

Electronics Industry Roadmap

OVERALL STRATEGIES

Facilities and Services

- Establishment of Electronics Product Inclusive Innovation Center (EPIIC)
- Establishment of Center for Integrated Circuits and Devices Research
- Establishment of Wafer Fabrication Laboratory

Human Resources

- Strengthen the capabilities of universities in microelectronics IC design
- Development of collaborative inter-agency testing

R&D Technologies

Integrated Circuit Design:

- Development of MCU with PMU and EHU
- Application of machine learning in IC layouting
- Development of electronics which are printed, reconfigurable, self-healing, batteryless, flexible, paper-based, biological, bio-compatible, liquid, transient, edible, and epidermal
- Development of linchpin technologies
- Development of logic core device, DRAM, Flash, and NVM technologies for More Moore applications
- Development of emerging memory devices including FeRAM, MRAM, CBRAM, OxRAM, polymer memory, and DNA-based massive storage devices
- Development of novel logic devices including SpinFET, Neg-C FET, Mott FET, NEMS, and topological insulator
- Development of Beyond-CMOS devices for More-than-Moore (MtM) applications including PUFs and RNGs
- Development of novel architectures including GAA devices, 3D stacking, and co-integration of CMOS and Beyond-CMOS

Consumer/Medical/Industrial/Automotive Electronics:

- Prototyping of robots and collaborative robots
- Implementation of robot-as-a-service
- Prototyping of ventilators, oxygen concentrators, and digital and handheld medical devices
- Development of smartphones, smart batteries, and chargers
- Development of advanced driver assistance systems
- Prototyping of electronic components for autonomous vehicles

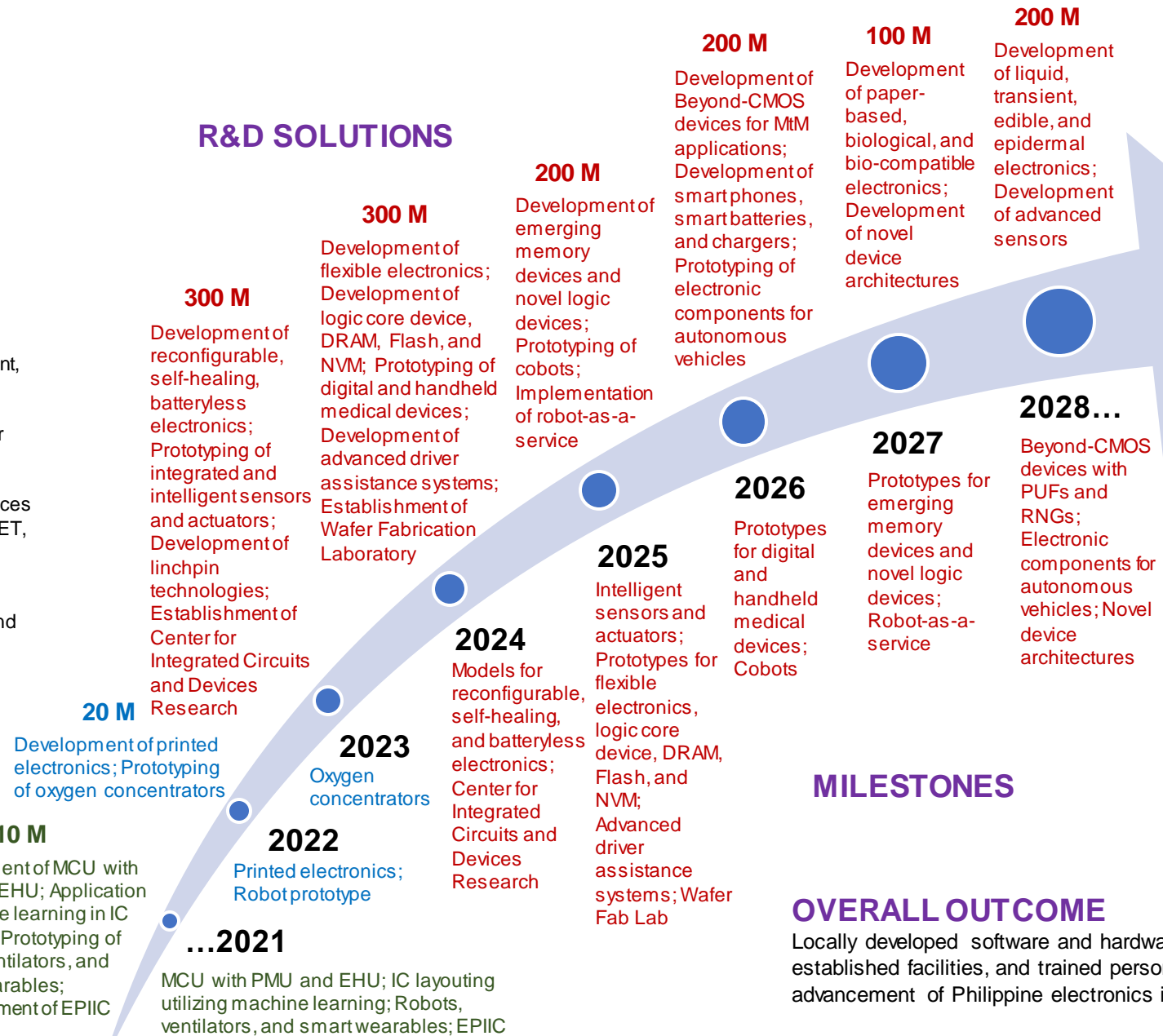
Sensors:

- Prototyping of integrated and intelligent actuators and sensors (e.g. biosensing, biophotonic, chemical, optoelectronics, mechanical, thermal, micromechanics, magnetics, chemometrics, and microarray)
- Development of advanced sensors (e.g. biomimetic, event-based, hyperspectral, living, and quantum sensors)

S&T Policies

- Develop policies and standards for local electronics industry

R&D SOLUTIONS



VISION

By 2030, the Philippines will carve a niche in the global electronics market, building a "Made in the Philippines" brand that will capture market opportunities among end-product manufacturers and end-users.

MILESTONES

OVERALL OUTCOME

Locally developed software and hardware prototypes, established facilities, and trained personnel for the advancement of Philippine electronics industry