

SC software: status and prospects

SC: quick reminder

- ➔ The Margarita detector (StartCounter, SC in the following) will provide:
 - Time reference for ToF calculations
 - #of ions traversing the detector
- ➔ From DAQ we'll need to handle:
 - 8 'histograms' of 1000 bins each, with 200ps resolution (waveforms)
 - The ToF will be 'measured' using software methods.
 - 8 times (one for each channel) and 8 charges (integral of each histo) will be stored.
 - 2 additional numbers will be made available to the 'local and global reconstruction': ToF and #ions. More will be added if needed ...

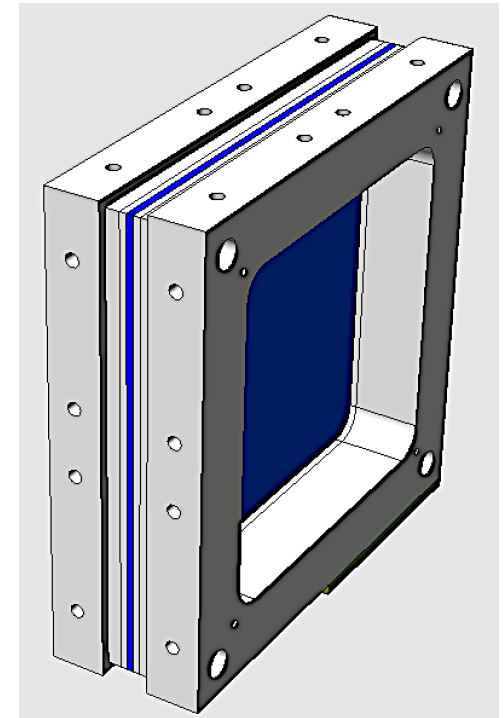
Software stat: overall

- The SC project now lives under the TAIR folder/class (IR stands for Interaction Region).
- CopyPaste from FIRST code, will need an update.
 - ToDo: DAQ now assumes a VME input with 4 pairs of numbers and instead will proceed with the analysis of 8 histograms. DAQ cabling will be handled by the TAIRparMap class. If needed mylar windows and frame can be added.
 - Simulation: for now the reference time is provided by the 'first' hit in the SC. No info on the charge is propagated. Can update that if needed (pointless as in MC for now we have at most 1 ion per event). Material: used EJ-232 for now (EJ-204 is the real deal).
 - Geometry: the positioning of the SC is needed only in global reconstruction (no need for 'local' reconstruction to know or calibrate the position). No calibration is foreseen nor local alignment.

Geometry

→ RCC stc 0.0 0.0 -29. 0.0 0.0 0.025000
2.600000

- Set by: TAIRparGeo, in printBodies.
- Will resurrect the ‘setting’ from the geo ascii file as soon as a general consensus on how to set the geometry is reached [discussion later]



Data class

→ Pretty straightforward

```
class TAIRrawHit : public TObject {
public:
    TAIRrawHit();
    TAIRrawHit(int typ, int cha, double charge, double time);
    virtual ~TAIRrawHit();

    void      SetData(Int_t type, Int_t id, Double_t time, Double_t charge);
    Double_t  Time() const;
    Double_t  Charge() const;
    Int_t     ChID() const;
    Int_t     Type() const;

    void      SetTime(double time);
    void      SetCharge(double charge);
    void      SetChID(int id); //SC channel ID
    void      SetType(int typ); //meaningless for now.

    ClassDef(TAIRrawHit,1)

private:
    Double_t ir_time;
    Double_t ir_chg;
    Int_t ir_typ;
    Int_t ir_chid;
};

TAIRrawHit*      Hit(Int_t i_ind);
const TAIRrawHit* Hit(Int_t i_ind) const;

void      SetTrigTime(double time);
Double_t  TrigTime() const;

Int_t     NTdc() const;
Int_t     NAdc() const;
Int_t     NDrop() const;

public:
    Int_t     nirhit;           //
    TClonesArray* hir;         // hits

private:
    double    trg_time;        //SC trigger time
    Int_t     fiNAdc;          //
    Int_t     fiNTdc;          //
    Int_t     fiNDrop;         //
```