AX-PET DAQ/Analysis meeting
17/2/10

Present: A.Rudge, P.Weilhammer, C.Casella, P.Solevi (Skype)

Agenda:
Plan / Mechanics / Actions taken

Plan (outcome from this and the past meeting)

Phase 1 :

- Modules setup untouched (modules on the marble table, all existing connectivity) with the rotating motor mounted between the 2 modules (at the place of the linear moving station)
- New mechanics needed : Support for the motor, support for the source(s), base plate for the sources on top of the motor
- Measurements on this setup, according to a plan of measurements to be sent by the Valencia team by the end of the week
- In parallel with the measurements, work in the mechanics needed for the gantry setup (e.g. electronics cards support, light shield, linear-angular movement)

Phase 2 :

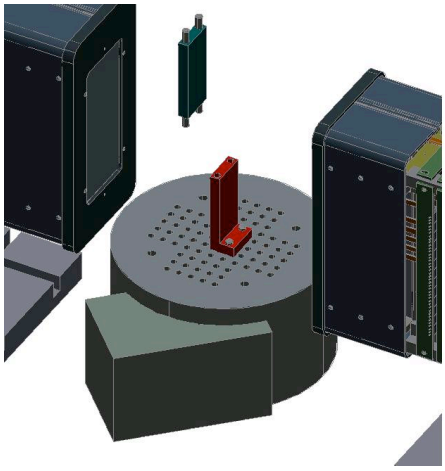
- Move to the gantry setup (in back to back position).
- This implies the following major changes in the mechanics / connectivity:
    a. modules mounted on the gantry , d=15 cm
    b. light shield
    c. new electronics supports
    d. motor + source support + base plate moved to gantry (can require adjustments in heights for the source supports)
- Measurements (according to plan from Valencia)

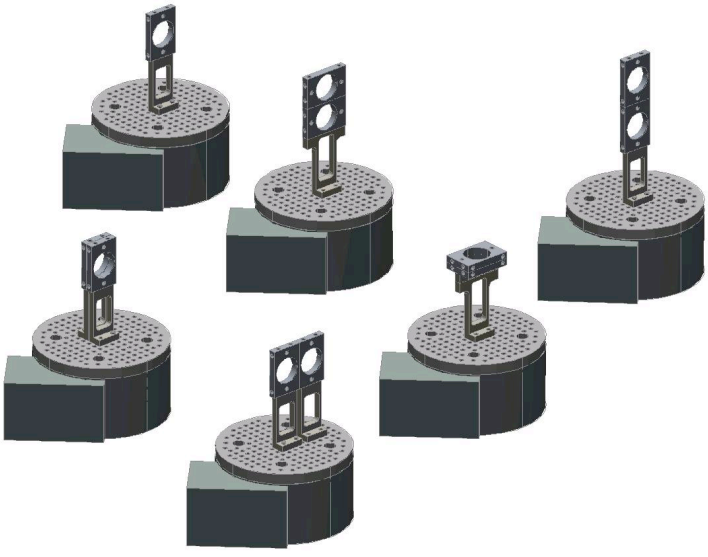
Phase 3 :

- Gantry setup, in all possible configurations (rotating 2nd module)
- Measurements (according to plan from Valencia)

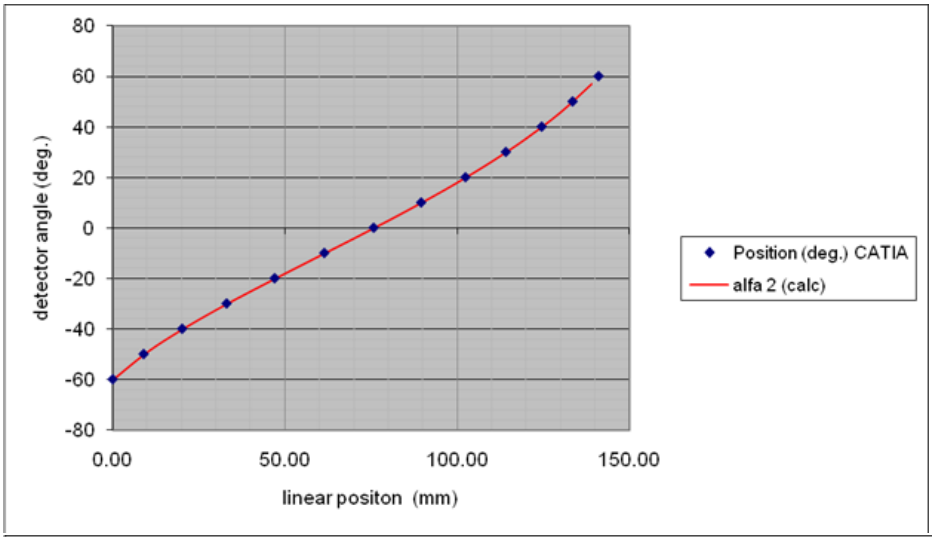
Actions taken (this week)

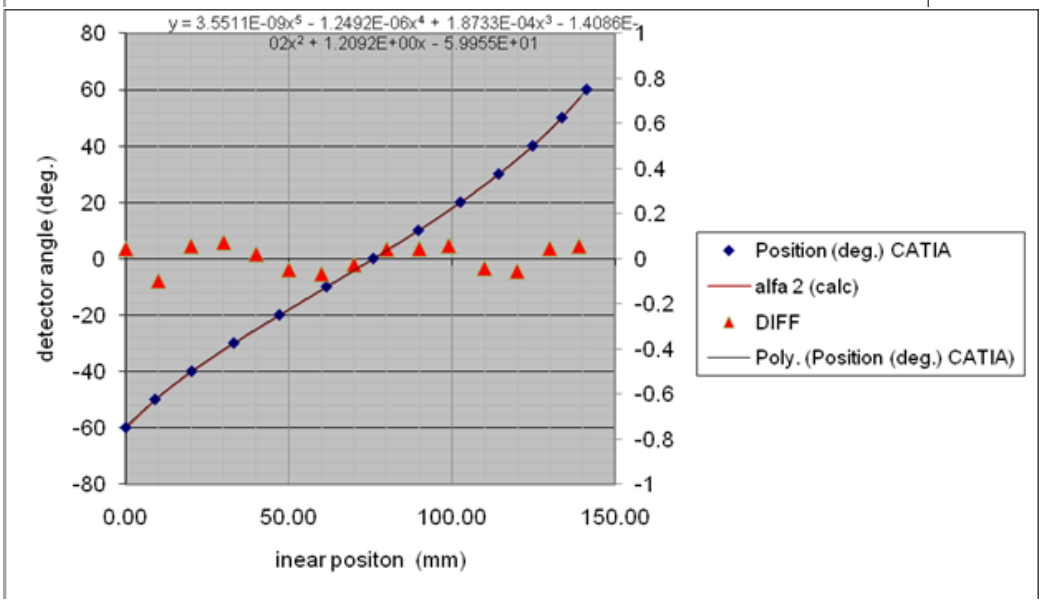
- support for the motor btw the 2 modules: done
- DAQ with motor tested. “Fake short scan”, 30 sec/run, at 4 different motor positions, internal trigger for the modules: successful
- support for the sources / base plate for the sources: designed (see fig) and in production





- Correspondence btw linear and angular position (CJ and Didier): Extracted by CATIA (blu points), represented by rather complicated analytical calculation (red line), well fitted by pol5 function (black line), with a deviation data/fit within +/- 0.1 deg (red triangles)





Question raised / open points:

- We believe we need an external system to find the back to back positioning of the modules, independently on the good functioning of the motor (we know it could loose the reference). For example, a mechanical reference to the origin could do it.
  a. Possibility to use the microswitch to block the motor in this origin?
  b. Attach a LED to the microswitch and block the motor manually?
  c. Integrate the output of the microswitch into LabVIEW?

- To measure random accidentals, we will need a delayed trigger window: a new NIM delay unit is available from AR to set delays of 200, 400, 600 ns (relevant question: which will be the final rate with 18F?)

- Dead time in the DAQ: try to estimate it and try to decouple the dead time coming from the VME to the one of the VATA chip