

Software Update

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Outline (as per Flemming's email)

- Progress and issues
- Milestone status
- Operations support

Prioritized list of activities

Items in RED were updated since last meeting

- Survey + related work
- **HFT Geometry model (rebuild)**
- 'online' data format/slow controls/online QA/Db considerations
- Slow/Fast PXL response simulation
- **Prototype tracking**
- **Conventions (naming revisited)**
- -----
- Evaluation/Analysis framework
- -----
- Kalman fitter for decays
- Tests of new/old tracker
- **Hit reconstruction**
- Event vertex finders

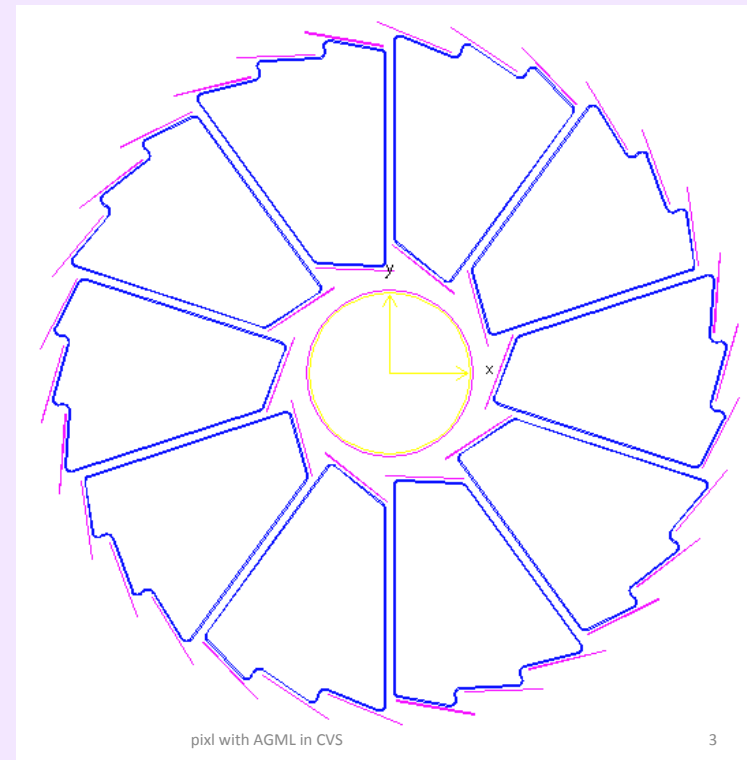
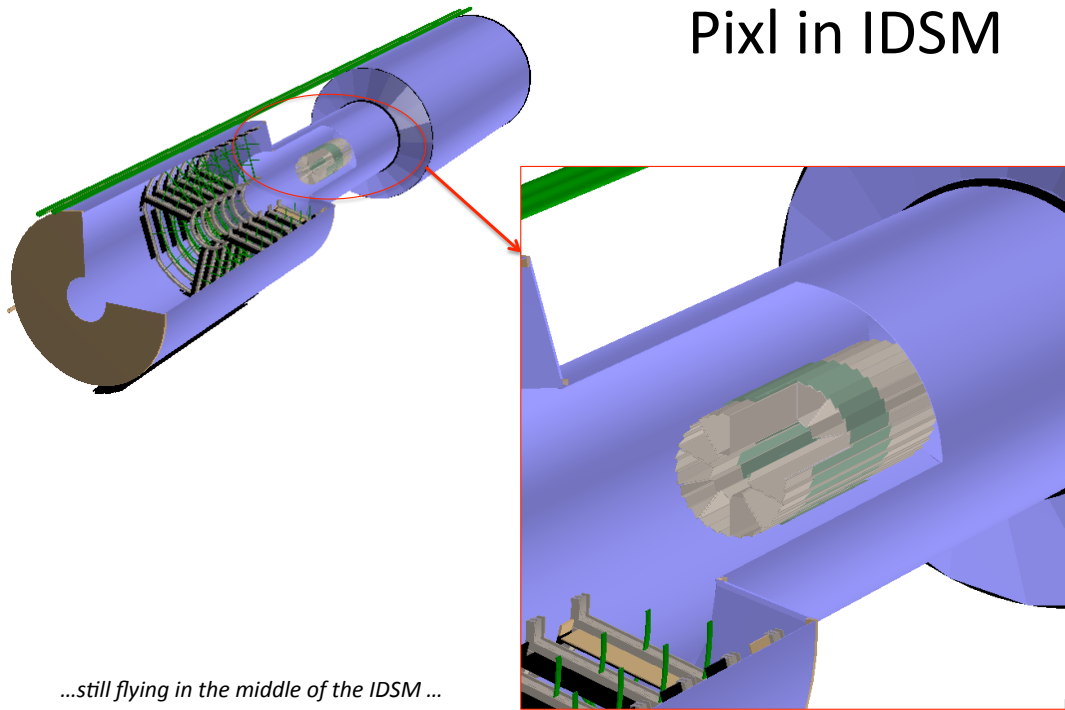
CMM measurements + related work for PXL fixture and prototype sectors

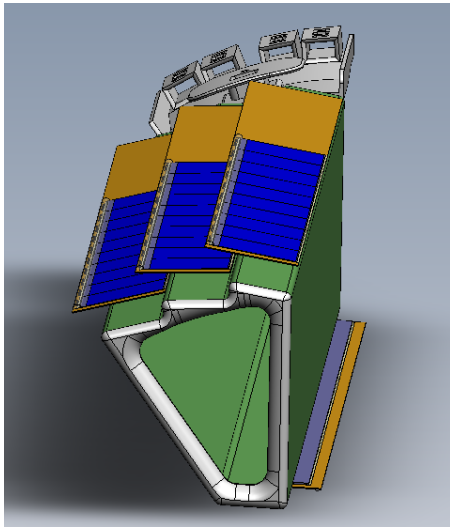
- In view of Leo's schedule for real prototype sector building (~october 2012)
- Requires pre-Prototype sector to be build
 - I assume we can start immediately after this is done
 - Bob needs to have model in place (?)
- It is getting tight
 - Review in April 2012

- **HFT Geometry model update**

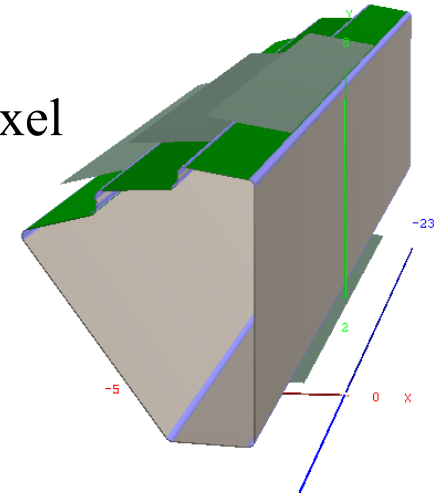
- **Good progress (Flemming/Jonathan/Jason)**
- **Created Y2013 test geometry in CVS (full HFT detector)**

Pixl in IDSM

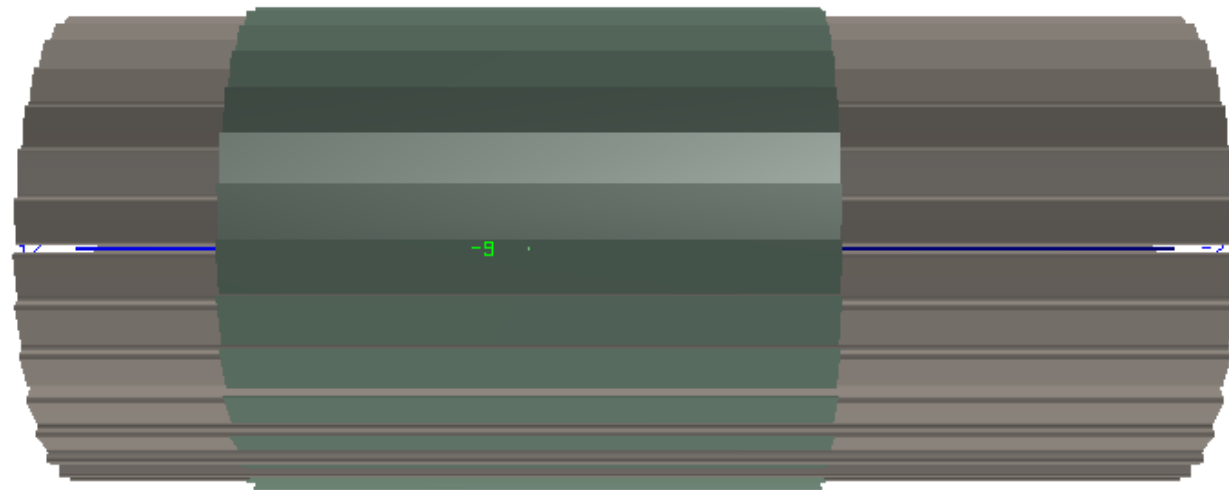




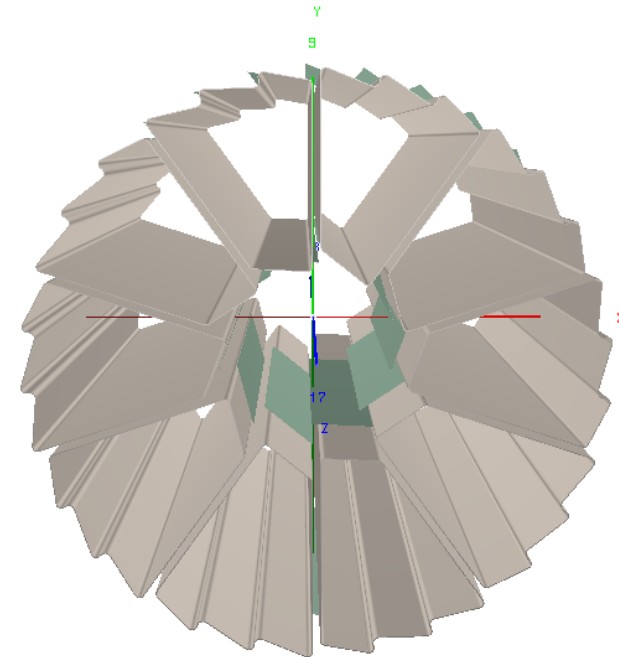
Using Flemming's tool to translate SolidWork Model to a "root" geometry, the full pixel geometry is implemented



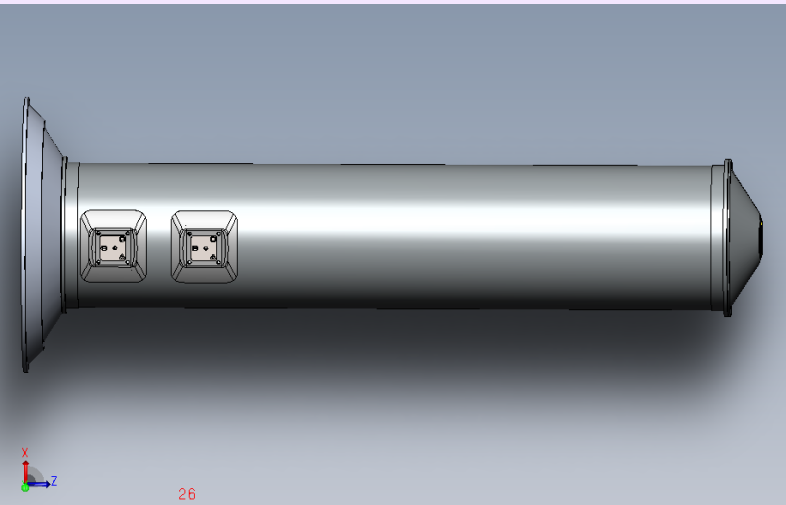
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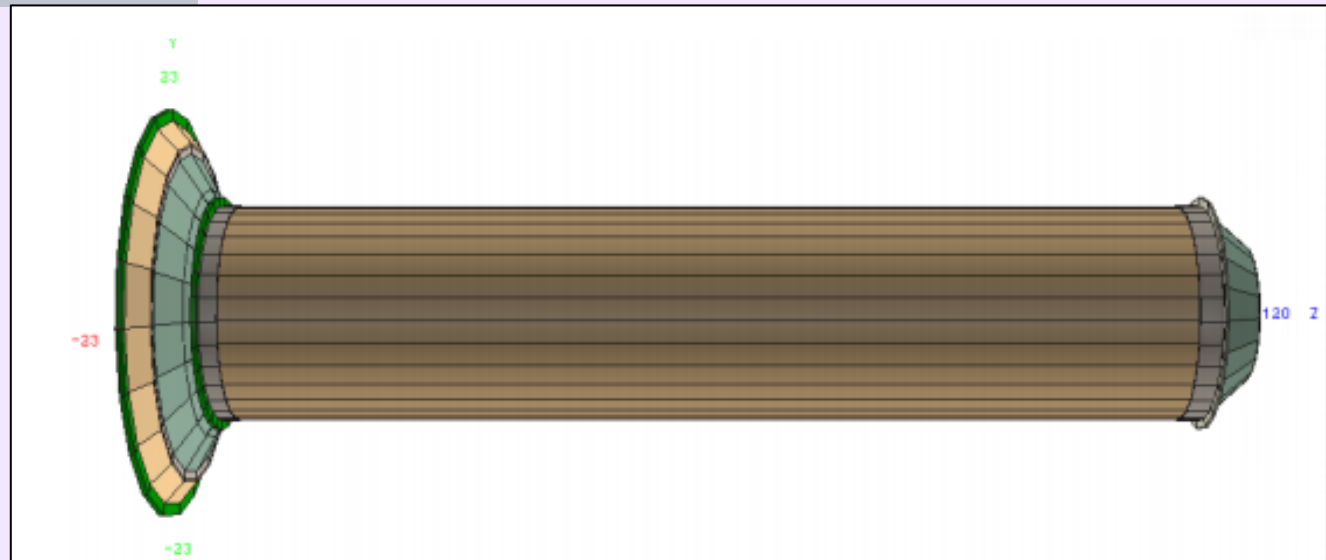
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Pixel Support Tube

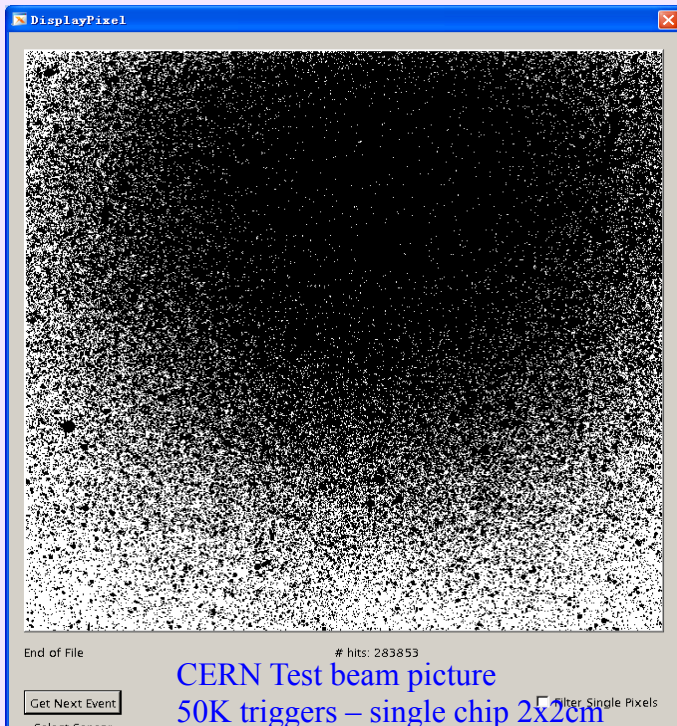


- The same is being done for the PST



- The pixel detector has been implemented in the new geometry software :
 - The pixel is part of the IDSM
 - After correct GEANT hits decoding, STAR software reconstruction chain with this new geometry is possible
 - To check : ladder numbering
- The PST geometry is about to be finalized (clean-up)
- Next steps :
 - Implement the PST within the IDSM
 - Put the correct material for the PST structure etc
 - Rerun simulations

- Slow/Fast PXL response simulation
 - *IHPC people work on:*
 - CERN data (inclined incidence) can fix most parameters
 - Other issues
 - They need/asked for some input from us
 - We had some discussion but nothing definite as answers to them

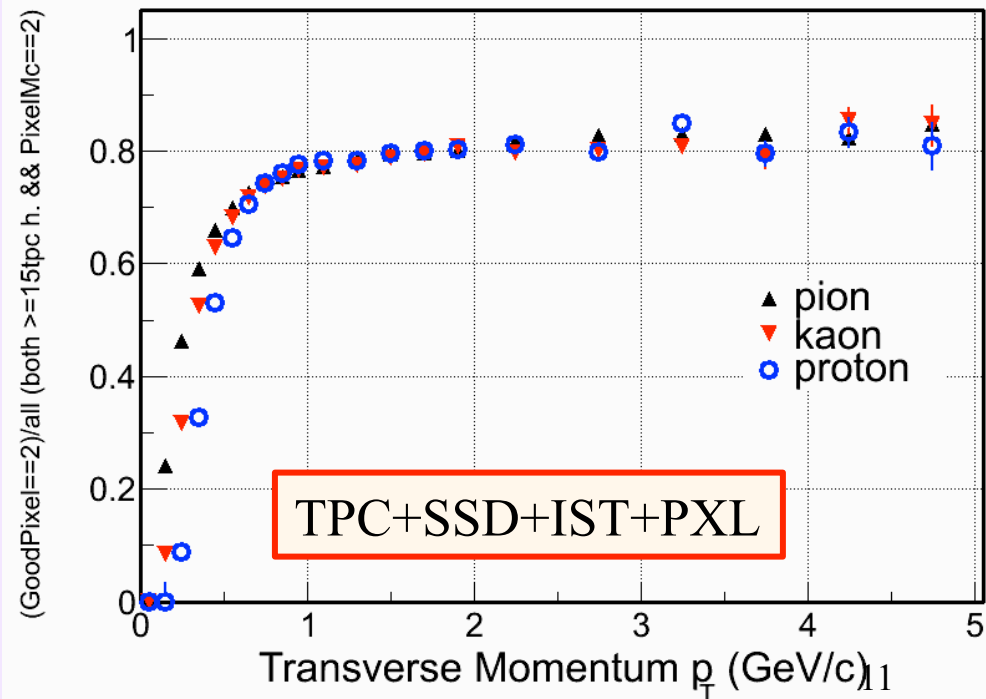
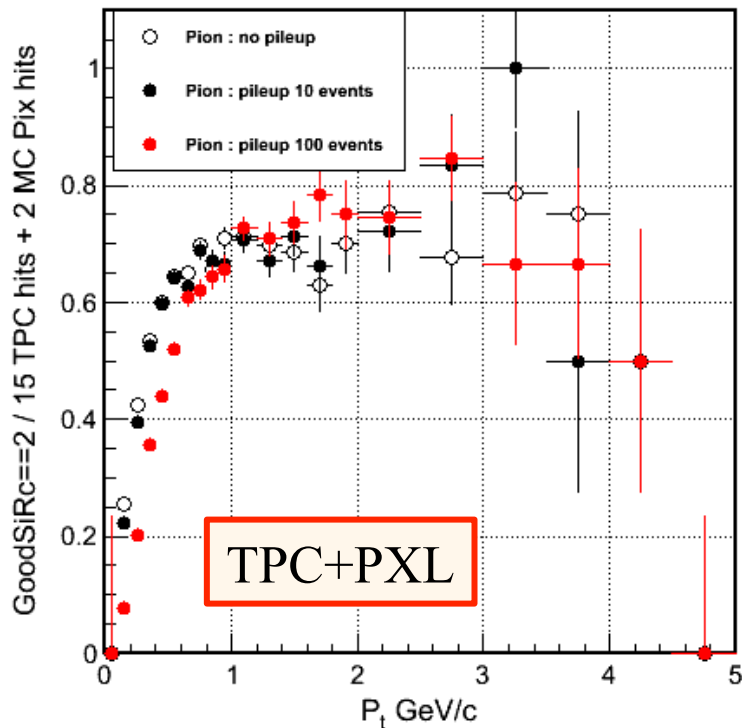


- **Tracking with TPC+PXL prototype?**
 - Good progress (Jonathan et al)
 - We are done with initial simulations
 - We need to have # of events estimates plus 'reality checks'

Prioritized list of Tasks for next year

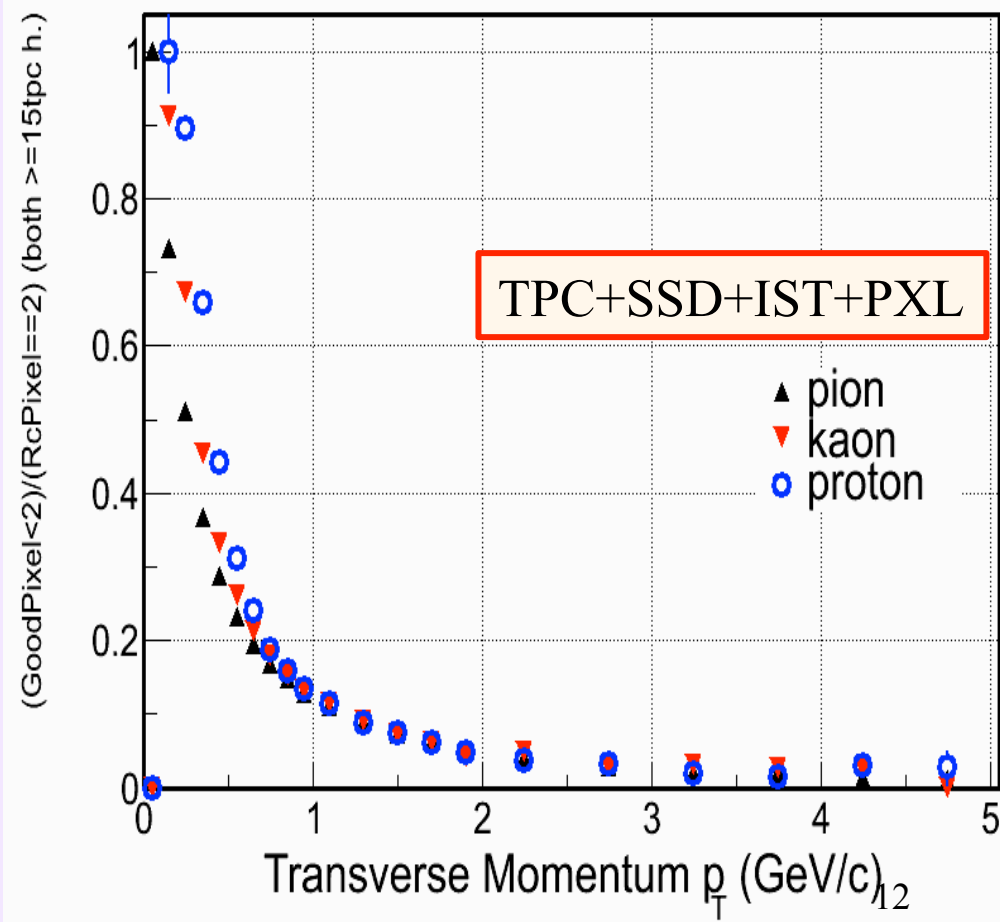
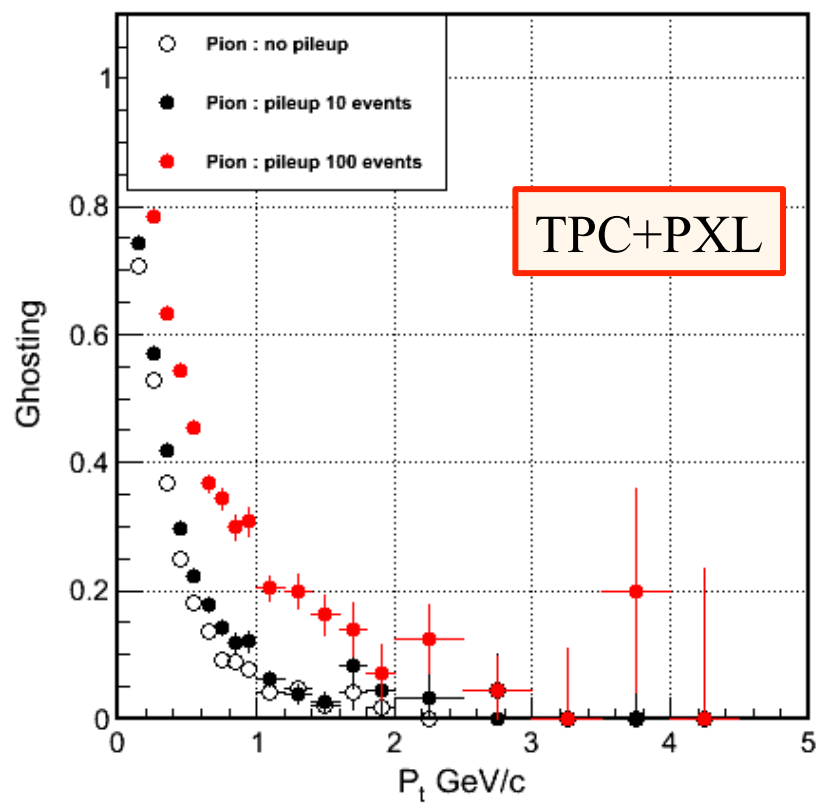
- **Tracking with TPC+PXL prototype?**
 - Good tracking efficiency (but no pile-up yet)

Hijing – WITH Pile-up



- Tracking with TPC+PXL prototype?
 - Low Ghosting

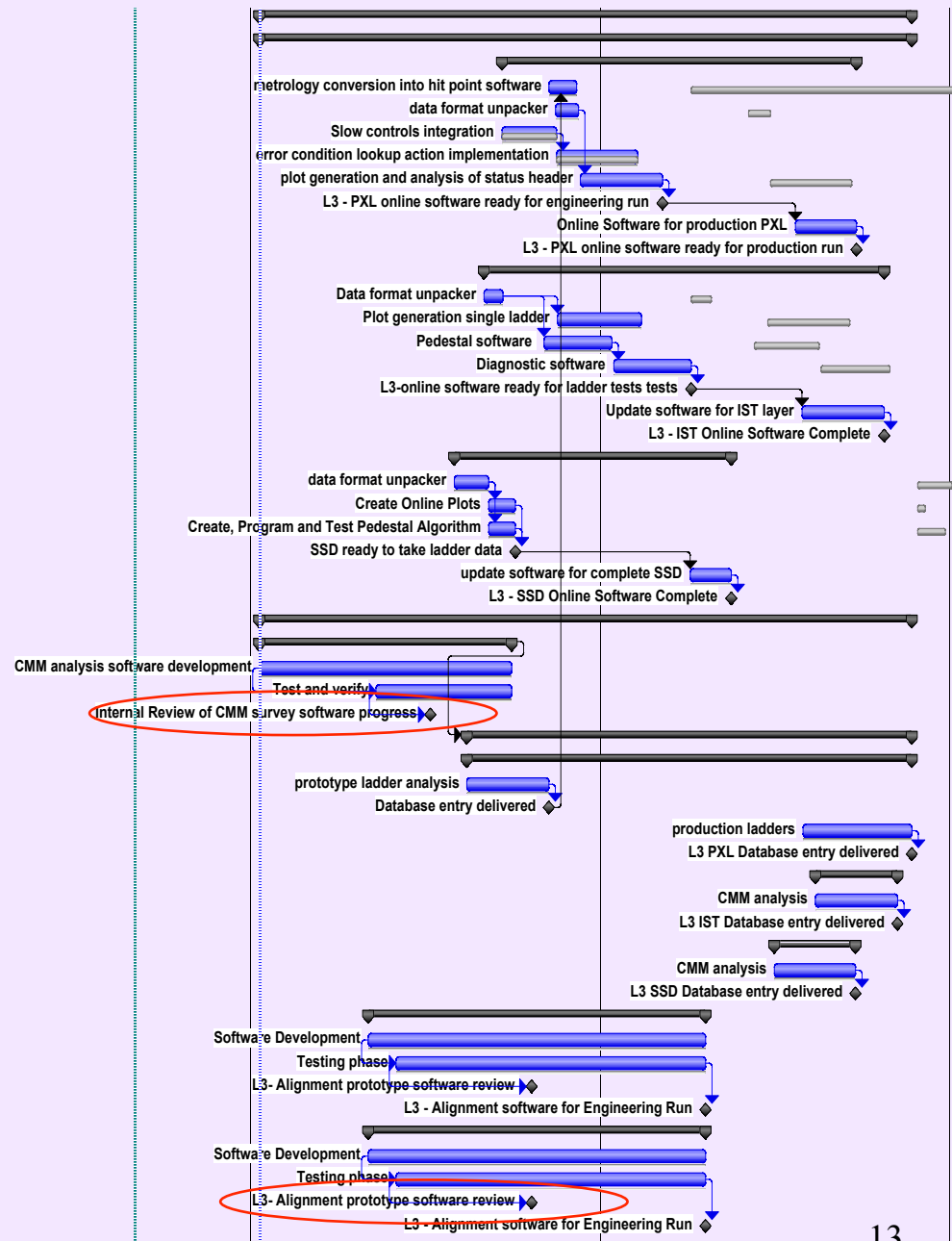
Hijing – WITH Pile-up



Schedule/Milestones (Flemming)

Task ID	Task Name	Progress	Duration
1.6	Software	0%	464 days
1.6.1	Online	0%	464 days
1.6.1.1	PXL	0%	251 days
1.6.1.1.1	metrology conversion into hit point software	0%	20 days
1.6.1.1.2	data format unpacker	0%	17 days
1.6.1.1.3	Slow controls integration	0%	40 days
1.6.1.1.4	error condition lookup action implementation	0%	60 days
1.6.1.1.5	plot generation and analysis of status header	0%	60 days
1.6.1.1.6	L3 - PXL online software ready for engineering run	0%	0 days
1.6.1.1.7	Online Software for production PXL	0%	45 days
1.6.1.1.8	L3 - PXL online software ready for production run	0%	0 days
1.6.1.2	IST	0%	284 days
1.6.1.2.1	Data format unpacker	0%	14 days
1.6.1.2.2	Plot generation single ladder	0%	61 days
1.6.1.2.3	Pedestal software	0%	50 days
1.6.1.2.4	Diagnostic software	0%	50 days
1.6.1.2.5	L3-online software ready for ladder tests tests	0%	0 days
1.6.1.2.6	Update software for IST layer	0%	60 days
1.6.1.2.7	L3 - IST Online Software Complete	0%	0 days
1.6.1.3	SSD	0%	195 days
1.6.1.3.1	data format unpacker	0%	25 days
1.6.1.3.2	Create Online Plots	0%	1 mon
1.6.1.3.4	Create, Program and Test Pedestal Algorithm	0%	20 days
1.6.1.3.5	SSD ready to take ladder data	0%	0 days
1.6.1.3.7	update software for complete SSD	0%	30 days
1.6.1.3.8	L3 - SSD Online Software Complete	0%	0 days
1.6.1.4	Calibration and alignment	0%	464 days
1.6.1.4.1	Survey Software	0%	180 days
1.6.1.4.1.2	CMM analysis software development	0%	9 mons
1.6.1.4.1.1	Test and verify	0%	5 mons
1.6.1.4.1.9	Internal Review of CMM survey software progress	0%	0 days
1.6.1.4.5	CMM analysis	0%	318 days
1.6.1.4.5.1	Analysis of PXL	0%	318 days
1.6.1.4.5.1.10	prototype ladder analysis	0%	3 mons
1.6.1.4.5.1.11	Database entry delivered	0%	0 days
1.6.1.4.5.1.12	production ladders	0%	4 mons
1.6.1.4.5.1.13	L3 PXL Database entry delivered	0%	0 days
1.6.1.4.5.2	Analysis of IST	0%	60 days
1.6.1.4.5.2.5	CMM analysis	0%	3 mons
1.6.1.4.5.2.6	L3 IST Database entry delivered	0%	0 days
1.6.1.4.5.3	Analysis of SSD	0%	60 days
1.6.1.4.5.3.1	CMM analysis	0%	3 mons
1.6.1.4.5.3.2	L3 SSD Database entry delivered	0%	0 days
1.6.1.6	Global Alignment	0%	240 days
1.6.1.6.1	Software Development	0%	12 mons
1.6.1.6.2	Testing phase	0%	11 mons
1.6.1.6.3	L3 - Alignment prototype software review	0%	0 days
1.6.1.6.4	L3 - Alignment software for Engineering Run	0%	0 days
1.6.1.8	Self Alignment	0%	240 days
1.6.1.8.9	Software Development	0%	12 mons
1.6.1.8.10	Testing phase	0%	11 mons
1.6.1.8.11	L3 - Alignment prototype software review	0%	0 days
1.6.1.8.12	L3 - Alignment software for Engineering Run	0%	0 days

NOW



Operations support

- To be done (didn't have time to work on Flemming's document estimates)

Summary

- Things are moving but more institutional involvement will definitely help