

MDC2 meeting, May 3, 2000

P.Murat & F.Ratnikov

1 MDC2A Goals

Rate test for the full data handling and analysis chain.

Target rate: 20 Mb/s

- 8xAIT-2 drives (6/3 Mb/s for read/write)
- 20 Mb/s for sub-chains:
 - L3 → B0-data-logger → dual-ported disk → FCC-data-logger → tape
 - Tape → DIM → production farm → splitting → concatenation
 - DIM → production-farm → splitting → concatenation → DHOutput
 - No resources to serve user analysis jobs
- 6...8 Mb/s for the complete chain
- Identify critical operations issues for the components

2 MDC2B Goals

Provide large samples of reconstructed simulation data to the collaboration.

- Test the quality of the simulation and the reconstruction software
- Exercise the DIM and associated data catalog and the DHInput and DHOutput modules
- Identify critical operations issues associated with the use of the data handling system on fcdfsgi2

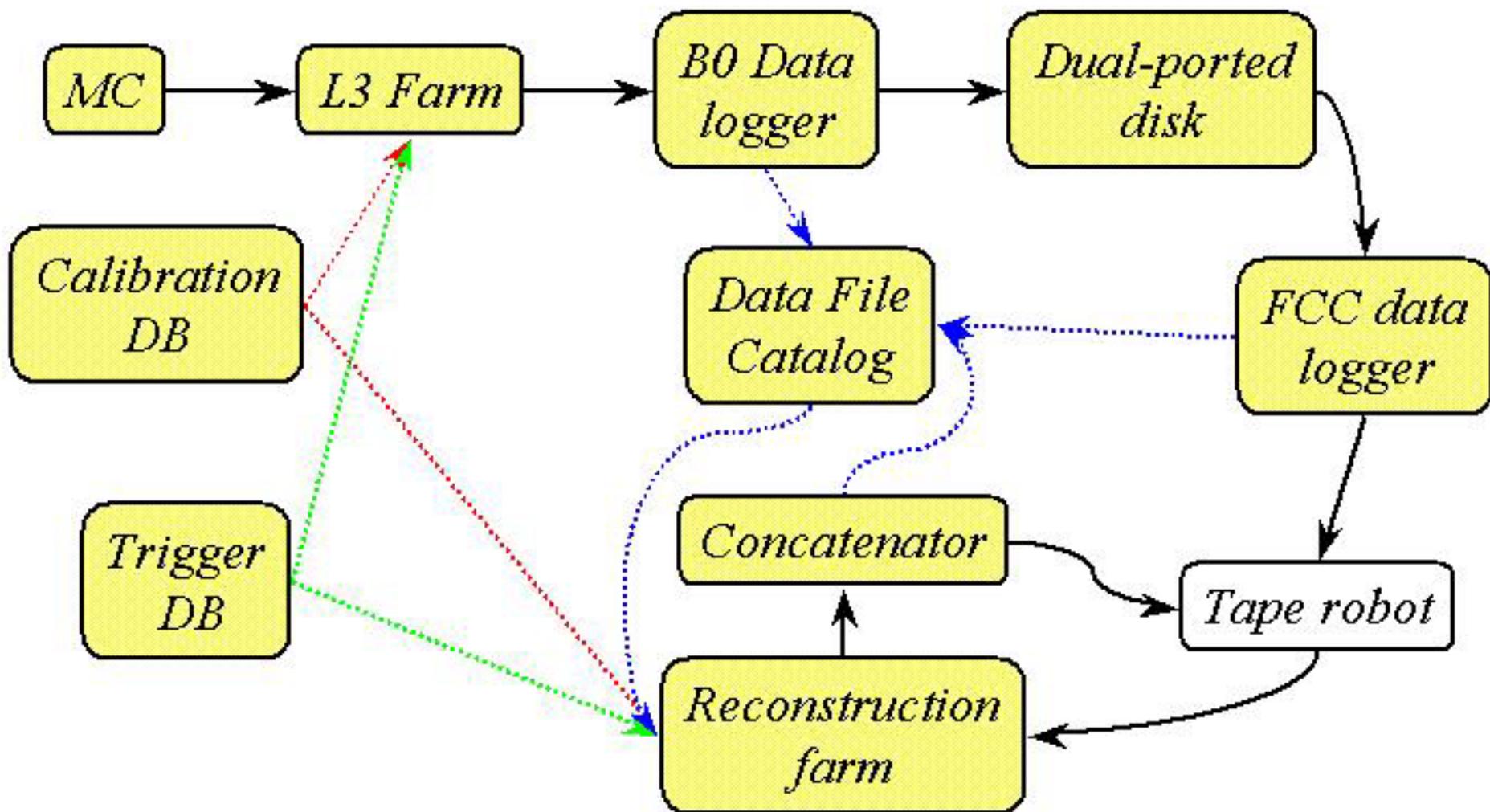
3 MDCII Schedule (to be tuned)

- May 1 → May 14 – standalone component testing
- May 15 → May 29 – 2-component / subchain testing
- May 30 → June 4 – full chain testing
- June 5 → June 11 – MDCIIA rate tests
- June 12 → June 30 – MDC2B

4 MDCII data flow and components

- MC
- L3
- B0 data logger (consumer server)
- dual-ported disk
- FCC Data Logger
- Data File Catalog
- Production Farm
- Concatenator
- Calibration DB
- Trigger DB
- DIM

MDC2 components



5 MC

- can run on the Productio Farm w/o crashes
- statistics for MDC2A
 - $4 \times 30 \text{ Gb} = 120 \text{ GBytes}$ to put on L3 disks
- statistics for MDC2B
 - $5 \cdot 10^6$ events generation will take 2-3 weeks
 - generation should be completed before the chain tests (May 25)
 - needed to be started now

6 L3 requirements (4 I/O + 16 processing nodes)

- can read MC (YBOS) files and distribute them to processing nodes
- can access TriggerDB, create an input .tcl for L3 executable
- can set L3 bits in T3LD bank
- can deliver event to the CS

7 B0 data logger (CS) requirements

- can accept event from the L3
- can derive runsection# from bunch crossing#
- can put runsection# into event
- can stream event to the dual-ported disk according to L3 bits
- can fill file record in the DFC

8 Dual Ported Disk

- B0 data logger can write the data to it
- FCC data logger can read the data from it
- the data can be deleted to free space

9 FCC Data Logger

- reads the files from the dual ported disk
- forms filesets
- writes the filesets onto tapes
- modifies the file catalog

10 Calib DB

- API
- can be flattened and downloaded to L3
- can be accessed from the production farm (number of licenses vs number of nodes)

11 Trig DB

- API
- can be used to create .tcl files for L3 and Production Farms

12 DIM

- reads filesets from tape
- deletes the filesets no longer in use to free space on the staging disk

13 File Catalog

- API
- can be modified
- the information can be read back

14 Production Farm

- reads the File Catalog
- runs CDF2SIM and ProductionExe
- reads the data from the tape robot
- does splitting based on the info from Trig DB

15 Concatenation Job

- reads the split files produced by the worker nodes
- does the concatenation itself
- hands the concatenated files in to the DH system
- modifies the file catalog

16 EDM

- XXX → ROOT for the consumer server
- multibranch ROOT files
 - speed up the concatenation? contents of the branches?

17 Production Exe

- runs w/o crashes
- outputs multibranch ROOT files
- is validated by physics groups (MDCIIB)

18 need to decide upon

- the volume of MC statistics for MDCII and the start of MC generation
 - Marjorie's proposal: 120 GBytes
 - can start right away
- output format of the consumer server to be used in MDCII: ROOT or XXX
 - ROOT-based solution can be implemented if we start working on it right now and make this direction a priority
- ROOT event format: single branch or 2 branches
 - one of the potential bottlenecks - concatenation (MDCI)
 - the technical solution worked on now assumes that the event header resides in separate branch
- switching to new ROOT - FNAL prerelease of 2.23/04 scheduled for the next week
 - will have all the functionality we need for CS and signal handling, can start using the new features immediately
 - will simplify preparations for the next release

19 To be discussed at the next meeting

- schedules of the individual component and 2-component testing