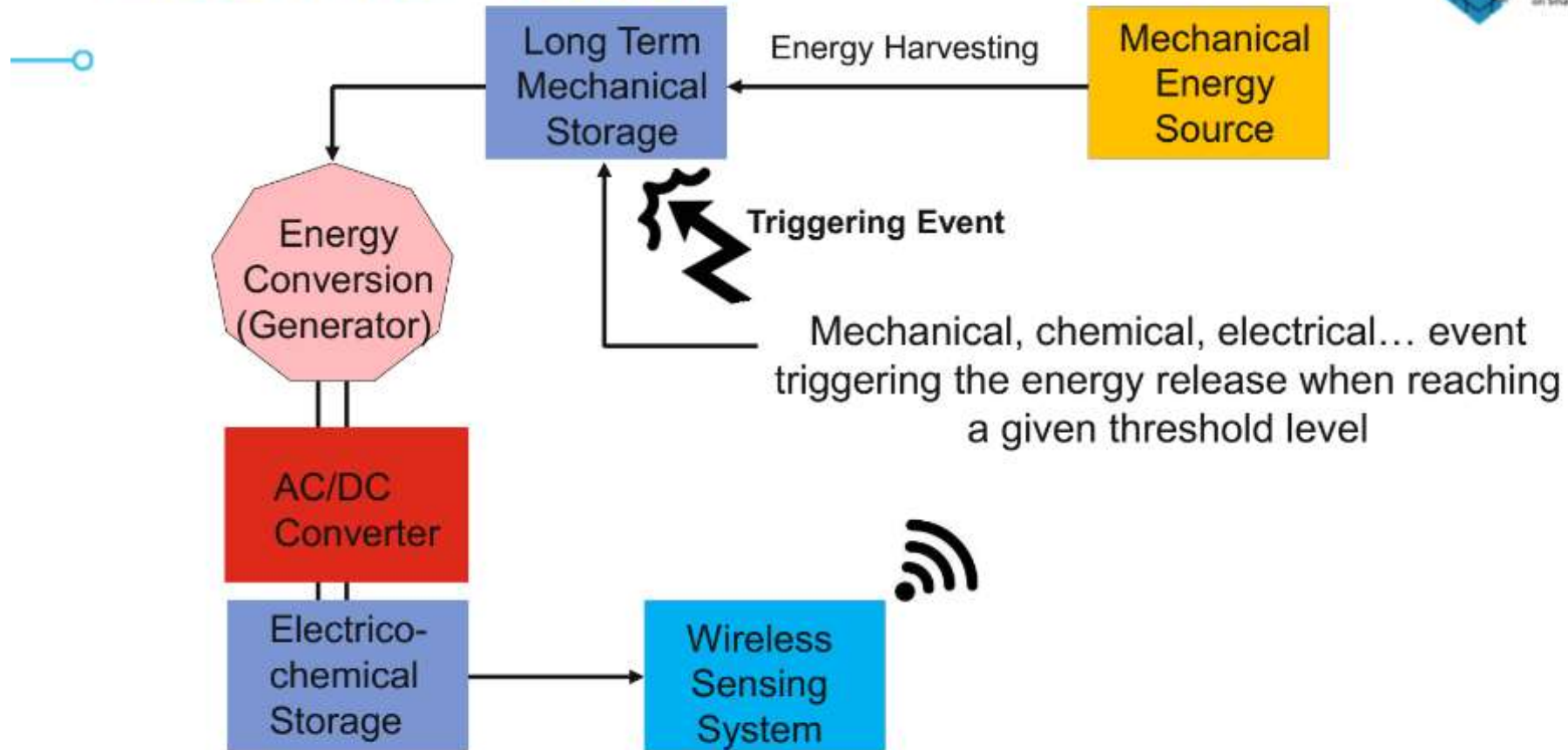


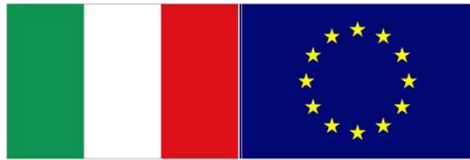


ARTENOR



ELEVATOR SLIDE

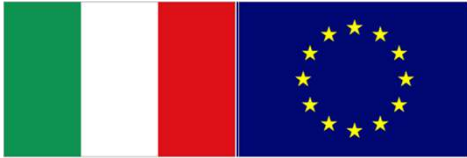




ESIPAT PROJECT IDEA

- Focus in packaging needs in photonics, optics and Industry 4.0 with ECSEL compatible user cases; **health, society, mobility**.
- Develop new and innovative electronics packaging solutions, as well as related technology building blocks, smart system integration, modelling and testing
- Demonstrate the developments;
 - Specified, integrated and evaluated by the end users;
 - Building blocks delivered by the project's value chain
- Develop standardized interfaces and design libraries
- Packaging community & know-how on board
- New end user cases welcome, health related cases also outside optics & photonics may be considered.

Coordinator Gerd Jungmann Gerd.jungmann@swissbit.com
ESIPAT co-chair Dan Negrea d.negrea@exceet.com
Support Euro Vinilko euro.vinilko@ciniverso.com



Wearable

Select the game

SPELL IT
HOUSE



SPELL IT
VERBS

SPELL IT
TEST

SPELL IT
WEATHER

SPELL IT
CLOTHES

SPELL IT
EMOTIONS



Turn on/off

- The wearable is connecting to the software. Please, waiting
- It's ready to bring the object
- Reading is right
- Reading failed

Game's Instruction

- Red Team must find 5 German cities
- Blue Team must find 5 Spanish cities
- Yellow Team must find 5 French cities
- Green Team must find 5 Greek cities
- Orange Team must find 5 Italian cities

Game's Level



Find 5 cities of Spain, Germany, France, Greece, Italy

Level 1

- Waiting
- Right word
- Duplicate word
- Wrong word



NextGaN

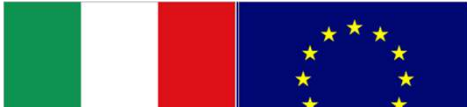


Challenges and objectives

- Develop novel scalable and adaptive III-N material technology for improvements in high-power electronic components
- Novel approaches to reducing defect density of III-N wafers to allow for vertical power transistors in the 600V – 1200 V category
- Addressing SRA Energy Challenge 1: Ensuring sustainable power generation and energy conversion
- Enable increased efficiency, cost-effective energy conversion, transport and utilization of electric power

Technical goals

- Develop low-dislocation density Ga(Al)N wafer technology
 - Nanowire-based low-dislocation density GaN and Al(Ga)N wafers
 - GaN and Al(Ga)N epitaxy with hot-wall MOCVD on SiC, GaN and Al(Ga)N wafers
- Develop defect reduction and efficient doping in hetero- and homo-epitaxy
- Design, fabricate and demonstrate vertical III-N power devices
 - Design, fabricate and assess vertical III-N JBS diodes and switches



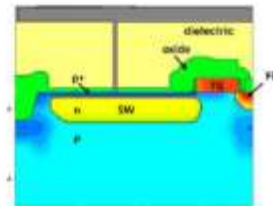
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CMOS Terahertz detector



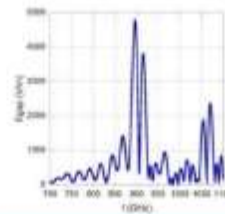
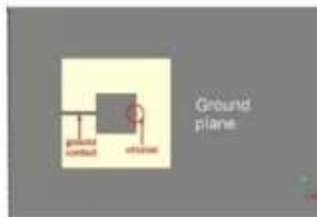
LFOUNDRY
A SAMIC COMPANY

La Sapienza University and LFoundry **jointly patented** a new detector structure



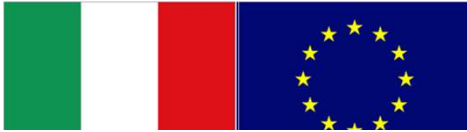
Direct integration of the antenna with a commercial CMOS active pixel image sensor (APS) allows the realization of THz detectors, with:

- High Field Enhancement thru a planar antenna.
- Limited bandwidth for high resolution spectroscopy.



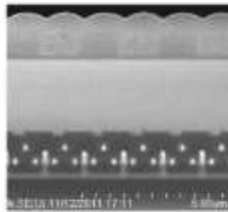
Envisioned applications:

- Security screening of letters, envelopes and small packages
 - Terahertz Earth Observing System
 - Large area sensors
 - Material inspection on pharmaceutical production lines
- Interested in ECSEL 2018 call (RIA) or in H2020 ICT-07-2018: Electronic Smart Systems
 - Looking for partners on applications (possibly project coordinator), system integration and EM design.



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CMOS sensors for real-time imaging of living cells



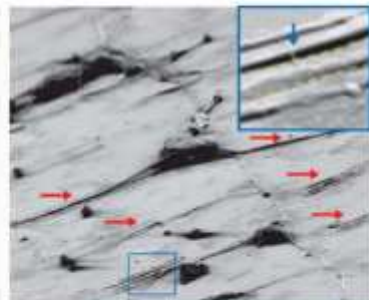
La Sapienza University holds a patent for the growth of low temperature compatible with the back-end of CMOS integrated circuits. The columnar structures of silicon nanowires allows intimate contact with the cell membrane.

It can transform the active pixel image sensor (APS), available by LFoundry, into an innovative Electronic Microscope, capable of providing real-time images of surface charge and action potentials of the cell membrane.



Among the possible therapeutic applications:

- in situ monitoring of cardiac fibrillation,
- electric dynamics of axons in neural cells.



Required competences:

- Bio-compatible packaging
- Measurement instrument integration
- Bio-medical competences for application

Aim is to join an ECSEL proposal on medical applications