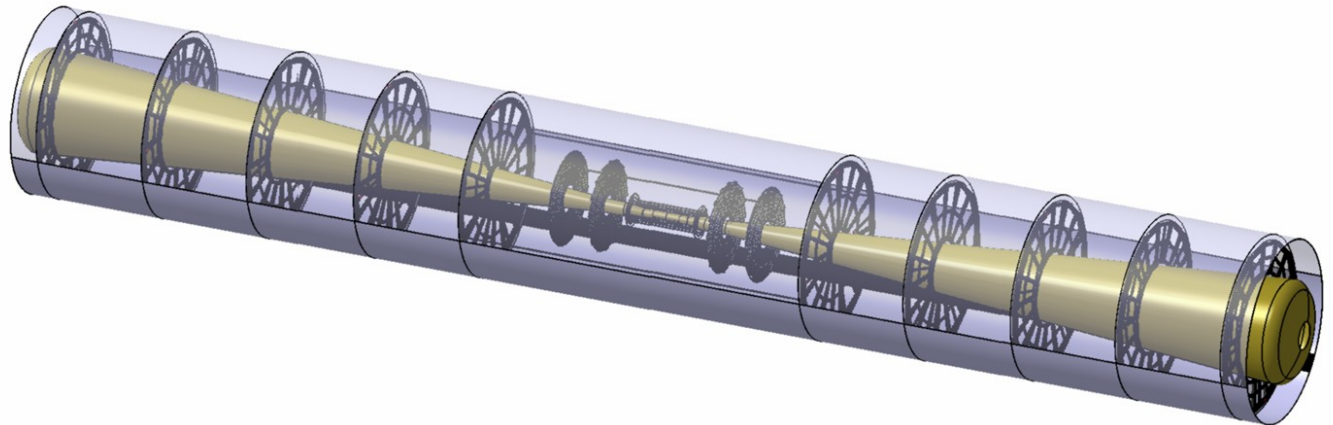# Strip FTD Readiness for the DBD

5th ILD Workshop
Orsay, 23rd -25th May 2011

D. Moya, J. Duarte, **I. Vila**, A. Ruiz - IFCA (CSIC-UC)
F. Arteche, C. Esteban - ITA
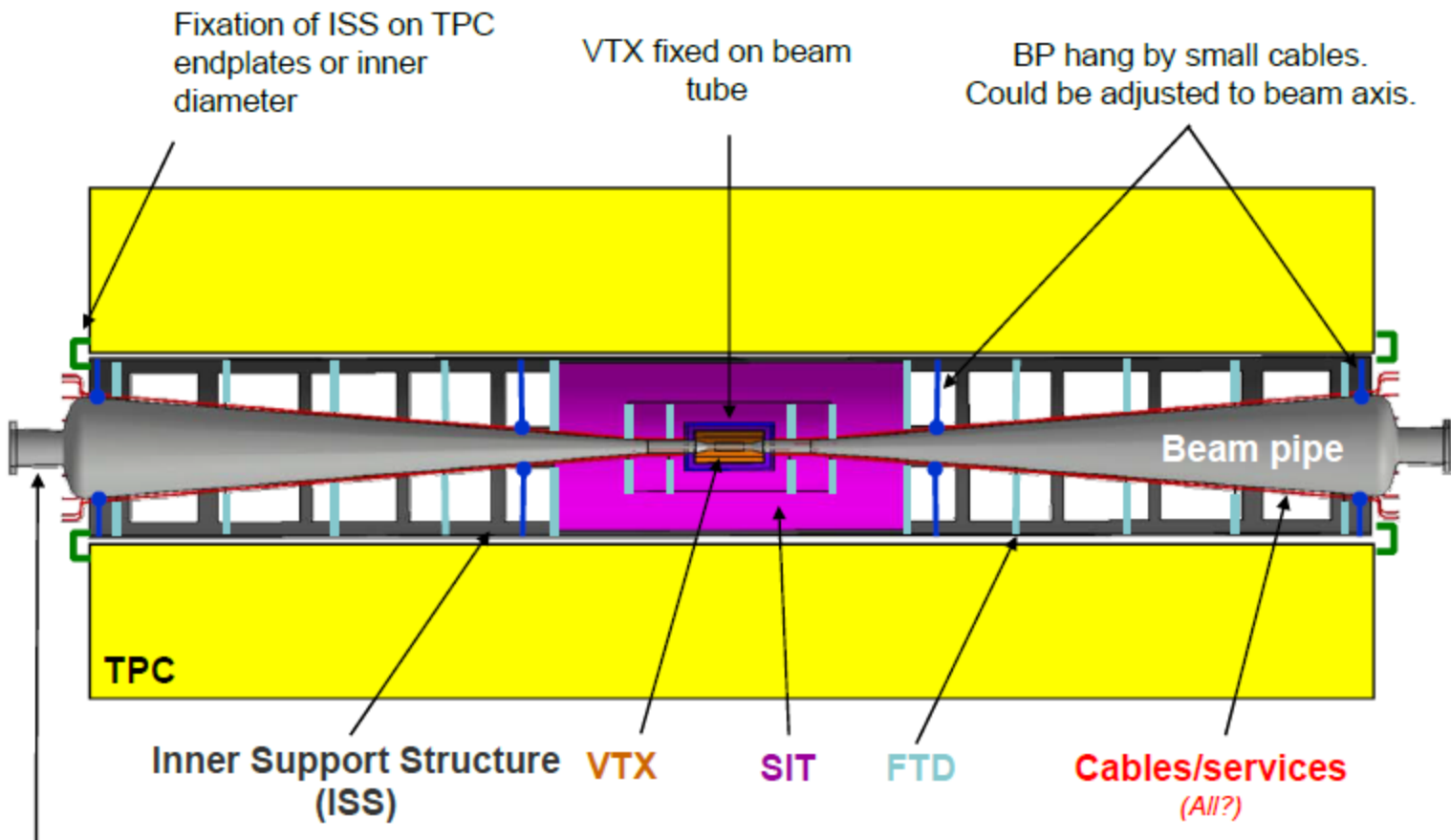
_Outline

— FTD detector Integration.

— Detailed design FTD (disk 3-7):

  — Mechanics

  — Power distribution system.
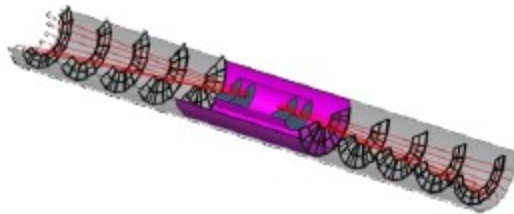
— Software modeling.

_Detector Integration
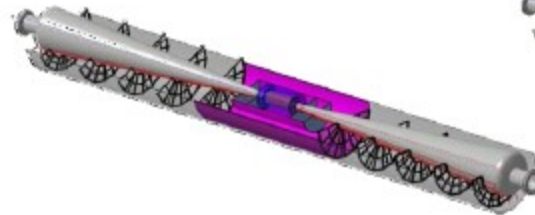
— Integration of inner detectors: critical item.

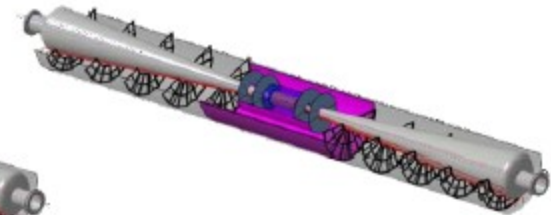Fixation of ISS on TPC endplates or inner diameter

VTX fixed on beam tube

BP hang by small cables. Could be adjusted to beam axis.

Beam pipe

TPC

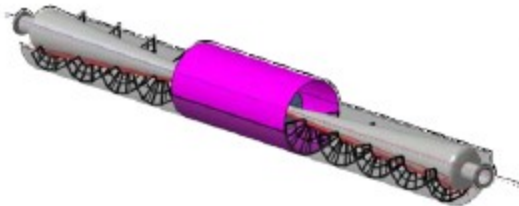Inner Support Structure (ISS) VTX SIT FTD Cables/services (All?)
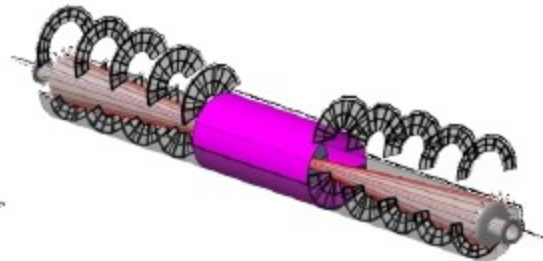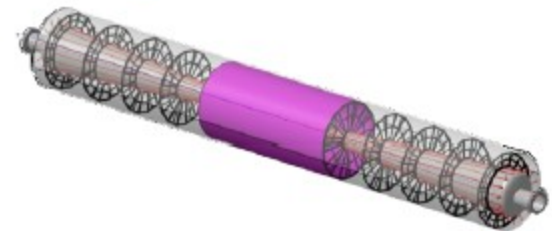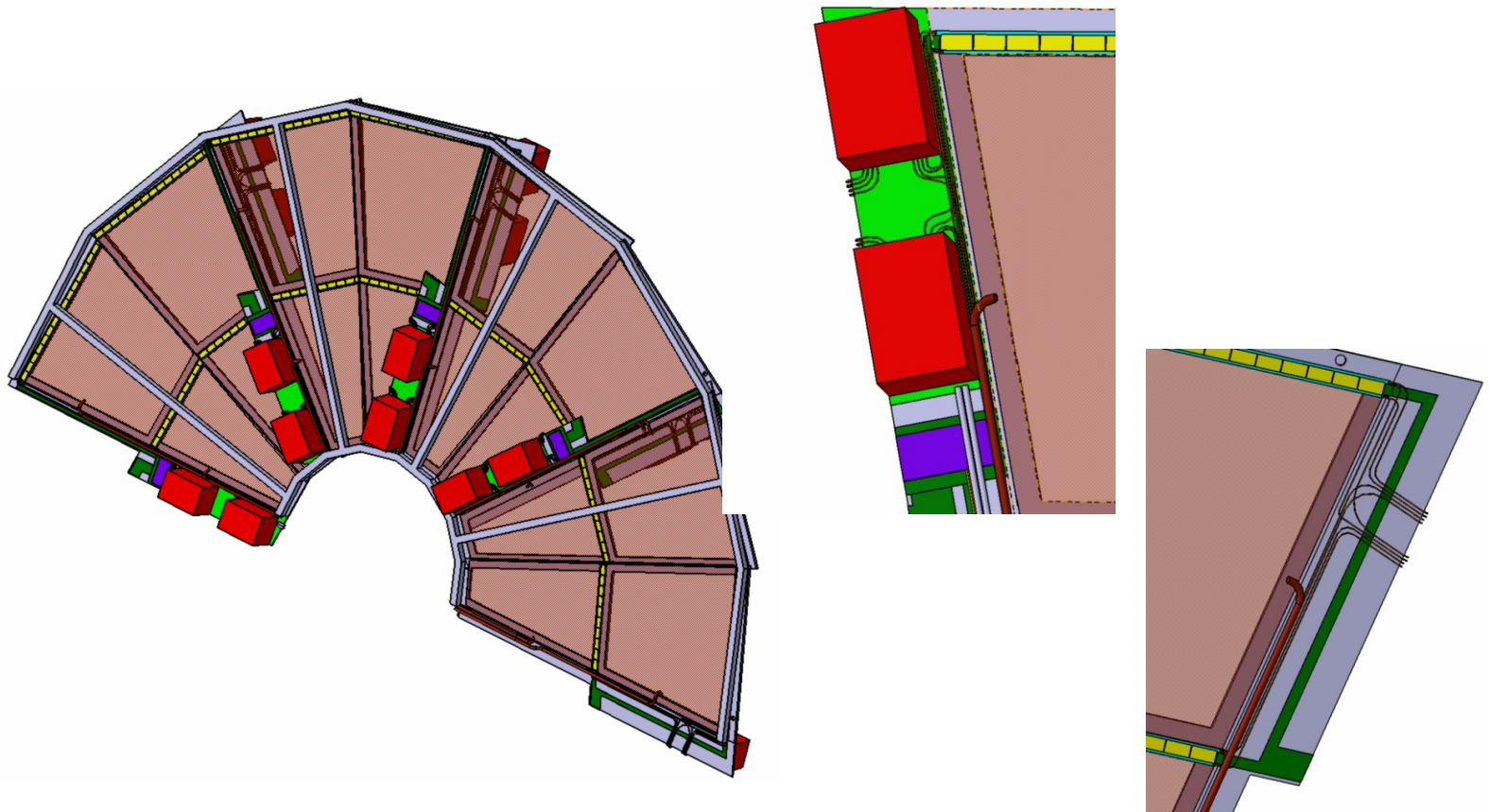
_Assembly procedure defined

_Detailed mechanical designs

– Including power distribution system, r/o electronics and cables and optical links.

_Power distribution system

— Currents consumption of Strip – FTD

FTD	MIDDLE PITCH									
	FTD3		FTD4		FTD5		FTD6		FTD7	
	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT
Nº STRIPS PER Module (2sensors)	4096	2560	4096	2560	4608	3072	4608	3584	4608	3584
Chips per petal	52		52		60		64		64	
Optical links per petal	1		1		1		1		1	
I2.5 (A) per Petal	2.56		2.56		2.8		2.92		2.92	
I1.25 (A) per Petal	1.18		1.18		1.34		1.42		1.42	
I per petal	3.74		3.74		4.14		4.34		4.34	
I per disk	59.84		59.84		66.24		69.44		69.44	
TOTAL Mstrip- FTD Current	**649 A**									

_Power supply topology

Software modeling of strip FTD
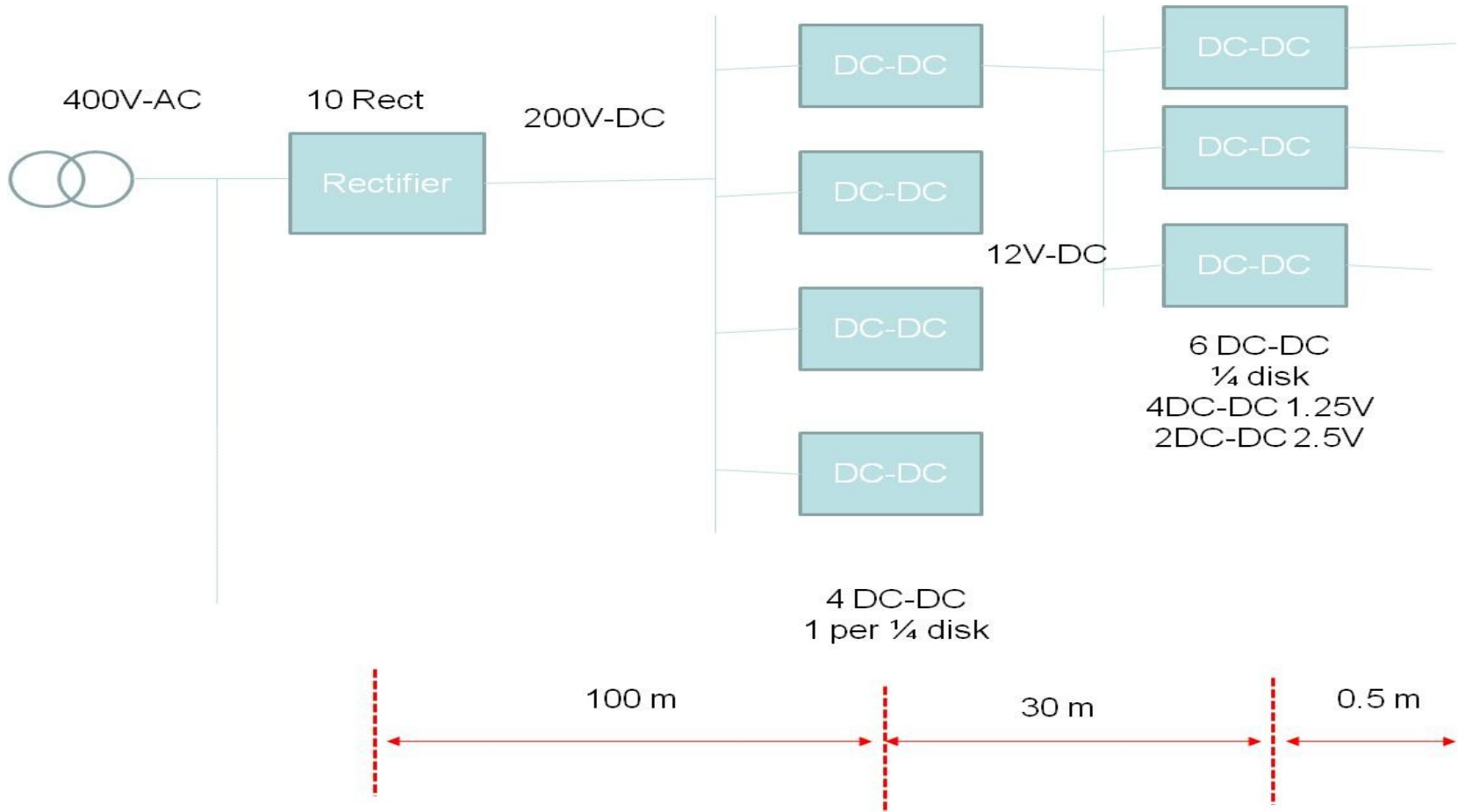
— Implementation of the detailed detector geometry including cables and electronics in simulation.

— Cooling (air-based cooling) it is not yet decided.

— Digitization code not developed yet.

Summary

- Significant improvement in terms of realistic hardware description for the strip FTD.

- BUT simulation code still lacking a working digitizer (short of manpower).

- Outside the scope of this talk other inner trackers pending issues:
  - FTD disk 1 & 2 (pixels)
  - SIT ?