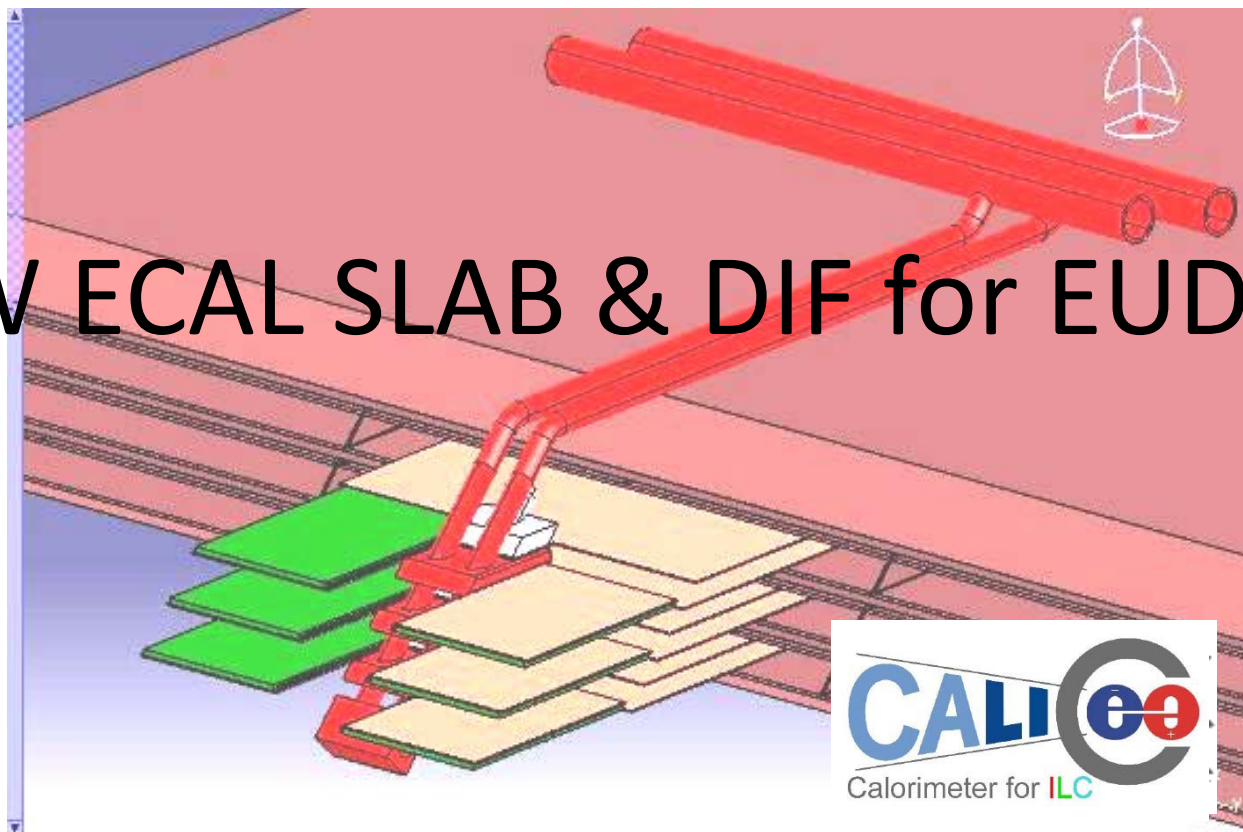


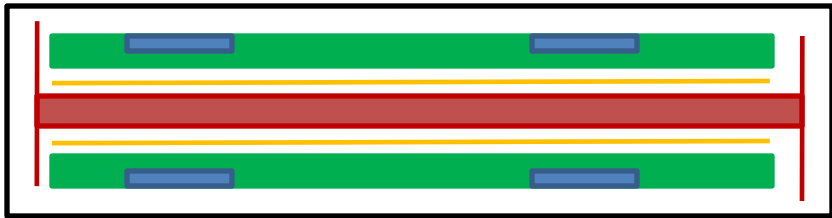
# Si-W ECAL SLAB & DIF for EUDET



# Front end board (FEV7)

- Some difficulties to find a manufacturer (see Stephane's talk)
  - Low thickness pcb
  - Groove for chips
  - bonding
- EUDET milestone approaching (June)
- Decision taken to:
  - Use packaged chips
  - Therefore forget the H structure for the firsts slabs
  - Design a FEV7b PCB with less constraints on thickness
- FEV7b should be ready by end of june
  - Agreement on Dif-asu interface needed (~ok)
  - Would enable real tests with dif, comic ray test bench, etc...

# FEV7b



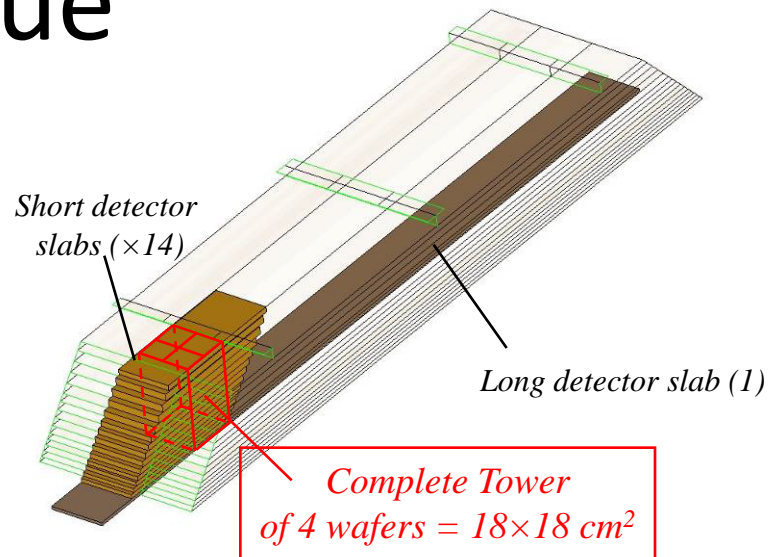
Then switch back to FEV7 as soon as a manufacturer will reply

# Initial proposal

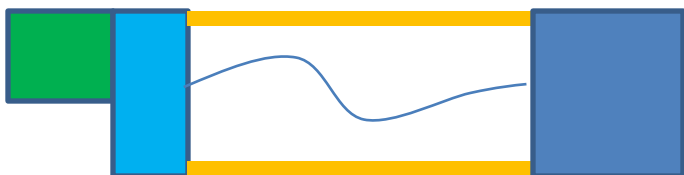
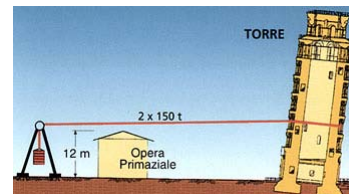
- E1) build a fake but realistic slab from existing elements (thermal pcbs, copper sheet, glass wafers, kapton)  
=> rehearsal for the assembly of the CALICE slab with FEV7  
\*> LAL mechanics
  
- E2) build one layer of the 18cm alveola structure  
\*> LLR mechanics
  
- E3) layout as soon as possible a 18 cm large FEV
  - o with no constraints on the thickness (the FEV7 layout is stopped waiting for the manufacturers feedback on feasibility essentially concerning the low thickness)
  - o with packaged chips
  - o realistic traces on pcb allowing signal integrity checks
  - o to be used with a fake H (a simple aluminum plate or equivalent with no carbon fibres) but **\*slided\*** into the E2) alveola layer\*> LAL omega, LAL electronics, LLR remi
  
- E4) preliminary assembly tools  
\*> LAL mechanics
  
- E5) minimal version of DIF (based on existing USB firmware?)  
\*> CALICE dif task force, LLR remi
  
- E\*) could most probably be done in // and ready early July

# Tower issue

The structure is cut with a 45° angle  
 If the short SLABs have the same length  
 (made from identical components), the  
 tower will be tilted compared to the long  
 SLAB !



If a perpendicular tower is required :  
 To the beam : rotate the detector (change the sampling ratio,  
 what about other detectors?)  
 To the long SLAB : issue!



# Tower

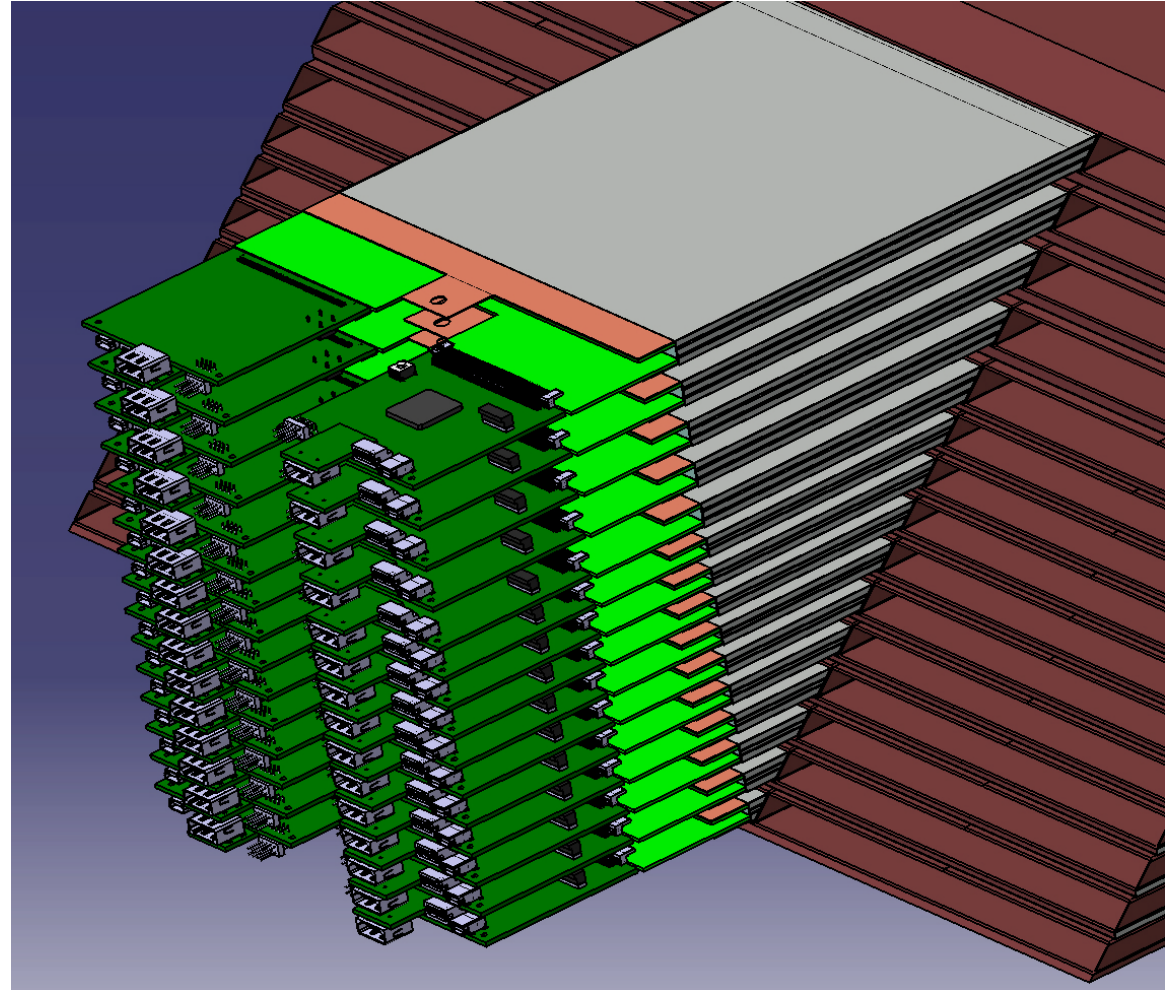
- Calice week at Manchester
  - Tilted tower is not an issue
- Last week
  - “we need a perpendicular tower”
  - Combined test beam with DHCAL

# Perpendicular tower

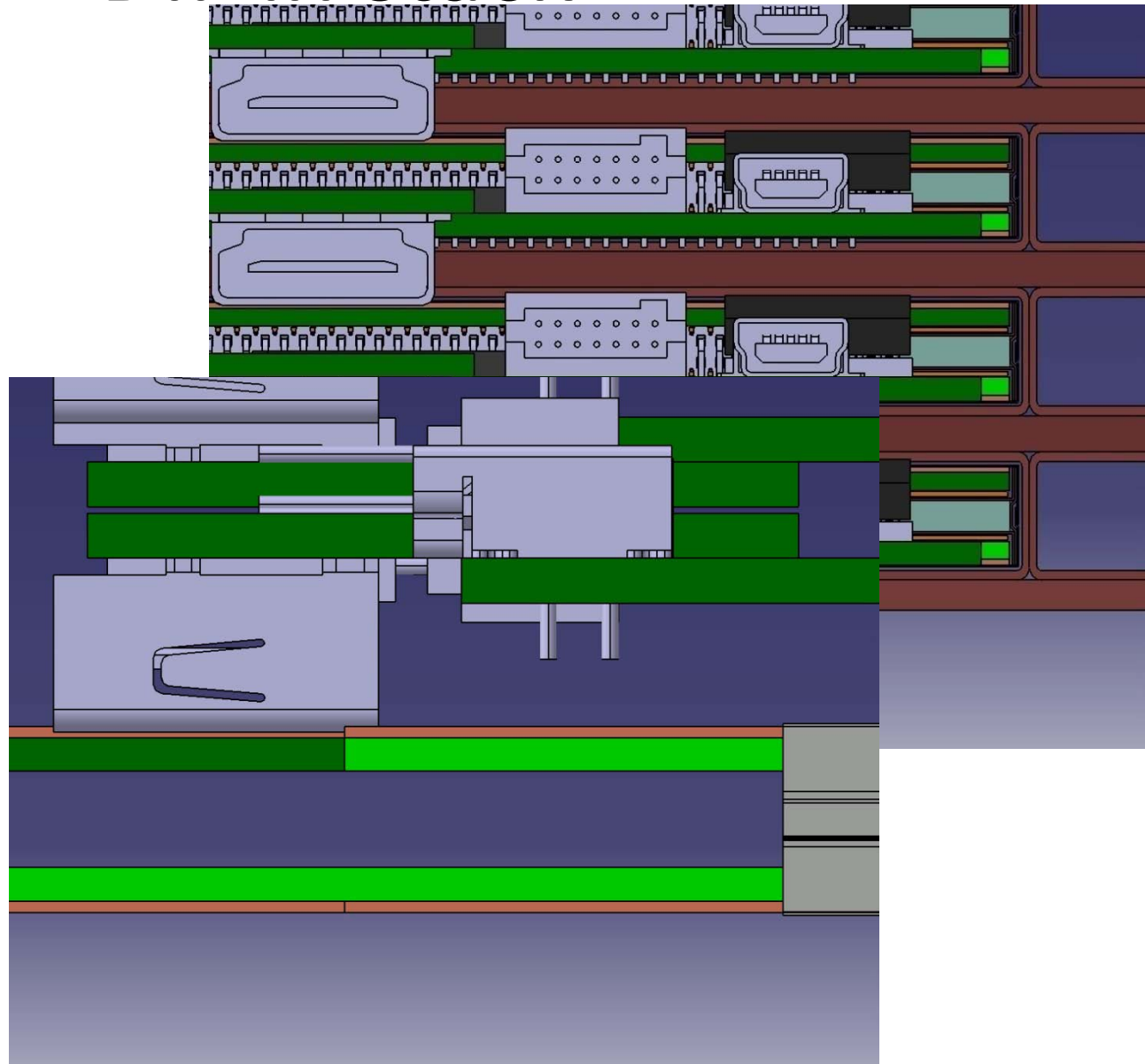
Adapter board is lengthened  
by 1 ASU length

DIF are put in stack well  
outside the structure

Need to redesign the cooling  
pipe



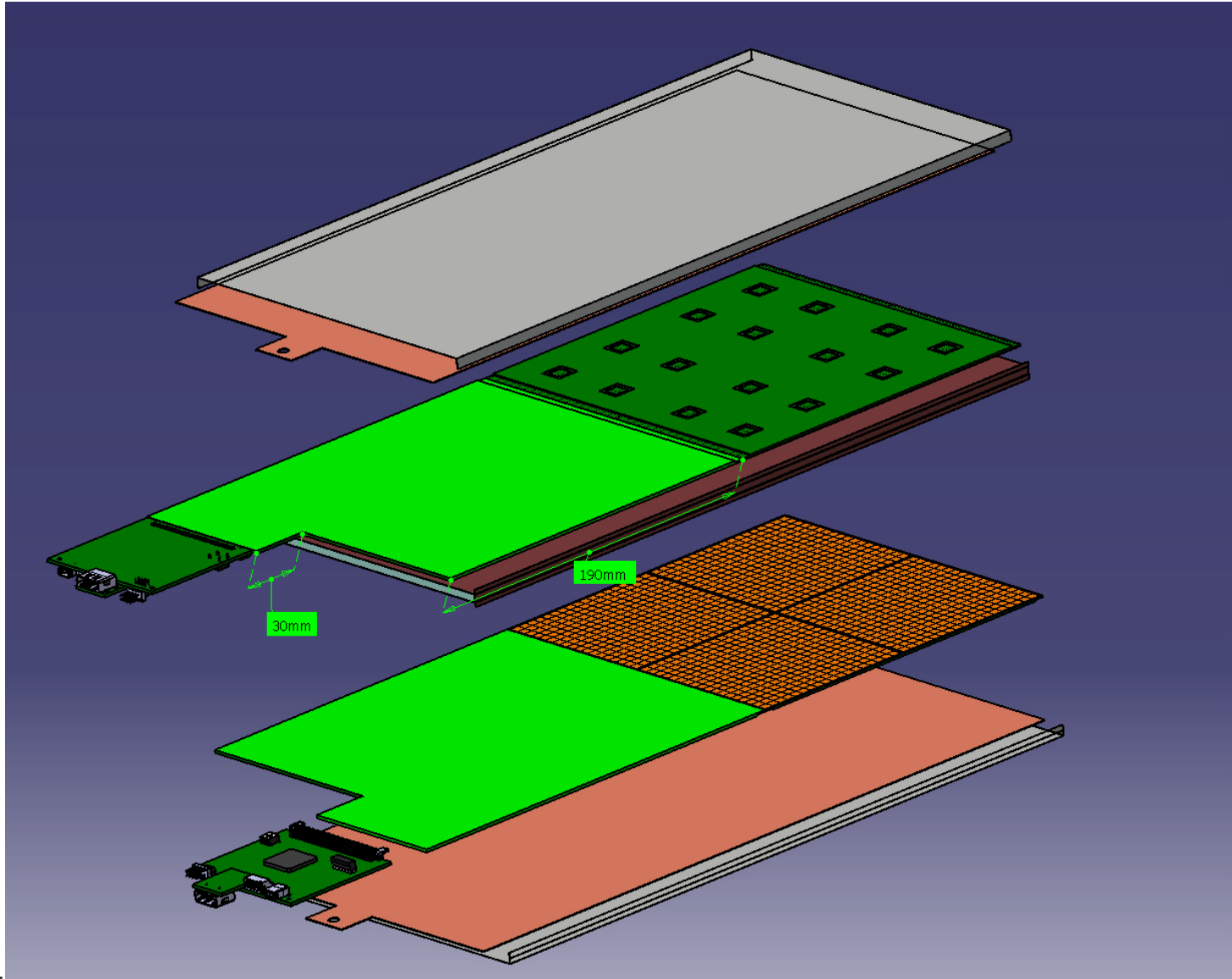
# DIF in stack



0.2 mm of covering

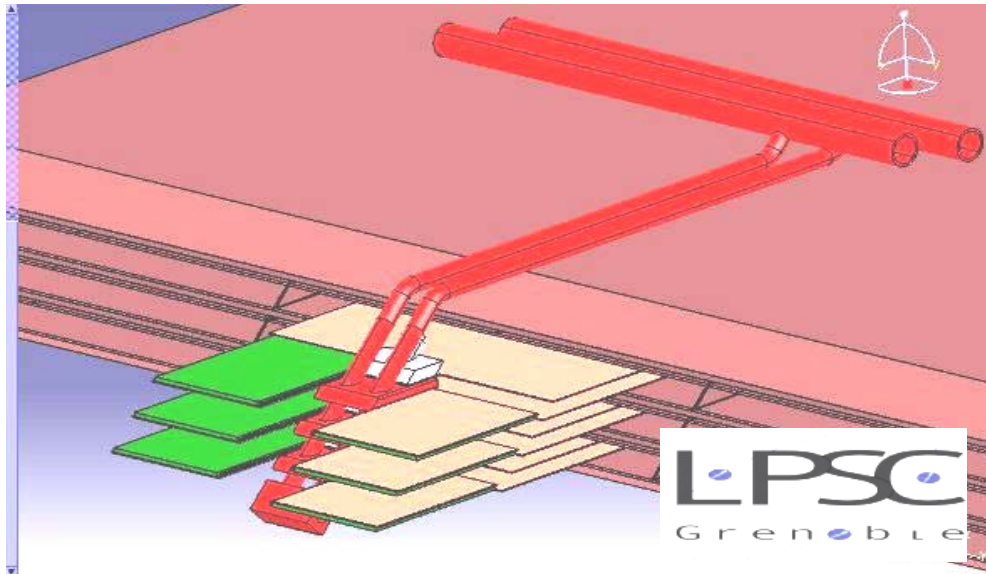


# Short slab



# tower

- No decision taken yet
- Manufacturing of cooling pipe is stopped
- Design of adapter board is delayed



# DIF electronics

- See Bart's talk
- At LLR :
  - Try to enable the DAQ chain from SW to DIF
  - Have a DIF from Bart
  - Will merge with existing USB test benches
  - HDL code development & simulation