COMPUTING & SOFTWARE

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MICE PROJECT BOARD
April 16, 2015

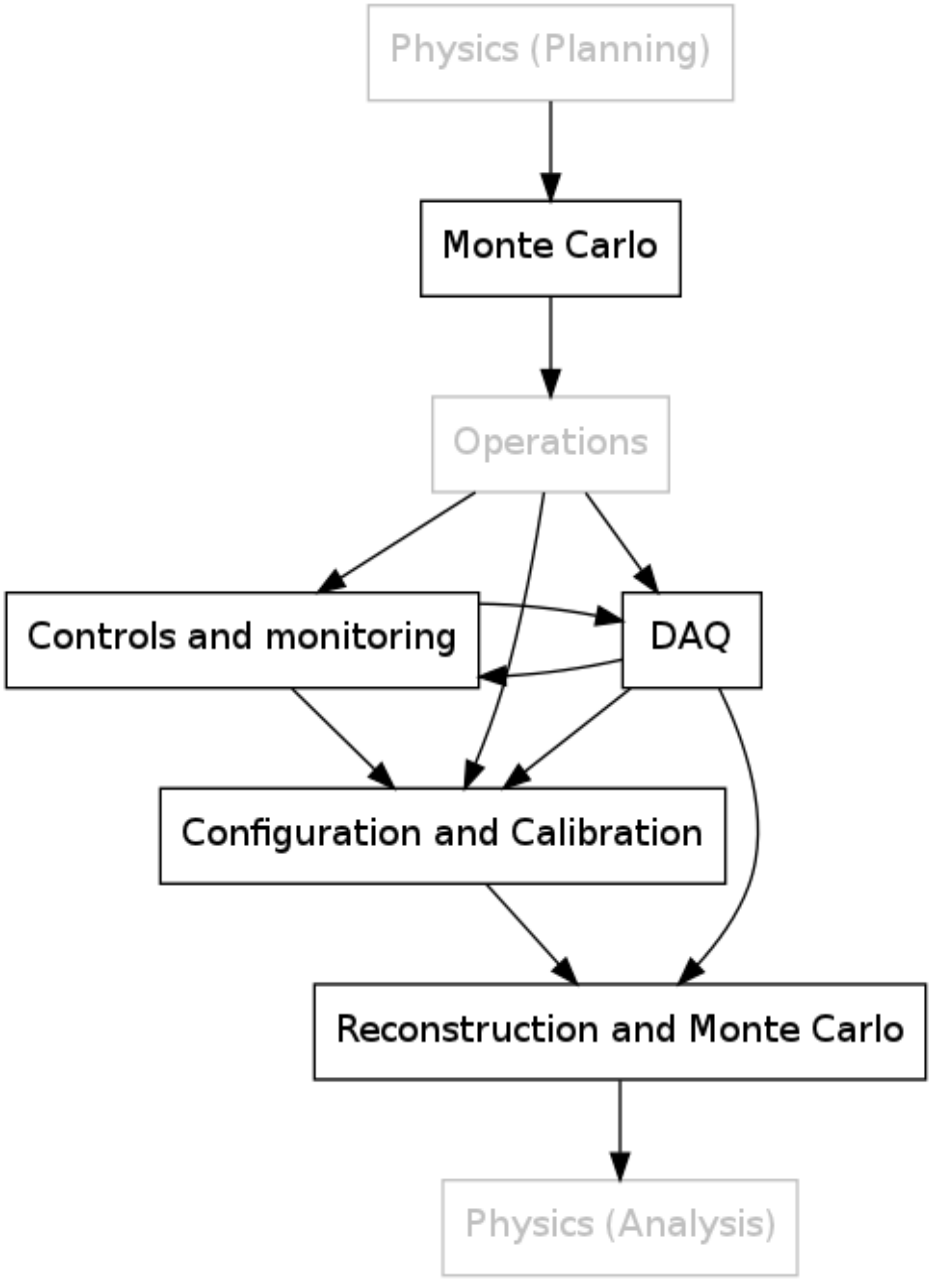
Overview

- Software & Computing Project
  - Goals
  - Workflow
  - Organization
- Highlights
- Schedule & Milestones
- Summary

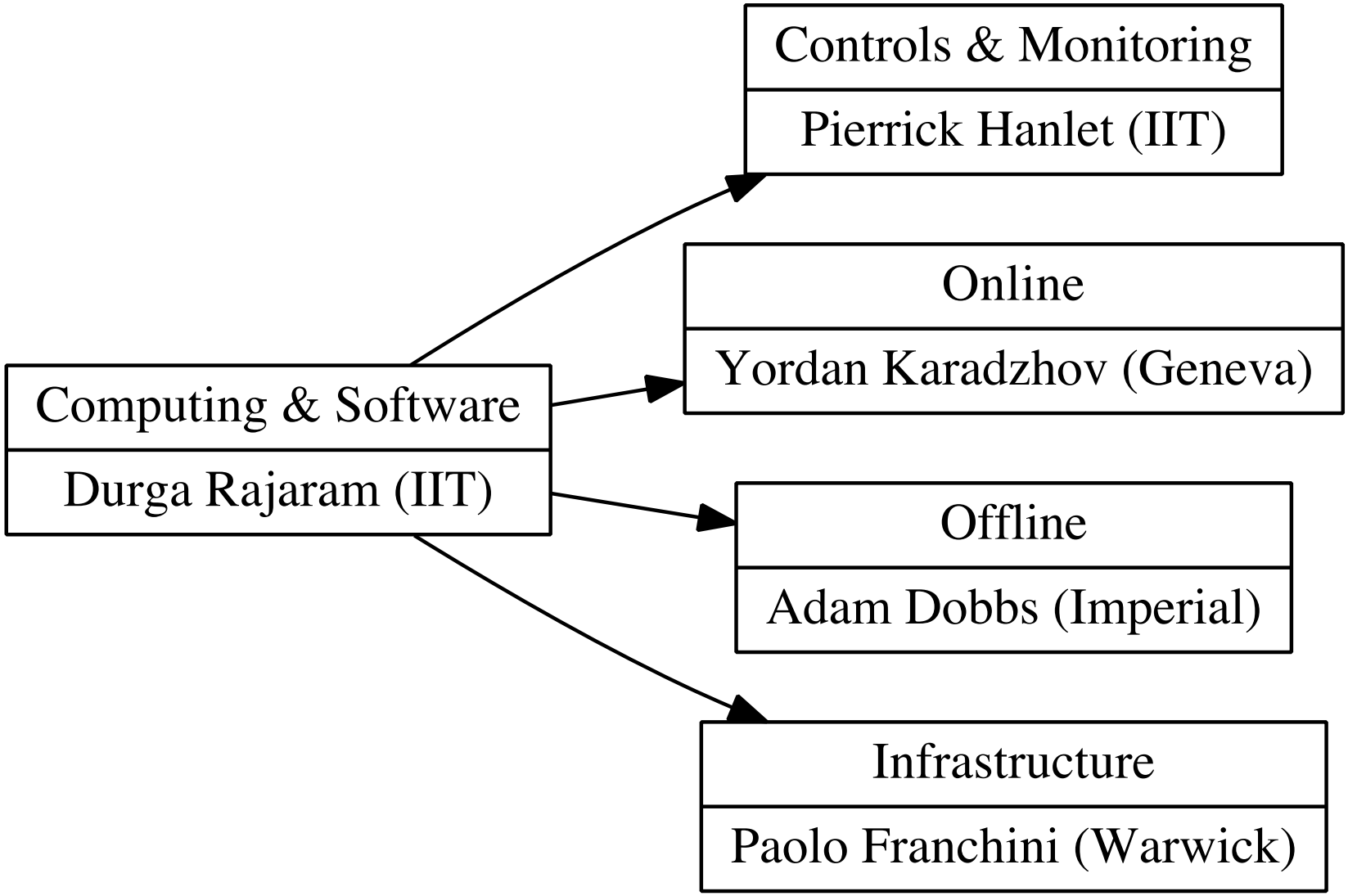
PROJECT OVERVIEW

- Wide range of tasks
  - Hardware controls & monitoring
  - Read out detectors – DAQ
  - Reconstruct data
  - Online monitoring & reconstruction
  - Describe geometry, fields
  - Monte Carlo simulation
  - Data movement & curation
  - Provide database tools to manage configurations
  - Manage and maintain Control Room servers
  - Web services
- *Goal: Ensure data quality and turn around reconstructed data to analysis within 24 hours*

WORKFLOW


Physics (Planning)
Monte Carlo
Operations
Controls and monitoring
DAQ
Configuration and Calibration
Reconstruction and Monte Carlo
Physics (Analysis)

ORGANIZATION



STAFFING

- Online
  - Paul Smith (Sheffield) who was managing the online group has left
  - Yordan Karadzhov (Geneva) now heads Online
- Infrastructure
  - The Infrastructure group manager had been managed on an interim basis by the head of computing
  - We finally have a full-time manager for the Infrastructure project
  - Paolo Franchini (Warwick) now heads Infrastructure
- Offline:
  - Adam Dobbs (Imperial) was managing the track Reconstruction, along with his responsibility for the Offline
  - Paul Kyberd (Brunel) now in charge of Track Reconstruction

(Re)Organization

- Online and Infrastructure projects have been reorganized
- Online group was responsible for
  - *MLCR network*
  - *MLCR servers*
  - *Monitoring & Backups*
  - DAQ
  - Trigger
  - Online DAQ Monitoring

Moved to Infrastructure

Remain with Online

- Allows the Online group to focus exclusively on reading out data & online monitoring of data quality
- Servers, network, monitoring fit naturally within the computing infrastructure group

ORGANIZATION: CONTROLS

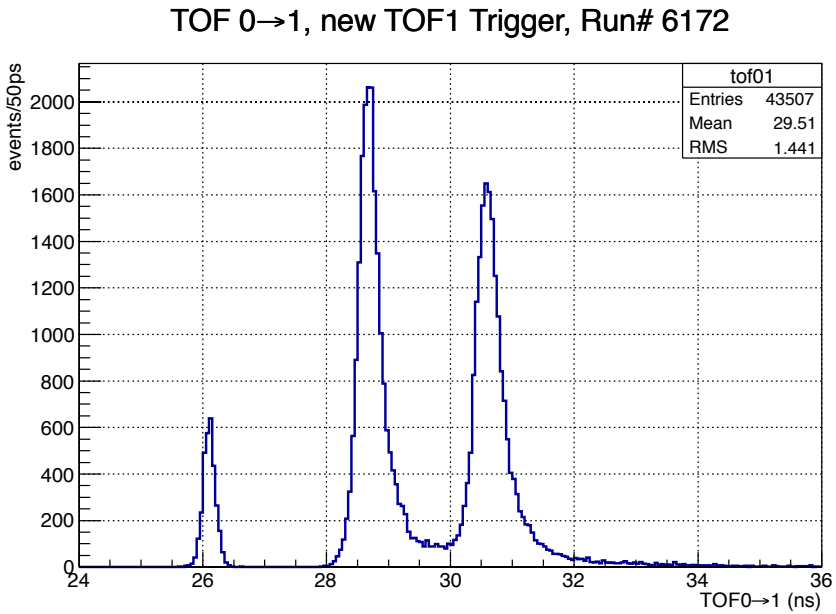
- Controls & Monitoring responsible for:
  - Hardware controls
  - Interfaces for controlling & monitoring subsystems
  - Monitoring the MICE environment
  - Run control
  - Storage of hardware and run parameters
- Several successes & lessons learnt from MDR
  - Beamline run control integration, detector state machines
- Pierrick Hanlet has already covered

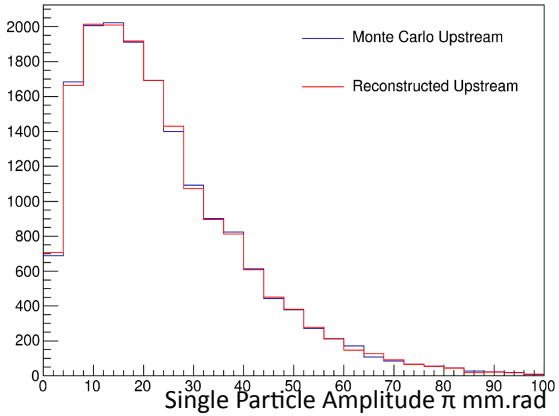
ORGANIZATION: ONLINE

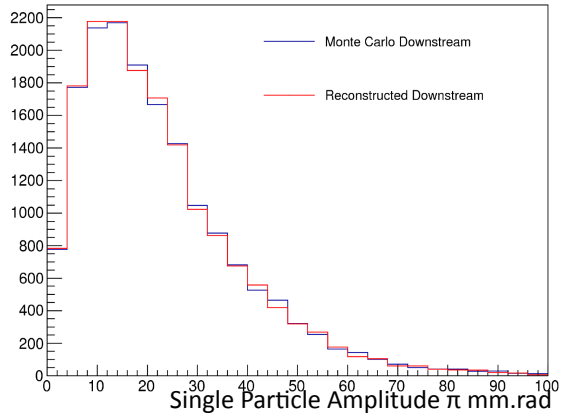
- Online group responsible for
  - DAQ including tracker DAQ
  - Trigger
  - Online monitoring of DAQ
- Reorganized, scope more focused and coherent now
- Milestones achieved
  - Tracker DAQ integration
  - FPGA trigger commissioning & validation
- Yordan Karadzhov will cover Online

ORGANIZATION: OFFLINE

- Offline group responsible for:
  - Detector reconstruction & simulation
  - Geometry
- Highlights:
  - Can reconstruct all detectors
  - Track reconstruction tested with MC
    - Real data unpacking being debugged
  - Great progress on global reconstruction
- Plans to speed up processing time
- Adam Dobbs will cover Offline







ORGANIZATION: INFRASTRUCTURE

- Reorganized in conjunction with Online
- Infrastructure group responsible for:
  - MLCR computing & network infrastructure
    - Network, spares, backups, monitoring
  - Configuration & calibration management DB
  - GRID services: Data curation, Batch processing
  - Web services
- Milestone achieved:
  - Automated data movement (*addresses MPB #12*)
- Fast-reconstruction tested during MDR. Successfully deployed during March weekend running
- Paolo Franchini will cover Infrastructure

Schedule

- Computing & Software schedule is integrated into the overall MICE schedule
- In January, we identified several Step IV readiness milestones for Online, Offline & Infrastructure

Milestone	Date	Responsible	Status
C&M - various		C&M	See Hanlet's talk
Integrated DAQ	March 20	Online	✔
Integrated Trigger	May 1	Online	On track
Track Fit	April 1	Offline	✔
Global Tracks & PID	June 26	Offline	On track
Automated data movement	April 6	Infrastructure	✔

Summary

- The Software & Computing project encompasses a broad spectrum of tasks
  - DAQ, controls, reconstruction, database
- Several milestones achieved to be ready for Step IV
  - Beamline and detector C&M
  - Integrated DAQ, Trigger validation,
  - Track reconstruction
  - Automated fast reconstruction