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

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Supported by OTKA K124850
IT-μDTC Firmware Development Update

- Running development tasks in order
  - Porting DIO5 → **Still in progress...**
  - Porting AMC13 → **To do...**
  - Porting TTC Decoder → **To do...**

Porting DIO5 FMC to the IT-firmware

- Overview and modifications
  - Pin assignment for DIO5 is made according to the **EDA-02408-V2-0** DIO5 schematic
  - Schematic and pin assignment for DIO5 will be uploaded to the DAQ site
    [https://espace.cern.ch/Tracker-Upgrade/DAQ/SitePages/Home.aspx](https://espace.cern.ch/Tracker-Upgrade/DAQ/SitePages/Home.aspx)
  - Constraints for DIO5 were sourced to the project for both L8 and L12 FMCs
  - 6 tcl scripts needed to enable constraints for Cern, Kansas and DIO5 FMCs for L12 and L8 FMCs
  - Porting DIO5 to **IT_user_core.vhd** is still in progress

- Changes need to be made in the IT-firmware
  - The following files need to be created:
    - `/fw/prj/IT_firmware/set_constraints/set_constraints_DIO5_FMC_L8.tcl` & `set_constraints_DIO5_FMC_L12.tcl`
    - `/fw/prj/IT_firmware/set_constraints/set_constraints_CERN_FMC_L8.tcl` & `set_constraints_CERN_FMC_L12.tcl`
    - `/fw/prj/IT_firmware/set_constraints/set_constraints_KANSAS_FMC_L8.tcl` & `set_constraints_KANSAS_FMC_L12.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`