

# ***ELECTRONICS HARDWARE – OVERVIEW 2008***

UCL

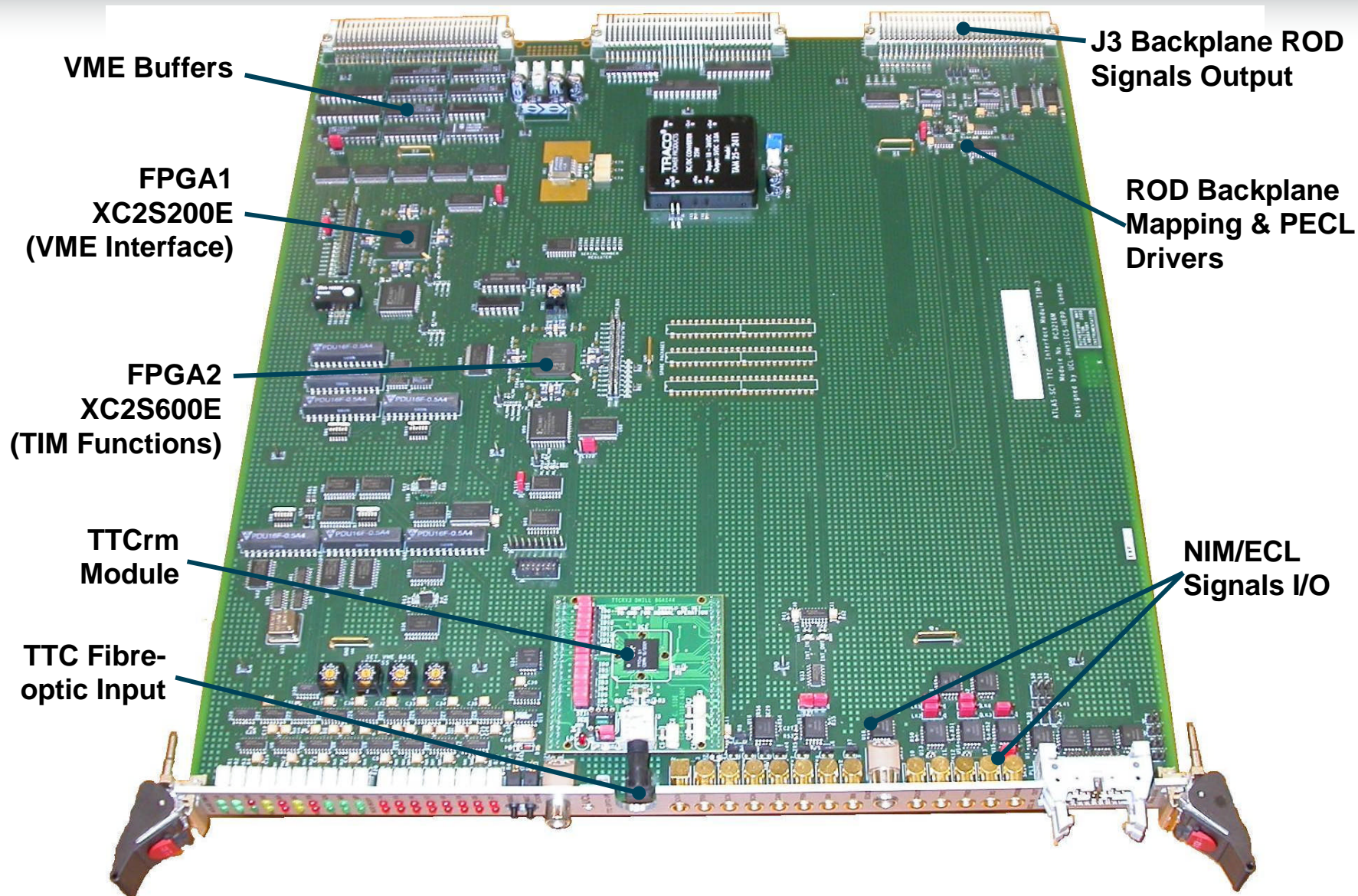


***- Martin Postranecky***

***- Matthew Warren***



# ATLAS-SCT TIM-3C (Timing Interface Module)



**Design started : December 1999**

**First TIM-0 delivered : September 2000**

**Last TIM-3F delivered : October 2008**

**UCL-HEP : All design and development, all testing  
Manufactured by outside contractors**

**Total 78x TIMs delivered to ATLAS Inner Detectors :**

- SCT ( SemiConductor Tracker ) ..... 38x**
- PIXEL Detector ..... 15x**
- MUON-MDT ( Monitored Drift Tube ) ..... 19x**
- MUON-CSC ( Cathode Strip Chambers )... 5x**
- RP ( Roman Pots ) ..... 1x**

CALICE : CAlorimeter for the LInear Collider Experiment

EUDET : European Union DETector

R&D towards the International Linear Collider

UCL – HEP :

CCC : Clock and Control Card

Custom design, started October 2007

First prototype in September 2008

Total ten modules manufactured January 2009

ODR : Off-Detector Rceiver – PC interface for system  
Commercial Virtex-4 development board

# DAQ architecture

Detector Unit: ASICs

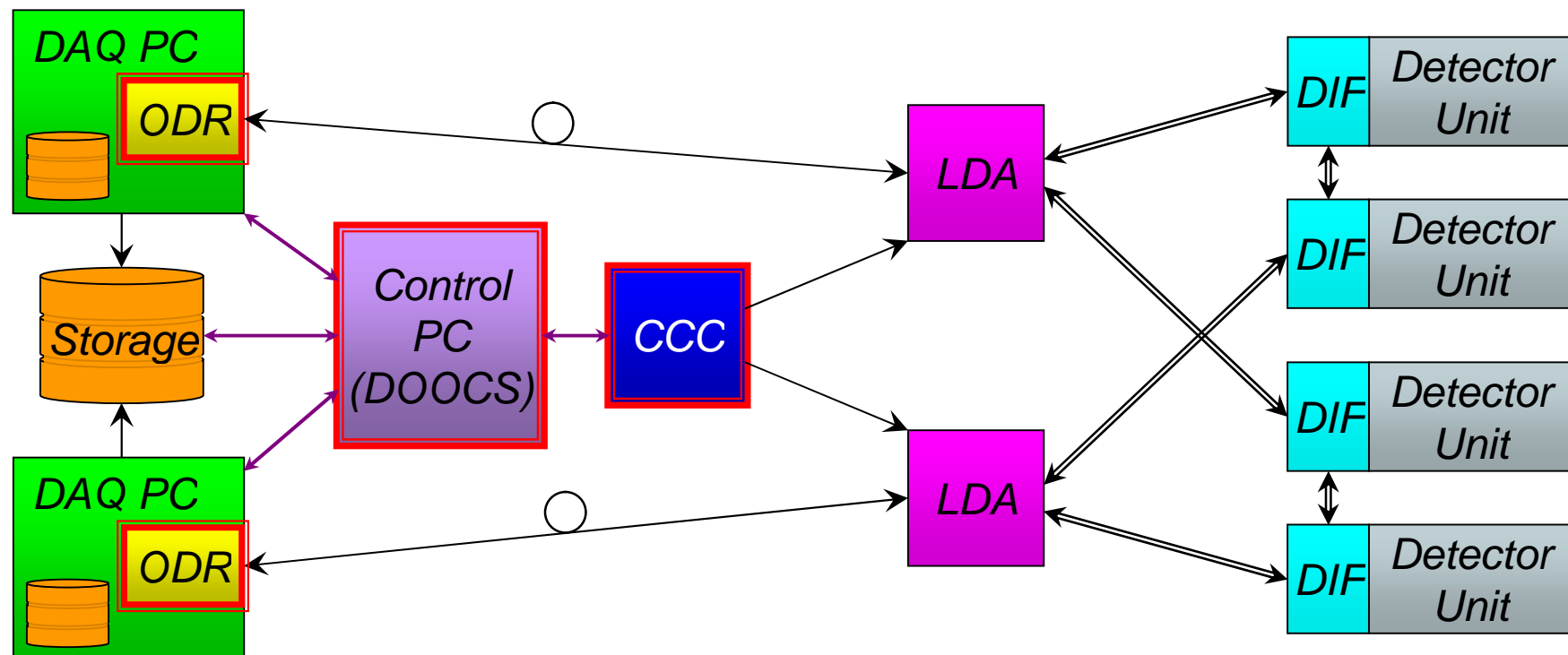
**DIF** : Detector InterFace connects  
Generic DAQ and services

**LDA** : Link / Data Aggregator – fanout /  
in DIFs and drives link to ODR

**ODR** : Off Detector Rceiver – PC  
interface for system.

**CCC** : Clock & Control Card: Fanout  
to ODRs ( or LDAs )

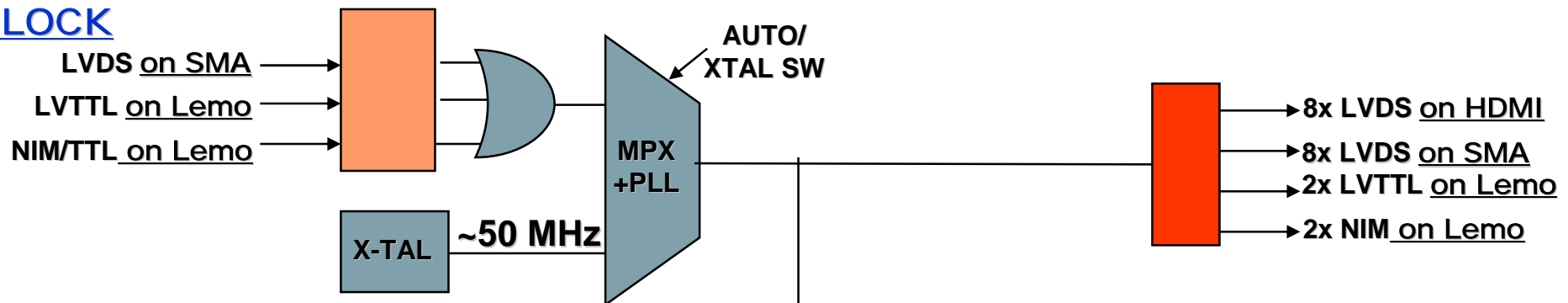
**CONTROL PC**: DOOCS GUI ( run  
control )



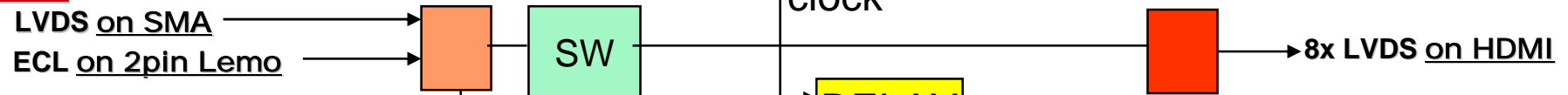


# CALICE CCC - Overview Schematic

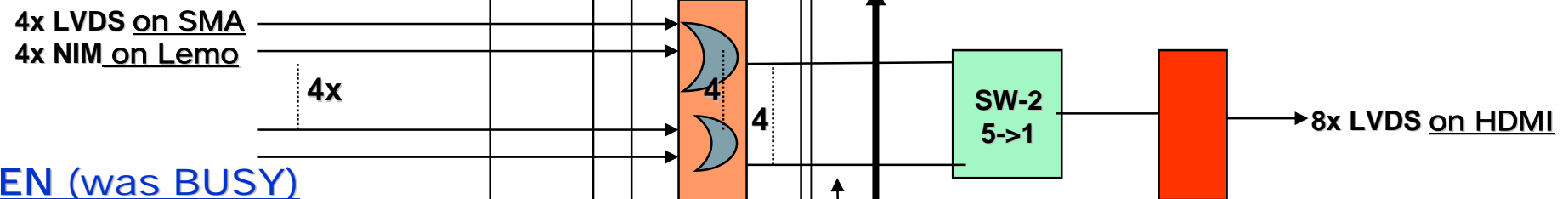
## CLOCK



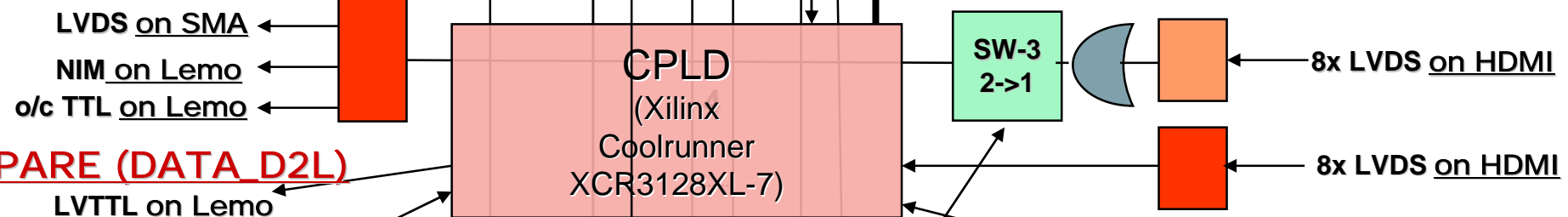
## ASYNC



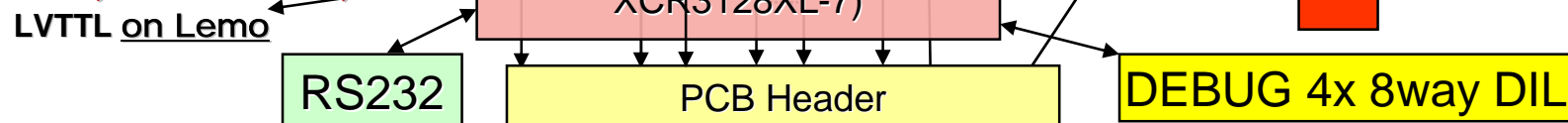
## Controls (SYNCCMD, BUSY-IN etc)



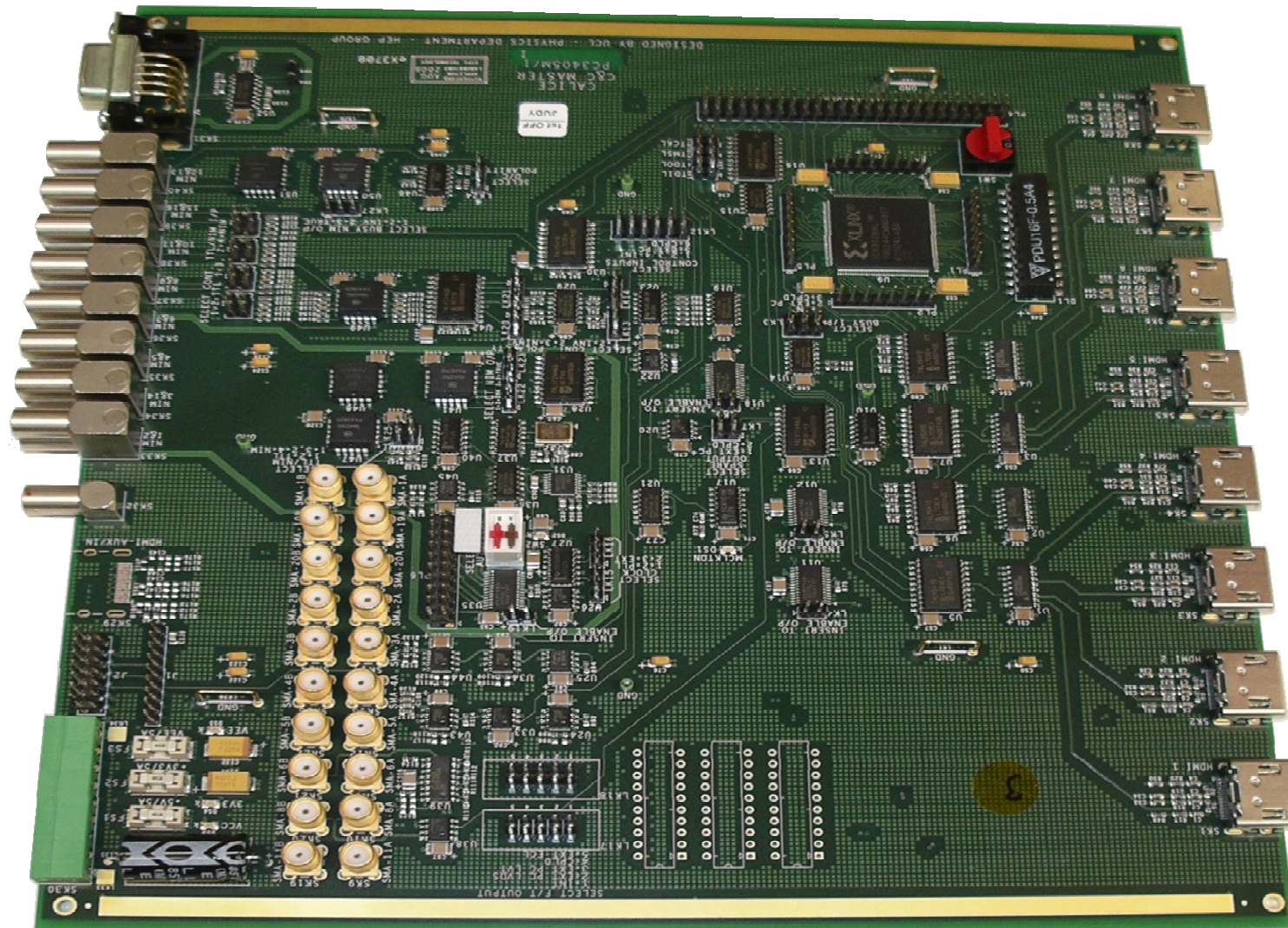
## GEN (was BUSY)



## SPARE (DATA\_D2L)



# CALICE CCC – First Prototype



## **The European X-Ray Laser Project XFEL**

**XFEL : X-ray Free-Electron Laser**

**To be built in DESY, Hamburg**

**FLASH : Free-Electron LASer in Hamburg**

**Existing prototype laser facility in DESY**

**WP 76 : DAQ & Control : DESY**

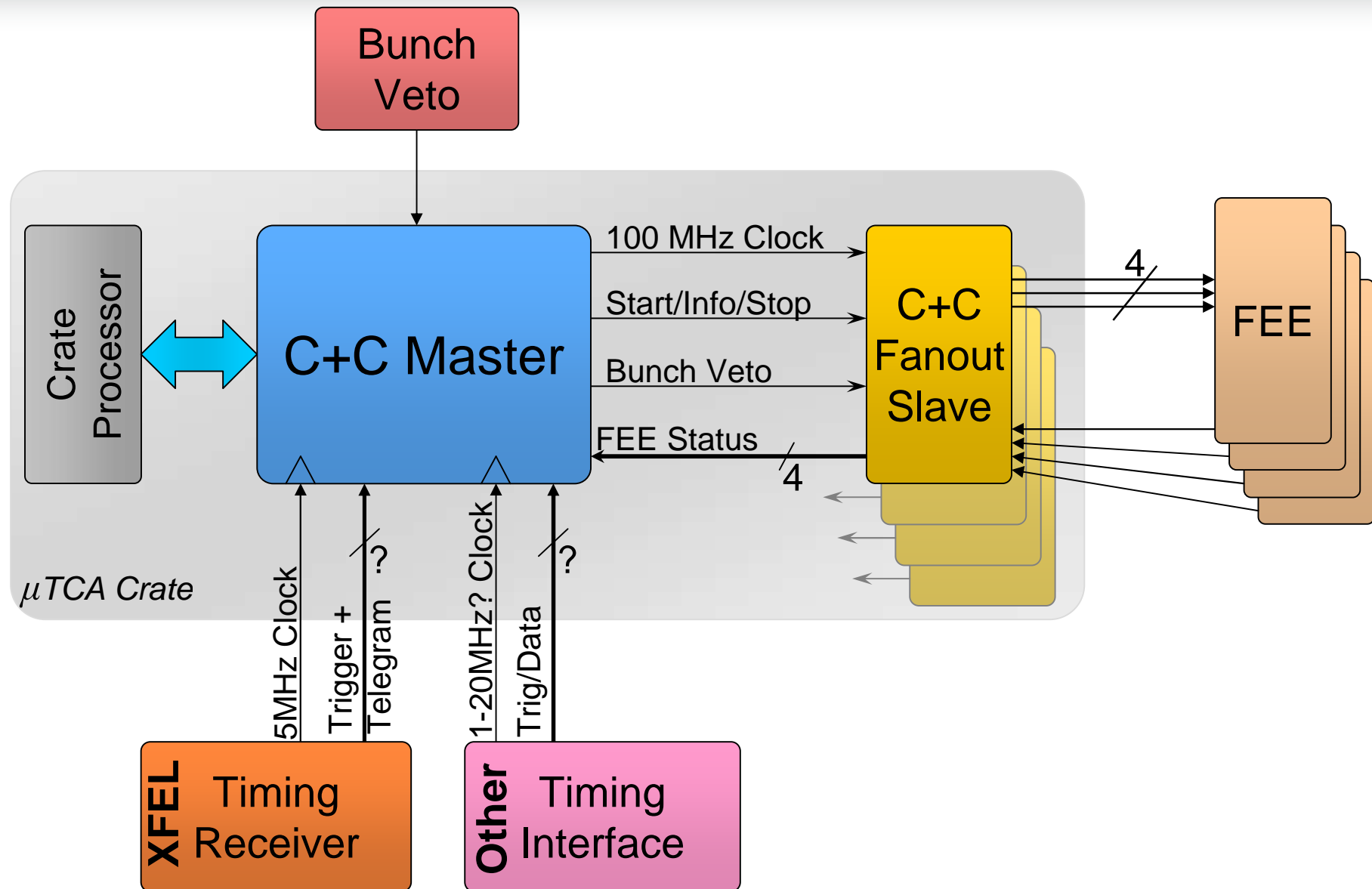
**Clock and Control System : UCL with STFC / RAL**

**First proposal – end 2008**

**First prototype – mid 2010**



# Clock and Control System - Overview



*Oh yes - one last  
small job :*

*Test Setup in D22*

*( by January 2009... )*

***HAPPY  
CHRISTMAS !***

