









EPIC Software

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November 17, 2022

Quick Summary

- Software stack underwent a several month long decision process in which technologies were chosen (e.g. for reconstruction, geometry, etc.)
- Decisions were made and last ~4 months have been spent setting up EPIC software stack
- First simulation campaign just started and single particles are being analyzed. “Final” reconstruction bugs being worked out

Overview of Timeline

	Discussion topic(s)	Decision topic(s)	comments	Point of Contact	
May	4	AIWG			
	11	Transition Period	Present procedure. Decide on list and order of decision topics		
	18	No meeting (Streaming Readout X Workshop)			
	25	Code Repository 	Repository: - Location (GitHub, GitLab+Host) - Admins - Access	David Lawrence	Software package chosen
Jun	1	Discussion Schedule	Schedule: - Decide most critical decisions to make before July 27th EICUG meeting - Schedule of topic discussions		
	8	Geometry 	Geometry: - Package (e.g. DD4HEP)	Markus Diefenthaler	Github+Gitlab for CI/CD
	15	Data Model 	Data format - Generated events - Simulated data - Processed data (e.g. ROOT w/ specific tree format)	Whitney Armstrong	DD4Hep
	22	Data Model 			EDM4Hep/PODIO
	29	Reconstruction Framework 	Reconstruction Framework - Package	Wouter Deconinck	JANA2
Jul	6	Reconstruction Framework 			
	13	Data and Analysis preservation 	Data Preservation - What is preserved (simulated, DSTs, ...) - Location(s) - Access (S3, xrootd, rucio, ...)	Kolja Kauder	
	20	Documentation 	Documentation: - Location of User documentation (wiki, repository,...) - Who will set up skeleton with list of topics (e.g. "Getting Started")	Dmitry Romanov	
	27	EICUG Meeting			
Aug	3	Schedule realignment/ WG Business			

Several other discussions have been deferred in favor of actually implementing the software stack

(Some) Areas of Need

- Reconstruction, reconstruction, reconstruction
 - Still no realistic track seeding, PID reconstruction
 - Certain basic clustering algorithms
 - Largely only been tested in single particles or signal events
- Embedding background
 - No embedding framework right now. Critical for realistic studies and tracking optimization
- Job simulation and processing
 - Discussion on a job scheduler technology still hasn't occurred. Currently using cobbled together scripts

Get Involved

- CompSW and SimQA meetings on Wednesdays at 11 AM EST
- Reconstruction meetings on Tuesdays at 11 AM EST
- Just reach out to conveners to ask how to get involved - we need more person power
- Email lists:
 - eic-projdet-simqa-l@lists.bnl.gov
 - eic-projdet-comp-sw-l@lists.bnl.gov

Tutorials

- Many (ongoing) tutorials to help you get started
- <https://indico.bnl.gov/category/443/>