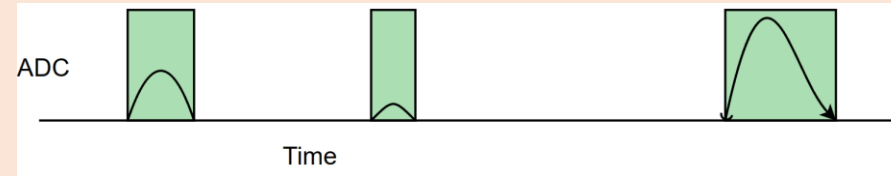


# What do I mean by streaming? (My views)

- Streaming is a tool, not an end
- No hardware trigger
- No deadtime in standard operation
- Hardware components are independent from one another

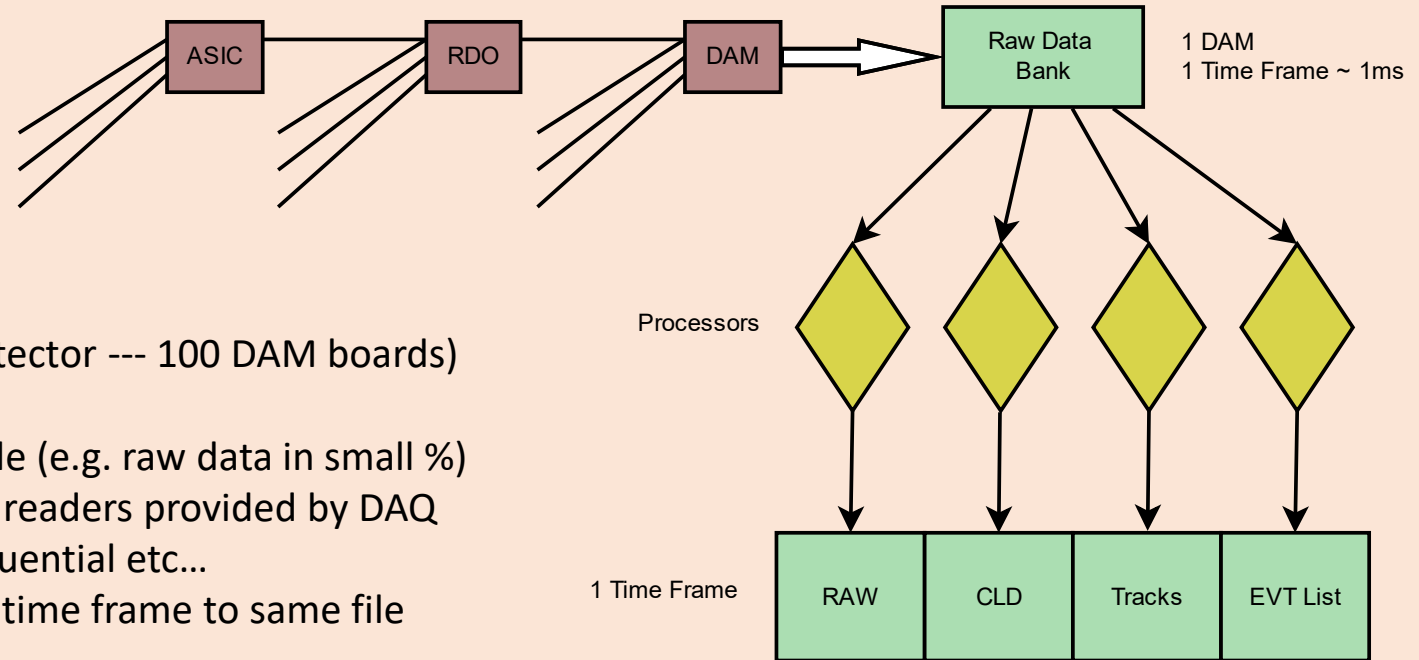
# Data Interface Examples...

Naïve Strawman:  
(Unformatted stream of hits)



ADC\_1 [det dam rdo asic ch bx]  
ADC\_2 [det dam rdo asic ch bx]  
ADC\_3 [det dam rdo asic ch bx]  
(...)

More Likely:  
(multiplexed data & packetized)



Base unit of data is the time frame:

- ~1ms (about 1MB for the full detector --- 100 DAM boards)
- 0, 1, or more events
- Bank list per time frame is variable (e.g. raw data in small %)
- Banks format source dependent, readers provided by DAQ
- Time frames can be ordered, sequential etc...
- I support building all DAMS from time frame to same file

# DAQ Software Tasks and Priorities

Need from S&C	Need to negotiate with S&C	Need to give S&C	Purely DAQ Software issues
<ul style="list-style-type: none"> <li>• Simulations for data volume               <ul style="list-style-type: none"> <li>• Beam</li> <li>• Beam gas</li> <li>• Synchrotron Rad</li> </ul> </li> <li>• Simulations for radiation effects</li> <li>• Simulations for testing DAQ data reduction algorithms</li> <li>• Slow simulators for detectors</li> </ul>	<ul style="list-style-type: none"> <li>• GIT repo's</li> <li>• Software release scheme (including CI &amp;/or exception from CI)</li> <li>• Documentation scheme</li> <li>• Database scheme (conditions, run, file tracking)</li> <li>• Analysis code interfaces</li> <li>• QA code interface</li> <li>• Collider information interface               <ul style="list-style-type: none"> <li>• Access "cdev"</li> <li>• Feedback</li> </ul> </li> <li>• Slow controls (masking, components, etc...)</li> <li>• Web servers etc...</li> </ul>	<ul style="list-style-type: none"> <li>• Conceptual Data Format (Time frame + data banks)</li> <li>• "time frame/event building" concept</li> <li>• Actual data file format (High level format → navigation to data banks)</li> <li>• Data bank formats / readers</li> <li>• Realistic data formats for doing simulations (based upon time frame and DAQ banks rather than event generators)</li> </ul>	<ul style="list-style-type: none"> <li>• Readout computer architecture (token proposal...)</li> <li>• Time frame handling architecture</li> <li>• Analysis code Architecture</li> <li>• QA architecture</li> <li>• Run control concepts (stand alone detector running, configuration setting / tracking)</li> <li>• Slow controls architecture</li> </ul>