

ROD / BOC table-top development

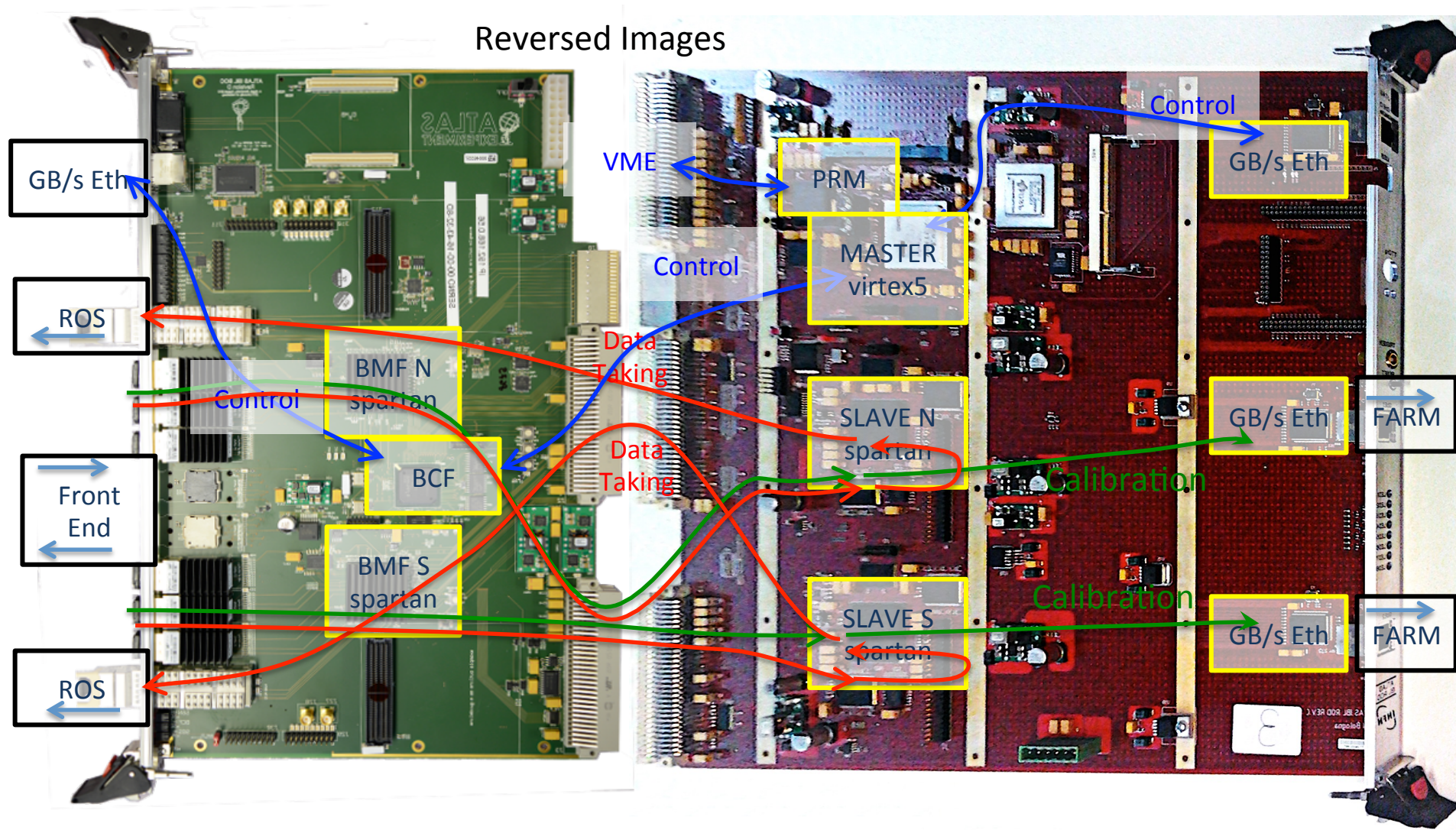
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Outline

- Current IBL BOC-ROD cards
- Proposal of a Table-Top board
- Table-Top board design: status
- Future plans

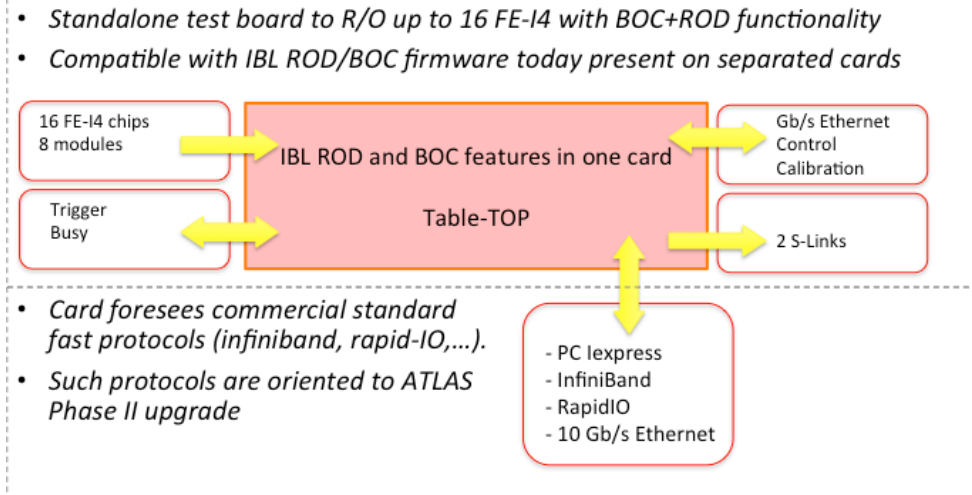
BOC ROD features



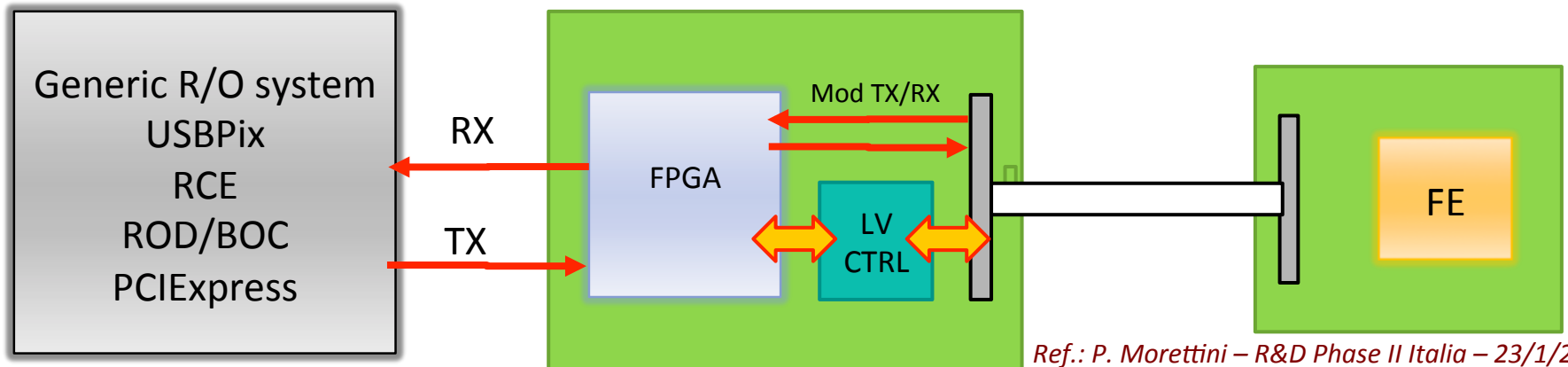
BMF: BOC Main FPGA

Table Top proposal

- Table-top ROD/BOC version (BO)
 - Use expertise on IBL ROD, no VME needs
 - **Full SW/FW compatibility with PIT cards**
 - Half ROD, up to 16 FE
 - Financed by INFN
- Possible activities on read-out
 - Expand existing FE-I4 R/O systems to HV/HR-CMOS
 - Common HW/FW/SW interface definition
 - Integrate mini-DCS in the read-out
 - GBT concentrator

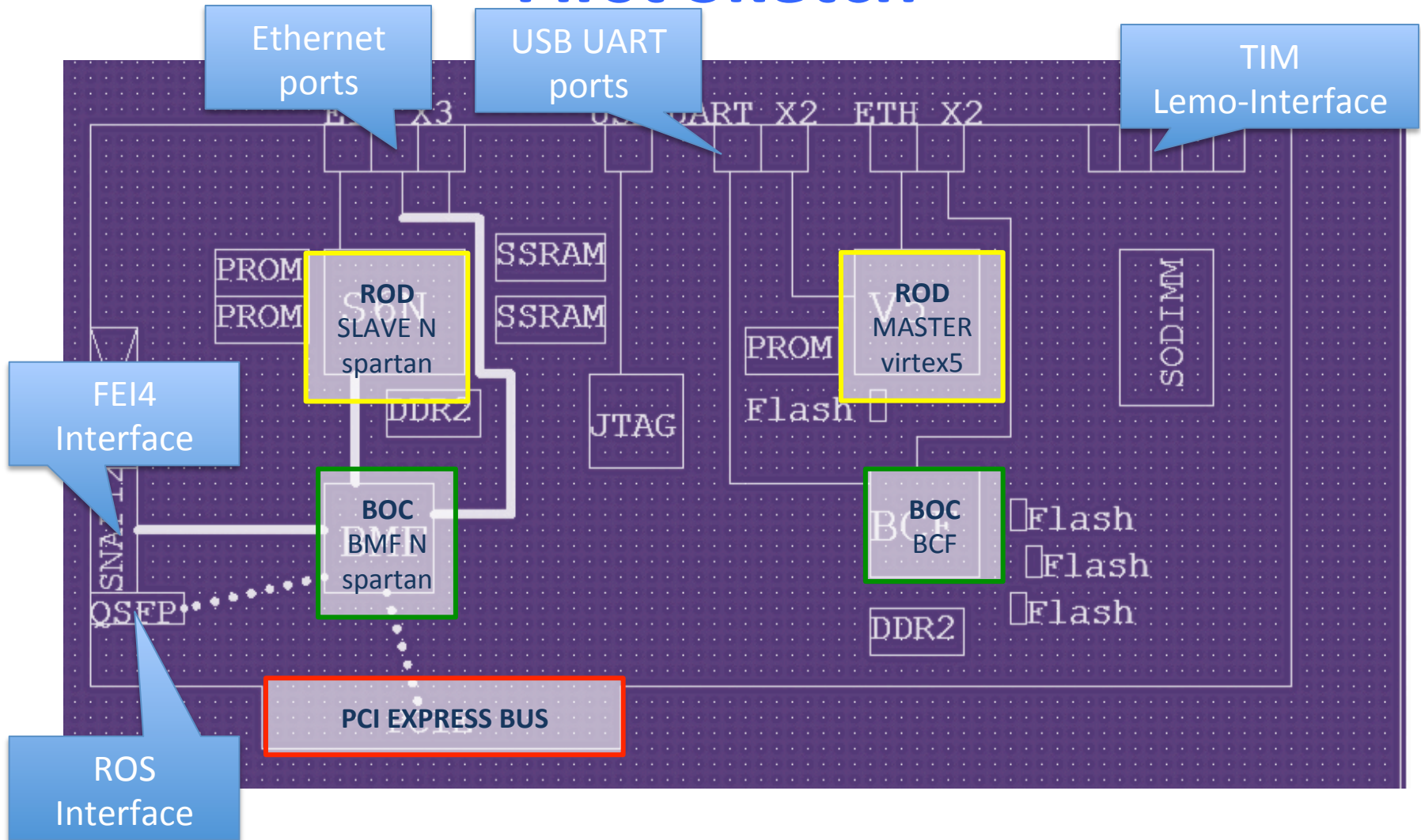


See Paolo's talk



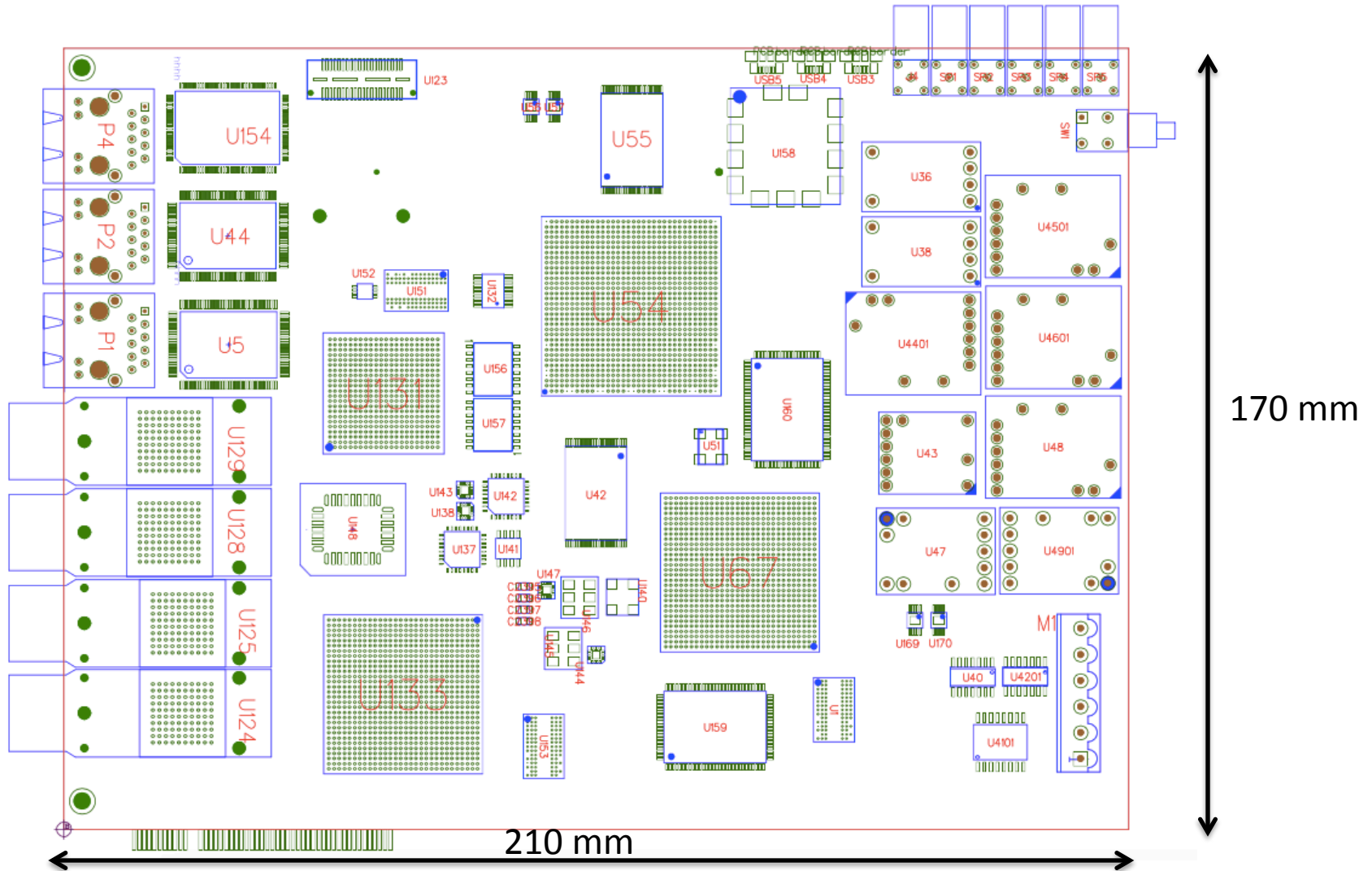
Ref.: P. Morettini – R&D Phase II Italia – 23/1/2015

First Sketch

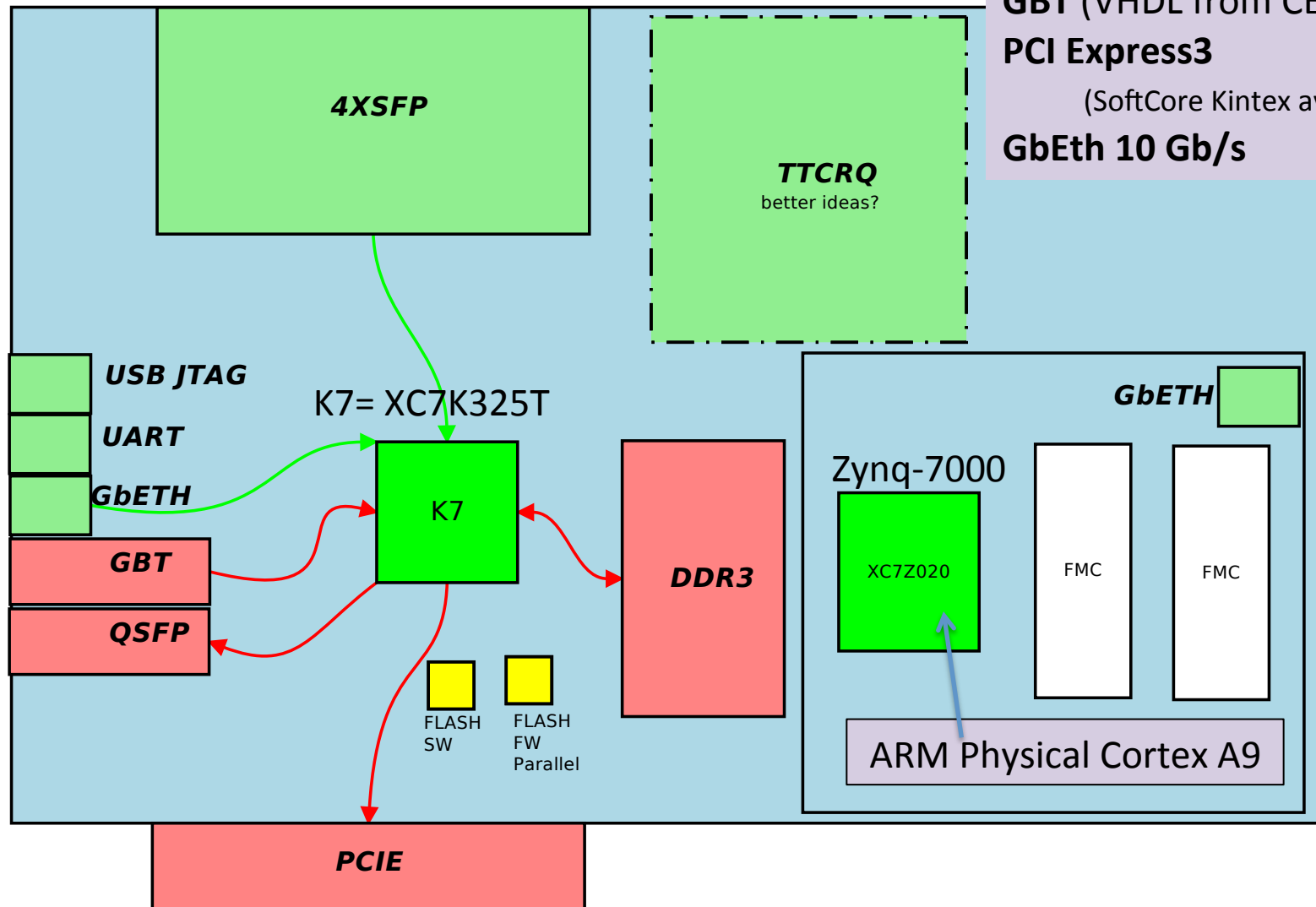


QSFP: Quad Small Form-factor Pluggable

First Sketch



Second (current) Sketch



New Features
GBT (VHDL from CERN)
PCI Express3
(SoftCore Kintex available)
GbEth 10 Gb/s

Plans (Summer-Fall 2015)

- The **Table-Top** board will be produced in **2-3 prototypes**
- First tests will be concentrated on the IBL BOC-ROD FW compatibility
- The PCI Express bus has to be integrated into the current VHDL firmware
 - At the first stage the full benefit of the PCI Express features are not guaranteed
 - PCI Express bus must be investigated from the HW viewpoint
 - Possible interface with a standard **PCI bus of a PC**
 - Other protocols might be implemented: **Infiniband, Rapid-Io, 10 Gbit/s Ethernet**
- **Replace the VIRTEX and SPARTAN current FPGAs to:**
 - **Kintex XC7K325T**
 - **Zinq 7000**