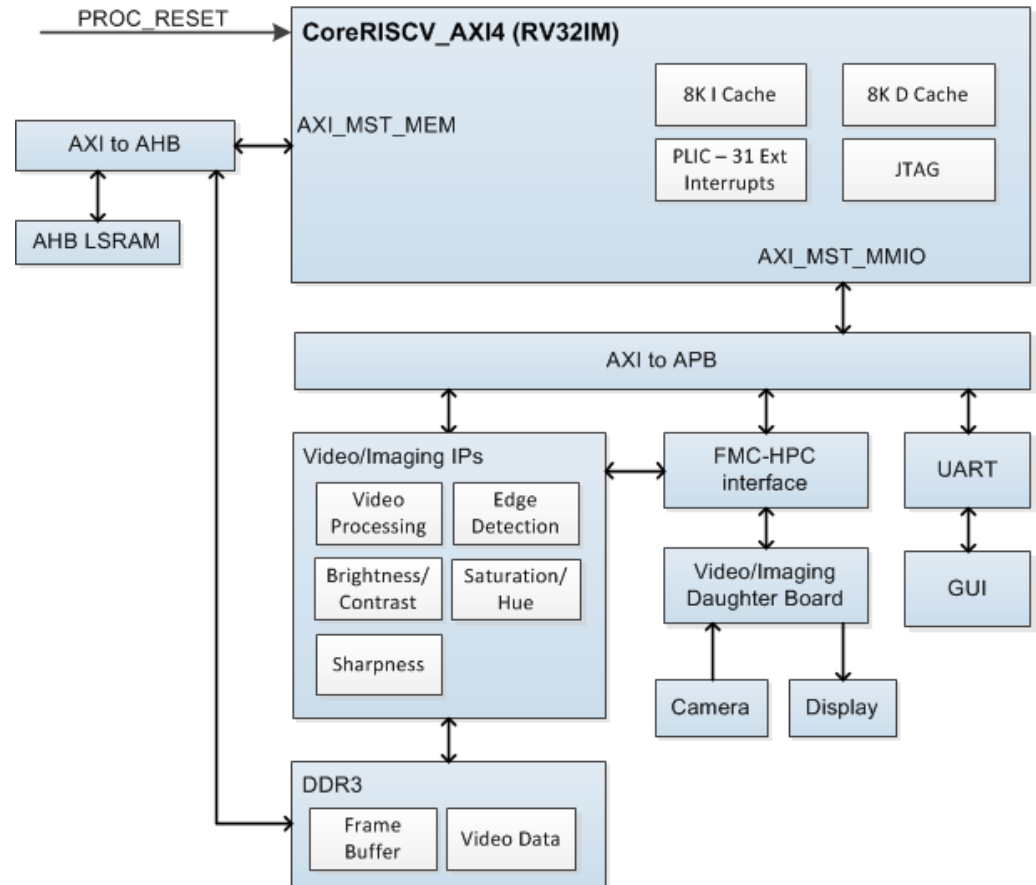# *Video/Imaging Solution on Microsemi Devices using RISCV Softcore*
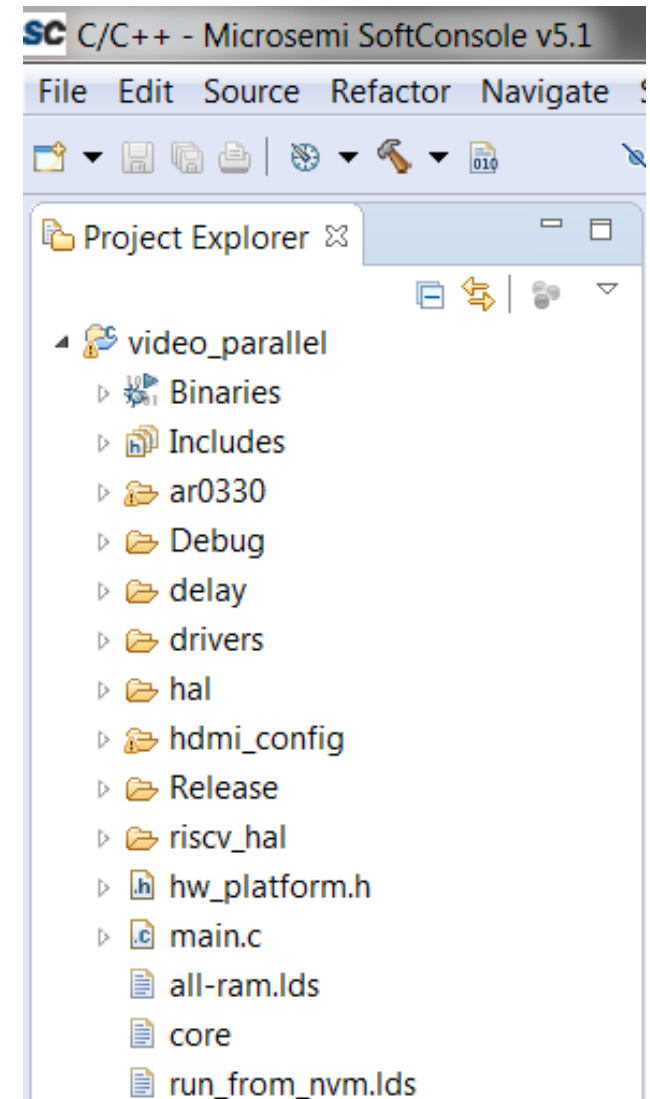
Badal Nilawar

05/02/2017

CoreRISCV_AXI – VIDEO/IMAGING IP Interface

- CoreRISCV_AXI4 is RV32IM based soft processor for Microsemi FPGA devices

- Video/Imaging IPs are developed in-house by Microsemi

- Video/Imaging daughter card supports HDMI display and Camera interface. Interfaced with FPGA over FMC-HPC interface.

- RISCV soft processor
  - configures Camera and HDMI display over I2C.
  - Initializes Video processing engine
  - Controls Brightness, Contrast, Saturation, Hue and Sharpness of Video in runtime.

SoftConsole IDE

- ## Softconsole 5.0/5.1(beta)
  - SC5.0/SC5.1 works with Flashpro5.0 JTAG debugger
  - SC5.0 supports specific versions of Ubuntu, Red hat/Centos and OpenSuse
  - SC5.1(beta) supports windows 7

- ## Firmware project structure
  - riscv-hal – startup code, hardware abstraction layer, interrupt management
  - Drivers - Drivers for peripherals e.g. UART, I2C and SPI
  - riscv_hal is available on github

Thank you

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