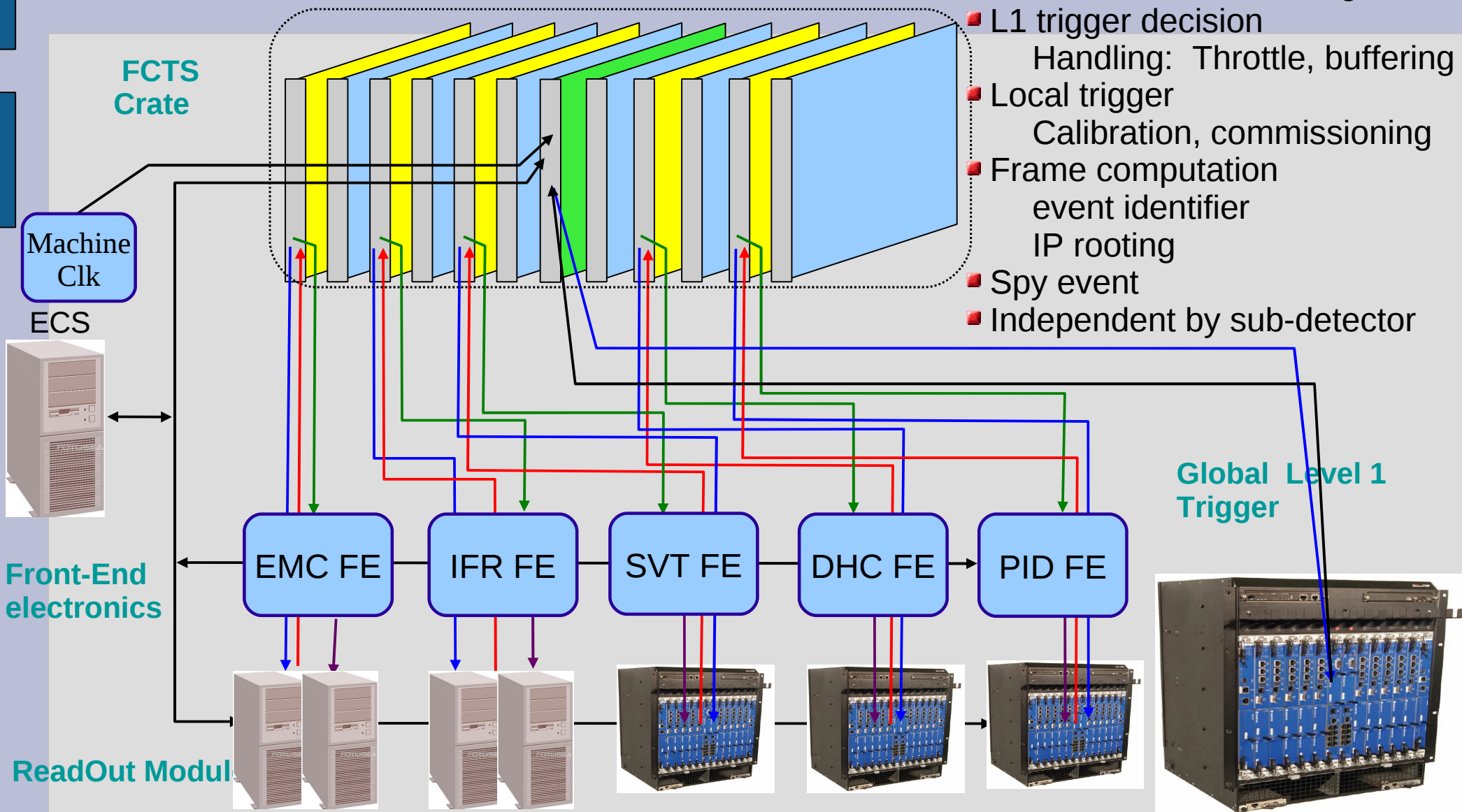
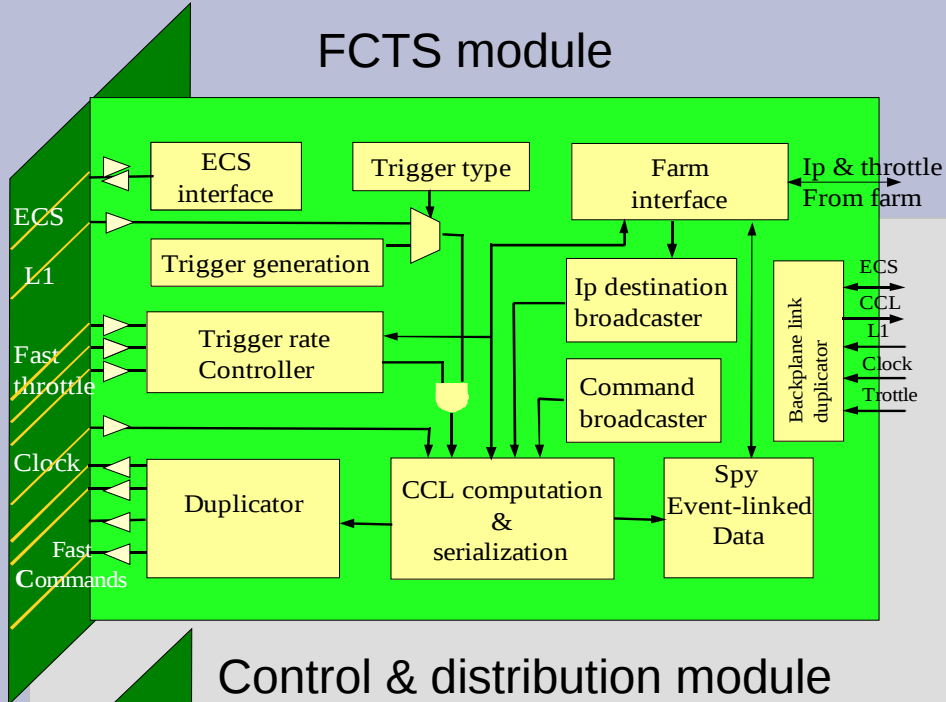


- # **FCTS system**
- **FCTM Architecture**
  - **A possible sketch**

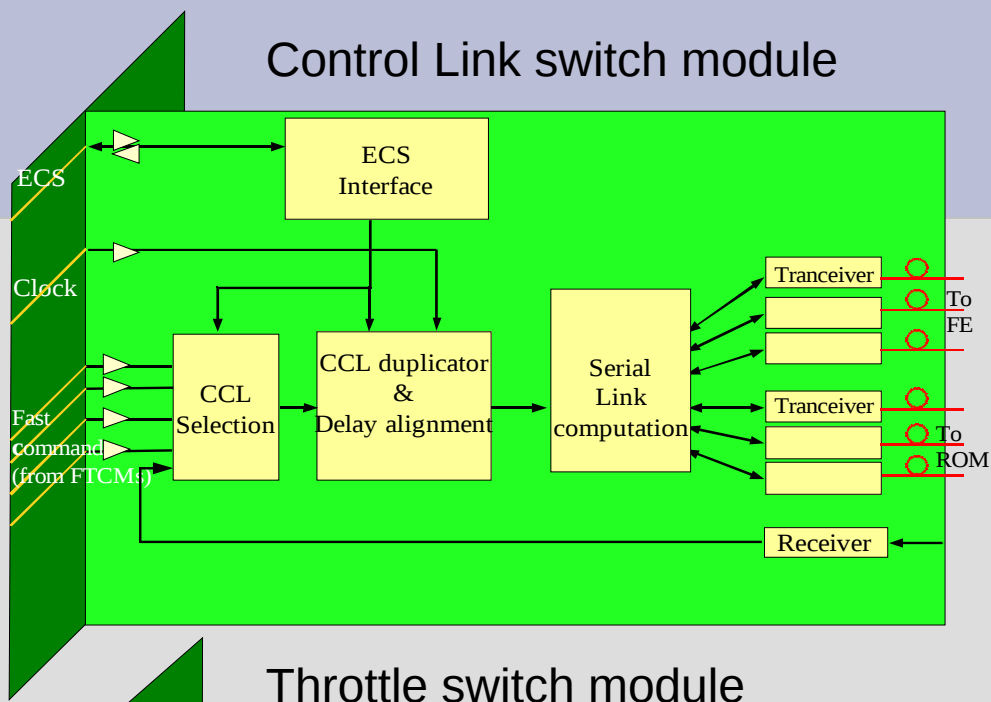
- Synchronization of the detector  
Clock, reset, buffering
- L1 trigger decision  
Handling: Throttle, buffering
- Local trigger  
Calibration, commissioning
- Frame computation  
event identifier  
IP routing
- Spy event
- Independent by sub-detector



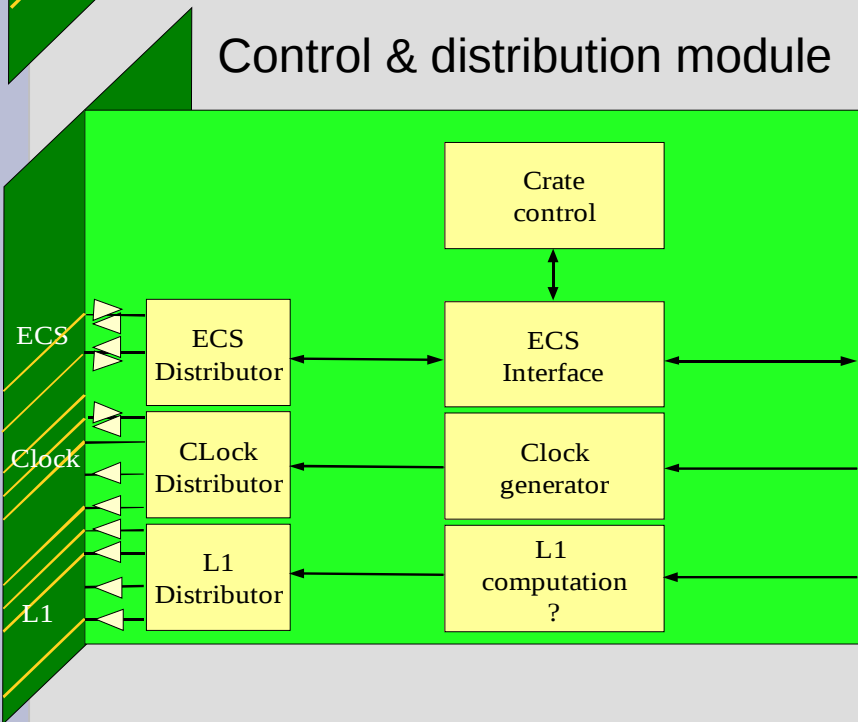
## FCTS module



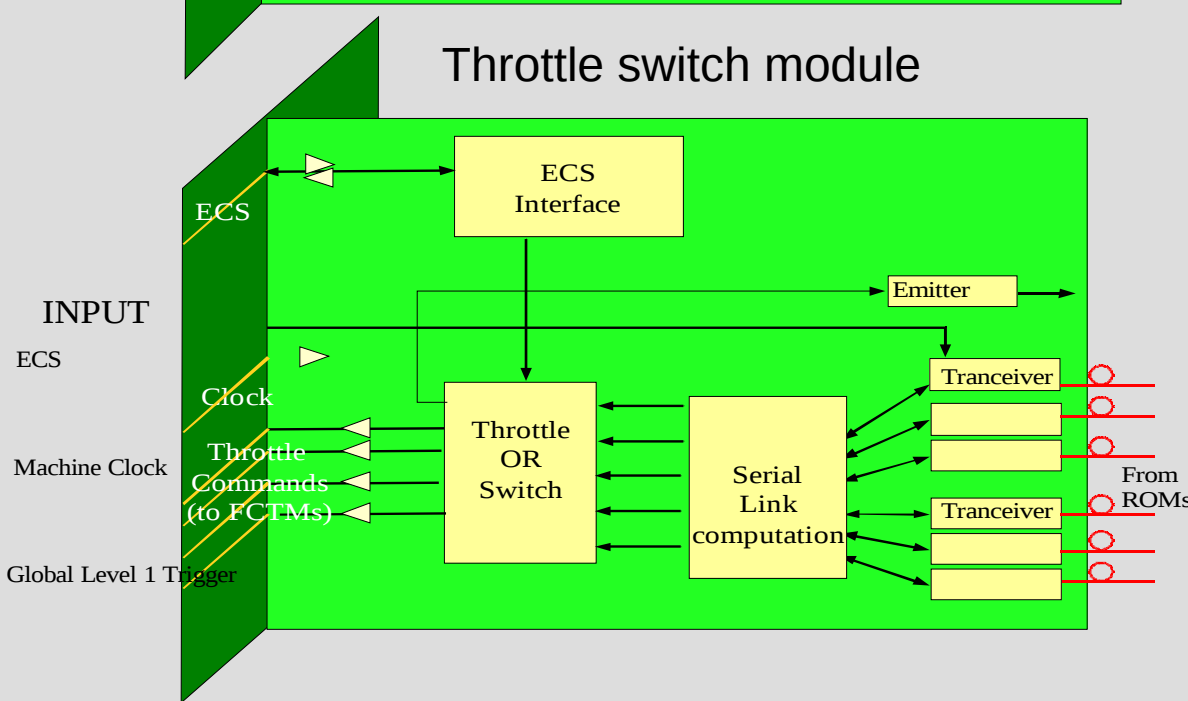
## Control Link switch module



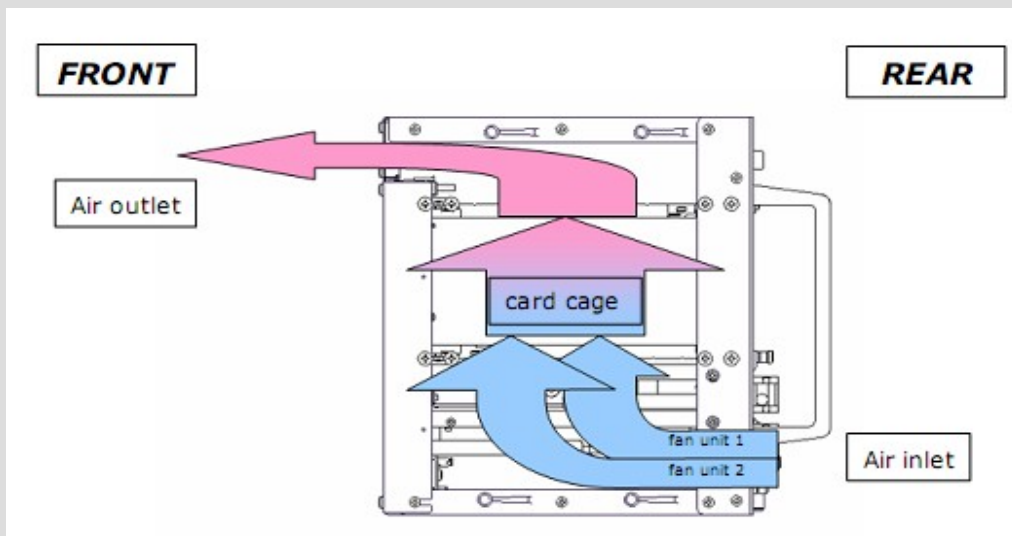
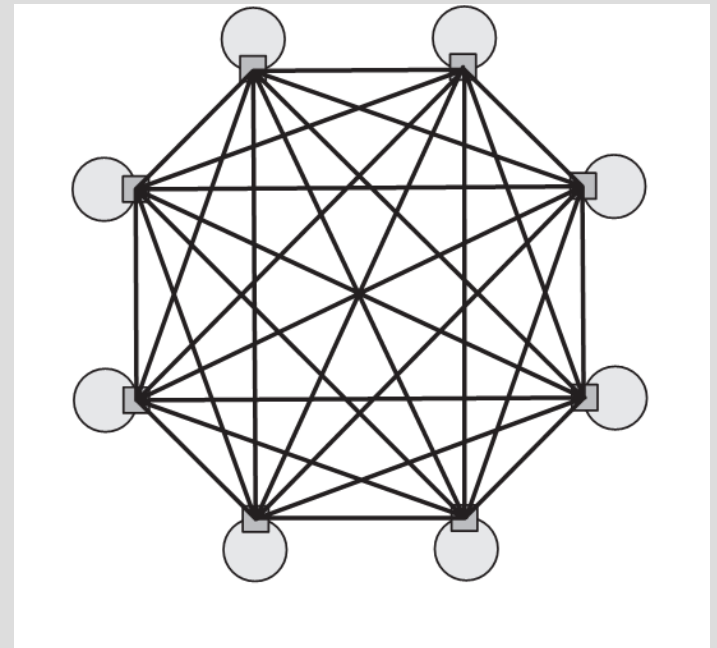
## Control & distribution module



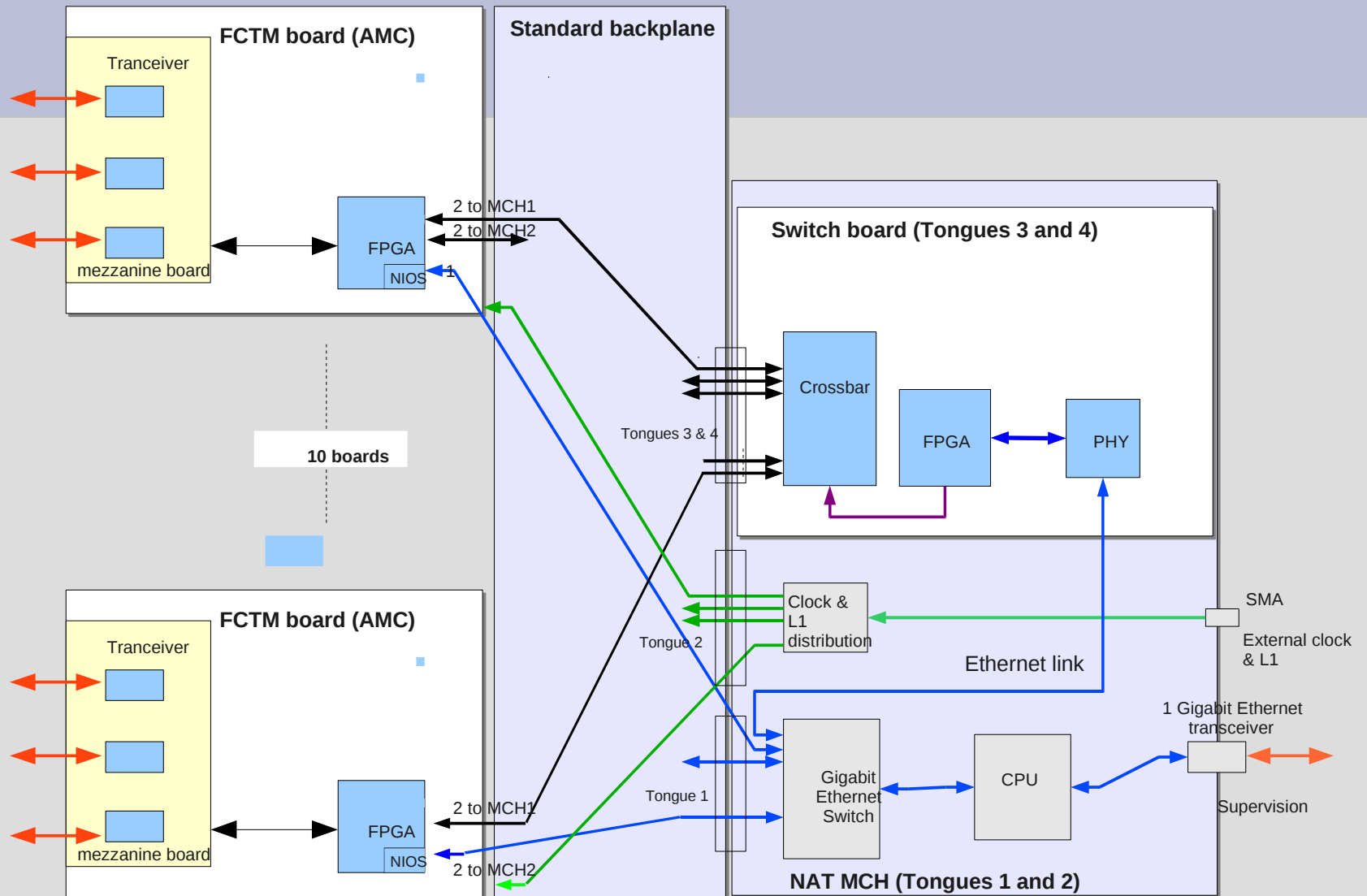
## Throttle switch module



# $\mu$ TCA standard

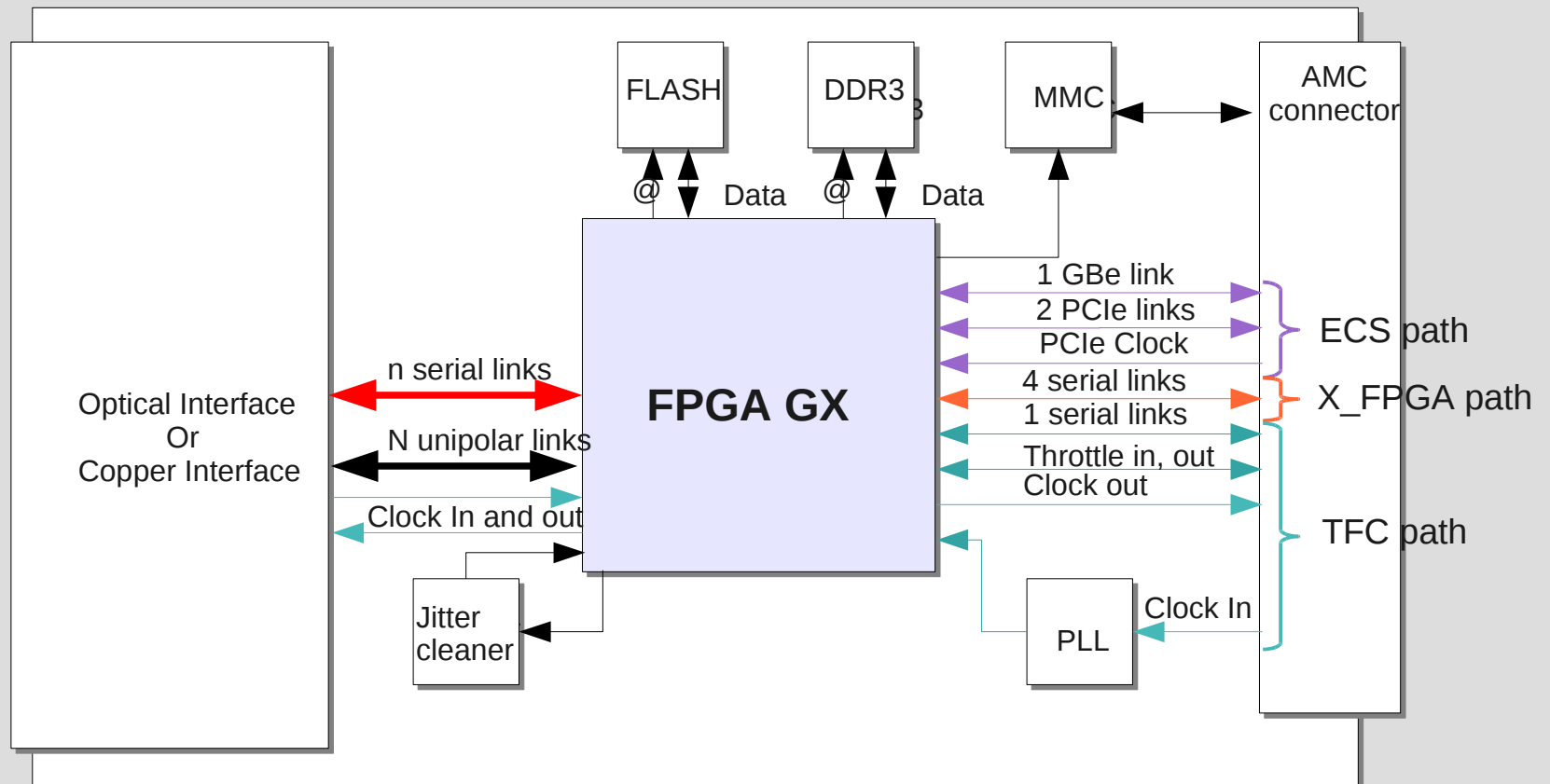


# Architecture

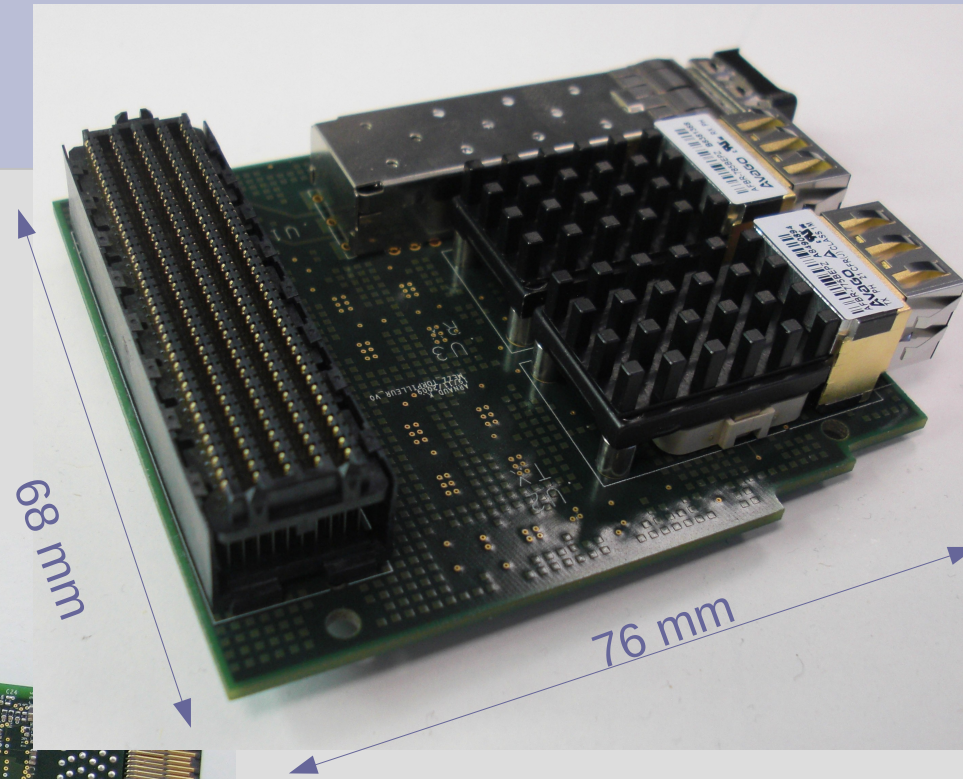


Special thanks to J.P Cachemiche for his help

# Generic AMC board



# AMC board & mezzanine example

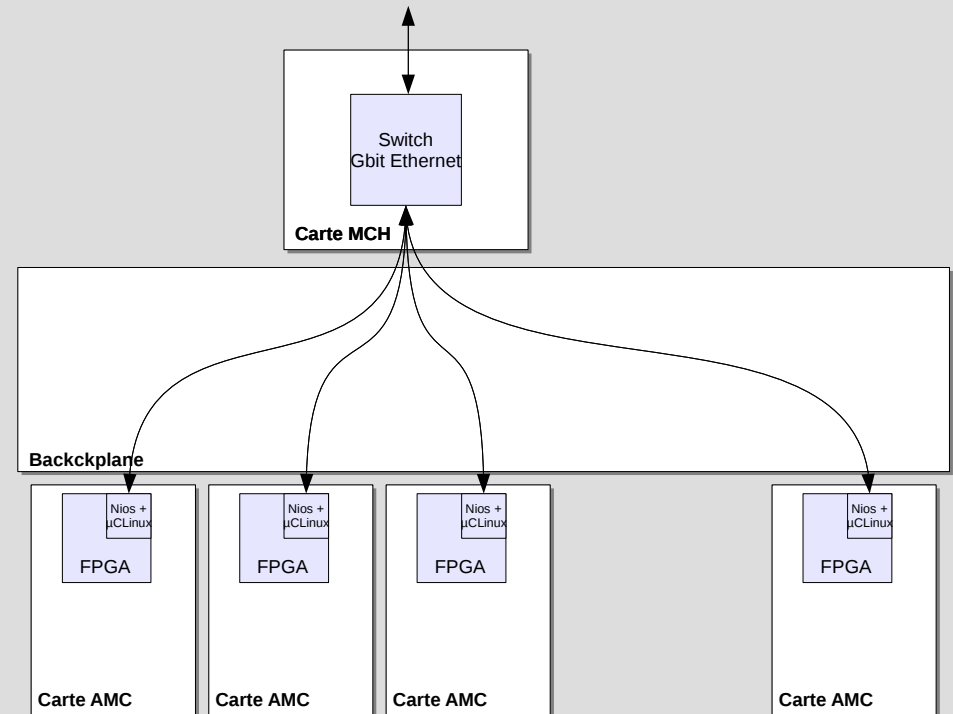


CCPM J.P Cachemiche

# Control System

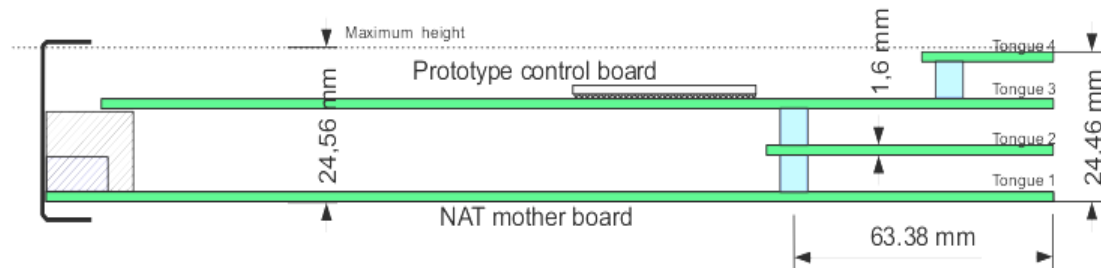
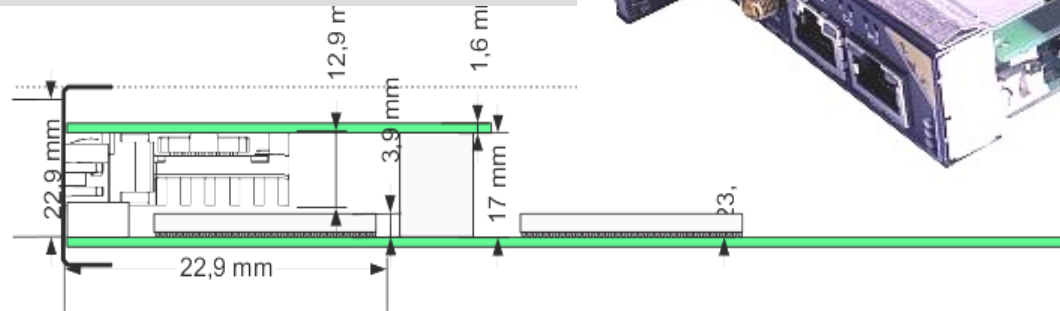
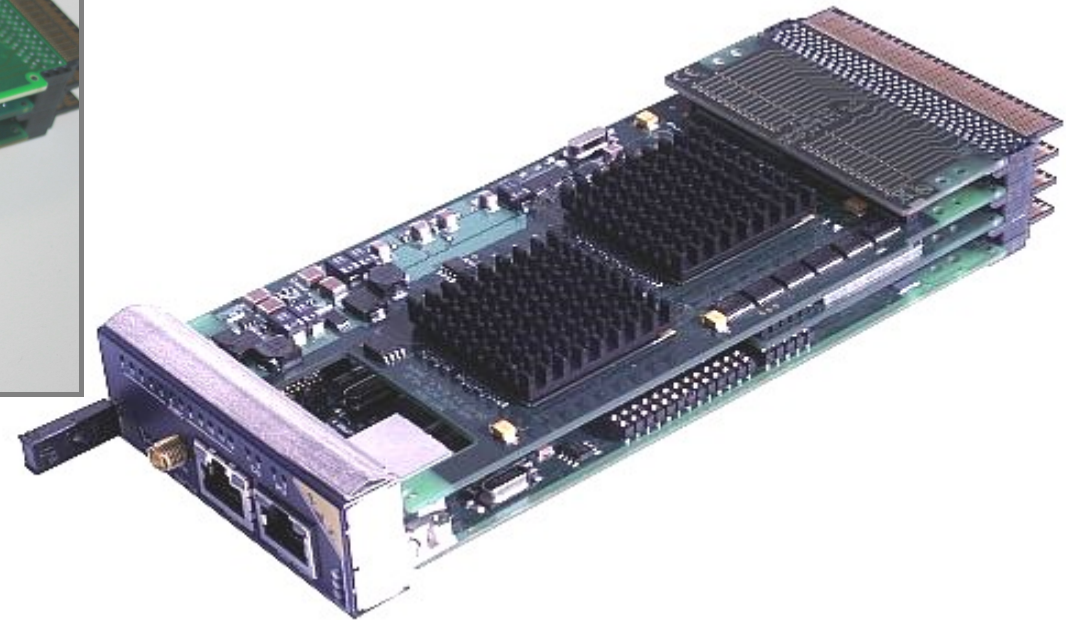
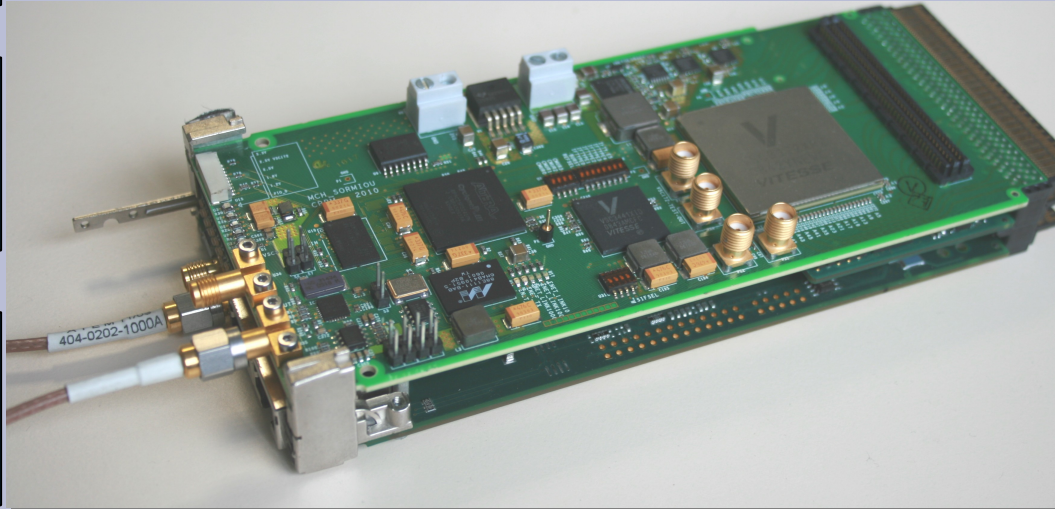
To be integrated in the FPGAs

- Base on Gigabit Ethernet
- 1 input point via the MCH board and distribution via the backplane to all AMC boards.
- NIOS processor + ftp server integrated in the FPGA of all AMC boards

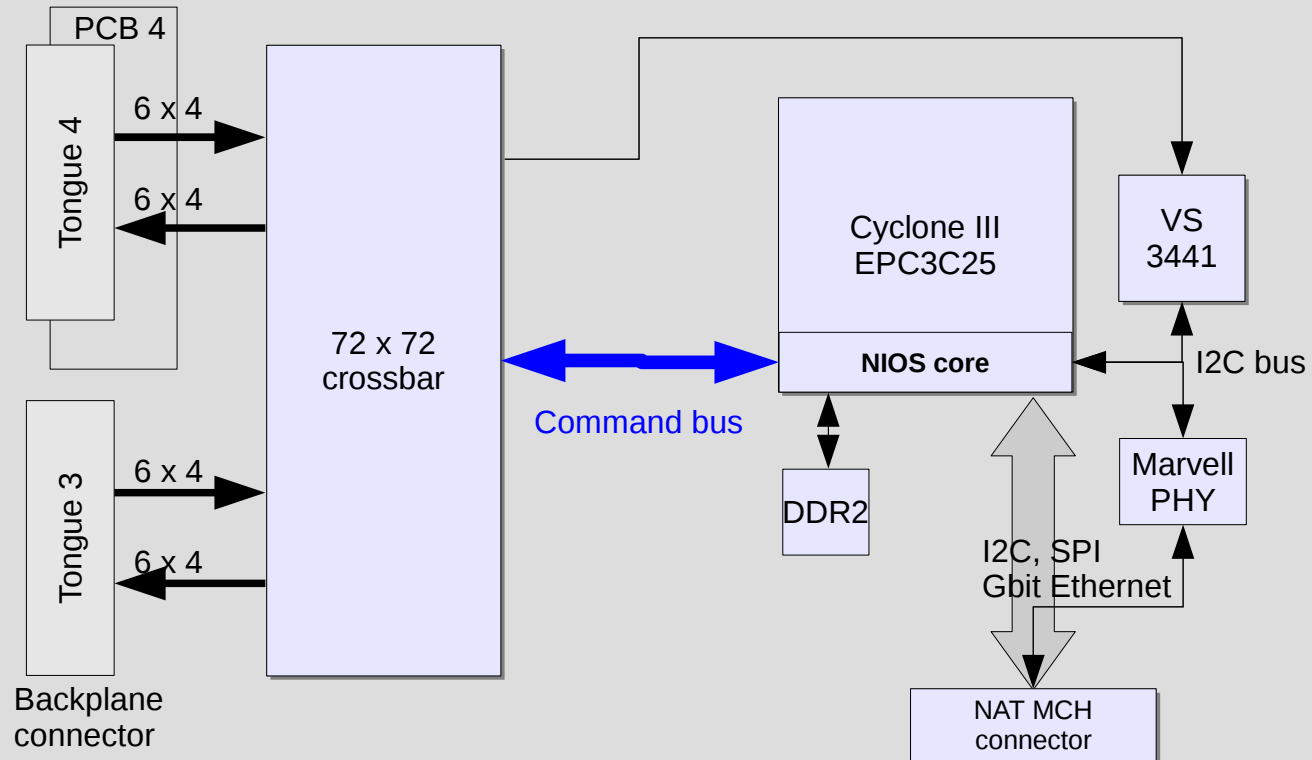




# MCH Board



# MCH possible configuration



# Multiple possible configuration

Universal AMC board could be used for:

- FCTS master
- FCTS link distribution
- FCTS throttle
- ECS master
- ROM

A few number of boards could be designed for FCTS, ECS and Acquisition system:

- AMC board
- MCH tongue 2 and 3&4 (but some CCPM & CERN development could be used)
- 2 or 3 mezzanines

# Conclusion

Some points have to be defined and other have to be checked accurately

- FPGA
- Backplane configuration
- Available link 10Gb Ethernet, FE links, SPECS....
- Mezzanine configuration (nb of links, connector....)
- Definition of the tongue
- .....

Consequence: no place for link mezzanine → emulation of LV18  
In firmware code .



# FCTM architecture

