IPCEI on Microelectronics
The Austrian Contribution

The Austrian IPCEI ME Consortium

Version 2021-10-13

IPCEI
on Microelectronics

IPCEI – Important Project of Common European Interest

- IPCEIs strengthen important European value chains and contribute to political priorities of the Union (e.g. Green Deal, Digital Strategy) and its sovereignty,
- are complementary to R&D programs like Horizon Europe or ECSEL/KDT by also involving “First Industrial Deployment” (FID) activities on top of R&D&I,
- address critical “key enabling technologies” like microelectronics, battery technologies, hydrogen, low carbon industries,
- are funded by national authorities of the member states, but approval from the EC is needed, as it is an exception to state-aid rules.

This exception is made due to **high-risk activities** involving **market failure** mechanisms and coordination problems, and due to the significant **additional value** IPCEIs bring to **European industry and society** by cooperation, dissemination and spill-over activities.

IPCEI on Microelectronics – Strengthened by Austria

- The IPCEI on Microelectronics started in 2018 with 29 partners in France, Germany, Italy and U.K.
- The planned overall private and public investment summed up to 4,4 bio€.
- The IPCEI ME is organized in five “Technology Fields”.
- In 2019 Austria started discussions to join the existing consortium, leading to a final approval by the EC in early 2021.
- First R&D&I activities have started at own risk by the three engaged Austrian partners AT&S, Infineon and NXP in autumn 2019.

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Strengthening IPCEI ME with the Innovation Capacity of Austrian Technology and Market Leaders

APA OTS

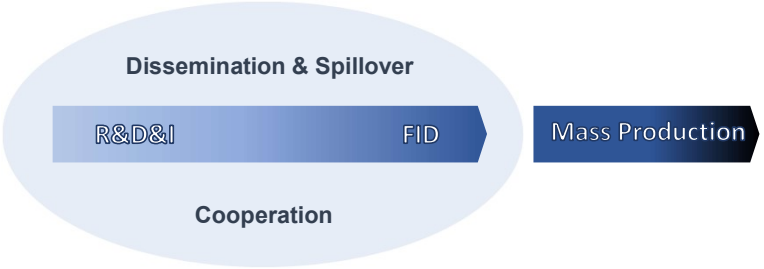
Bundesministerium
Klimaschutz, Umwelt,
Energie, Mobilität,
Innovation und Technologie

Mikroelektronik-Startschuss: Österreich tritt größter europäischer Initiative bei und setzt auf Schlüsseltechnologien

EU-Kommission genehmigt österreichische Teilnahme an Großvorhaben – Österreich trägt mit drei Schlüsselunternehmen zu starkem Technologie- und Forschungsstandort bei

Wien (OTS)- Heute hat die Europäische Kommission die nachträgliche österreichische Teilnahme an einem paneuropäischen Schlüsselvorhaben zur Weiterentwicklung des europäischen Mikroelektroniksektors genehmigt. Nach der Genehmigung des IPCEIs Mikroelektronik im Dezember 2018 in Europa tritt nun auch Österreich diesem „Important Project of Common European Interest" (IPCEI) bei. Das Großvorhaben umfasst ein Gesamtinvestitionsvolumen von 8 Milliarden Euro. Finanziert durch das Klimaschutzministerium (BMK) und das Bundesministeriums für Digitalisierung und Wirtschaftsstandort (BMDW) wird Österreich mit drei Unternehmen teilnehmen. Mikroelektronik ist ein wichtiges Werkzeug zur Stärkung des Wirtschaftsstandorts in Österreich und im Kampf gegen die Klimakrise.

- The Austrian IPCEI participation underpins the proactive engagement of Austria in the development of the European EBS innovation eco-system, and the technology and market leadership ambitions of the three involved companies.
- The Austrian partners are adding significant complementary competencies to the existing consortium in the area of energy efficient and secure ICs and advanced electronic power solutions.

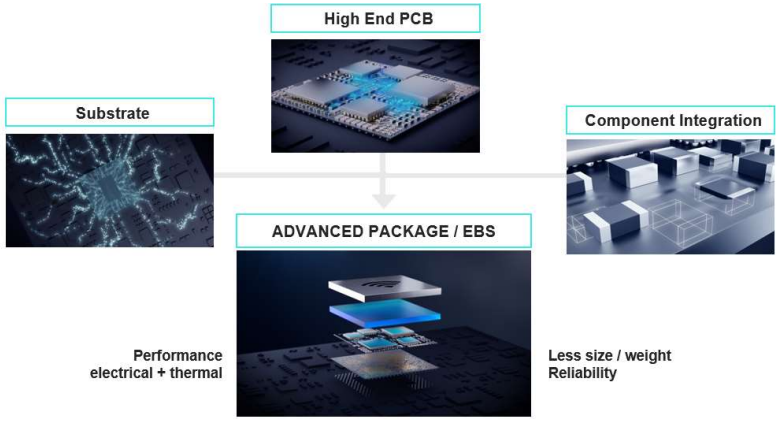


Strengthening IPCEI ME - The AT&S Contribution

- **Scope & focus (of IPCEI contribution)**
  - FID of Advanced Packaging Technology for European Electronic Based System
- **Activities/ WPs:**
  - FID of organic substrate cores for power and processor packages
  - Novel Packaging concepts for high frequency
  - New technology node test and reference boards
  - Industry 4.0 production capabilities and resource recycling technologies
- **Benefits & Spill-Over:**
  - AT&S will be open in the “Technology Forum” to applicants of universities, RTOs, industry, SMEs of eastern & southern Europe
  - Transfer of the generated knowledge (e.g. prototype workshops)
- **Status of work & outlook:**
  - Project is running according to plan.
  - First activities have initiated additional projects and employment of technologies from IPCEI project in other areas.

“IPCEI is a very good first step to keep pace with international competitive financing regimes and should trigger innovation in key enabling technologies in the European microelectronic supply chain.”

Andreas Gerstenmayer, CEO AT&S



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AT&S

Strengthening IPCEI ME - The Infineon Austria Contribution

- **Scope & focus (of IPCEI contribution)**
  - Technology Development and First Industrial Deployment (FID) of leading edge power semiconductors
- **Activities/ WPs**
  - Wide Band Gap Technologies
  - Chip Technologies for E-Mobility and Green ICT
  - Process innovation for MEMS
  - Collaboration across Europe with other IPCEI companies
  - Strengthening the Academic Network in EU13 region
- **Benefits & Spill-Over**
  - Bringing innovative technologies fast to volume production
  - Added value by increased long term cooperation with companies and academia
- **Status of work & outlook**
  - Technology development fully operative.
  - First industrial deployment phase partially started
  - Spill Over in EU13 started by 09/21

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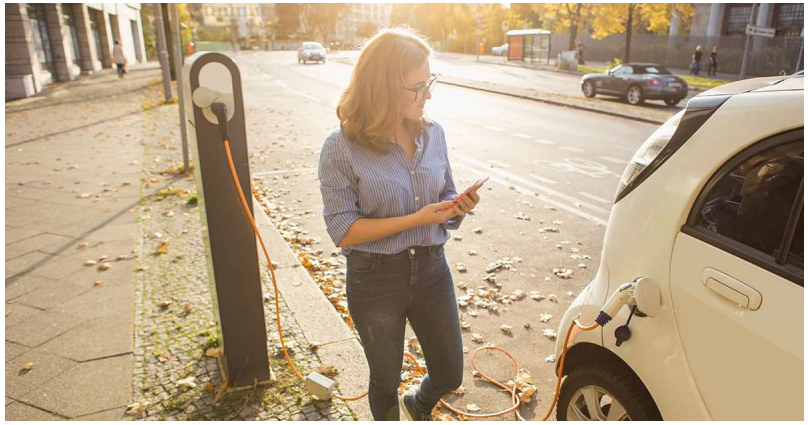
Infineon

Strengthening IPCEI ME - The NXP Semiconductors Austria Contribution

- **Scope & focus (of IPCEI contribution)**
  - Hardware-based security for energy efficient and trustworthy EBS solutions
- **Activities/ WPs:**
  - Development of an advanced secure element
  - Advances in analog virtual testing concepts
  - High R&D&I share, FID included
- **Benefits & Spill-Over:**
  - Increased trustworthiness of systems and infrastructures (user & provider perspective)
  - Contribution to resilience and digital sovereignty
  - Active engagement in dissemination & spill-over
- **Status of work & outlook:**
  - R&D&I activities in final stage (ending mid 22)
  - FID activities, as well as dissemination in focus for 2022/23
  - Active engagement in IPCEI ME/CT planned

"The IPCEI ME is a solid start, now we need to scale up. Improving technology leadership is not only about supporting the right innovation, but also about speed and pragmatism."

Lars Reger, CTO NXP Semiconductors



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NXP

Spill-over Activities by Austrian Partners - Benefits for European Industry & Society

1 Education/ training

Sponsored professorships, lectures and training activities with universities, hackathons, SME trainings, customer trainings

2 Conferences & workshops

Conference contributions ideally in concert with IPCEI direct or indirect partners, within the microelelectronics sector & beyond (e.g. health, energy sector) to ensure knowledge transfer

3 Papers & publications

Scientific & non-scientific (non papers, white papers) contributions, with partners (e.g. with universities or common standardization events)

4 Media activities

(IPCEI) Website activities, Social Media, Linked-In Campaign, Press Releases

5 Actions with industry associations/ clusters

E.g. Silicon Alps (Silicon Europe Alliance), application clusters like AC Styria

IPCEI on Microelectronics – Positive Impact & Outlook

Benefit of IPCEI ME

- Cooperation with partners along the value chain strengthens European **sovereignty in microelectronics**
- **Increase of R&D&I activities** for AT&S, Infineon and NXP triggers additional R&D in the whole sector and across sectors
- Increase of knowledge transfer from universities **advances technological expertise** in Europe
- The **production of new energy efficient digital technologies in Europe** is accelerated and gives European big players the chance to compete against initiatives from other regions
- **Economic benefit for Austrian and European society**
- Creating **additional high-tech jobs** and pushing upskilled digital **work forces**

Outlook for IPCEI on Microelectronics and Communication Technologies

- Safety & Security, Sustainability and Digital Sovereignty for the European Union of tomorrow
- New level of cooperation with additional partners **creating new value chains** in Europe with 18 countries involved
- **Upscale efforts with focus on new technologies in line with European strategies**
- **Create technologically skilled work force to address the current and future requirements**
- Austria again actively engaged with an increased number of partners

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FFG
Forschung wirkt.

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