

October 1, 1998, Mrionmoy & Jae

### Data/Message Flow

1. How do we receive events from the data logger/ or distributor dynamically? Is the schemes the same whether the process runs on the "online slaves(linux)" or L3 machines (NT) ? This probably does not matter because the processes running on L3 might not even have to know about the existance of the data distributor.
2. What is the event distributor supposed to do? (We need to identify the list of functionalities of the event distributor.)
3. How do we feed in the events to each online processes?
4. How does one setup queues (or communication ports) for various online processes?
5. How many queues do we need?
6. How many events do we keep in the given queue?
7. How does one communicate with the event distributor in a multi-threaded asynchronous environment?
8. How does one process request for more events to the distributor?
9. What does D0ME do and is available in it?
10. What are the available tools for a process to wait for the next event to come in?
11. What is the communication package that enables the online processes to talk to COOR/TAKER/etc (D0 ACE, D0ME)?

### Data extraction

1. Is the data format from the event distributor in DSPACK? This would be the natural choice and I don't even think the event distributor should care about the format.
2. What is the functionalities of the interface required to extract the data? Who provides this interface? Is d0Stream the interface to be used?
3. If we need to provide the interface what are the functionalities the event feeding interface should have?
4. How does a given detector system's chunk structure look like?
5. What are the available methods for each chunk? How does one extract necessary information from the given chunk?

\*\* We must have full scale MC which provides digitized data in the DSPACK format for various offline unpacking codes to test.

### Data Presentation

1. What is the optimal analysis package to use for online monitoring? ROOT/Histoscope?
2. What would be the best choice of GUI language for user interface? Python/Java/Jpython?

## Data Distributor Requirements

I assume this is a program that runs on the online hosts all the time? Would this be a correct assumption? The distributor does not do anything until it receives a connection request from online processes at the initialization stage of the Examine processes.

### 1. Initialization

- (a) Set up communication ports and queues for each online process
- (b) Assign the ports to the processes and establish connections.
- (c) Connect to data logger for event reception

### 2. Data processing

- (a) Send events to examine process queues till the queue gets filled.
- (b) Wait for a request from the queues for the blank buffer for an event.

### 3. Termination

- (a) Disconnect the established ports, keeping the connection with other processes.
- (b) Clean up.
- (c) Automatically notify end-of-run (maybe DOME?).

### 4. Exception

- (a) If a connection is lost without proper termination request, wait for the process to come back up, while carrying out the duties to other live processes.
- (b) If all queues are full, wait for the blank spaces in the queue.