



Strengthen the European supply chain of Electronic Components and Systems



Addressing societal challenges on health, automotive and navigation, communication

Microelectronics is at the core of innovation in embedded systems and thus a key driver of social and economic progress in Europe. The shift towards nanoscale will open new opportunities but requires large investments in design technologies to master the increasing complexity of silicon systems. The challenge is to match the product vision of system and service providers that need to continuously add new functionalities to the efficiency of implementation methods. System innovation and integration are accelerated by the close relationship with microelectronics due to ever increasing capabilities of chip.







The economic impact of strengthening Nano electronics manufacturing capabilities in Europe includes more than the direct effect in skilled wages. As the demand for microelectronics increases, the demand for materials, services, labor, machinery and equipment required in producing silicon devices increases, setting off a ripple effect throughout the European economy.

Innovative Application for Advanced FD-SOI Architecture

The four EC co-funded projects, PANACHE, THINGS2DO, WAYTOGO FAST, and WAKeMeUP, have targeted technology development and application demonstration in 2 main technology fields where Europe is a leader:

-  FDSOI technology for high end low power application
-  Embedded Non-Volatile Memory enabling microcontrollers.

What are the innovative results and services that projects will bring to Horizon Europe?

-  FDSOI silicon processes ready for volume production in Europe (technology nodes: 28 FDSOI, 22FDX and beyond...)
-  Sustainable route for the future nodes and strengthening of the European technical leadership on this technology family.
-  FDSOI design ecosystem build-up for large market adoption for new products
-  FDSOI derivatives for differentiation leadership including embedded Non-Volatile memories (Embedded PCM)
-  Microcontroller range extension for High Performance, Ultra-Low Power and security features (technology nodes: eFlash 55 and 40nm, 28 FDSOI ePCM)
-  New products in several fields of application from automotive, to secure payments and all kinds of smart objects and appliances, based on innovative technologies and solutions (FDSOI eco-system and Microcontroller platforms and eco-system).



Common Dissemination Booster

These projects have received support from the European Commission's Common Dissemination Booster

Who benefits?



Member States/ other
ENIAC/ECSEL member
states



Research Organizations



System Integrators



SMEs and Large Enterprises







Semiconductor Industry
associations



Policy makers

Impact

-  Strengthen the European supply chain of Electronic Components and Systems
-  Foster the demand side and the emerging market of smart connected objects and Internet of Things
-  Ensure the continuation of competitive semiconductor manufacturing in Europe
-  Reinforce strong global industrial positions in the global microcontroller's market.

Projects Group:



PANACHE

Pilot line for **Advanced Nonvolatile** memory technologies for **Automotive microControllers** **High security** applications and general **Electronics**

The PANACHE project has achieved the set-up of a pilot line for embedded Flash technology design and manufacturing platform for the prototyping of innovative microcontrollers in Europe.



WAKeMeUP

Wafers for Automotive and other **Key** applications using **Memories, embedded in Ulsi Processors** (WAKeMeUP) aims to set-up a pilot line for advanced microcontrollers with embedded non-volatile memory, design and manufacturing for the prototyping of innovative applications for the smart mobility and smart society domains.



THINGS2DO

The program **THIN** but **Great Silicon 2 Design Objects** (THINGS2DO) has contributed to building the European Design & Development Ecosystem for FD-SOI technology.



WAYTOGO FAST

Which Architecture Yields Two Other Generations Of Fully depleted **Advanced Substrate and Technologies** (WAYTOGO FAST) leveraged Europe leadership in Fully Depleted Silicon on Insulator technology (FDSOI) so as to prepare the next node transistor architecture.

