

Status of the SPD software project

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13.05.2020

Software repository

- Current repo: ***<https://git.jinr.ru/nica/spdroot>***
- Sw branches:
 - *development*
 - *master [= production release]*
- Automatic test:
 - Pythia8: $pp \rightarrow J/\psi$, $J/\psi \rightarrow \mu\mu$; reconstruct tracks and plot $M_{\mu\mu}$ (macro/fullchain) — **many thanks to Igor!**
 - At every *git push* or *merge request* in development branch and every *merge request* in master branch
- Documentation wiki:
 - ***<https://git.jinr.ru/nica/spdroot/-/wikis/home>***

Available pre-compiled software

- CVMFS: FairRoot, FairSoft

ls /cvmfs/nica.jinr.ru/spd

centos7 sl6 ubuntu

- Also available at Hybrilit cluster
- Docker container will be available soon
- Spdroot requires more work to run from an arbitrary location

Release plan

- Assume «CDR-ready» release by 01/09/2020
- Main deliverables:
 - Fast simulation of all subsystems
 - Reliable primary and secondary vertex reconstruction — essential for the open charm program
 - RS reconstruction — essential for the charmonium program
 - Event data model

Fast simulation

- Adequate distribution of material
- Simplified MC hit generation
 - true position and/or energy/momentum smeared with the expected resolution
 - russian roulette with the expected efficiency
- Shall be replaced by the full simulation as soon as practicable
 - i.e. when geometry is fixed, detector response is known etc

Event Data Model

- The later the more difficult to modify
- Tightly related to the data format
- Important for the computing CDR (data flow, data size)
- Current EDM is not complete and definitely needs a revision:
 - MC and reco hits
 - Top level physics objects (track, shower, MC particle, vertex, PID ...)
 - Event header

Other items

- Track finding
- Ecal clustering
- Ecal shower fitting
- Particle ID
- ...

Of course, it is desirable as well,
although not the highest priority

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- What is missing?