

The Electronics Value-Chain

What's it all about

The roadmap for European electronics is about having stronger European involvement in the global electronics "value chain", benefiting our economic competitiveness and ability to innovate. So what is the electronics value chain?

Architecture

A chip's architecture depends on its purpose: what will it be used for? Its functions and behavioral features are based on that - iteratively until the "final" chip is designed.

Did you know?

Hundreds of people work to design, test, fine-tune and make a chip.

Design tools

Computers are themselves used to design chips, from defining specifications, to testing and production.

Did you know?

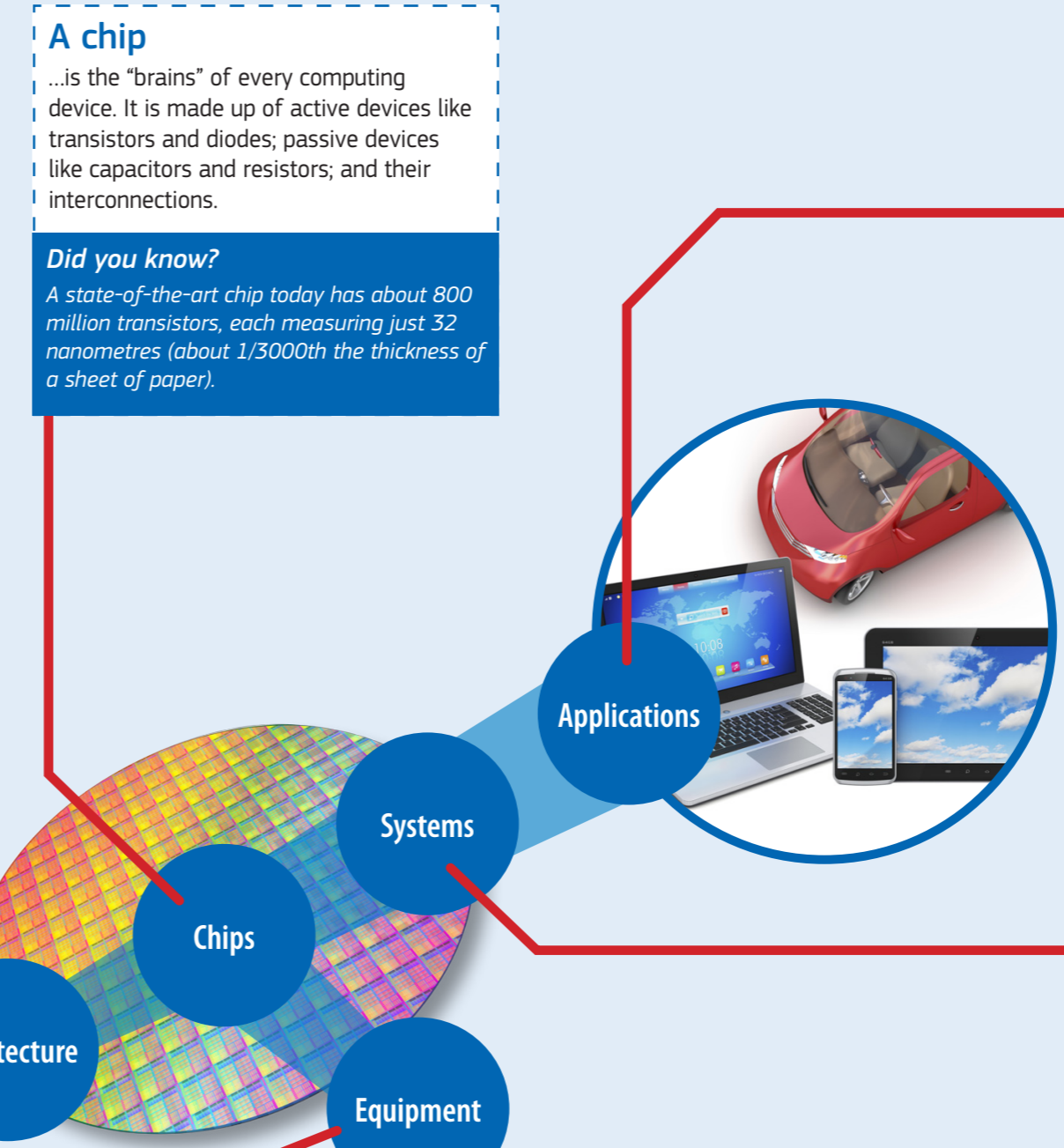
While chips look flat, they are in fact three-dimensional, with as many as 30 layers of complex circuitry.

A chip

...is the "brains" of every computing device. It is made up of active devices like transistors and diodes; passive devices like capacitors and resistors; and their interconnections.

Did you know?

A state-of-the-art chip today has about 800 million transistors, each measuring just 32 nanometres (about 1/3000th the thickness of a sheet of paper).



Applications

Chips are used in virtually all electronic equipment today: from computers smartphones and tablets, to domestic appliances, cars and factories.

Did you know?

Your car may soon be able to prevent accidents by "talking" to other cars - and to the road itself. v

Systems

Electronic systems can be intelligent, miniaturised, and with advanced functionality - even integrating with biological systems.

Did you know?

You could soon be able to wear medical instruments 24/7: as bio-electronic systems take your vital signs for you.

Materials

Chips are built up on a thin "wafer" of semiconductor; usually silicon. The EU is investing €1 bn over 10 years on research to substitute silicon with graphene - perhaps the thinnest, lightest and strongest material in the world.

Did you know?

Silicon is among the most common elements on Earth, and the key ingredient in sand.