

Minutes of the ILD inner region integration meeting at LAL Orsay

From 06/30 to 07/01

Attendees: A. Charpy, D. Vincent (LPHNE)
R. De Masi, J. Beaudot, M. Winter (IPHC Strasbourg)
A. Ruiz, D. Moya (IFCA)
C. Clerc, H. Videau (LLR)
M. Joré, R. Poeschl, F. Richard (LAL Orsay)
Ivan Vila Alvarez, Marcel Vos (IFCA – remotely with Webex)

Distribution list: Attendees + Cesar Blanch Gutierrez, Duarte, Gamba, Didier Imbault, Mereu, P. Ghislain, P. Cornebise, M. Anduze

Agenda of the meeting: <http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4675>

The aims of this meeting were to:

- Sketch first solution for the inner region integration
- Define the material budget to be implemented in the simulation model

1. Vertex

The supporting structure in Beryllium, the cryostat including the Aluminum Faraday cage and the kapton cables are already implemented in Mokka.

The current mechanical model in CATIA must be updated with the detailed description implemented in Mokka.

The cooling depends on the sensor technology (Air or CO2 cooling).

The weight is about 300g.

It would be supported on the beam tube. The mechanical interface needs to be studied.

2. SIT alternative from IFCA

There was one alternative solution shown by David Moya.

The cooling has not been studied.

One alternative is to put the inner layer into the VTX cryostat.

The design must evolve to a solution without any cracks.

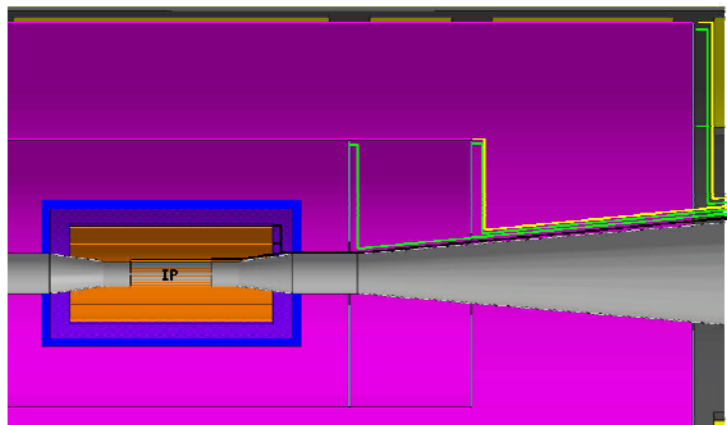
3. FTD 3->7

The cooling must be studied but Air Flow could be sufficient.

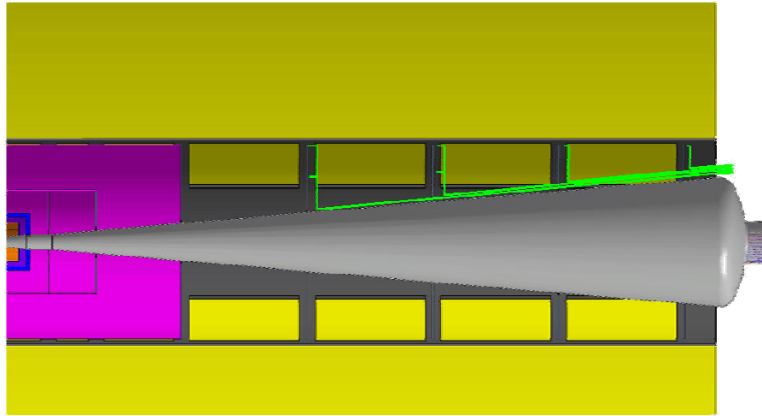
The weight is about 500g for the biggest disk.

4. Integration of the inner region

People agreed on the proposed services scheme:



VTX, SIT, FTD1/2/3 services



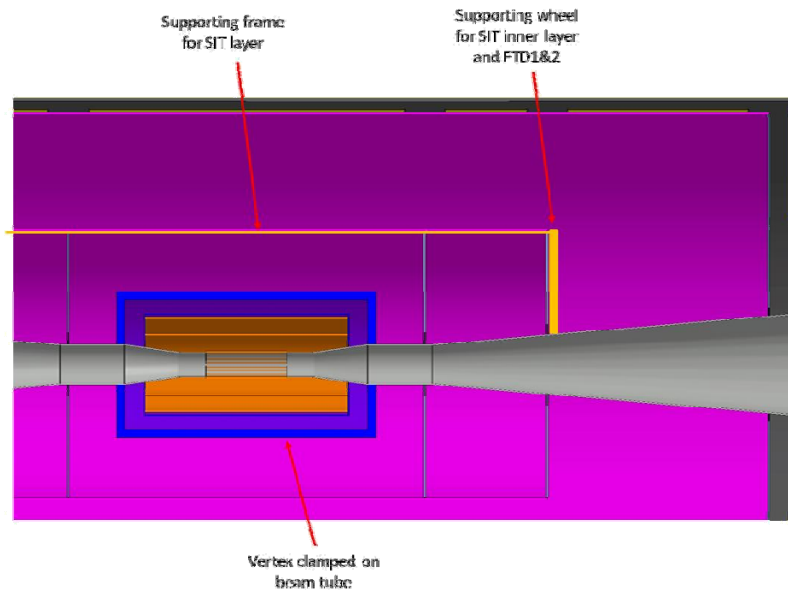
FTD 4/5/6/7 services

The first concept has been approved by sub detectors groups:

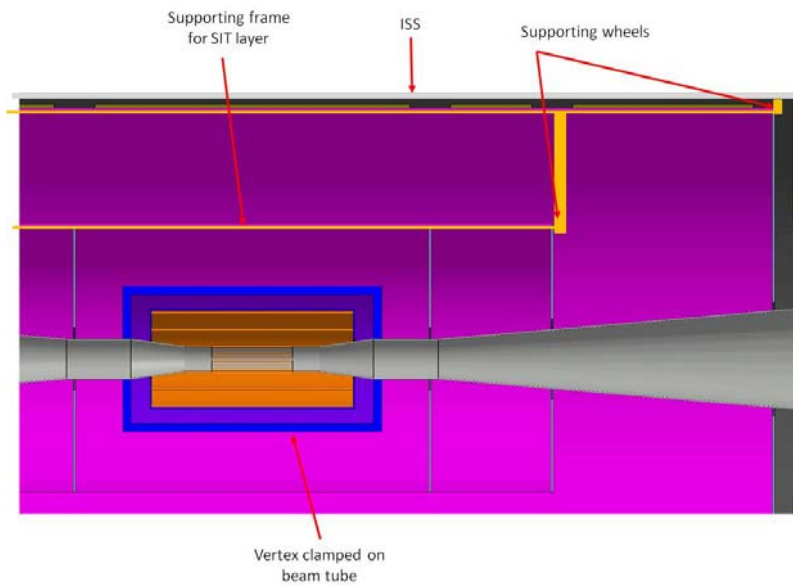
- VTX clamped on beam pipe
- FTD 3->7, beam pipe and SIT outer layer on Inner Support Structure
- SIT layers are assembled on an end cap wheel

There is 2 kind of solution for the SIT inner layer and the 2 first disks of FTD :

- Supporting on the beam pipe



- Supporting on the Inner Support Structure



5. List of items to be studied

- Heat power and cooling in more details
- More details on services dimensions
- Stability of each components
- Mechanical design of the VTX detector (no resource available for the moment)
- Design of FTD1&2
- Mechanical design of the supporting structure (MJ)
- Interfaces with TPC (MJ)

The next meeting is planned during the CERN workshop in end October. The idea is to have some data concerning the above items.

In order to prepare this meeting, it is mandatory to discuss with the people involved in the baseline solution for the SIT (P. Mereu and al.) and the design of the 2 first disks of FTD. A webex meeting might be organized during September.