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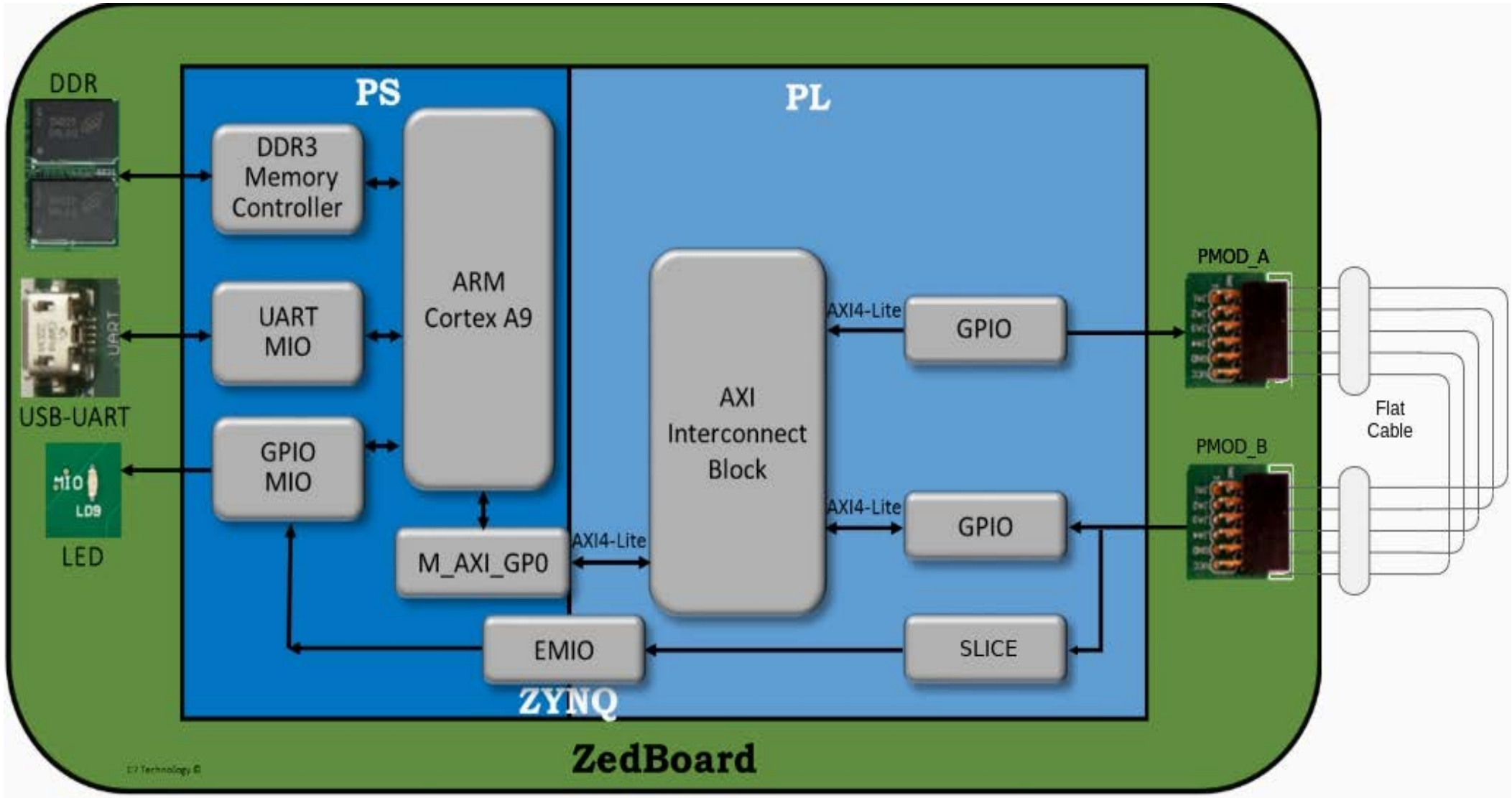
Zynq Processing System

- Complete ARM – based PS
- Combines a dual-core ARM Cortex-A9 with a traditional (FPGA).
- Two hard processors
- Programmable logic (PL)
- PS Main components:
  - I/O peripherals
  - Memory interfaces
  - Timers
  - DMA
  - General Interrupt Controller

Laboratory 2: GPIO IP Cores

Lab2 guide:

- Create a system with two GPIOs IP Cores
- One GPIO IP -> output
  - Output -> PMOD-A Header of ZedBoard
- One GPIO IP -> input
  - Input -> PMOD-B Header of ZedBoard
- Write an application in ‘C’ code in the SDK environment
- To run in PS


DDR
PS
PL
DDR3
Memory
Controller
ARM
Cortex A9
UART
MIO
GPIO
MIO
M_AXI_GP0
EMIO
AXI
Interconnect
Block
AXI4-Lite
GPIO
AXI4-Lite
GPIO
SLICE
PMOD_A
PMOD_B
Flat
Cable
USB-UART
LED
ZYNQ
ZedBoard

VIVADO

- Open VIVADO
- Create New Project
- Create New Block Design
- Add PS7
  Configure PS7
  Run Block Automation
  Add and Configure other IPs
  Run Connection Automation
  Validate Design
- Generate Output Files
- Create HDL Wrapper
- Generate Bitstream
- Export Hardware to SDK

SDK
Software Development Kit

- Create Board Support Package
- Create New ‘C’ Application
- Write ‘C’ Code
- Build the Application
- Configure FPGA
- Run on Hardware (Debug)

Thank you for your attention !