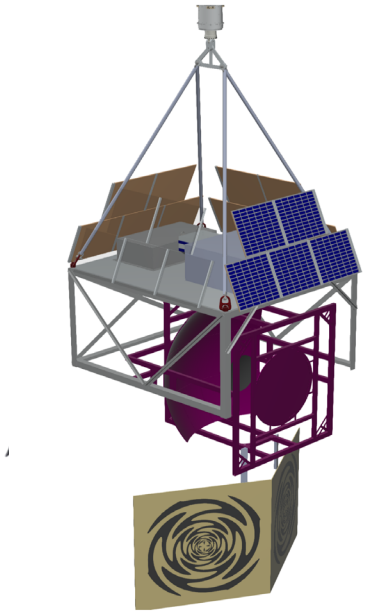
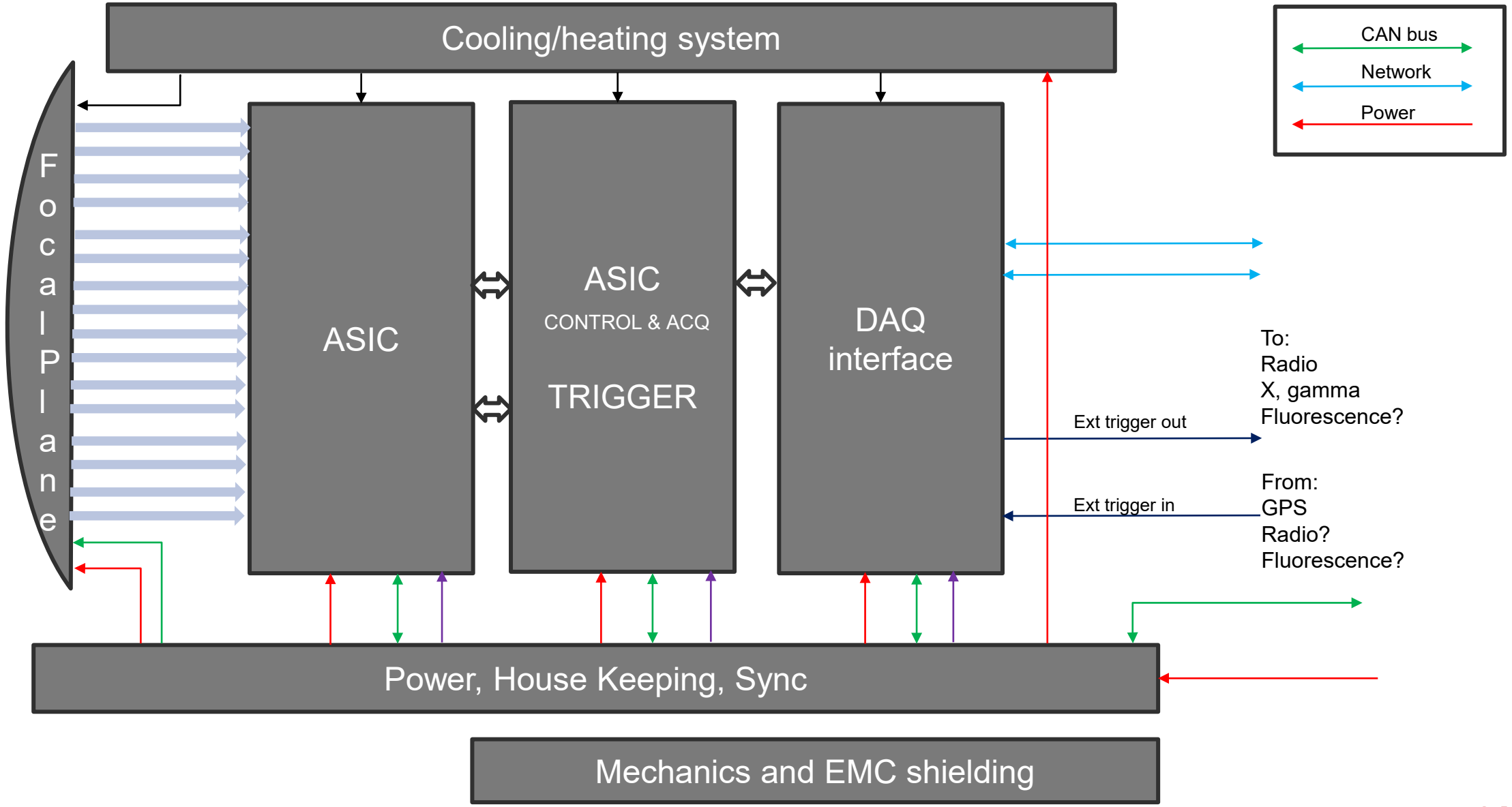
PBR
Wanaka NZ
2027



CHERENKOV CAMERA: UPDATE

GIUSEPPE OSTERIA (INFN NAPOLI)

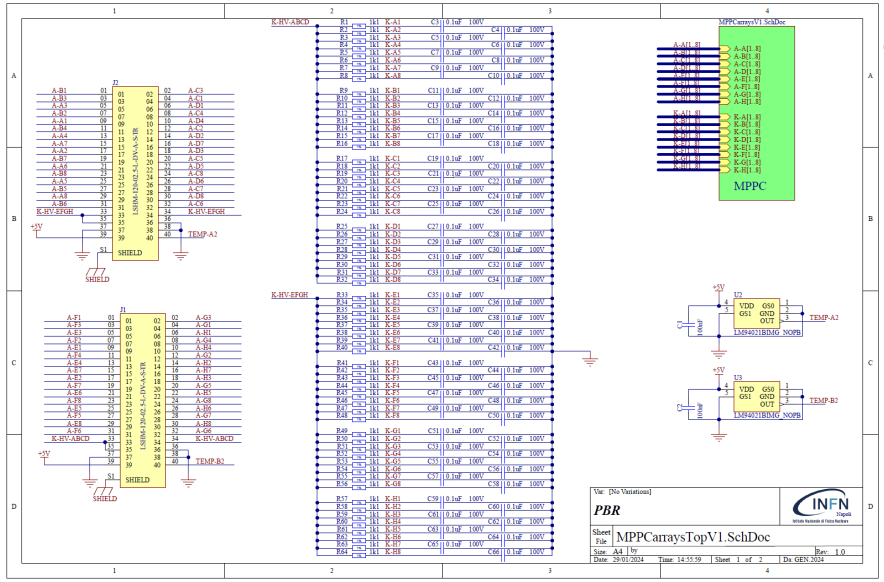
CHERENKOV CAMERA: BLOCK DIAGRAM



CC FOCAL PLANE: TRANSFER OF THE SENSOR ARRAY SIGNAL TO THE ASIC

Micro-coax connection

(Samtec) 40 position 38 AWG coax
HLCD-20-12.00-TD-TH-1

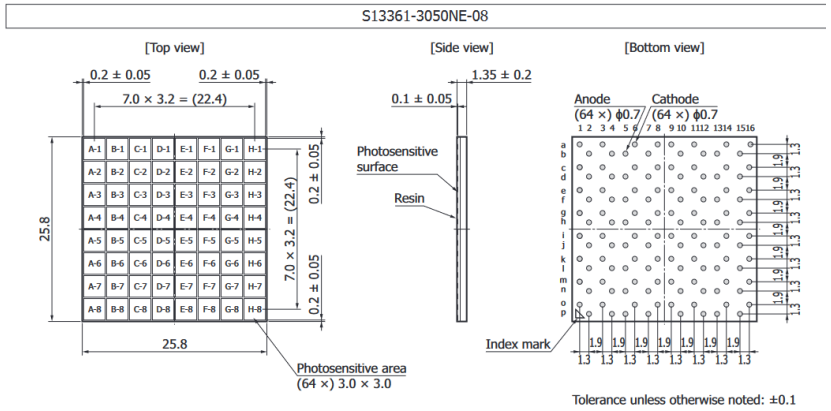


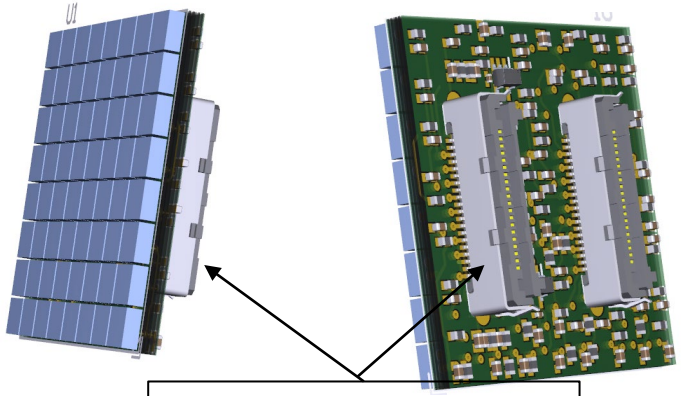
Two temperature sensors (LM94021BIMG)

Status:

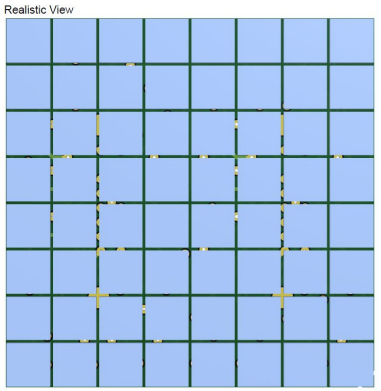
- production in progress,
- Samtec cables and connectors delivered
- Hamamatsu SiPM arrays (two samples) delivered

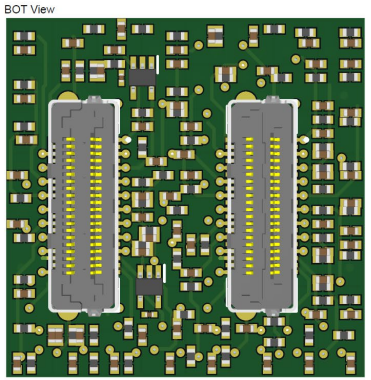
8 x 8 Hamamatsu SiPM array



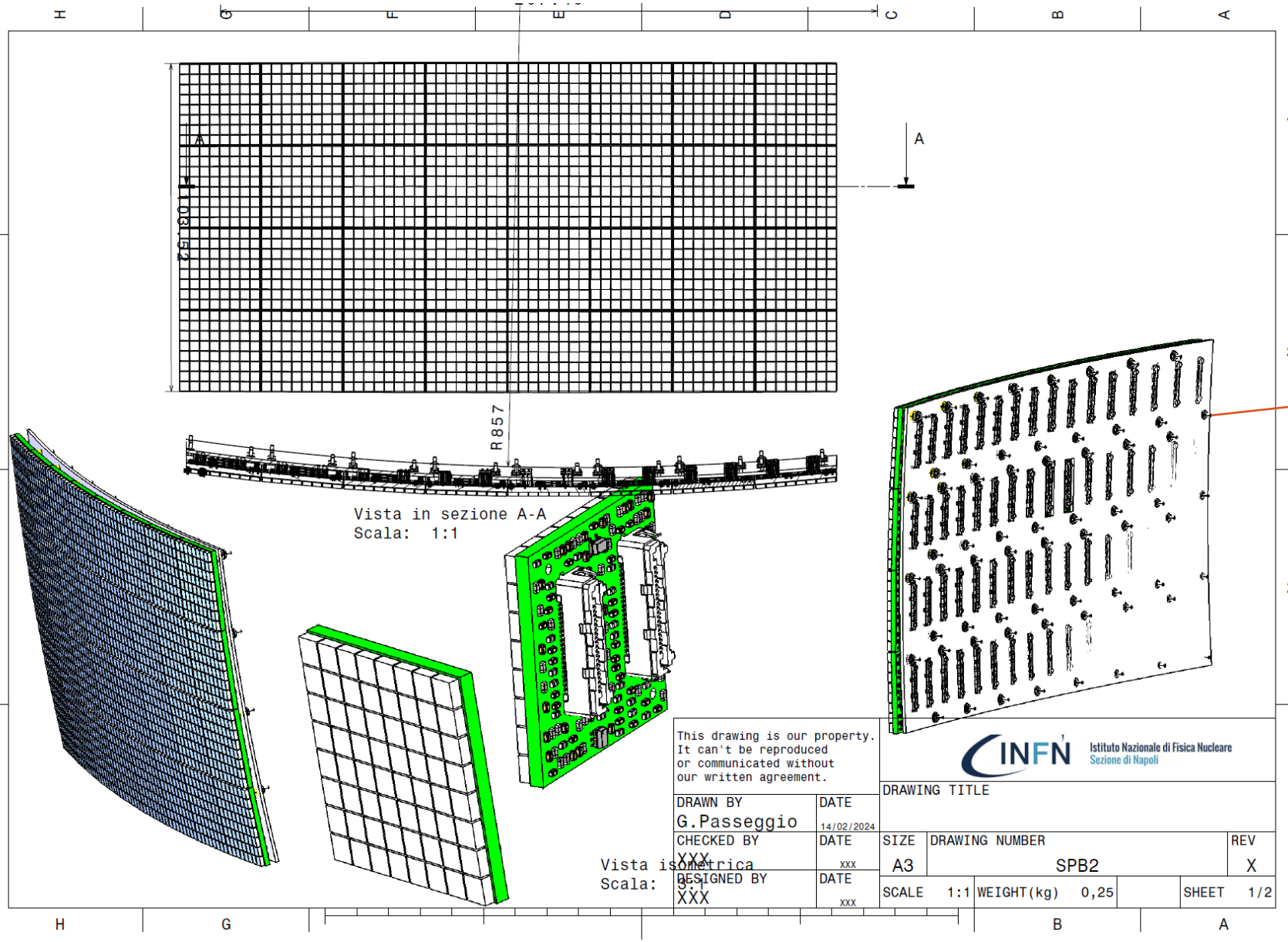


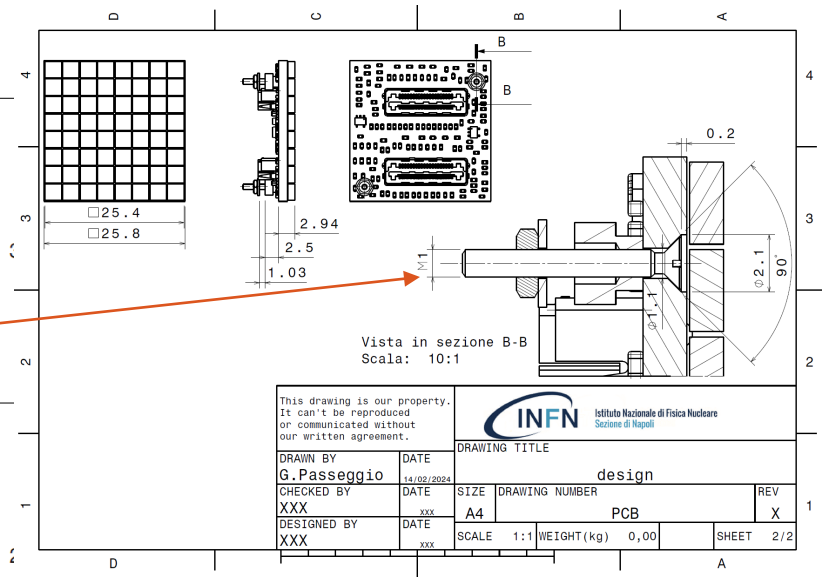
(Samtec) 40 position
LSHM-120-02.5-L-DV-A-S-TR



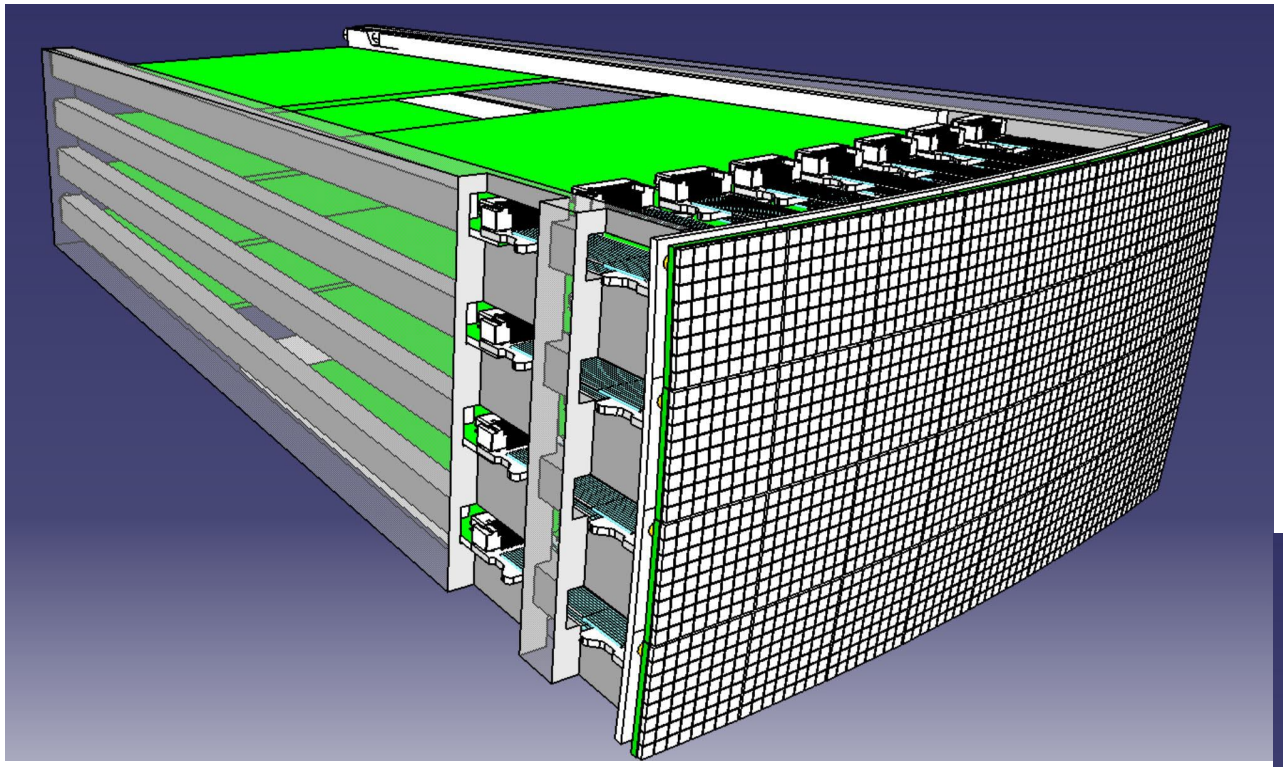


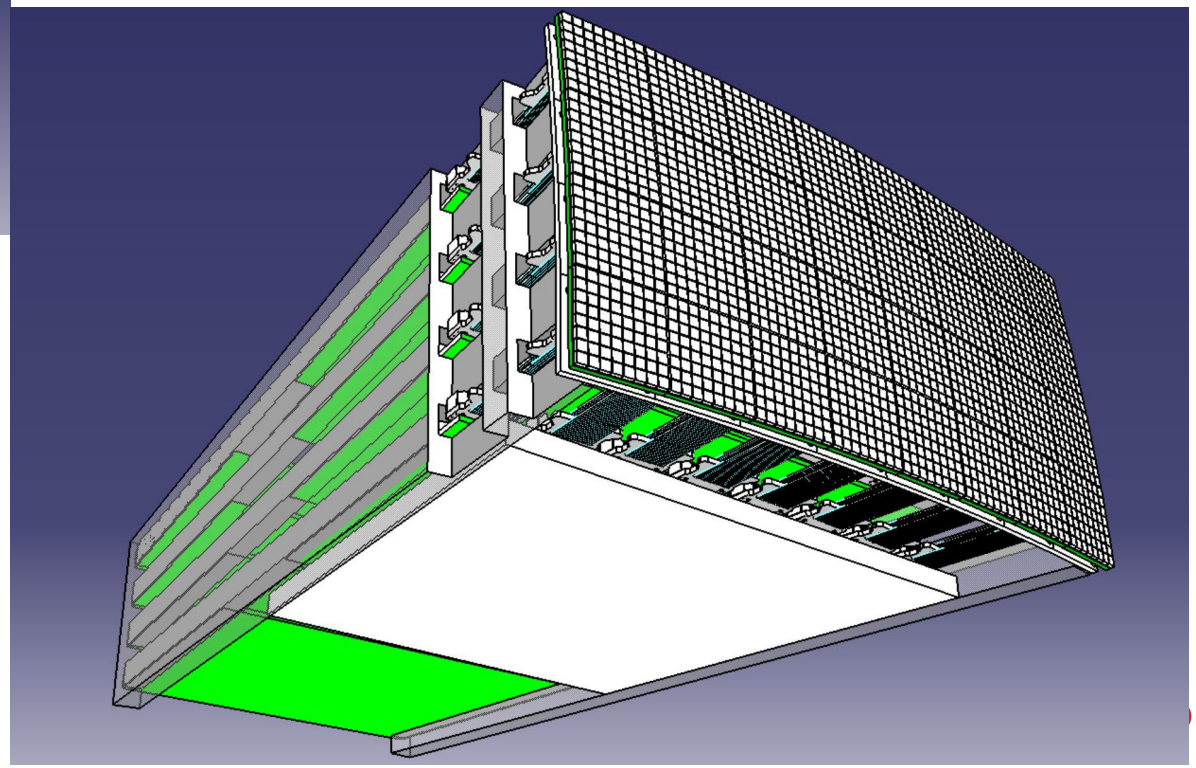
CC FOCAL SURFACE MECHANICS



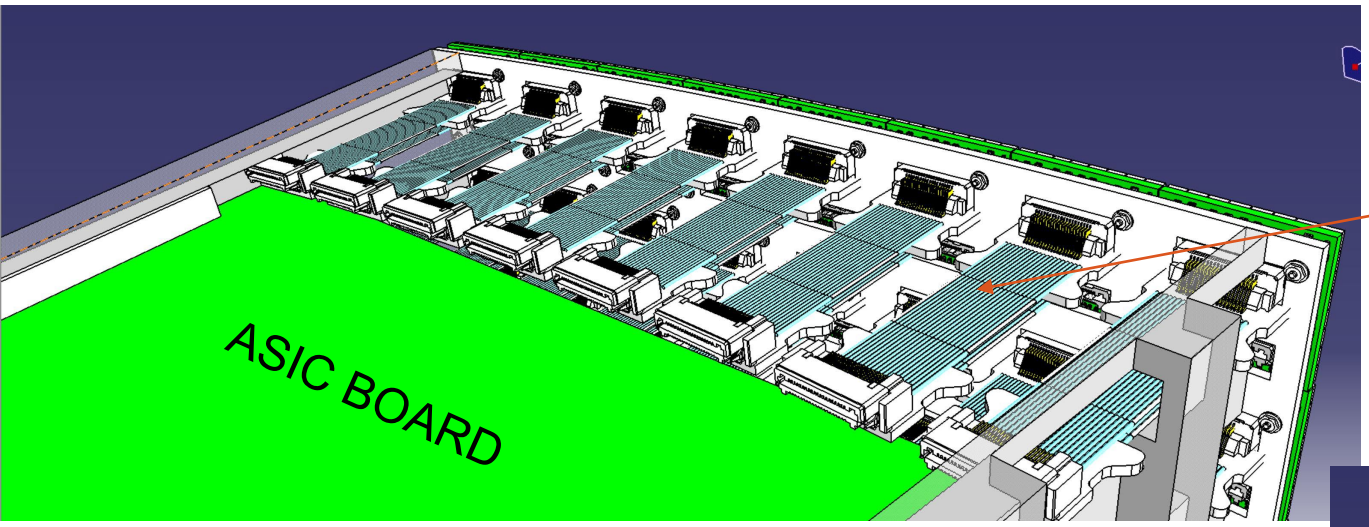


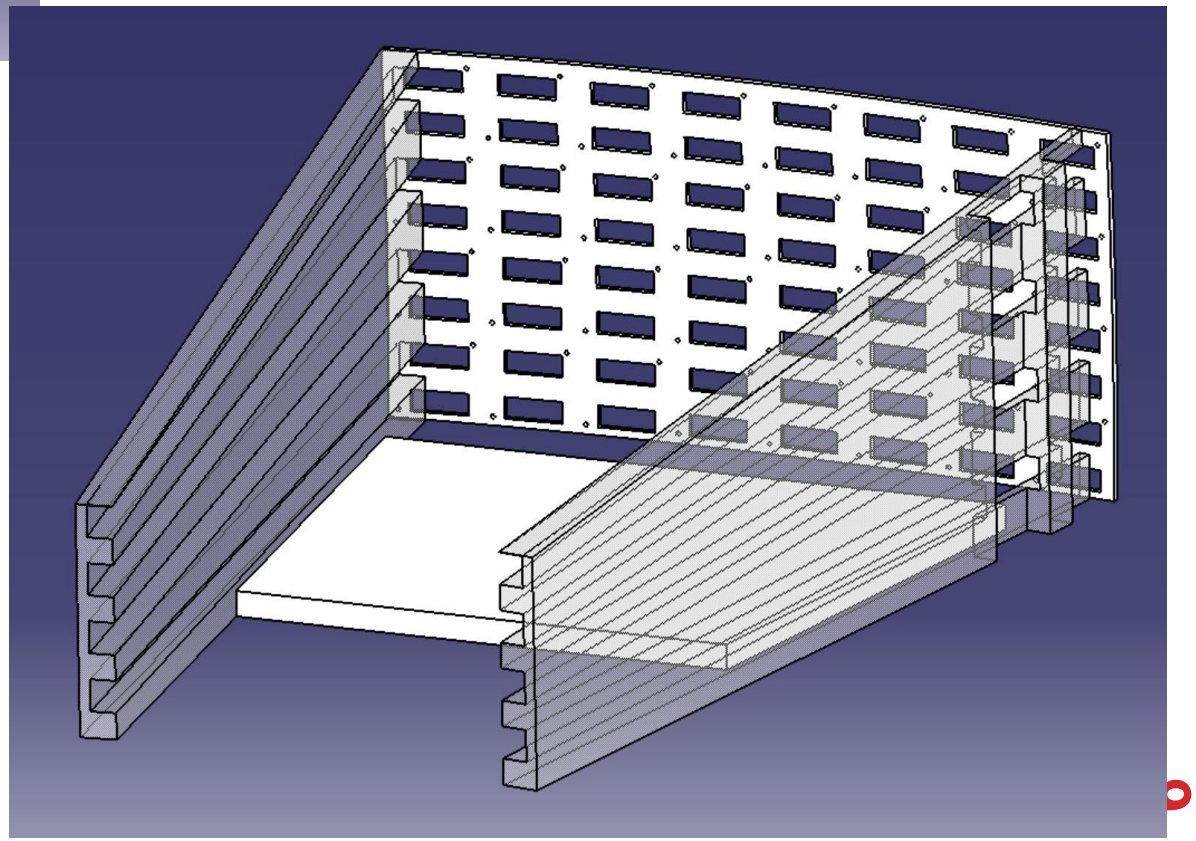
CHERENKOV CAMERA





CHERENKOV CAMERA

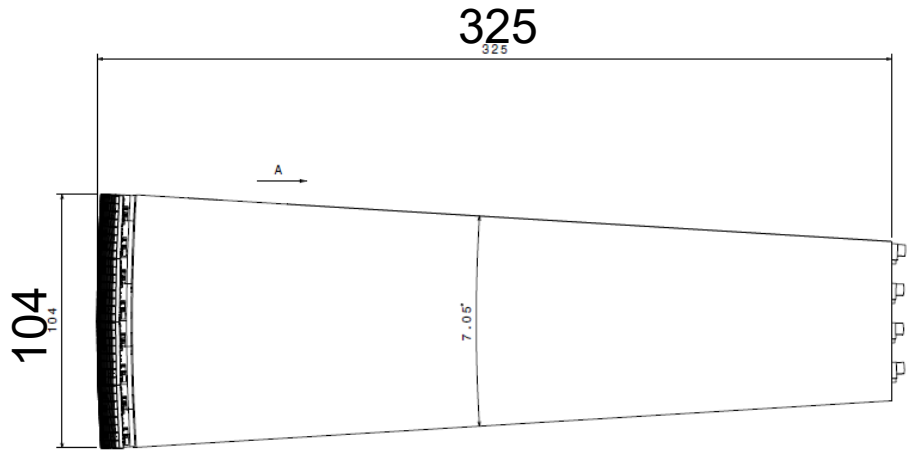


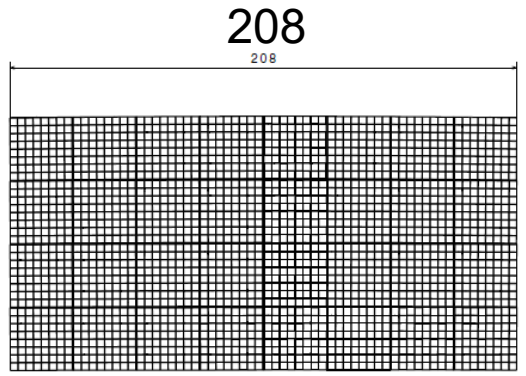


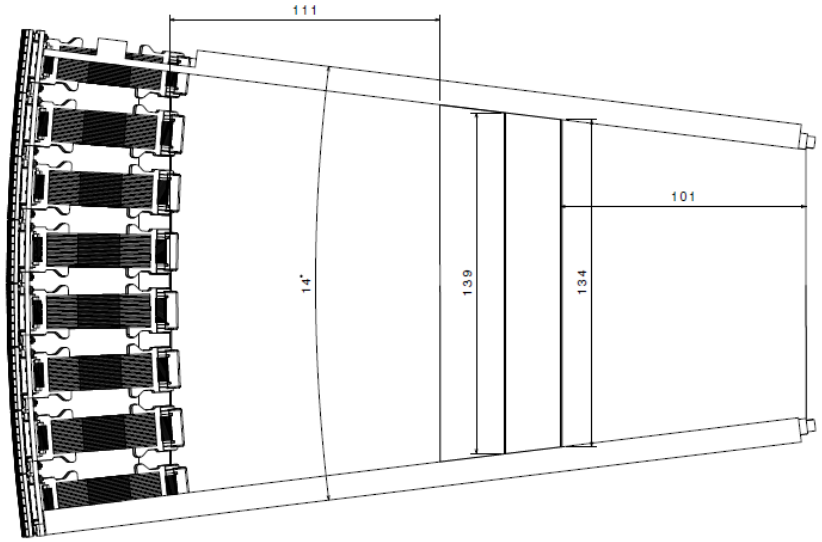
The main structure is made of aluminum,
Its total weight is ≈1.5 kg

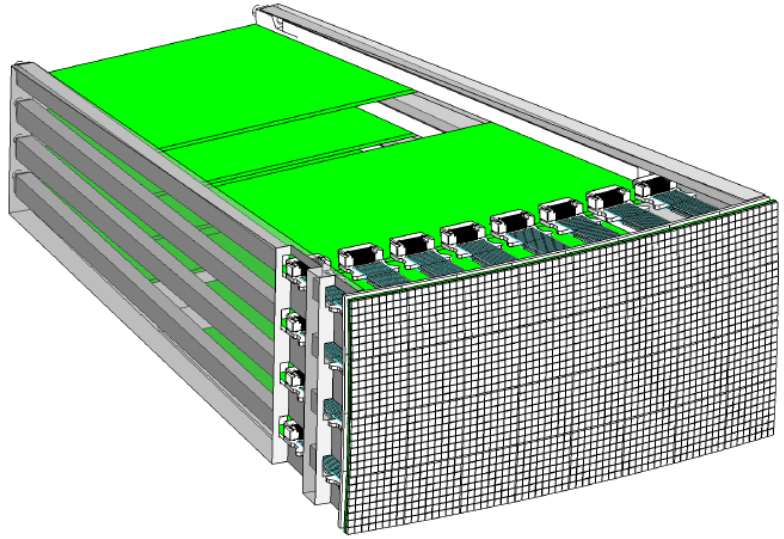
CHERENKOV CAMERA

Dimensions (mm)





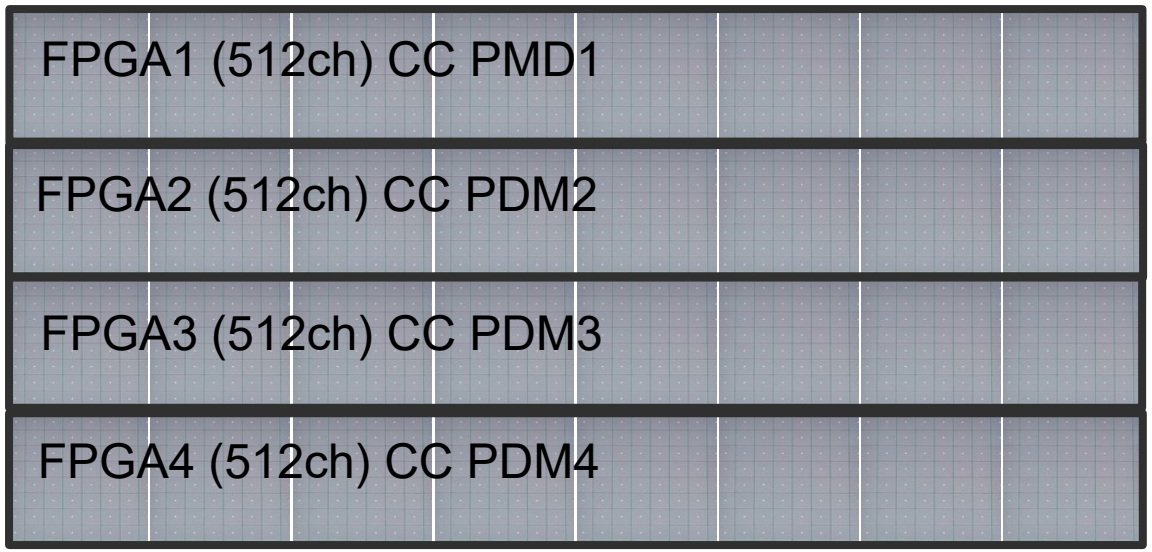


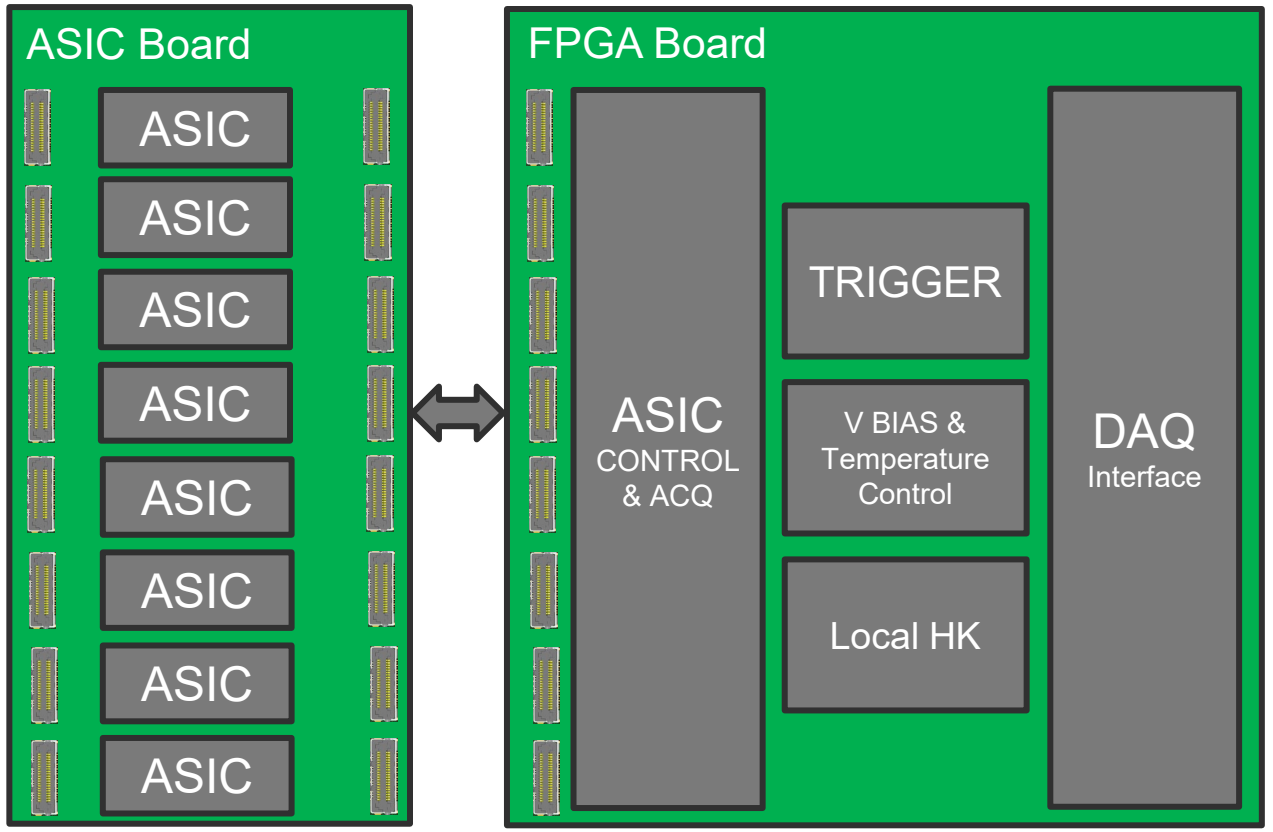


CC ASICS & FPGA BOARDS

The CC will be logically divided into four Photo Detection Modules (CC PDMs) (1 x 8 SiPm arrays). For each CC PMD, we have:

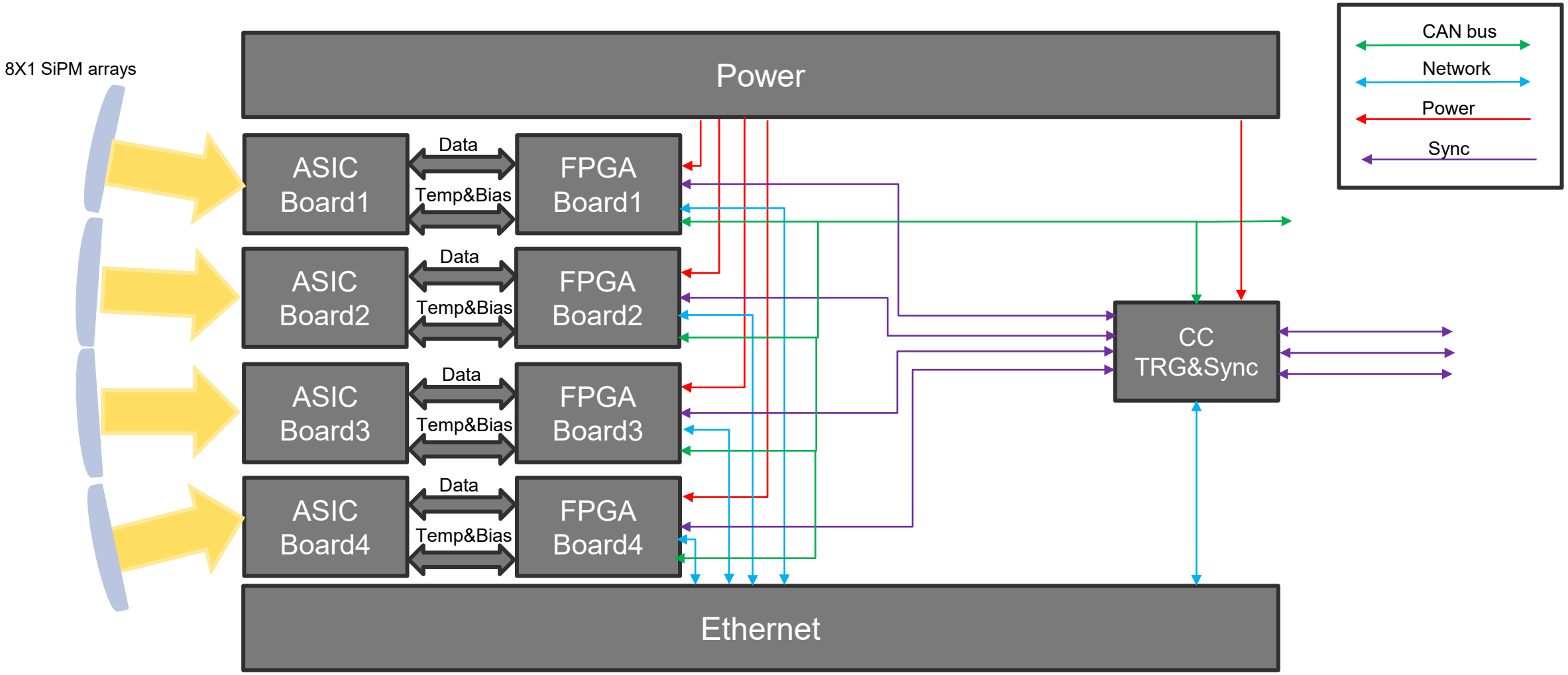
- **One ASIC board (hosting 8 MIZAR ASICs)**
- **One FPGA board (controlling 8 MIZAR ASICs)**





Status:
For both boards, the design hasn't started yet
The ASICs board could benefit from the ASICs board design developed for Terzina

CC CAMERA


8X1 SiPM arrays
Power
ASIC Board1
Data
Temp&Bias
FPGA Board1
ASIC Board2
Data
Temp&Bias
FPGA Board2
ASIC Board3
Data
Temp&Bias
FPGA Board3
ASIC Board4
Data
Temp&Bias
FPGA Board4
CC TRG&Sync
Ethernet
CAN bus
Network
Power
Sync

CC TRIGGER & SYNC BOARD

Status:
The design hasn't started yet, but it will benefit from the CLK board design created for SPB2

The four segments of the CC need to be synchronized by a master board (CC Trg&Sync). The CC Trg&Sync board manages and distributes:

- Synchronization signals
- Local and global trigger signals
- 1 PPS signal from GPS
- Reset signals
- Vetos and Busy signals needed to define the live and dead time of the full camera (or of each segment in case they are acquired independently (TBD))