Software Project Overview

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MICE Collaboration Meeting
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Simulation

- PhysicsList carefully examined, various problems found and solved (Rikard)
- Per-detector cuts and processes to be implemented (Cerenkov photons, etc.)
- May need to substitute more sophisticated models for important processes (dE/dx, multiple scattering in hydrogen) but existing ones validated (Igor)
- Some physics issues still to be investigated for detector hits (TOF, EMCal)
- Need to make decisions and cvs commit
DetResp

- Lots of progress in TPG (Rikard)
- New SciFi parameters from prototype to replace defaults (Malcolm)
- TOF, Ckov (Steve), EMCal (Alessandra) to be re-baselined in dataCards
EngModel

- Some interfaces implemented/updated
- Magnetic field map features added, some debugging necessary
- Should start adding more detailed description of geometry and materials (cryostats, etc.)
- Needs general overhaul
DetModel

• TOF, Ckov (Steve), EMCal (Alessandra) dataCards to be re-baselined

• Time to add more geometry details
Recon

- SciFi update in progress (Malcolm) with Kalman and better dE/dx model
- Building code for TPG (Olena), need to connect with parallel HARP-based effort
Analysis

• Emittance code rebuilt (Chris)
• ICOOL comparison in progress (Chris, Ulisse)
• Need to implement different algorithms
• mice2root overhaul in progress, may need to rearrange tree structure (Hart)
• Time to implement global PID (Steve)
Config/Calib

- Some new parameters added, more to come
- Need to get started on calibration database
BeamTools

- Updated to keep up with GEANT4 releases
- Should consider replacing parts with G4BeamLine components (Tom)
Interface

- Many new parameters in dataCards, more to come
- Should implement persistency soon
- Need more efficient output format for high statistics studies
External packages

- Kalman moved out for easier maintenance
- Some GEANT4 interfaces have changed
- CLHEP, GSL are stable, no worries
- Need to evaluate use of more ROOT features for analysis or persistency
General Issues

- Some updates needed in Makefiles
- Lots of new documentation, need a lot more
- Release early/often
- Have to implement tests
- MICE on the GRID
- Design iteration: MouseCases collected, editing user requirements document (Malcolm)
- Beamline components: Upstream detectors, spilled into beamline, need to redo interface to G4BeamLine