

# INTERNATIONALIZATION ACTIVITIES AT



**Smartare  
Elektroniksystem**

ELECTRONIC COMPONENTS & SYSTEMS



Activities related to strengthen Swedish participation in Int'l (EU funded) consortium projects

**THORBJÖRN "TOBY" EBEFORS, PHD**

DEPUTY PROGRAM MANAGER

[www.smartareelektroniksystem.se](http://www.smartareelektroniksystem.se)



Virtual Conference  
May 19, 2021

# 2021 MISSION

**STRENGTHEN SWEDISH ECS COMPANIES  
PARTICIPATION IN  
INT'L (EU FUNDED) PROJECTS**

**PROMOTE ECS PROJECTS  
TO GO INTERNATIONAL**

**COLLABORATED WITH OUR SISTER ORGANIZATIONS  
WITHIN THE ECSEL MIRROR GROUP NETWORK**

# Outline

- What is a strategic innovation programme
- How we work in Sweden for the growing electronics sector
- Support from idea to product in emerging technologies
  - focus 7 HUBs like organic and printed electronics
- Project and Swedish ECS Company examples from Nat'l portfolio
  - Under development - ECS collaboration tool (Swedish matchmaking day June 10<sup>th</sup>)
  - New ideas for Int'l (EU / SWE-ITA) collaboration



# Strategic Innovation Programmes



INFRASweden2030



Drive Sweden



RE:Source



Smart Built Environment



Medtech4Health



Innovair



SIO Grafen



Smartare elektroniksystem



IoT Sverige



BioInnovation



Swelife



STRIM (gruv och metallutvinning)



LIGHTer



Processindustriell IT och Automation (PiiA)



Produktion2030



Metalliska material



Viable Cities

VINNOVA

Energimyndigheten

FORMAS

STRATEGISKA INNOVATIONS-PROGRAM

# Strategic Innovation Programmes

## Smartare elektroniksystem

Verkar för att Sverige 2025 är ett världsledande industriland inom alla områden där vi är beroende av elektroniksystem.

STRATEGISKA INNOVATIONSPROGRAM

**Smartare  
Elektroniksystem**

ELECTRONIC COMPONENTS & SYSTEMS

# Strategic innovation areas

With support from



Strategic  
innovation  
programmes

- Cooperation Industry – public sector – Academia (PPP)
- Strategic research and innovation agendas
- Strategic innovation programme

SES Founded in 2014:

+ ~70 companies, total 107 organisations



+ adding 350 new organisations  
(Large Corps and SME and ROTs)  
through-out 2014-2021 calls





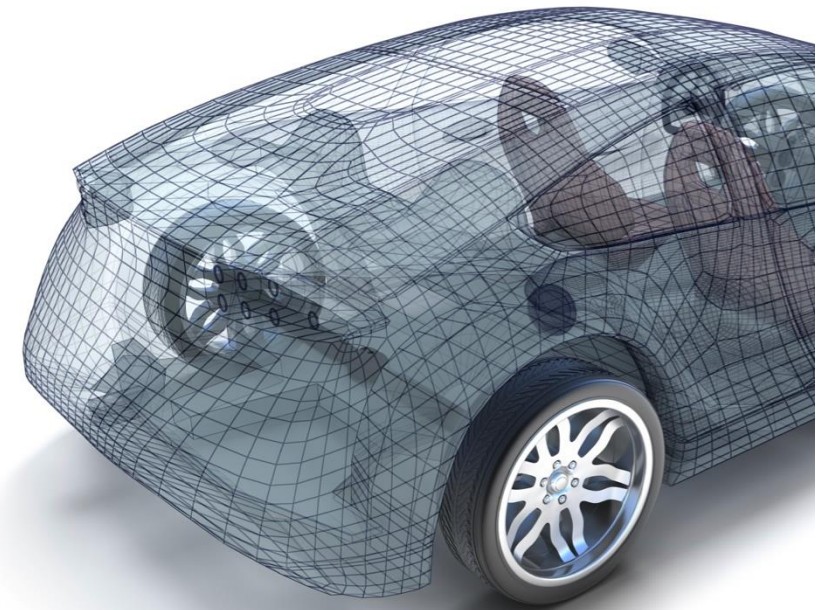
Forming 504 SWE ECS project proposals 2014-21

# VISION and challenges

”by 2025 Swedish electronic systems enable a world-class Swedish industry ”.

## 3 challenges

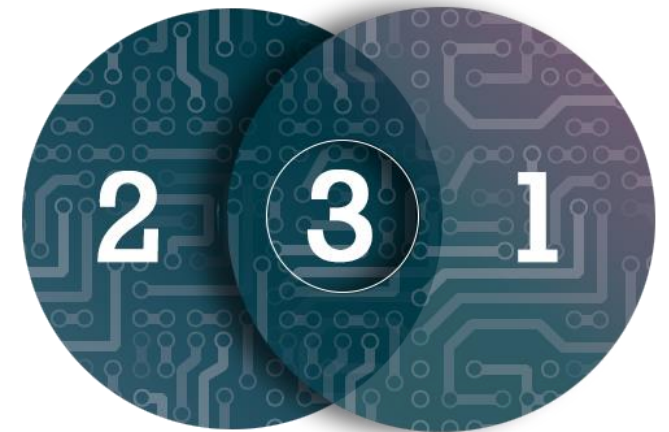
- Increased cooperation and efficiency in the value chains
- Maintained and further developed Swedish excellence
- Secure the provision of skills





# Three groups form electronic related industry in Sweden (figures from 2017)

- **Group 1** - 3 650 companies making electronics
  - Manufacturers, consultants, material/component suppliers and distributors
  - ENICS, Semcon Caran and Arrow
- **Group 2** - 7 850 companies with electronics in products
  - Elekta, ABB and Scania
- **Group 3** - 15 300 companies with electronics in production/operations
  - E.g. LifeScience, process industry, mining
  - AstraZeneca, Vattenfall and LKAB



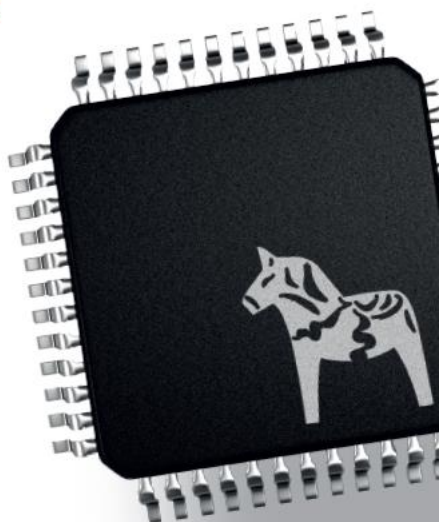
# Swedish ECS Roadmap

Smartare  
Elektroniksystem  
för Sverige

RAPPORT

## Roadmap for Smarter Electronics Systems

September 2016

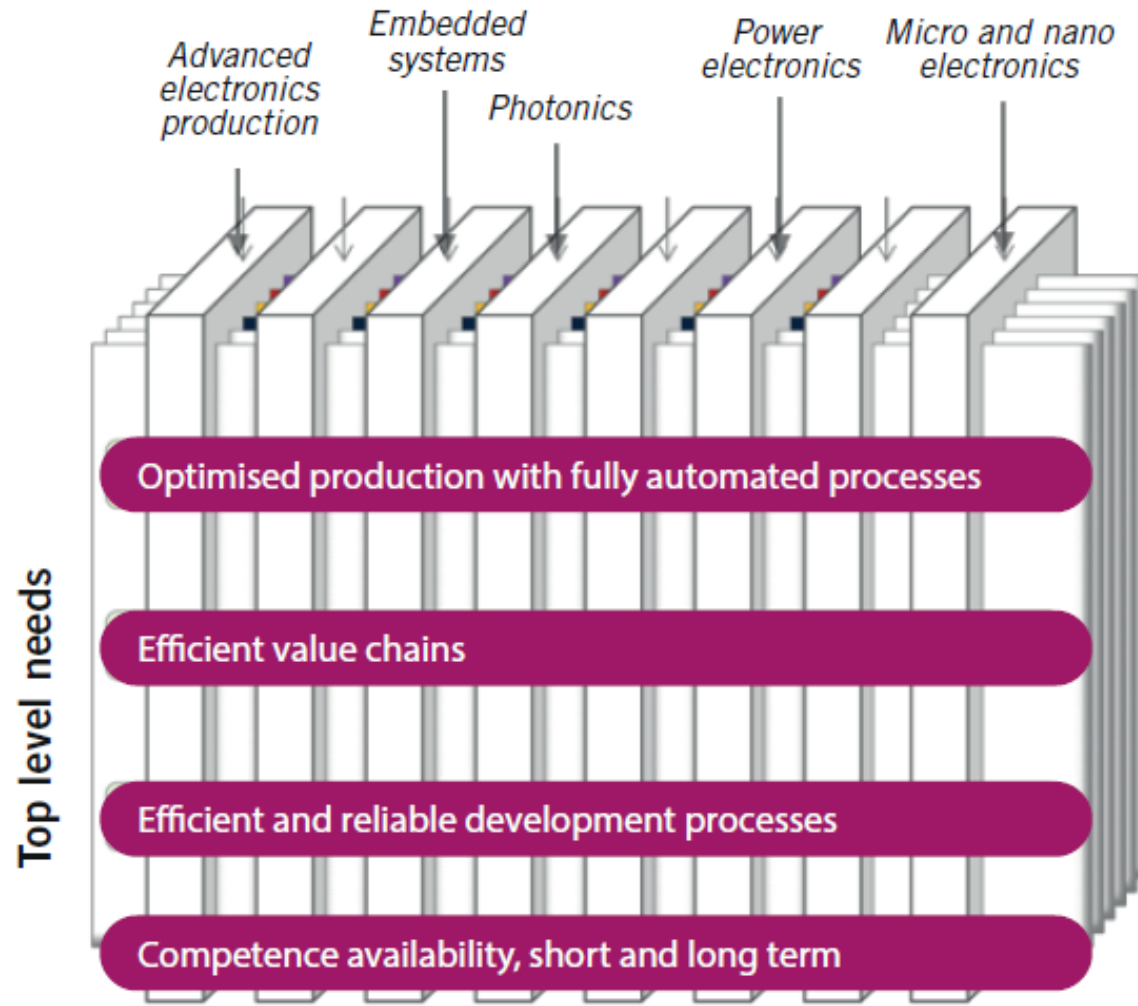


Rapporten är sammanställd av:

Jerker Delsing, Luleå Tekniska Universitet  
Jonas Gustafsson, Luleå Tekniska Universitet  
Magnus Svensson, Acreo Swedish ICT AB  
Leif Lungqvist, Acreo Swedish ICT AB  
Maria Månsson, Svensk Elektronik  
Pierre-Yves Fonjallaz, PhotonicSweden  
Hans Grönqvist, Swerea IVF AB



# Strategic Research and Development ECS areas in Sweden



## *Industrially interesting/emerging technologies*

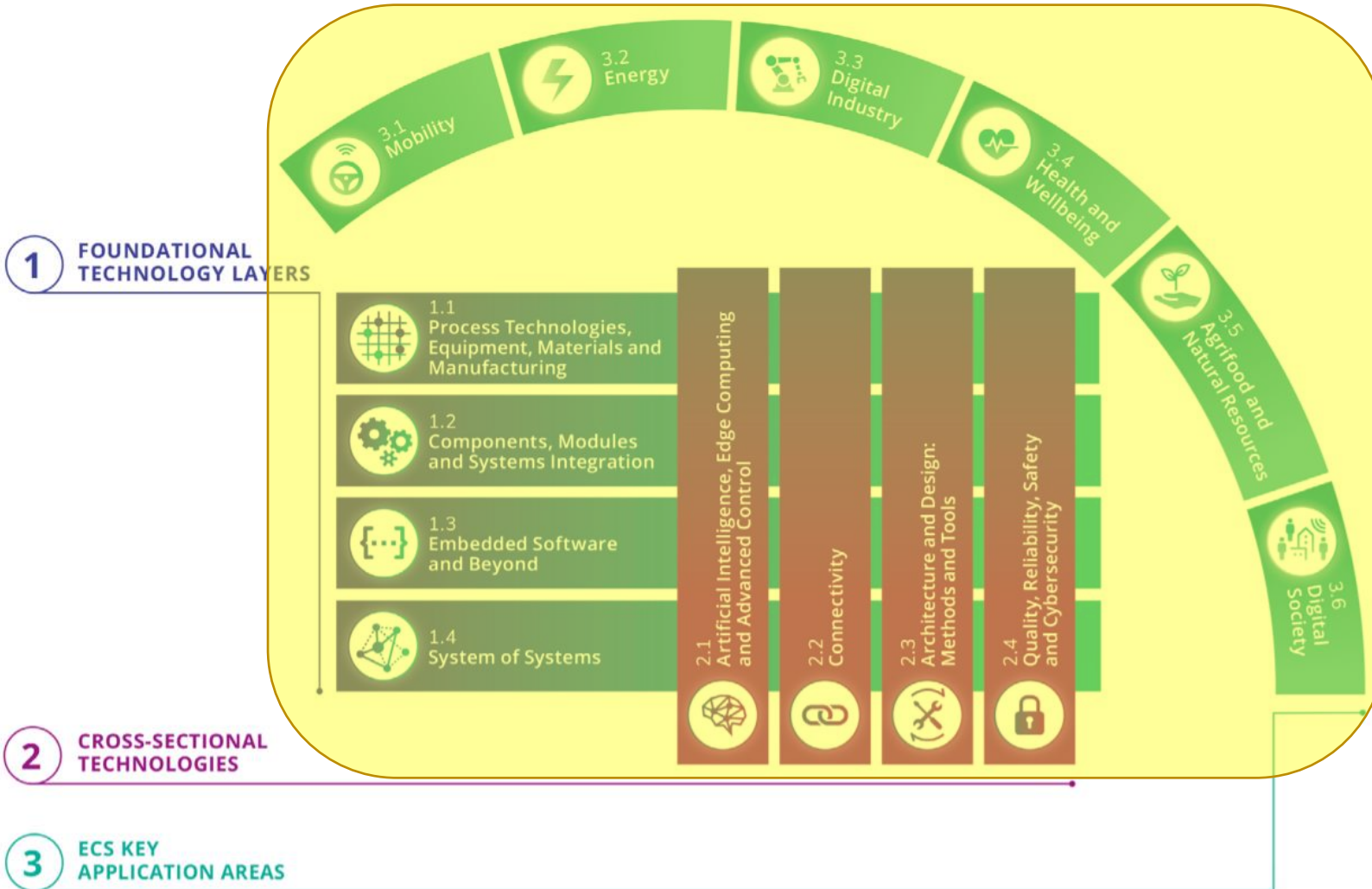
- *Assembly technology and reliability*
- *Sensors*
- *Printed electronics*
- *Antenna, microwave and terahertz systems*

## Application priorities

- Telecom
- Automation/production
- Automotive
- Energy
- Life Science
- Military and security



# The 150 Swedish ECS projects granted under SES 2014-20 - all over the EU ECS (ECSEL/KDT/Xecs) theme map



## SES competence HUBs:

- ✓ Antenna, microwave and THz systems
- ✓ Printed Electronics
- ✓ Photonics
- ✓ Micro- and nano- electronics
- ✓ Embedded systems
- ✓ Advanced electronics production
- ✓ Power electronics
- ✓ Reliability in electronic hardware

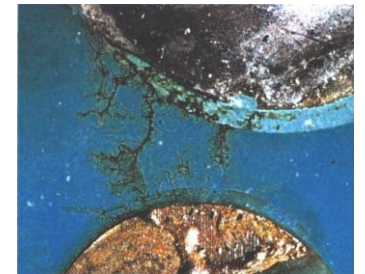
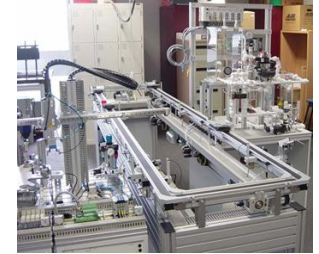
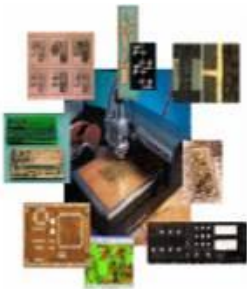
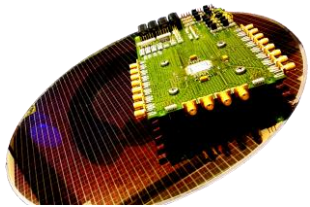
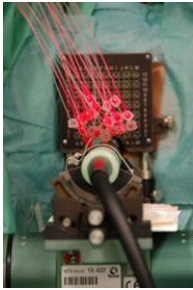
## extra HUBs:

- ✓ Embedded sensor systems for health
- ✓ Integrated Circuits and systems




# ECS Competence HUBs in Sweden with contact info

[www.smartareelektroniksystem.se/en/efforts/competence/](http://www.smartareelektroniksystem.se/en/efforts/competence/)

- Embedded systems, Luleå University, [ulf.bodin@ltu.se](mailto:ulf.bodin@ltu.se)
  - Sub-HUB Embedded sensor systems for health, Mälardalens Högskola, [maria.linden@mdh.se](mailto:maria.linden@mdh.se)
- Photonics, Photonic Sweden, [lennart@photonicsweden.org](mailto:lennart@photonicsweden.org)
- Printed Electronics, Printed Electronics Arena, RISE, [bjorn.norberg@ri.se](mailto:bjorn.norberg@ri.se)
- MicroNano Electronics, Mitt University, [christer.frojdh@miun.se](mailto:christer.frojdh@miun.se)
  - Sub-HUB Integrated Circuits and systems, Linköpings University [Atila.Alvandpour@liu.se](mailto:Atila.Alvandpour@liu.se)
- Power Electronics, SiC Power Centre at RISE, [Mietek.bakowski@ri.se](mailto:Mietek.bakowski@ri.se)
- Advanced electronics production, KTH, [johnnyob@kth.se](mailto:johnnyob@kth.se)
- Reliable electronics hardware, RISE / Swerea IVF, [per-erik.tegehall@ri.se](mailto:per-erik.tegehall@ri.se)
- Antennas- mm wave- and terahertz systems, Chalmers [jan.grahn@chalmers.se](mailto:jan.grahn@chalmers.se)



# EU Investments in Sweden

Invest. (-> 2019)	H2020	ICT	ICT-Target HEU	Increase H2020 -> HEU	ECSEL (-> 2019)
Total	48 824 M€	5 252 M€			823 M€
Sweden 	1 660 M€ (  ~ 4,42 B€)	142 M€ (  460 M€)			17,1 M€
Share	3,4%	2,7%	~3,5%	21%	2,1%

- Sweden is 8th largest receiver of H2020 funds in EU corresponding to 3,5% of the H2020 budget (public data upto 2019)
- In the ICT Area Sweden's share dropped from 2,9% (2017) to 2,7% (2019) which is considerably less than average H2020 level
- A reasonable goal is to increase ICT share in HEU to the average Swedish H2020 level of ~3,5%,
- In the ECSEL JU 76 Swedish participants (3,3%) had a share of only 2,1% of the grants (17,1 M€) up till 2019. This has increased in 2018-19/20 with several new Swedish ECSEL consortia (5 in the 2020 call).

SOURCE: [Vinnova - Horisont 2020 - årsbok 2019](#)



The background features a repeating pattern of light-colored circuit traces on a dark teal-to-purple gradient. The traces consist of interconnected lines and circular nodes, resembling a printed circuit board layout. The text is centered in the middle of the image.

**Swedish ECS project ideas  
for Int'l collaborations**

# ECS SWEDISH Matchmaking Day June 10<sup>Th</sup> 2021



Start > *Nätverksdag med matchmaking*

## Nätverksdag med matchmaking

Nätverksdag med matchmaking för innovationsprojekt inom smartare elektroniksystem.

Förberedelser för deltagare: Lägg in era projektidéer i ECS Collaboration Tool <https://ecscollaborationtool.eu/>

### Praktisk information

**Digitalt**

10 juni 2021

**Tid**  
10.00-15.00

**Organisatör**  
Smartare elektroniksystem

**Avgift**  
Digitalt

**Kontaktperson**  
Magnus Svensson  
Programchef  
+46 706-96 36 17  
[magnus.svensson@smartareelektroniksystem.se](mailto:magnus.svensson@smartareelektroniksystem.se)

**TILL ANMÄLAN**

Project ideas in ECS Collaboration

Tool <https://ecscollaborationtool.eu/>

### Application fields:

- Transport & Smart Mobility
- Health and Well-Being
- Energy
- Digital Industry
- Digital Life
- Connectivity and Interoperability
- Safety, Security and Reliability

### Other Strategic Innovations programs (SIP) attending:

- SES /ECS
- PiiA
- Drive Sweden
- Smart Built Environment
- SIO Grafen
- IOT Sverige
- and more to be added

- 10.00-11.00** SIP presentations - open and coming Nat'l calls
- 11.00-12.00** Presentations international calls
- 12.00-13.00** Lunch
- 13.00-15.00** Project ideas - company pitches and matchmaking



## CONTACT:

**[WWW.SMARTAREELEKTRONIKSYSTEM.SE](http://WWW.SMARTAREELEKTRONIKSYSTEM.SE)**

Deputy program manager  
responsibilities for Int'l activities:

Dr. Thorbjörn "TOBY" Ebefors

[Thorbjorn.Ebefors@smartareelektroniksystems.se](mailto:Thorbjorn.Ebefors@smartareelektroniksystems.se)



Program manager:

Magnus Svensson

[Magnus.Svensson@smartareelektroniksystem.se](mailto:Magnus.Svensson@smartareelektroniksystem.se)





**Swedish ECS project portfolio examples  
and ideas for Int'l collaborations**