IT-$\mu$DTC firmware development
Simulation and testing of RD53A Chip Readout with FC7

Tamás Balázs, Viktor Veszprémi
MTA Wigner RCP

Oct 12, 2018

Supported by OTKA K124850
IT-\(\mu\)DTC Firmware Development Update

- Running development tasks in order
  - Porting DIO5 ➝ In progress...
  - Porting AMC13 ➝ To do...
  - Porting TTC Decoder ➝ To do...

Porting DIO5 to the IT-firmware

- Overview and modifications
  - pin assignment and schematic for DIO5 is not available
  - but the constraint for DIO5 are available in d19c firmware for both L8 and L12 FMCs
  - i2c is connected to the same \texttt{fmc\_i2c\_sda}, \texttt{fmc\_i2c\_scl} ports as other i2c which programs the PLL
  - it can cause multiple driver problem ➝ need to be solved

- Changes need to be made in the IT-firmware
  - The following files need to be created:
    - /fw/src/usr/dio5/IT_dio5ch_core.vhd
    - /fw/prj/IT-firmware/set_constraints/set_constraints_DIO5.tcl
  - The following files need to be modified:
    - /fw/src/usr/usr/IT_user_core.vhd
    - /fw/src/usr/usr/IT_user_package_basic.vhd
    - /fw/prj/IT-firmware/set_constraints/set_constraints_CERN_FMC.tcl
    - /fw/prj/IT-firmware/set_constraints/set_constraints_KSU.tcl

Oct 12, 2018