

#### SILICON AUSTRIA LABS

The Austrian Research Center for **Electronic Based Systems** 

Bundesministerium Verkehr, Innovation und Technologie



LAND **KÄRNTEN** 







### EBS – A STRATEGIC KEY ENABLING TECHNOLOGY



<u>Electronic Based Systems (EBS)</u> are components, devices and systems with micro- and nanoelectronics as well as embedded software



Silicon Austria Labs is the leading research hub boosting the global ranking of the Austrian Ecosystem.

Source: A. Wild Forum Alpbach 2016

## REASONS BEHIND SILICON AUSTRIA LABS



- Silicon Austria Labs has been established to further strengthen Austria as economic location in the field of electronic based systems.
- The internationally recognized Austrian EBS industry and scientific landscape shall benefit from the synergies and new opportunities provided by the research center. Hence, innovation processes will be accelerated significantly.
- The conception of SAL is based on comprehensive studies of the R&D&I ecosystem involving public institutions, industrial associations and independent research organizations during the last 2 years.



Source: bmvit (2016): Electronic Based Systems. Die technologischen Helden der Zukunft. Zahlen, Daten und Fakten. https://www.bmvit.gv.at/service/publikationen/innovation/downloads/electronic\_based\_systems.pdf

\*) According to a study by the FEEI association

## SAL **KEY FACTS & FIGURES**

#### **Shareholders**

- 50.1 % Republic of Austria
- 10 % State of Styria
- 10 % State of Carinthia
- 4.95 % State of Upper Austria
- 24.95 % Industrial Association FEEI

#### Three Locations Graz, Villach, Linz

#### Financing & Company type

- 140 Mio. Euro public funding until 2023
- 140 Mio. Euro investment by industry partners
- Public-Private-Partnership
- GmbH (Ltd.) organized under private law



High Tech Campus Villach

LAND **KÄRNTEN** 

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Verkehr, Innovation

#### SAL SILICON AUSTRIA LABS

### SILICON AUSTRIA LABS AT A GLANCE

Austria's research center for electronic based systems (EBS)

Conducts applied research with own scientific personnel & lab infrastructure

01

02

03

04

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Accelerates innovation & scientific excellence in the Austrian EBS ecosystem

Focuses on core topics driven by strategic industrial demand & long-term scientific vision

Will engage approx. 350 – 500 employees during ramp-up phase until 2023

#### Si.A. Errichtungs-GmbH

### SAL VISION & MISSION

#### **Vision – Unfold the Future**

Silicon Austria Labs is a world-class research center and pioneer in electronic based systems.

#### **Mission – From Idea to Innovation**

Silicon Austria Labs propels ideas into innovation in the fields of

- ≡ Sensor systems
- RF systems
- Power electronics
- ═ System integration

with scientific excellence and economic impact.





## SAL RESEARCH NETWORK



- Silicon Austria Labs operates within a national and international network, elevates research to world class by fostering collaboration and adding critical mass
- **University institutes** provide outstanding scientific knowledge and talent
- **RTOs** act as research partner or as multiplier towards application oriented industry and SMEs
- International RTOs and service provider deliver services (e.g. fab service) beyond SAL scope and infrastructure



## COOPERATION MODELS WITH UNIVERSITIES





#### WITH THE DIGITAL REVOLUTION EVERYTHING BECOMES SMART, CONNECTED AND ENERGY SUSTAINABLE





The Digital Revolution is fueled by innovations in **Sensor**, **RF** and **Power Electronic** components. This plays into the strengths of the Austrian electronic industry.

Major growth opportunities can be sized in combination with **world class research** in the **cross-cutting topics** of:

- Virtual Prototyping and Model Based Design
- Electronic Micro-/Nano-Systems and beyond-CMOS Process
  Technologies
- **Heterogeneous Integration ("More-than-Moore")**
- Integrated Circuit Design and Signal Processing with Machine Learning
- Subsystem Integration with Embedded Software
- **Secure** and **Robust Communications**

### SAL SCOPE WITHIN THE ARCHITECTURAL LAYERS OF IOT/CPS





### SILICON AUSTRIA LABS RESEARCH PROGRAMS





- An essential part of the strategy are the **research programs** that generate projects to fulfil the major challenges.
- This includes continuous alignment with the Austrian EBS industry & scientific landscape.
- The programs are allocated to one or more SAL research divisions.
- $\equiv$  SAL research divisions:
  - $\equiv$  Sensor systems
  - $\equiv$  RF systems
  - $\equiv$  Power electronics
  - $\equiv$  System integration
- The programs will be continuously refined, based on the gained knowledge during further assessments.

# **RESEARCH DIVISIONS & PROGRAMS**



Sensor Systems	RF Systems	Power Electronics	System Integration		
Program 1 Virtual prototyping and model based design with x-in-the-loop testbeds				Model	ling
Program 2 Micro- & nano-systems and beyond-CMOS process technologies					
Program 3 Heterogeneous 'More-than-Moore' Integration and novel packaging concepts				HW le	vel
<b>Program 4</b> Advanced Signal Processing a	and Integrated Circuit Design for	power and complexity reduction			
Program 5 Intelligent Multi-Sensor Systems with Machine Learning and Sensor Fusion				SW level	
<b>Program 6</b> Secure Wireless Sensor & Ac	tuator Communications Networks	6			
Program 7 Application specific sensor concepts & sensor systems	<b>Program 8</b> RF systems for sensing and communications	Program 9 Power converter systems from low to high power classes	Program 10 Embedded SW/HW for smart & distributed systems	Syster level	M

### **RESEARCH PARTNERSHIP THROUGH PROJECTS**





## WHY COOPERATE WITH SAL

#### SAL = Top Innovator

Creating technology innovation for world-class differentiation of next generations' products

#### **SAL = Partner**

For SME, global enterprises and other research organizations

#### SAL = Catalyst

- For new business & start-ups
- For innovation and competitiveness of our partners

#### SAL = Door-Opener

To know-how, infrastructure & international knowledge networks

#### **SAL = Attractive Employer**

For highly-qualified researchers & experts with international reputation





### HOW WE GET STARTED IN 2018



Si.A. Errichtungs-GmbH

- E Continuously refine SAL research programs
- E Start first research projects
- Establish necessary enterprise processes & strategies
- E Increase visibility in the scientific community
- Attract employees & intensify international recruiting
- Event Silicon Austria Labs GmbH in Q4 2018





#### SILICON AUSTRIA LABS LOCATIONS



### **CONTACT US**



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# **UNFOLD THE FUTURE**

www.silicon-austria-labs.com