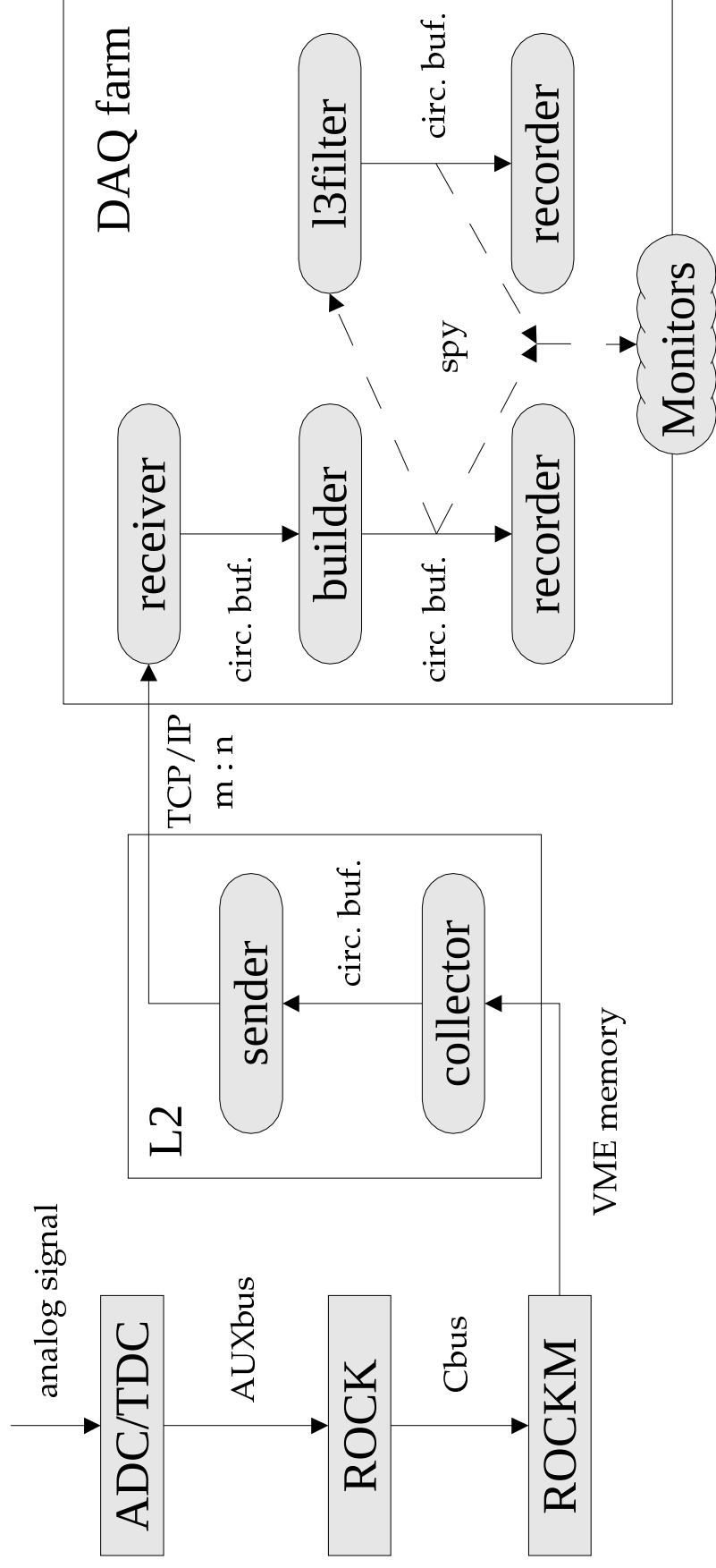


KLOE DAQ

Introduction
and
overview

DAQ data flow



L2 software

↑ collector

- reads via VME from
ROCKM FIFO
- writes to circ. buf.

↑ sender

- reads from circ. buf.
- selects target DAQ farm
and sends via TCP/IP

DAQ farm software

↑ receiver

- receives via TCP/IP
- writes to circ. buf.

↑ builder

- reads from circ. buf.
- validates and builds the event
- writes to circ. buf.

↑ l3filter

- peeks events from circ. buf.
- writes a subset of events to circ. buf.

↑ recorder

- reads from circ. buf.
- writes to disk
- updates the DB

Monitors

↑ local (*spy*)

→ trgmon

↑ local (*not on data*)

→ process checker

↑ remote (*spy*)

→ physmon

→ kserver

→ event display

DAQ control

↑ KLOE run control

- runctl process
- TCL/TK interface

↑ Data Flow Control

- redirects traffic from busy DAQ farms
- receiver controlled
- not active during trash runs

DAQ problems

- | | | | |
|---|--------------------------------------|---|---|
| ↑ | busy periods during data acquisition | ↑ | busy periods after introduction of new sender |
| | → high machine background | | → NFS activity during archival |
| ✓ | optimized TCP/IP buffer size | ✗ | use of static DFC |
| ✓ | increased circ. buffers | | |
| ✓ | parallel sender introduced | | |

Computing power

↑ L2 CPU power

- one CPU per board
- up to now, CPU was not a problem for L2 DAQ

↑ Farm CPU power

- 4 CPUs per node
- saturating the FDDI, **one CPU** is enough for data acquisition
- 13filter saturates its CPU at much lower data rates
- other local monitors together uses less than one CPU

Disk space



Each farm machine has 70GB of disk dedicated for DAQ

- enough for more than 6 hours of continuous acquisition at 3 MB/s/node (*peak rates of last end of year run*)



New disk bought recently

- more than 250GB of disk space per node
- enough for more than 17 hours of continuous acquisition at 4 MB/s/node

HW overview

↕ 10 L2 chains

Chain number	Number of crates	With DC ADCs	
1	4	5	DC
2	7		EMC
3	4	5	DC
4	7		EMC
5	6		trigger
6	7		EMC
7	2		trigger
8	3	4	DC
9	7		EMC
10	3	4	DC

↕ 5 DAQ farm nodes

- 3 used for data acquisition
 - 1 used for calibration
 - 1 used for monitoring/
open also to users
- ↕ 2 more now used for archiving

DC ADC

- ↑ first working prototypes
- ↑ chain 3 ready to acquire DC ADC data
- to be inserted into the 4 DC chains (as last crate in the chain)
- ↑ 3 crates in the remaining 3 chains needs to be delivered and mounted
- at least one day needed to install one crate
- ↑ still some problems in the AUX interface

SW changes due to DC ADC

- ↑ adcdc online package available for the access to the boards
- ↑ data acquisition processes did not need any change
- ↑ dmap and GeoVme upgraded
- ↑ monitor software needed some changes to properly handle the new board
- ↑ L2 software upgraded to properly handle the new board

Spares

Board	Spare avail	Used in lab.	Needed for DC ADC	Total avail
ROCK	5	2	3	0
ROCKM	2	1		1
VIC	7		3	4
I2 SBC	6			6
EMC ADC	13			13
EMC TDC	16			16
DC TDC	0			0