Alamin Mohammed-Nabil

15/Eng02/006

* 1. ASIC: Application Specified Integrated Circuit: An integrated chip specialized customized for a particular use, rather than intended for general purpose use.
  2. PAL: Programmable Array Logic: A family of programmable logic semiconductors used to implement logic functions in digital circuits.
  3. PLA: Programmable Logic Array: A kind of programmable logic device used to implement combinational logic.
  4. PLD: Programmable Logic Device: An electronic component used to build reconfigurable digital circuits.
  5. CPLD: Complex Programmable Logic Device: A programmable logic device with complexity between that of PALs and FPGAs, and architectural features of both.
  6. FPGA: Field Programmable Gate Array: An [integrated circuit](https://en.wikipedia.org/wiki/Integrated_circuit) designed to be configured by a customer or a designer after manufacturing – hence the term "[field-programmable](https://en.wikipedia.org/wiki/Field-programmability)".

1. The Granularity of logic block has influence on performance of an FPGA. Typically, higher granularity level results in lesser delay between input and output. As the granularity of logic blocks increases, number of levels of logic in critical part decreases, and hence delay in critical path decreases.
2. The main reason for the use of programmable logic devices over the traditional logic is flexibility. There is no need to change the whole device but to update the firmware, the behavior can be modified later for use.

They provide manufacturers an advantage in that, if there are two or three variants of a device, they don’t have to design three different ICs. They can just create a programable IC and modify its behavior programmatically. It is also cheaper, easier to implement, high switching speed, reduces power requirement.

1. The advantage for the use of fuses would be the stored program would be nonvolatile. Its disadvantage is it being read only, hence why these devices are also called OTP (One Time Programmable).
2. 