
Event Builder integration

with at2sim

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Copies of slides can be found at: <http://home.cern.ch/wheeler/ptolemy/talks.html>

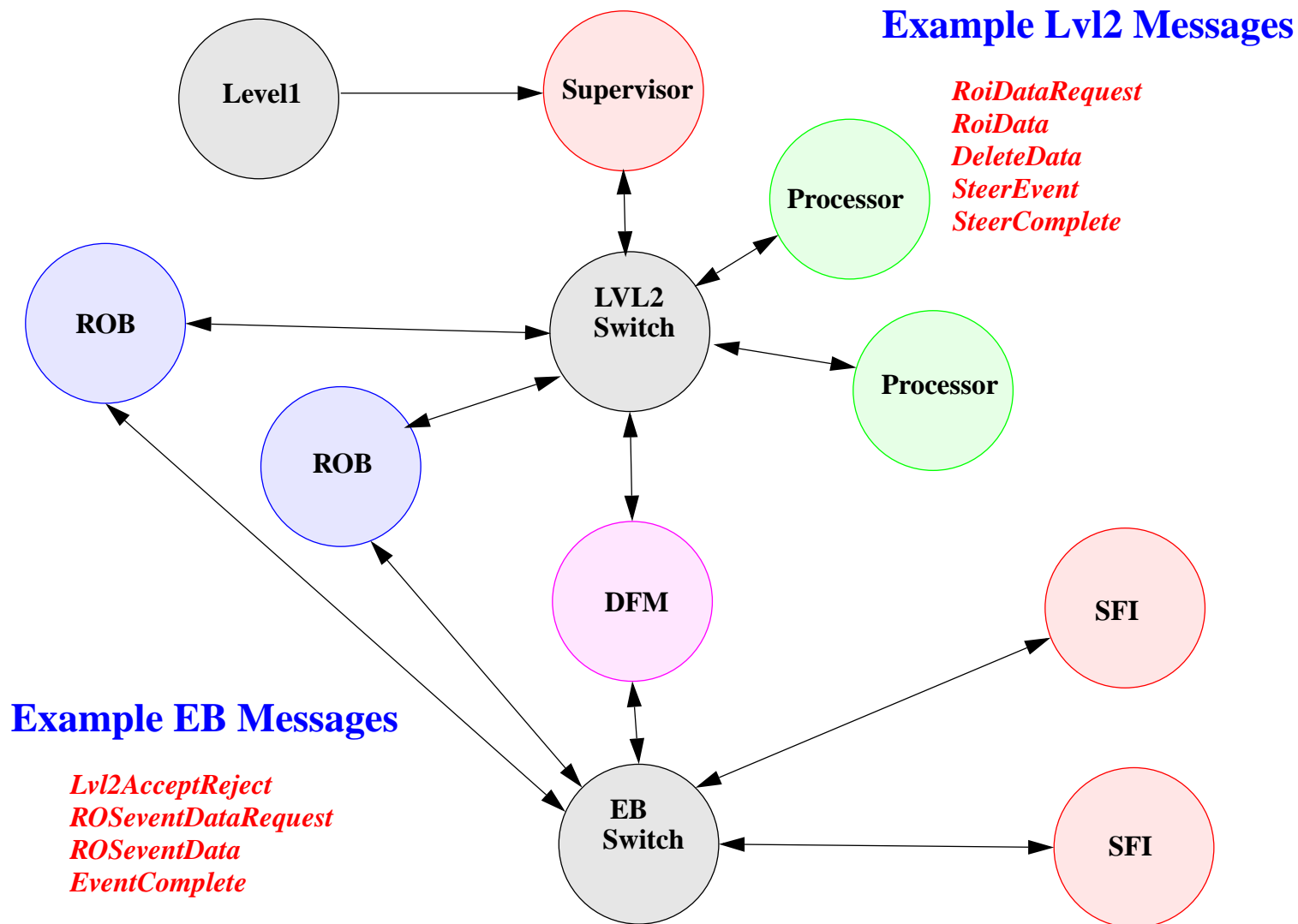
EB Ptolemy Model

- Original EB model written in Ptolemy by G.Lehmann and initially adapted by M.Dobson to run with at2sim
based on DAQ EB prototype with ATM network
- Now completely re-written to conform with at2sim
uses Amessages => allows use of at2sim Null and Ethernet switch models
- Implements the two message passing scenarios proposed by the DataCollection group
<http://atlasinfo.cern.ch/Atlas/GROUPS/DAQTRIG/DataFlow/DataCollection/docs/MessageFlow.pdf>

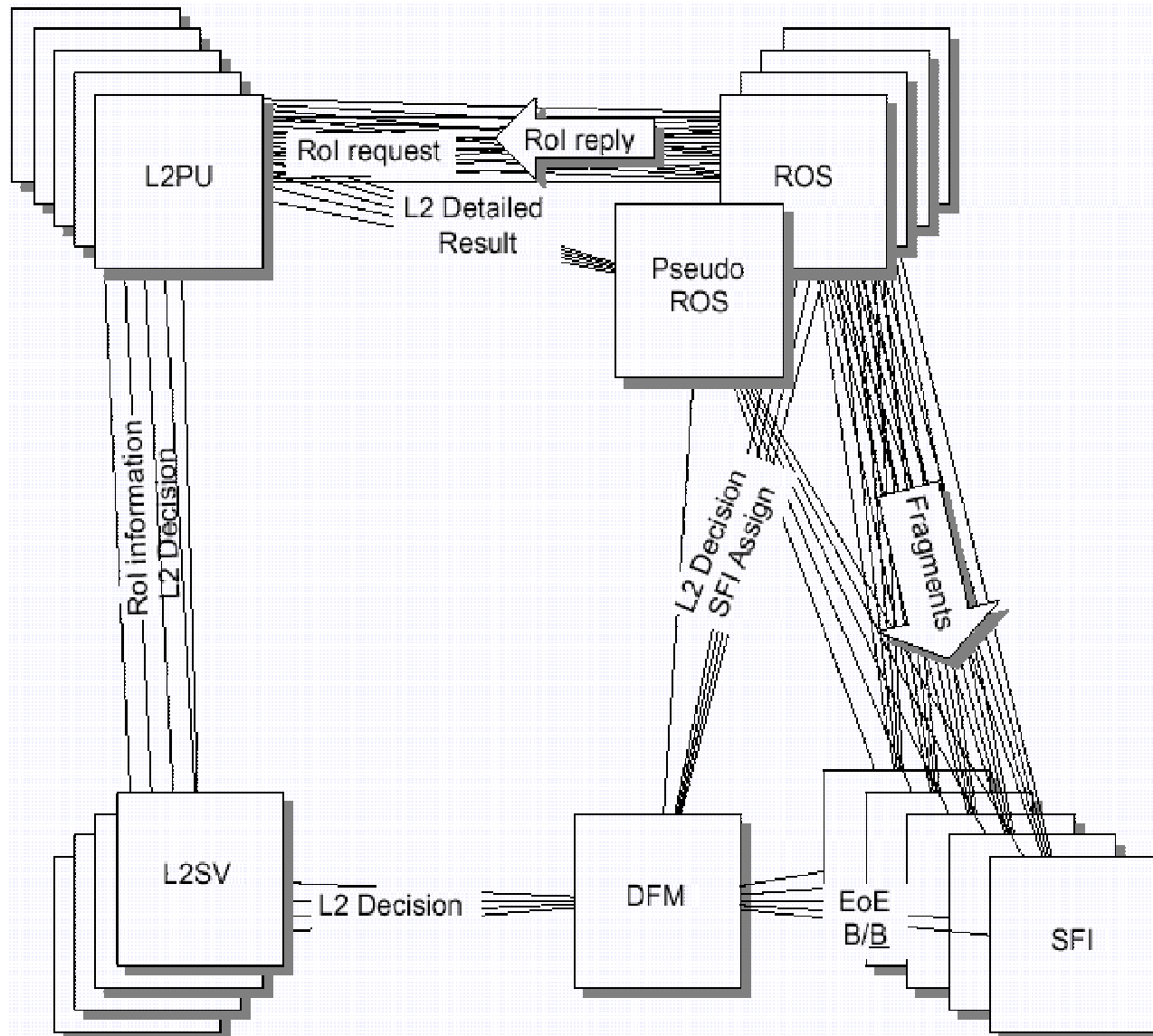
Specifically:

- DFM and DST (SFI) stars completely re-written, ROB's (ROS) have been given an extra interface to the EB network and LVL2 Supervisor sends LVL2 decisions to the DFM
- at2sim can now run a LVL2 simulation on its own or combined with the EB using one or other of the 2 messaging scenarios

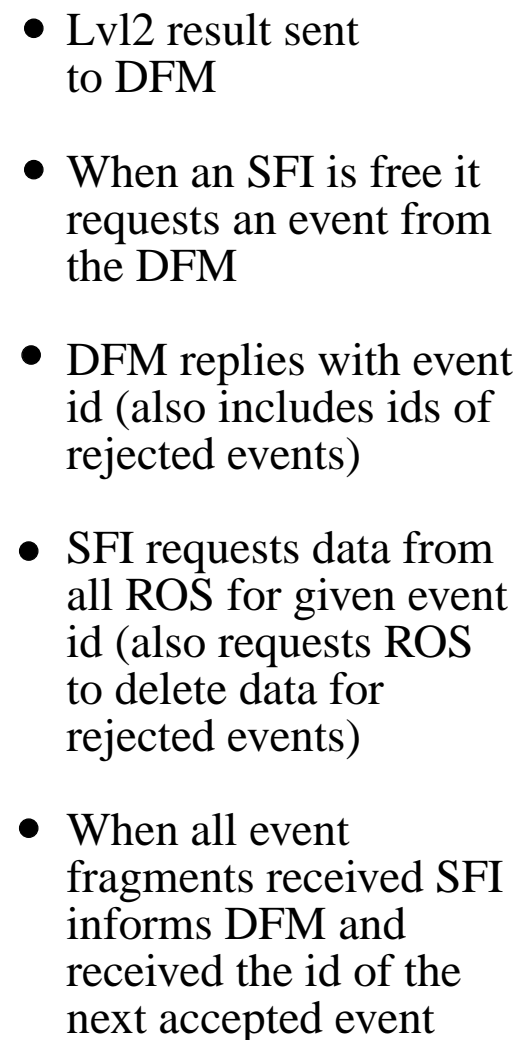
Ptolemy model LVL2 + Event Builder



“Classic” Scenario



- Lvl2 result sent to DFM
- DFM broadcasts message to all ROS
 - list of accepted events and SFI to which data is to be sent
 - list of rejected events
- SFI sends message to DFM once all fragments for event received (or timeout)

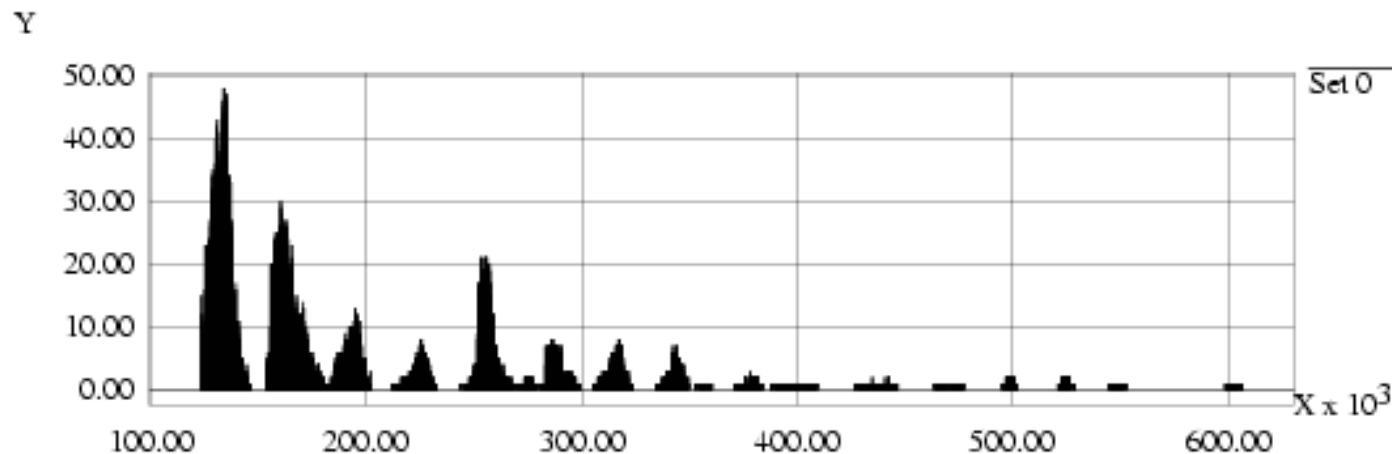


“Results”

Very preliminary results (really only proof that we can run) for simple system consisting of 1 Lvl2 Super, 1 Lvl2 processing unit, 10 ROB, 20 SFIs, 2 DFMs connected with NULL switches. The same (uncalibrated) timing parameters used in both cases.

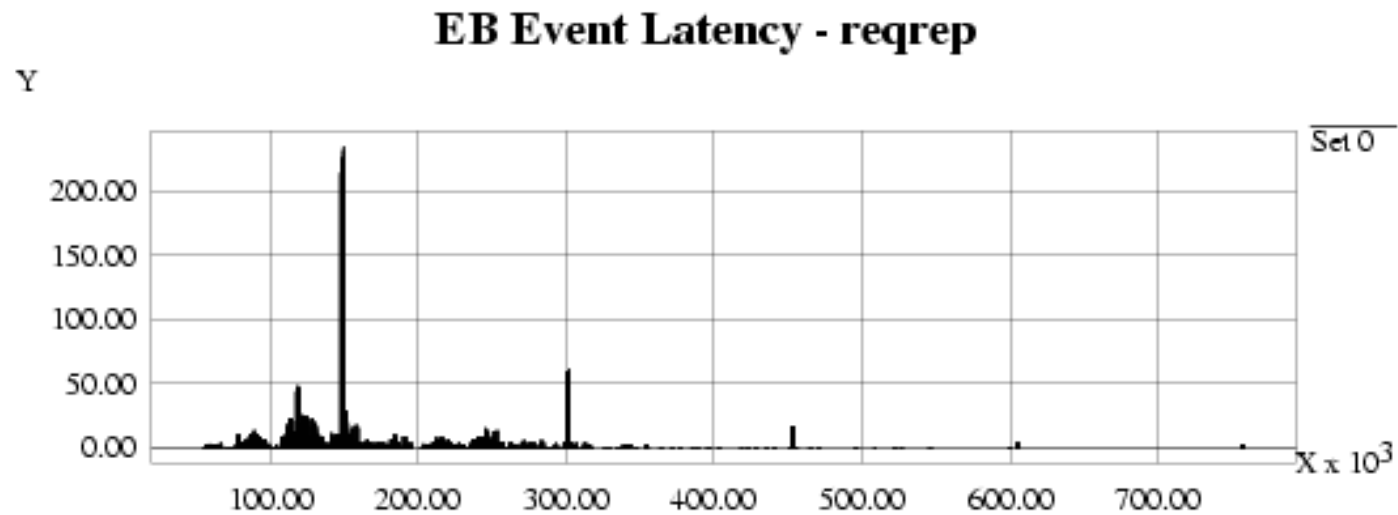
Preliminary

EB Event Latency - classic

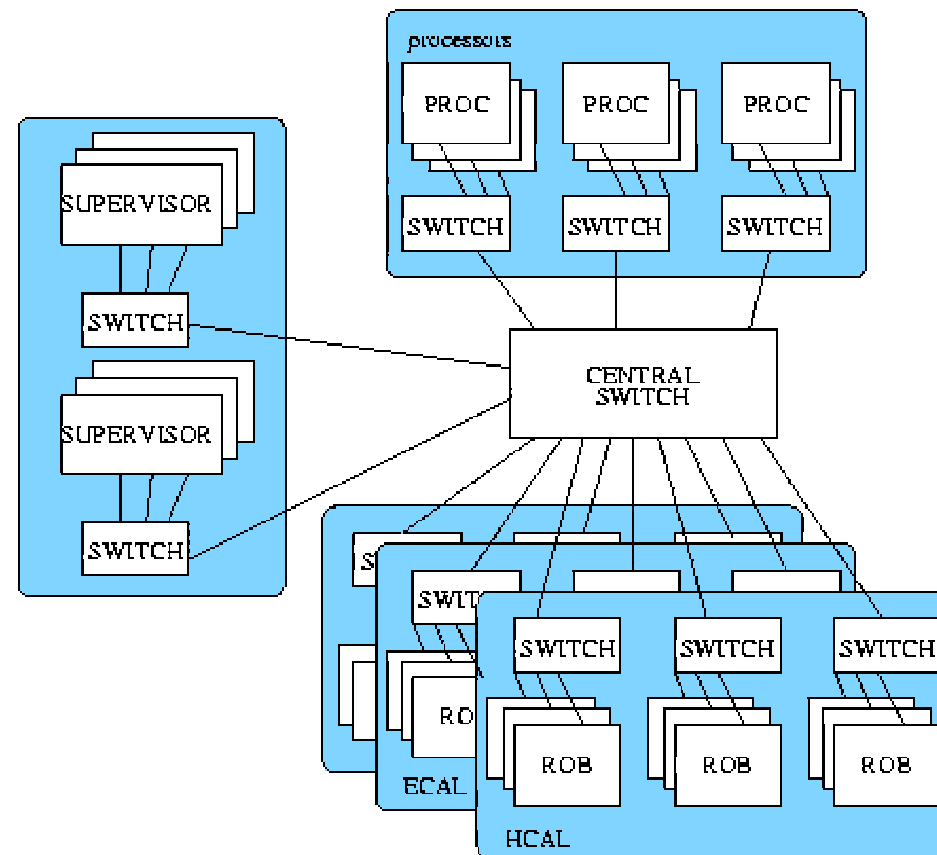


“Results”

Preliminary



at2sim LVL2 simulation



Initial plan is to have similar concentrating switches for ROBs on EB network and implement EB network as Ethernet (see diagram from K.Korcyl)

Future Work

- Investigate traffic shaping issues for both scenarios
- Concentrating switches for DFM/SFIs ?
- Calibrate
- Comparison of 2 Event Builder scenarios
- Feedback to DataCollection group