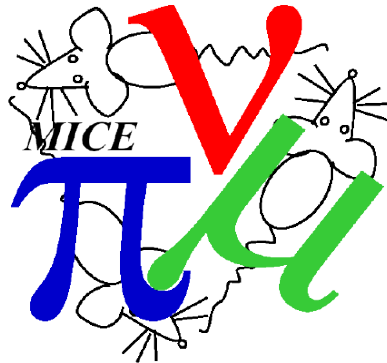




MAUS - Overview

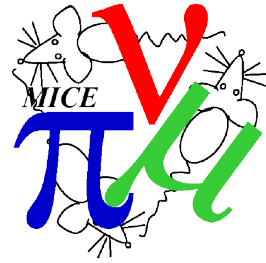


Chris Rogers,
ASTeC,
Rutherford Appleton Laboratory



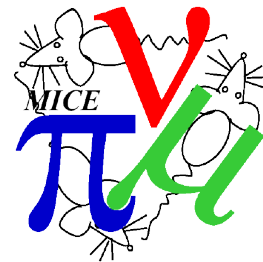


Overview



- MAUS online
 - November, December, February runs
- MAUS offline
 - Batch production
- Unit test coverage
- Documentation and Integration Testing
- Others will cover also
 - Geometry and Monte Carlo
 - Global reconstruction
 - Detector reconstructions

Responsibility/Block Diagram



Project management
Rogers

Build system
Rogers

Geometry + fields
Ricciardi/Bayes

TOF
Rajaram

Data Unpacking
Karadzhov

Detector Integration
Taylor/Lane

QA
Rogers

Geant4 Simulation
Rogers/Bayes

Tracker
Dobbs/Santos et al

EMR
Karadzhov/Ruslan

Accelerator physics
analysis
Rogers/Lane

Documentation
Rogers

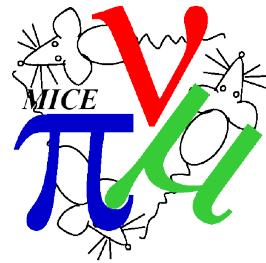
Data flow/API
Rogers/Richards

Ckov
Cremaldi/Kafka

KL
Bogomilov

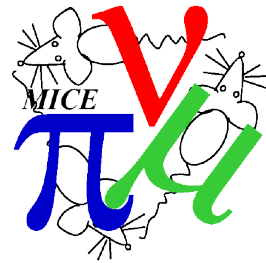


MAUS online



- Before the last CM
 - MAUS failed to run properly in control room
 - Issue to do with incorrect data structure following Unpacking
 - Rogers bug
 - Operated successfully during
 - December shifter training
 - December run and
 - Wednesday's run
- Still not comfortable with system robustness
 - No easy roll back capability
 - Not properly version controlled
 - Integration tests need more work
- But it is converging

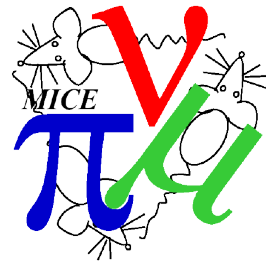
Batch production

A screenshot of a Mozilla Firefox browser window. The address bar shows the URL 'www.hep.ph.ic.ac.uk/micedata/RECO/0.4.1/Step1/04700/'. The page title is 'Index of /micedata/RECO/0.4.1/Step1/04700'. The main content is a directory listing with columns for Name, Last modified, Size, and Description. The listing includes a 'Parent Directory' link and several 'offline.tar' files with their respective sizes and modification dates.

| Name | Last modified | Size | Description |
|-----------------------------------|-------------------|------|-------------|
| Parent Directory | - | - | - |
| 04742_offline.tar | 04-Jan-2013 17:31 | 49K | |
| 04743_offline.tar | 04-Jan-2013 17:33 | 13K | |
| 04744_offline.tar | 04-Jan-2013 17:31 | 15K | |
| 04745_offline.tar | 04-Jan-2013 17:33 | 11K | |
| 04746_offline.tar | 04-Jan-2013 17:33 | 10K | |
| 04747_offline.tar | 04-Jan-2013 17:33 | 15K | |
| 04748_offline.tar | 04-Jan-2013 17:33 | 13K | |
| 04749_offline.tar | 04-Jan-2013 17:32 | 10K | |

- Automatic batch production (MC + recon)
 - Watches for data moving onto GRID
 - Runs reconstruction, Monte Carlo job automatically and pushes data to data server
 - MAUS end game
- Needs time-indexed Configuration Database data
- Needs decent Monte Carlo beam generator

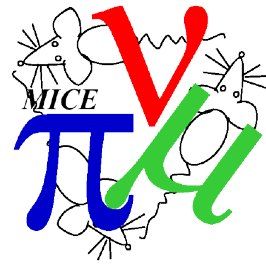
Test coverage - python



| | | |
|-------------------------------|-----|---------------|
| ReducePyTOFPlot | 3% | Durga Rajaram |
| MapPyTOFPlot | 12% | Durga Rajaram |
| framework.merge_output | 18% | Alex Richards |
| framework.input_transform | 20% | Alex Richards |
| MapPyScalersDump | 45% | ? |
| docstore.MongoDBDocumentStore | 49% | Alex Richards |
| ReducePyCkovPlot | 60% | Gene Kafka |
| docstore.DocumentStore | 68% | Alex Richards |
| framework.utilities | 73% | Chris Rogers |
| framework.multi_process | 79% | Chris Rogers |

- Overall test (line) coverage is 75%

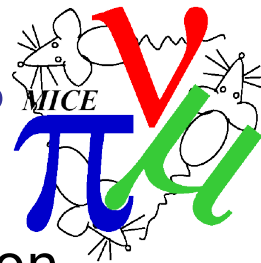
Test coverage - C++



| | | |
|---|------|------------------|
| src/common_cpp/API | 51.8 | Alex Richards |
| src/common_cpp/DetModel/SciFi | 53.7 | Chris Heidt |
| src/common_cpp/JsonCppStreamer | 59.9 | Alex Richards |
| src/input/InputCppDAQData | 63.9 | Yordan Karadzhov |
| src/common_cpp/JsonCppProcessors/Common | 66.7 | Chris Rogers |
| src/common_cpp/Utils | 67.2 | Durga Rajaram |
| src/input/InputCppDAQOfflineData | 67.3 | Yordan Karadzhov |

- Overall test (line) coverage is 69%
- Not keen for this to dip any lower

Documentation/Integration Tests



- As functionality improves focus turns to documentation
 - Core documentation I think is coming together
 - Needs improved documentation on detectors
- Also like to have decent integration testing
 - Unit tests = “does this function do what I think?”
 - Integration tests = “do my e.g. reconstruction residuals look good”
 - Already started for online data