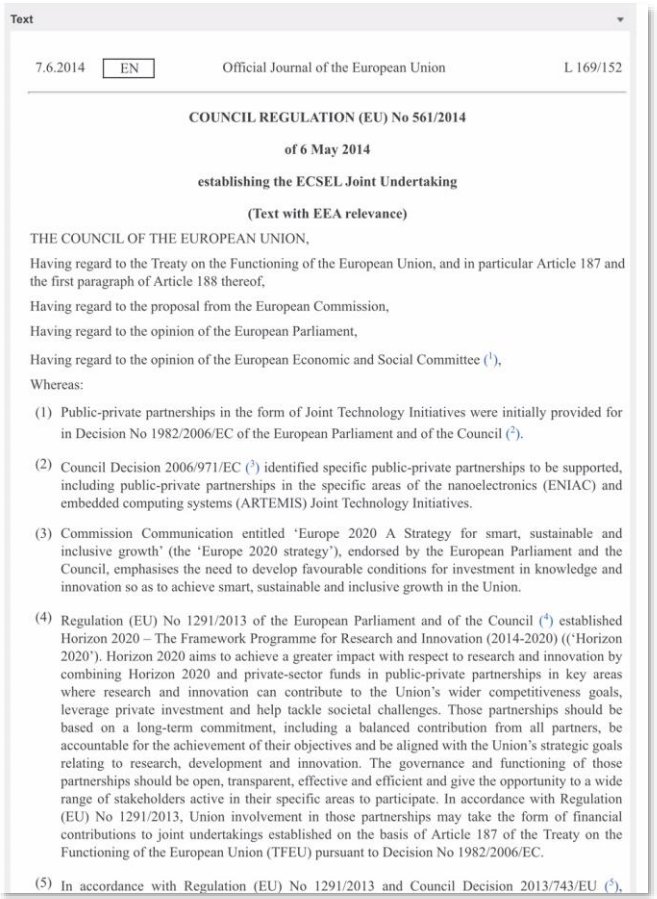
A PUBLIC PRIVATE PARTNERSHIP ON NANO-ELECTRONIC COMPONENTS AND SYSTEMS: THE ECSEL JU

BERT DE COLVENAER, ECSEL JU, BELGIUM

ECSEL Joint Undertaking

Electronic Components and Systems for European Leadership

THE ECSEL JU



Text

7.6.2014 EN Official Journal of the European Union L 169/152

COUNCIL REGULATION (EU) No 561/2014

of 6 May 2014

establishing the ECSEL Joint Undertaking

(Text with EEA relevance)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 187 and the first paragraph of Article 188 thereof,

Having regard to the proposal from the European Commission,

Having regard to the opinion of the European Parliament,

Having regard to the opinion of the European Economic and Social Committee ([1]),

Whereas:

(1) Public-private partnerships in the form of Joint Technology Initiatives were initially provided for in Decision No 1982/2006/EC of the European Parliament and of the Council ([2]).

(2) Council Decision 2006/971/EC ([3]) identified specific public-private partnerships to be supported, including public-private partnerships in the specific areas of the nanoelectronics (ENIAC) and embedded computing systems (ARTEMIS) Joint Technology Initiatives.

(3) Commission Communication entitled 'Europe 2020 A Strategy for smart, sustainable and inclusive growth' (the 'Europe 2020 strategy'), endorsed by the European Parliament and the Council, emphasises the need to develop favourable conditions for investment in knowledge and innovation so as to achieve smart, sustainable and inclusive growth in the Union.

(4) Regulation (EU) No 1291/2013 of the European Parliament and of the Council ([4]) established Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020) (('Horizon 2020'). Horizon 2020 aims to achieve a greater impact with respect to research and innovation by combining Horizon 2020 and private-sector funds in public-private partnerships in key areas where research and innovation can contribute to the Union's wider competitiveness goals, leverage private investment and help tackle societal challenges. Those partnerships should be based on a long-term commitment, including a balanced contribution from all partners, be accountable for the achievement of their objectives and be aligned with the Union's strategic goals relating to research, development and innovation. The governance and functioning of those partnerships should be open, transparent, effective and efficient and give the opportunity to a wide range of stakeholders active in their specific areas to participate. In accordance with Regulation (EU) No 1291/2013, Union involvement in those partnerships may take the form of financial contributions to joint undertakings established on the basis of Article 187 of the Treaty on the Functioning of the European Union (TFEU) pursuant to Decision No 1982/2006/EC.

(5) In accordance with Regulation (EU) No 1291/2013 and Council Decision 2013/743/EU ([5]),

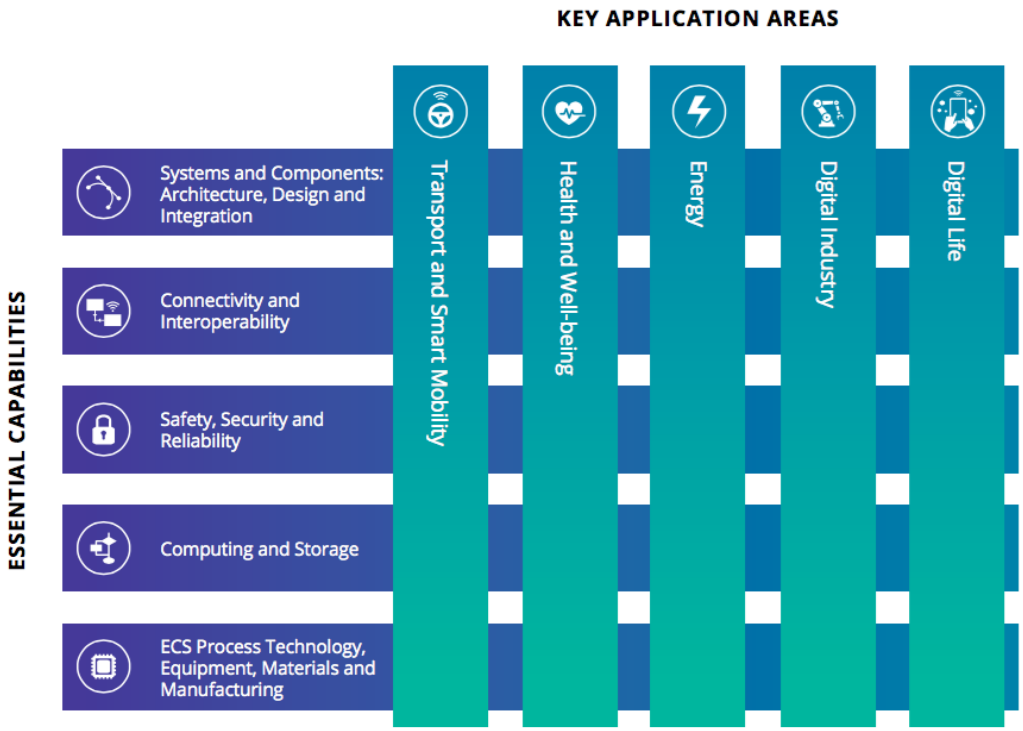
The ECSEL JU in short:

- Covers Electronic Components and Systems (ECS)
- Partnership EU, participating MS, Private Members
- Budget 1,2 B€ + 1,2 B€ + 2,4 B€
- Annual Call for proposals as Horizon 2020

Objectives:

- Strong and globally competitive ESC industry in EU;
- Ensure the availability of **ECS as KET**;
- Keeping Europe at the forefront of technology;
- Bridging the gap between research and exploitation;
- Strengthening innovation capabilities and creating economic and employment growth in the Union;
- **Align strategies with Member States** to attract private investment;
- Maintain and grow semiconductor and smart system manufacturing capability in Europe;
- …

THINKING TOGETHER



https://www.ecsel.eu/sites/default/files/2017-12/ECSEL%20GB%202017.94%20-MASP%202018_0.pdf

THINKING TOGETHER
THE ELECTRONICS VALUE CHAIN

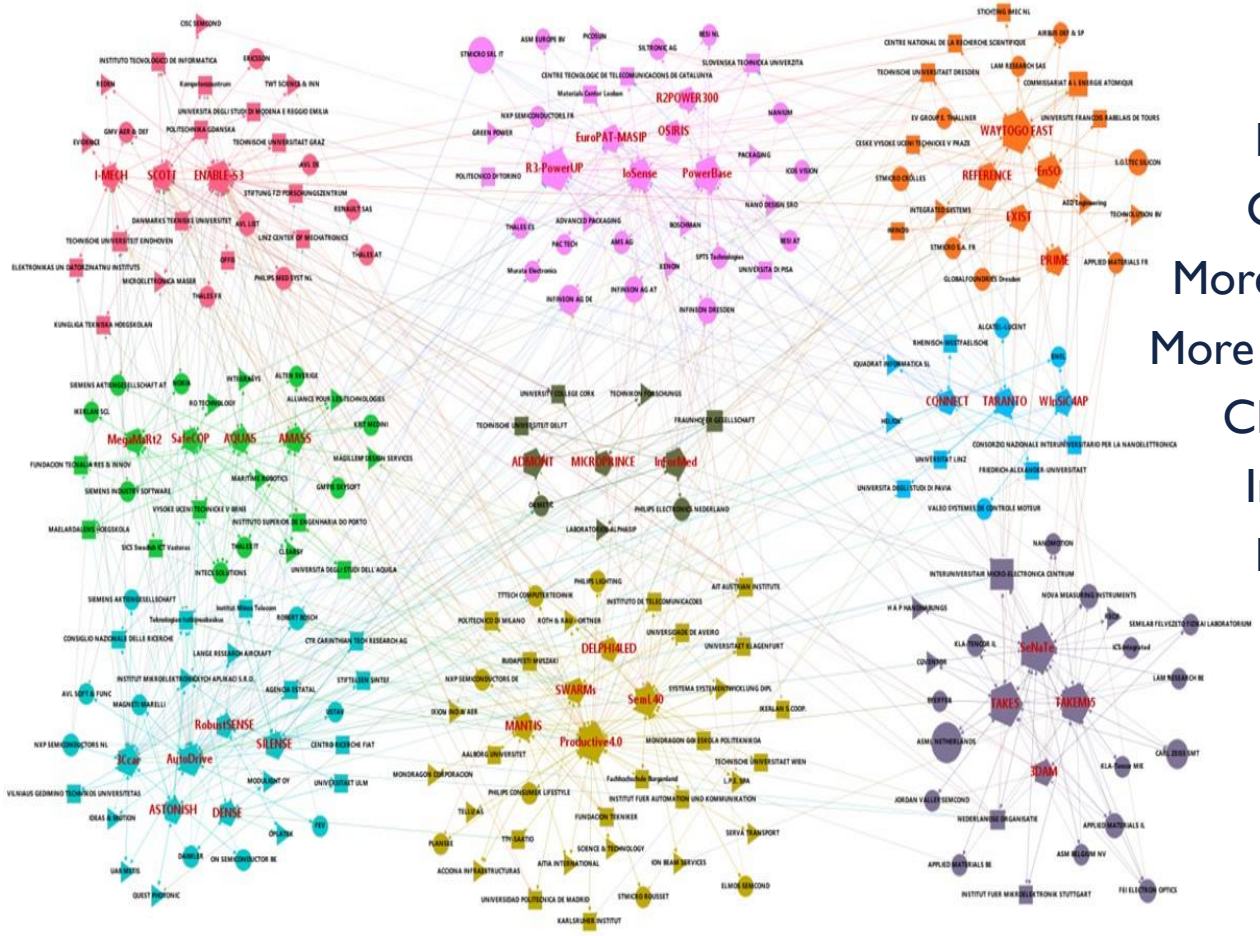
THINKING TOGETHER

WORKING TOGETHER

3Ccar	CAMMI	DENSE	ENLIGHT	iFEST	ME3GAS	PARSIMO	RobustSENSE	SYSMODEL
3DAM	CESAR	DESERVE	EnSO	iLAND	MegaMaRt2	PLACES2BE	SafeCOP	TAKE5
ACCUS	CHARTER	DEWI	EPAMO	I-MECH	MERCURE	PLACYD	SAFESENS	TAKEMI5
ACROSS	CHESS	E2COGAN	EPPL	IMPROVE	Manufacturing	POLIS	SCALOPES	TARANTO
ADMONT	CHIRON	E2SG	EPT300	INCITE	MICROPRINCE	POLLUX	SCOTT	THINGS2DO
AGATE	CONCERTO	E3Car	eRamp	INDEXYS	MIRANDELA	PowerBase	SE2A	TOISE
Almarvi	CONNECT	E450EDL	ERG	InForMed	MIRTIC	PRESTO	SemI40	VARIES
AMASS	COPCAMS	E450MDLP	ESCOP	INTEGRATE	MODERN	PRIME	SeNSIT	WeTe
AQUAS	CRAFTERS	EDEN	ESEE	IoP	MOTOBRAIN	Productive4.0	SESAMO	WIDOP
Arrowhead	CRYSTAL	EEM450PR	ESiP	IoSense	NANOCOM	PROMINENT	SILENSE	WAYTOGO FAST
ARTEMOS	CSI	EEMI450	eSONIA	JEMSIP_3D	NANOTEG	pSAFECER	SILVER	WInSiC4AP
ASAM	CSSL	e-GOTHAM	EuroPAT-MASIP	LAB4MEMS	nSafeCer	pSHIELD	SIMPLE	With-Me
ASTONISH	D3CoS	ELESIS	EXIST	Lab4MEMSII	nSHIELD	R2POWER300	SMARCOS	WSN-DPCM
ASTUTE	DCC+G	EMC2	GreenElec	LAST-POWER	OPERA	R3-COP	SMART	
AutoDrive	DELPHI4LED	EMMON	HEECS	LENS	OSIRIS	R3-PowerUP	SmartPM	
BASTION	DEMANES	ENABLE-S3	HIGH PROFILE	MANTIS	PANACHE	R5-COP	SMECY	
BATTMAN	DEMETER	ENCOURAGE	HoliDes	MAS	PANORAMA	RECOMP	SOFIA	
CAJAL4EU	DENECOR	END	IDEAS	MBAT	PaPP	REFERENCE	SWARMs	

43.500 PERSONYEARS

WORKING TOGETHER



FD-SOI for IoT

More Moore Technology

CPS with mixed HW/SW

More than Moore IC-Technology

More than Moore pilot lines for ISS

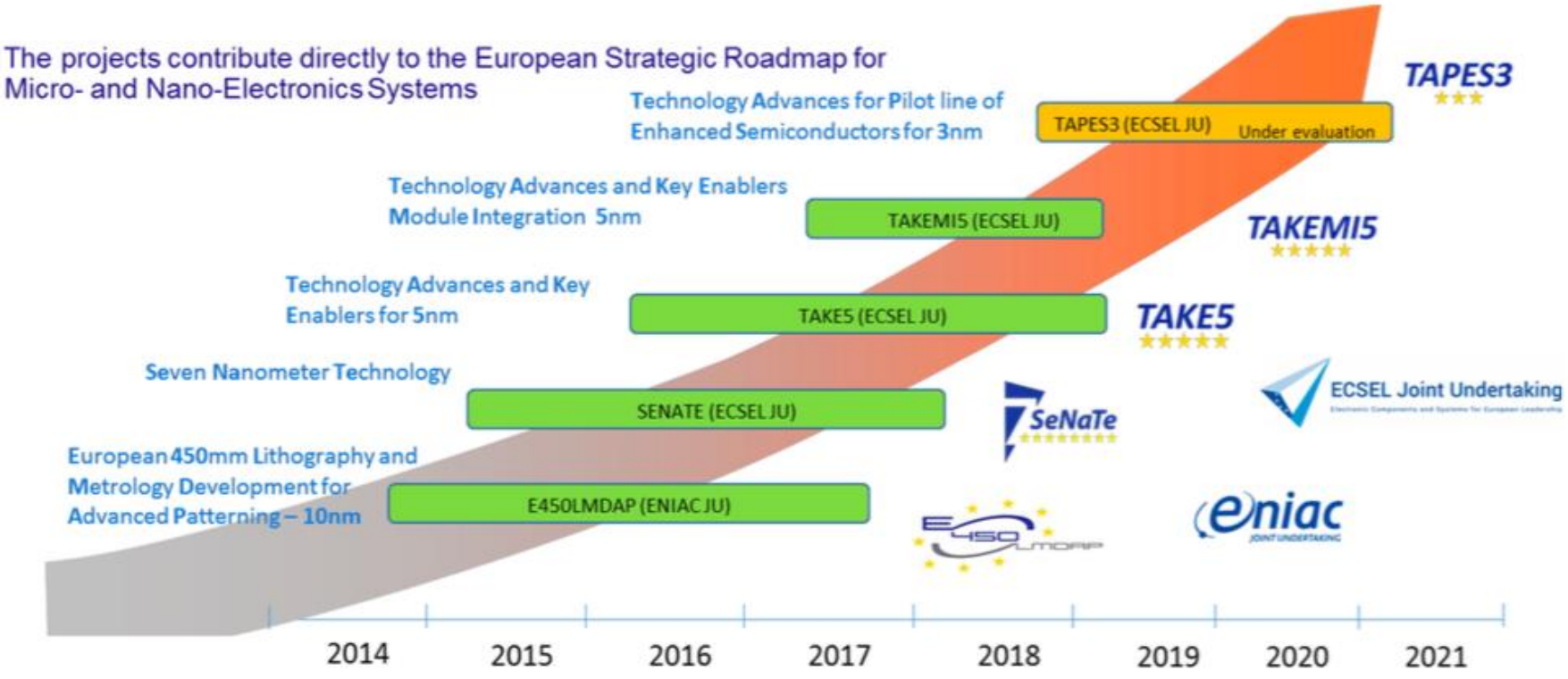
CPS platform developments

Integrated Smart Systems

Digitalisation of Industry

Other Components

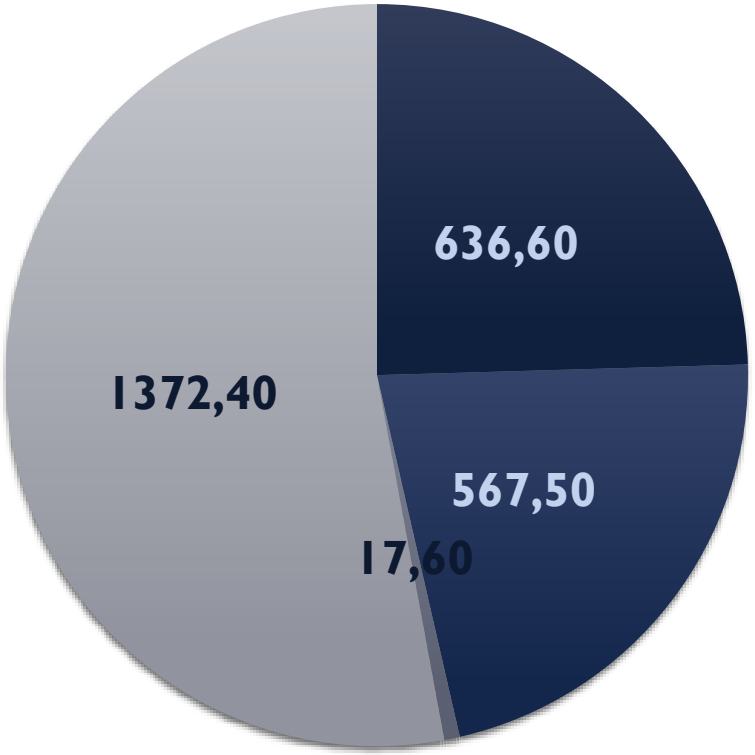
WORKING TOGETHER



from ASML

INVESTING TOGETHER

Total ECSEL JU Project Portfolio : 2 594,10 M€

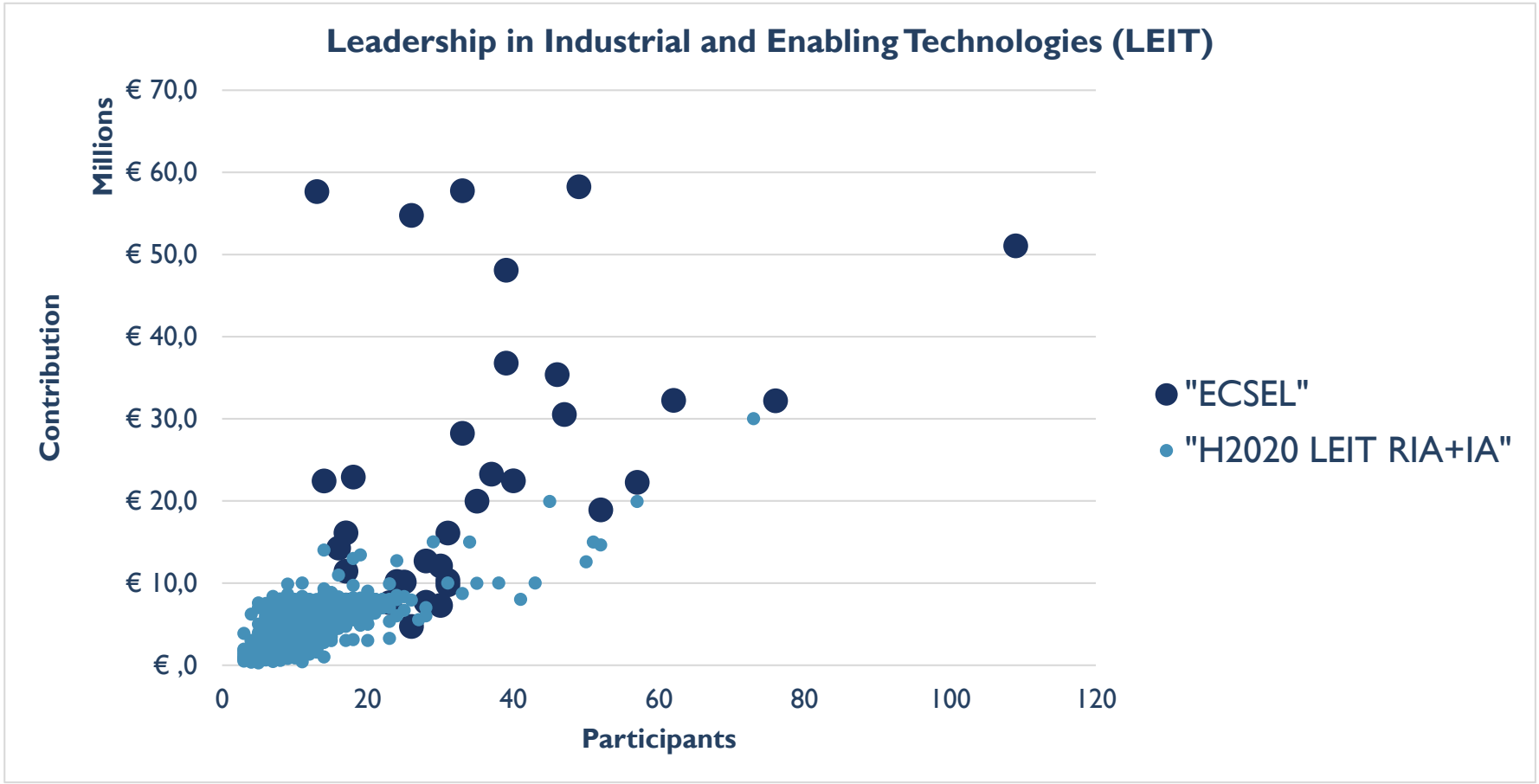


- EC/ECSEL JU
- EPS
- ESIF
- PM Contribution

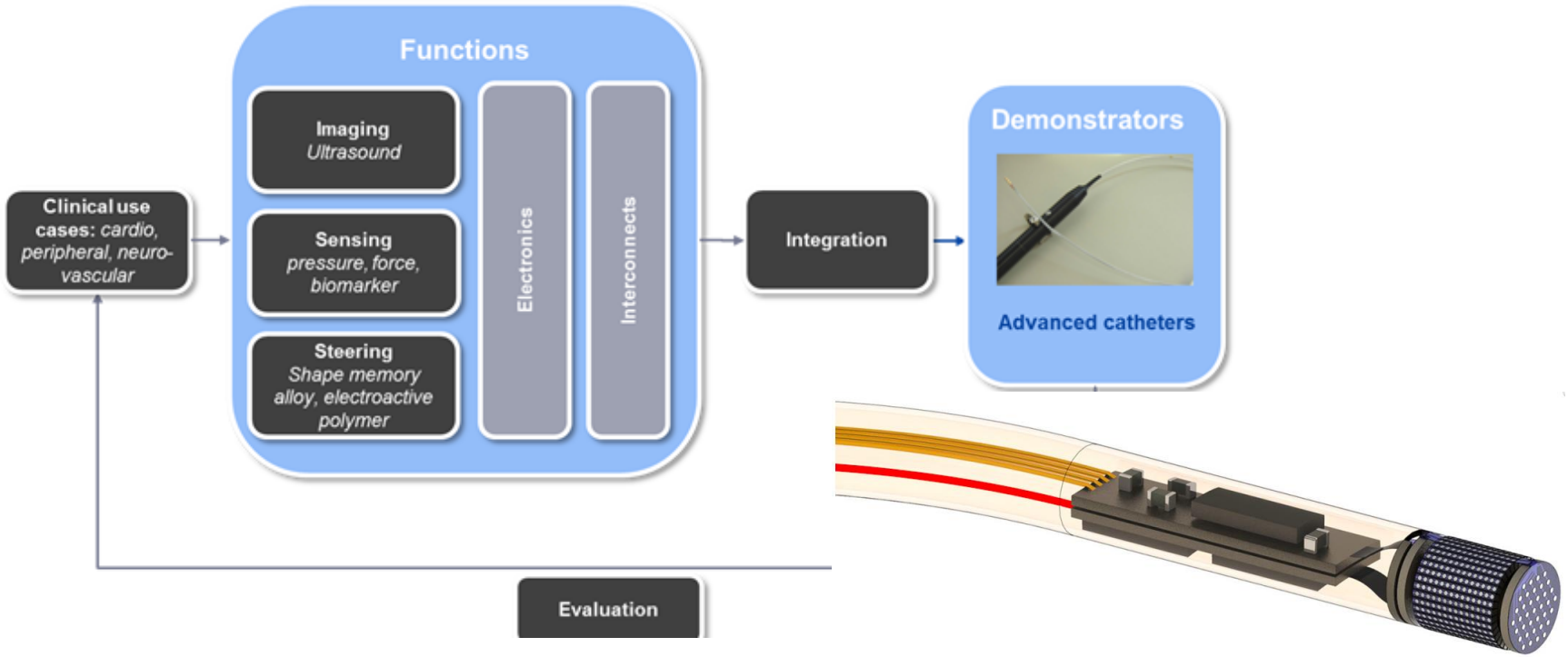
Remarks :

- EPS/EU=0,89; target >1
- PM trend : 2 400 M€ in 2020
- ESIF trend increasing

INVESTING TOGETHER

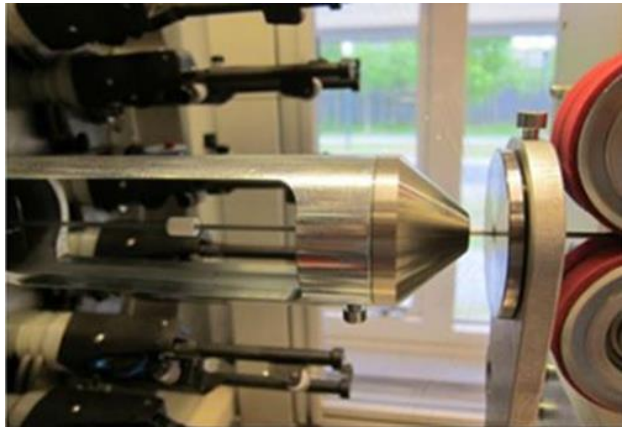


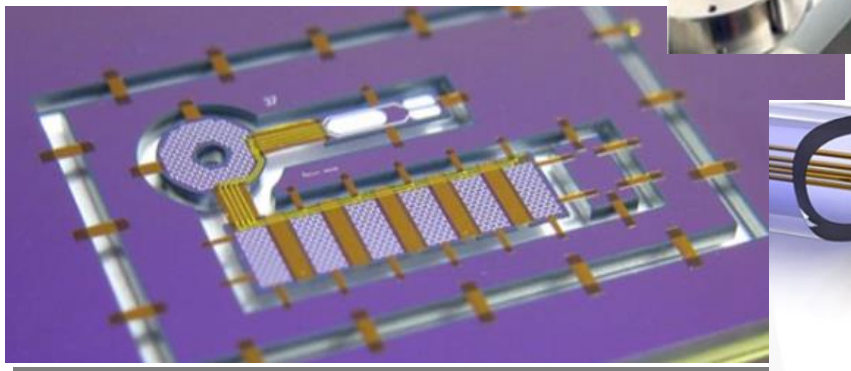
INCITE



INCITE (Intelligent Catheters in Advanced Systems for Interventions) is a research project focusing on the development of a technology platform that will enable advanced imaging, sensing (pressure, force, biomarker) and steering functions to be integrated into (sub) millimeter size in-body catheters and surgical instruments for emerging complex minimally invasive cardio-, neuro-, and peripheral vascular interventions.

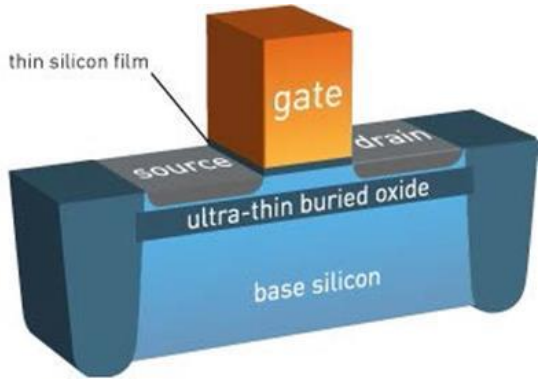
INFORMED





The InForMed project will establish an integrated pilot line for medical devices, covering the complete innovation chain from technology concept to system qualification, including micro-fabrication, assembly and even the fabrication of smart catheters.

FD-SOI TECHNOLOGY



Fully Depleted Silicon on Insulator: EU changing the rules of the game for edge computing, IoT, always-on applications, radars, … **made in Europe !**

& REFERENCE ThingsToDo PRIME

FD-SOI

2005	2008	2010	2014	2015	Soon…
leti ceatech	IBM	ST life.augmented	SAMSUNG	GLOBAL FOUNDRIES	GLOBAL FOUNDRIES, SAMSUNG
Materials Research	Advanced R&D	Industrial Partner	28FD Foundry offer	22FD Foundry offer	12FD, 18FD Foundry offer

NXP, MOBILEYE, Dream Chip, AUDI, AIRBUS, Renault

PILOT LINES FOR POWER ELECTRONICS

Power Semiconductor and Electronics Manufacturing 4.0 smart, security, variation, simulation

excellence in speed and reliability for More than Moore technologies : high volume production and quick introduction.

Staatspreis Innovation 2013

des Bundesministeriums für Wirtschaft, Familie und Jugend

"Enhanced Power Pilot Line": 2nd generation power semiconductor devices on 300mm wafer

"Enabling Power technologies on 300mm Wafers" project was based on the concept of a **1:1 transfer approach** from 200 mm to 300 mm diameter silicon wafers.

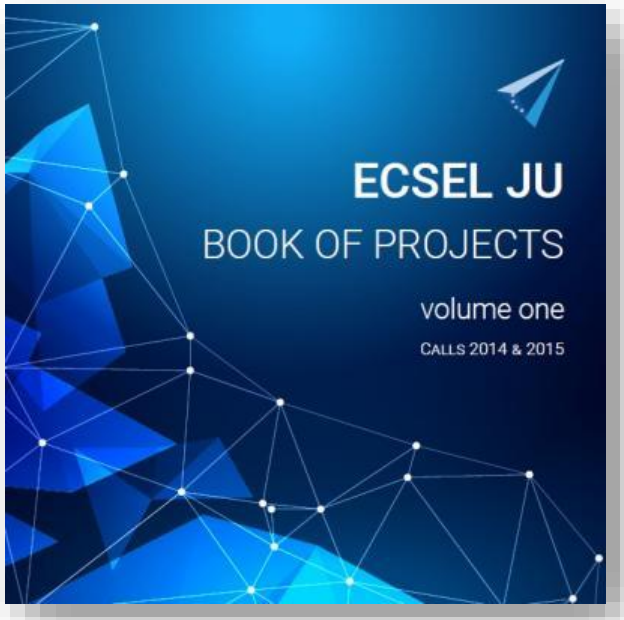
PILOT LINES FOR POWER ELECTRONICS

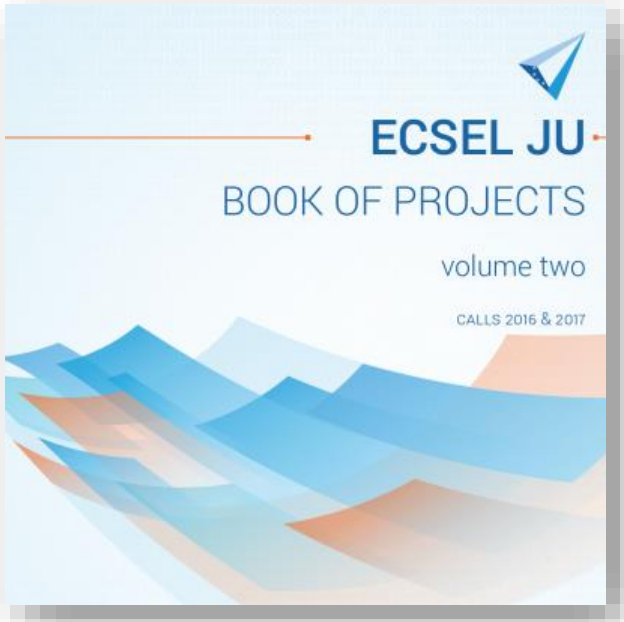
Staatspreis Innovation 2013

des Bundesministeriums für Wirtschaft, Familie und Jugend

Infineon Austria invests 1,6 B € over 6 years on a new 300 mm fab for power semiconductors: 400 employees and 1,8 B€ additional sales. (May 2018)

BOOK OF PROJECTS





https://www.ecsel.eu/sites/default/files/2017-08/ecsel_ju_book_of_projects_volume1_website.pdf

BOOSTING ELECTRONIC VALUE CHAINS IN EUROPE

A report from Industry to Commissioner Gabriel handed over on 19/06 :

1. Extend Europe's partnership success model (ECSEL JU: fast track access, synergies & new applications, AI market readiness & lower TRL)
2. Continue investment towards a strong microelectronics manufacturing industry (extend IPCEI & EU co-funding)
3. Create a strategic component sovereignty programme (with EDA, ESA & CS)
4. Create a smooth innovation path from IP to Products (facilitate SME & midcap)
5. Pursue strategic design initiatives (OEM – system house – ECS sector)
6. Create design tools for electronics value chains (IP & technology blocs)
7. Create a Task Force for electronics education and skills
8. Create a pan-European research infrastructure for advanced computing technologies (RTO led)

Presented by CEO from SOITEC, ST, Bosch, X-FAB, FhG, GF, Infineon, CEA, inec, ASML, UMS
http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=53119

NEXT WEEK


ECSEL Joint Undertaking
Electronic Components and Systems for European Leadership
BUCHAREST
ECSEL JU
SYMPOSIUM
June 17-18 2019
SHAPING DIGITAL INNOVATION
romania2019.eu

CONCLUSION

THE ECSEL JOINT UNTERTAKING makes us

- THINKING TOGETHER
- WORKING TOGETHER
- INVESTING TOGETHER

Future is now : HORIZON EUROPE & DIGITAL EUROPE

Industry ambitions “BOOST ELECTRONIC VALUE CHAINS IN EUROPE”