Développements au LAPP

xTCA working group- IN2P3

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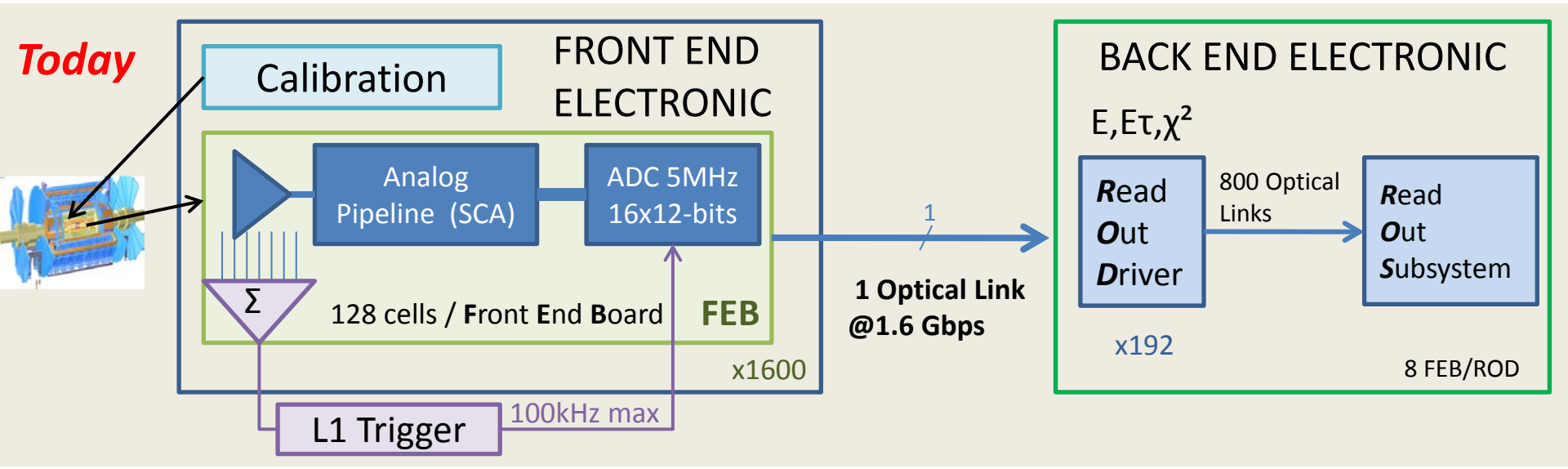
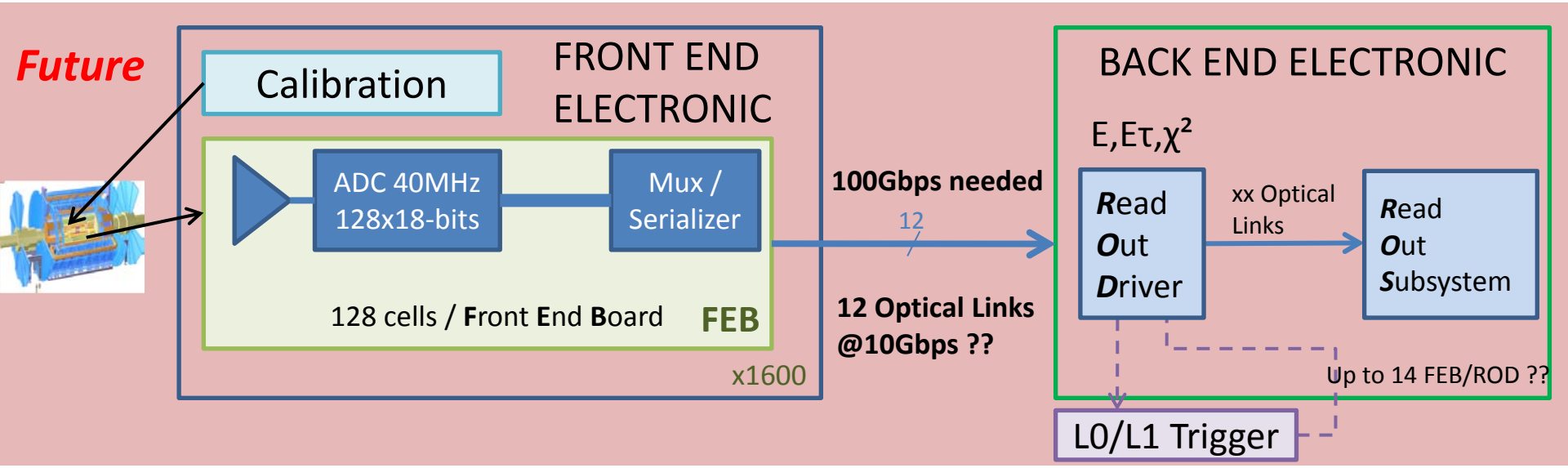
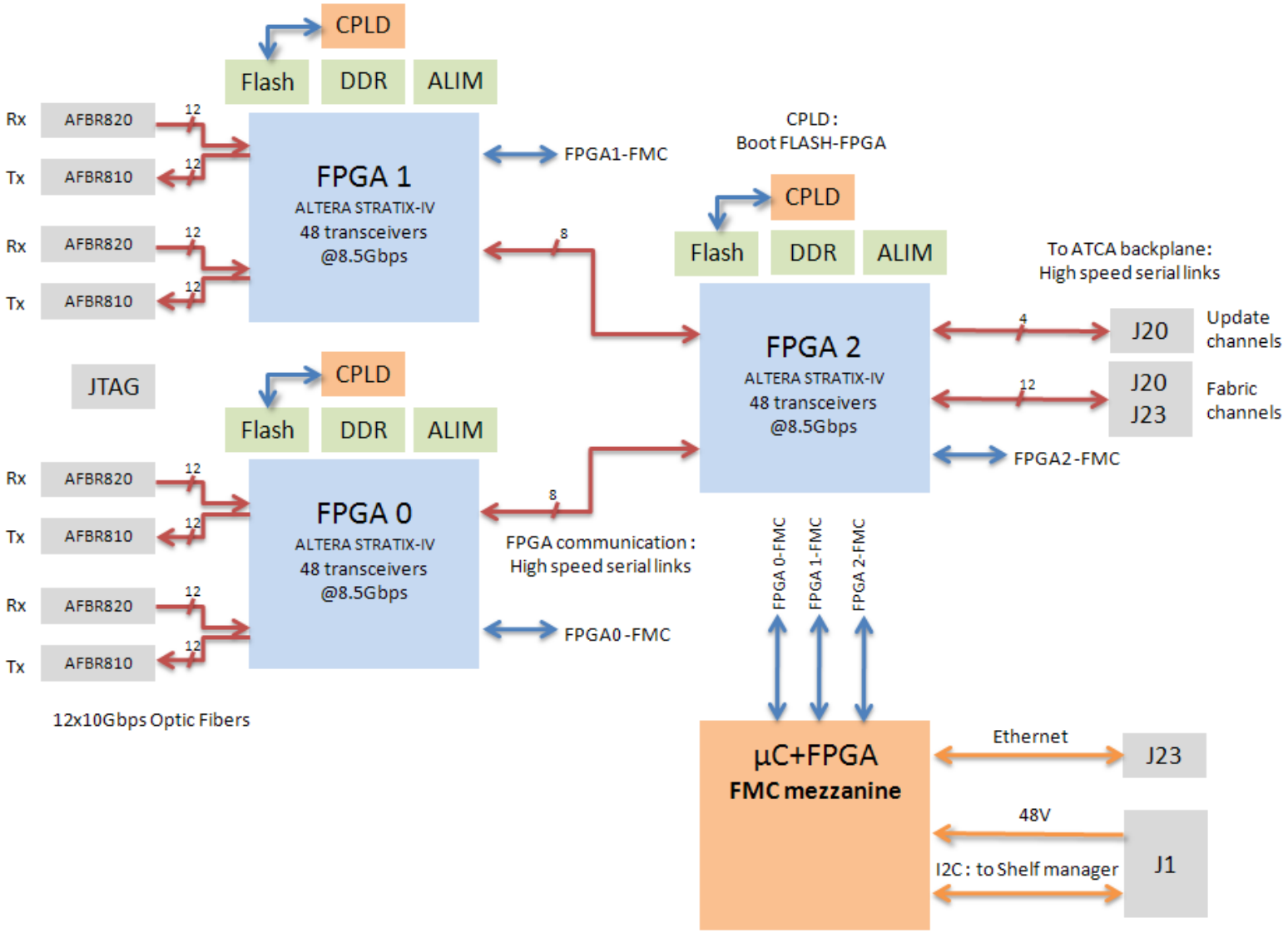
Contexte: LHC haute luminosité

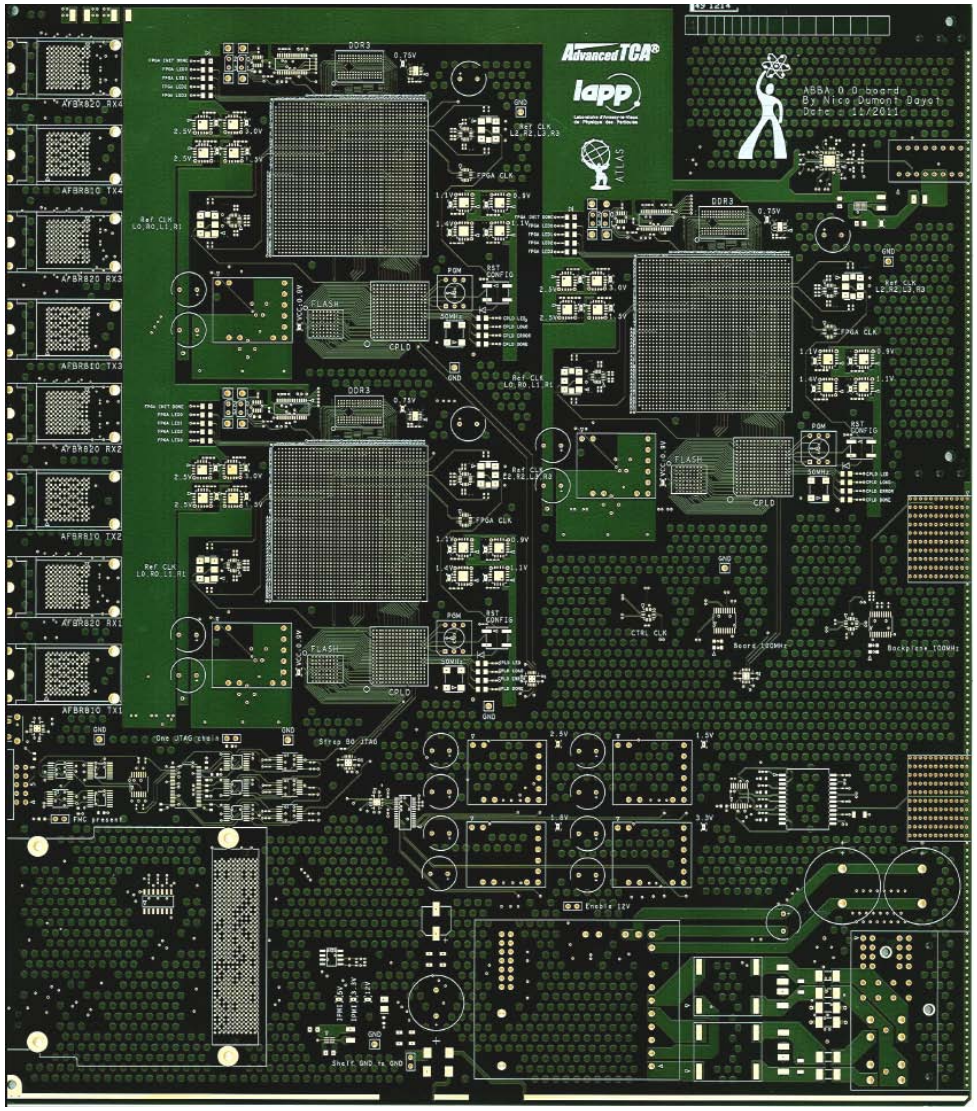




Atlas Rod Evaluator

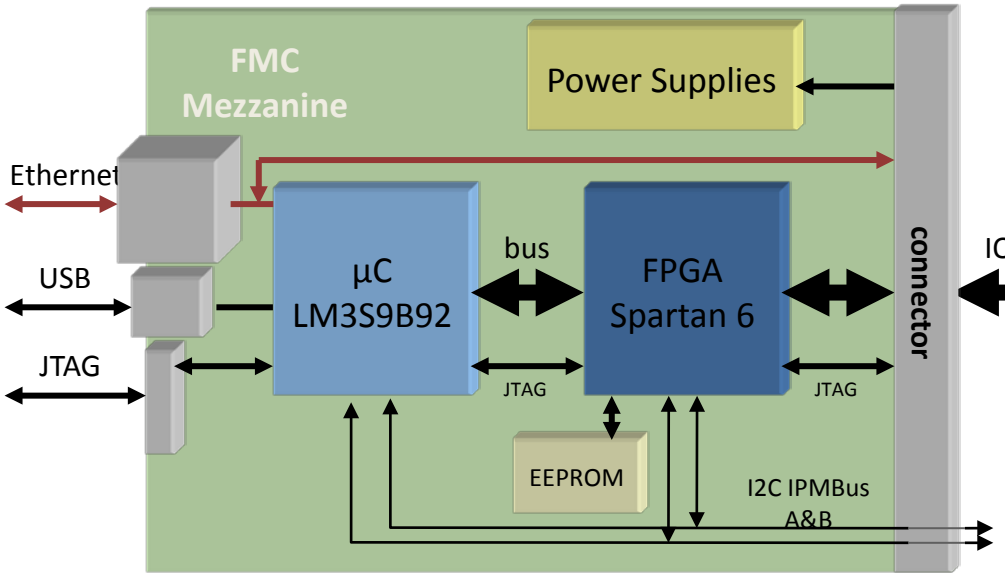


Rod Evaluator Status

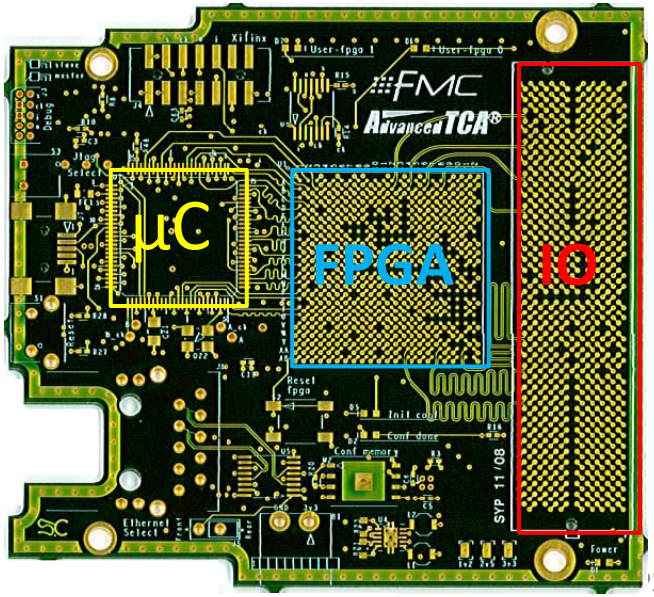


- **Retard à la production du PCB…**
- **La carte arrive la semaine prochaine**

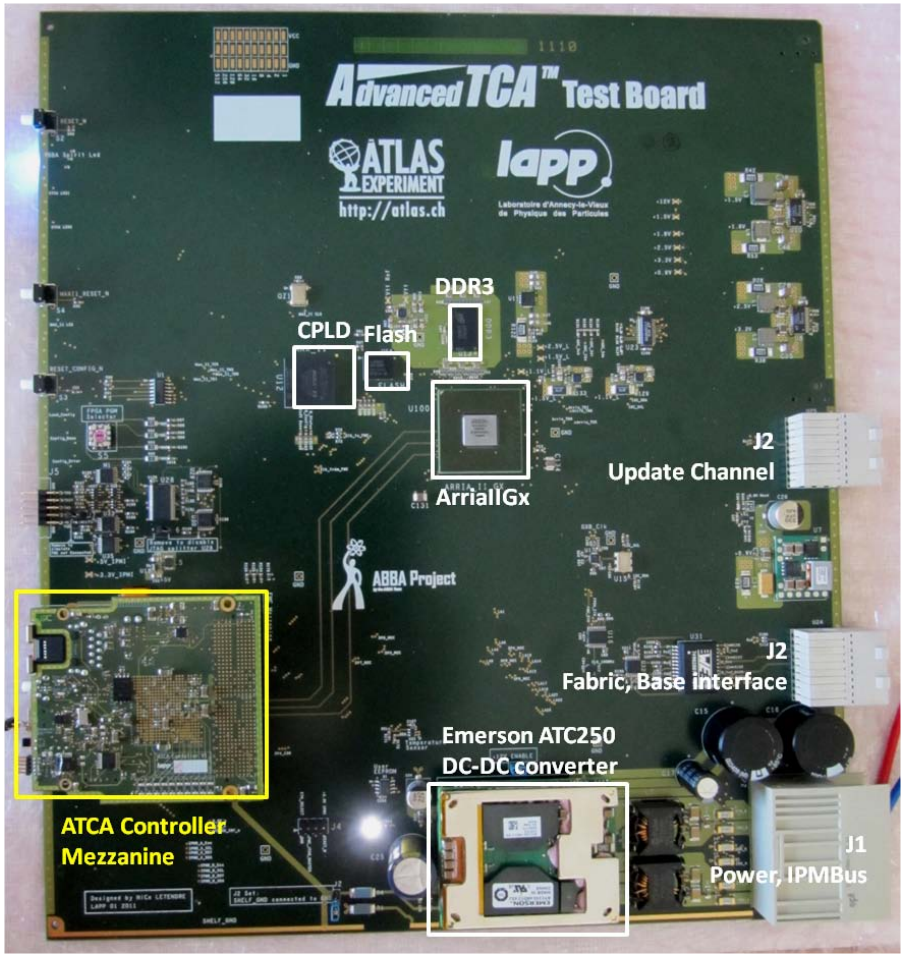
IPMC Mezzanine V1



- **IPM Controller**
  - Communique avec le Shelf manager à travers les bus IPMBus A & B
  - Hot Swap, Power management etc..
- **ATCA board management**
  - Communication par Ethernet (front panel or ATCA Base Interface)
  - Fonctions Utilisateur
    - Firmware Upgrade
    - ATCA board monitoring & configuration
    - Users stuffs….
- Standard FMC (FPGA Mezzanine Card)
  - Jusqu'à 160 liens configurables (ou 74 liens différentiels)
- Caractéristiques:
  - Processeur ARM cortex M3
  - Xilinx Spartan 6 avec IO configurables
  - Interfaces Ethernet / USB / JTAG



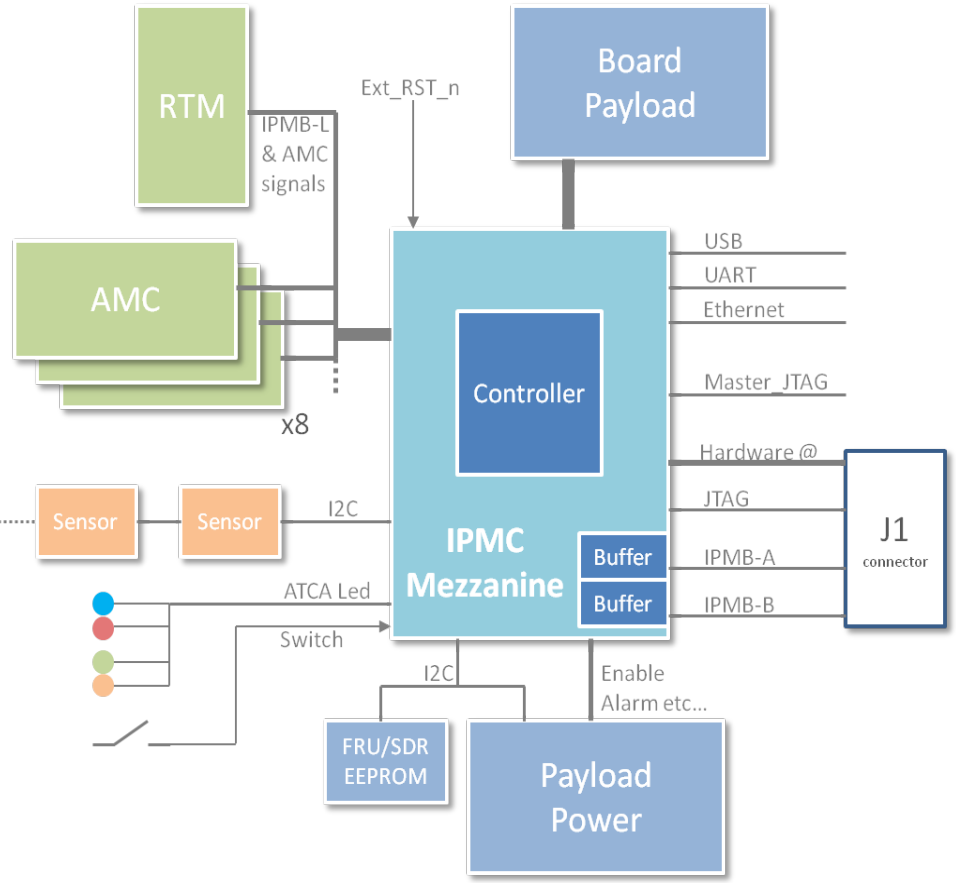
IPMC Mezzanine V1 Status



- **ATCA Test Board**
  - Test de la Mezzanine sur l'ATCA Test Board
  - Fonctionnalités IPMC:
    - Hardware & software OK
  - ATCA board management OK:
    - Firmware upgrade
    - Monitoring
    - Mezzanine ↔ FPGA communications

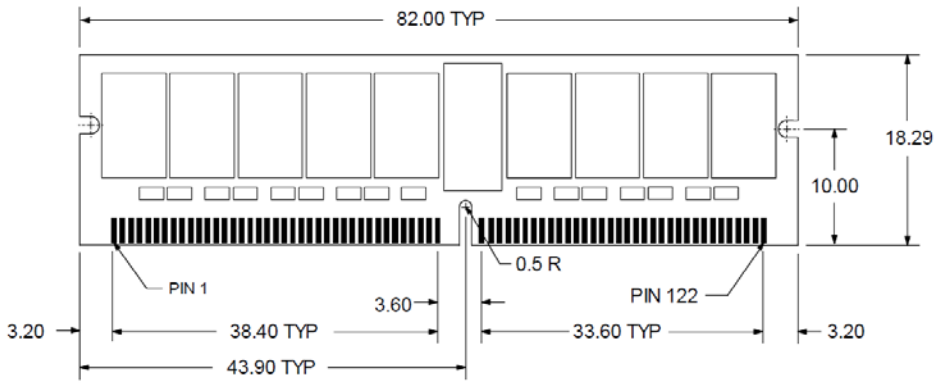
Mais: Pas de support pour les AMC, mezzanine size…

IPMC Mezzanine V2



- **IPMC features**
  - IPMB_0 with on board buffers, Hardware address detection
  - Hot Swap management with ATCA Leds and front panel switch
  - Management of up to 8 AMC + RTM
  - On board Event LOG
  - FRU & SDR via I2C
  - Access to ATCA board sensors via I2C
  - Configurable User Signals for Payload management
- **JTAG Master**
  - JTAG master via Ethernet (ATCA board debugging, firmware upgrade)
- **Custom interface**
  - Possibility to have a custom interface between the Mezzanine and the ATCA board for custom functionalities
- **Other**
  - USB and UART interfaces (debugging etc..)

IPMC Mezzanine V2



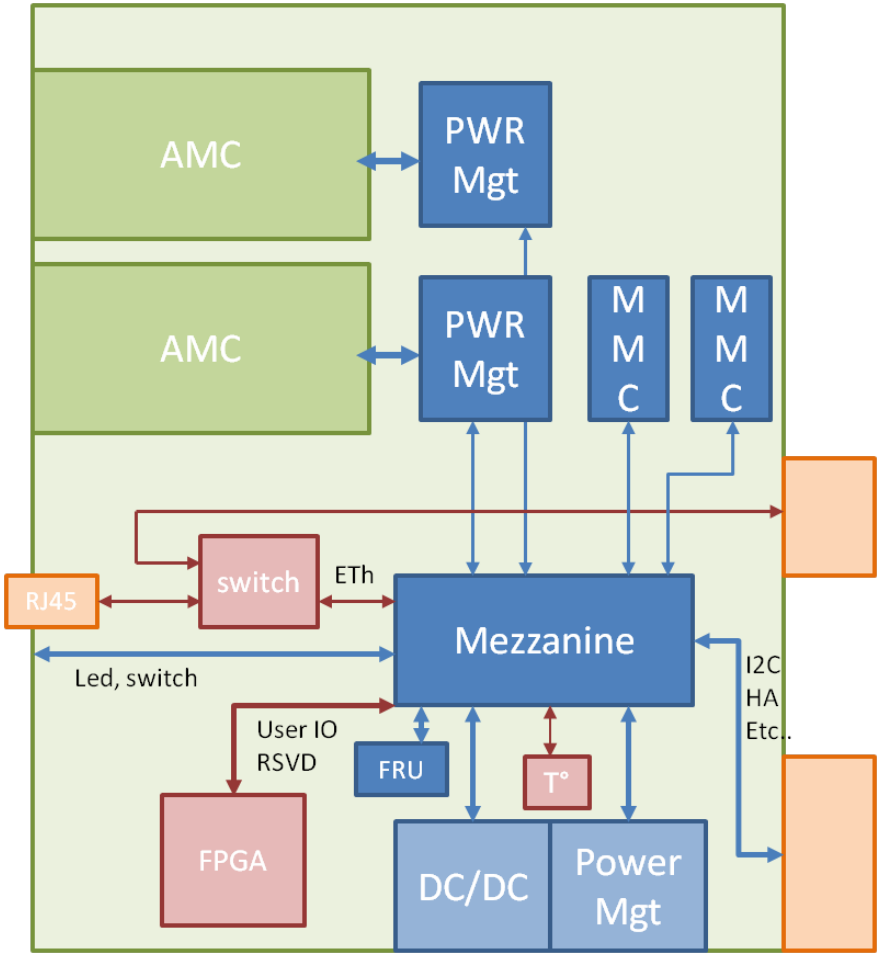
- **Mécanique**
  - Small size: DDR3 VLP Mini-DIMM
  - Montage Vertical ou Horizontal

- **Hardware**
  - Basé sue un processeur ARM cortex M3 or M4 µC (de chez ST)

Premier Prototype: été 2012

- **Software**
  - Réutilisation du code la Mezzanine V1
  - Ajout de l'AMC management

Test of IPMC Mezzanine



- **IPMC Mezzanine Test Board**
  - ATCA Board avec 2 slots AMC
  - Permet de tester toutes les fonctionnalités de la Mezzanine
  - Servira de “Reference Design” pour les utilisateurs

Première carte: été 2012

QUESTIONS ???