Detected errors
CRC errors happened in many COPPERs simultaneously. 
- Possibly, related with large-event-size issue. 
  (Katsuro-san’s talk yesterday)

Belle2link seems unstable for some links.
- CDC experts sometimes reprogram those FEEs when the error repeatedly occurs.
**TOP**

- A lot of event # jump
- B2link errors simultaneously in many links
- “HSLB not found” happened simultaneously in many links
- FTSW clock trouble? (one FTSW for TOP COPPERs)

**ARICH**

- Several CRC errors during b2link for cpr4017
- B2link errors simultaneously in many links. (Two FTSWs for ARICH COPPERs)
- Belle2link seems stable for ECL
- Sometimes, event # issue happened for all input links
- Not recorded as FATAL/ERROR in log, no events arrival problem frequently occurs. (data w/o w.f.)
**KLM** - Event # jump was observed
- Belle2link error occurred simultaneously in bKLM COPPERs
- Fee errors in eKLM?

**TRG** - Event # jump was observed
- Belle2link error in some COPPERs
Other issues

Recovery of HSLB from large event error
- FTB setup is now available at B3 with help of Katsuro-san.
- The problem can be reproduced with FTB at B3
- I simply cut the input to FIFO above the certain size limit and it did work at B3 test bench. But, with this new firmware, every reset signal from FTSW makes COPPER FIFOs completely full.
  - Investigation ongoing.

COPPER CPU freezes
- Still happens in CDC, TOP, KLM.
- I connected the power-cable of one CDC crate in a rack to another vacant rack to reduce power-consumption in the rack.
  - Seems fine but other CDC crates also shows few COPPER stuck problem.
  - KLM and TOP racks consumes less power but COPPERs in it got stuck.
Event size
Current event size on COPPER (including DAQ overhead)

<table>
<thead>
<tr>
<th>Event size/COPPER [kB]</th>
<th>max. rate w/o loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 kB</td>
<td>75kHz</td>
</tr>
<tr>
<td>2 kB</td>
<td>40kHz</td>
</tr>
<tr>
<td>3 kB</td>
<td>25kHz</td>
</tr>
<tr>
<td>4 kB</td>
<td>20kHz</td>
</tr>
</tbody>
</table>
DATA FLOW TO/FROM ROPC (JUN.6) AND SCALE TO 30KHZ (1)

Exp8 run2076 on Jun.6 : event rate = 2.9kHz

➢ SVD experts expect large increase in event size in future. -> 350MB/s/ROPC

<table>
<thead>
<tr>
<th>SVD data rate @ 15kHz [MB/s]</th>
<th>SVD data rate @ 30kHz [MB/s]</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. ~ 35</td>
<td>max. ~ 70</td>
</tr>
<tr>
<td>max. ~ 170</td>
<td>max. ~ 350</td>
</tr>
<tr>
<td>~ 1200</td>
<td>~ 2500</td>
</tr>
</tbody>
</table>

(Katsuro)

2019 BELLE II TRIGGER AND DAQ WORKSHOP AT YONSEI UNIVERSITY 10
DATA FLOW TO/FROM ROPC (JUN.6) AND SCALE TO 30KHZ (2)

TOP

- Recvd from COPPERs [MB/s] : run2076 on Jun.6
- Sent to HLT [MB/s] : run2076 on Jun.6
- Recvd from COPPERs [MB/s] : scale to 30kHz
- Sent to HLT [MB/s] : scale to 30kHz

ARICH

- Recvd from COPPERs [MB/s] : run2076 on Jun.6
- Sent to HLT [MB/s] : run2076 on Jun.6
- Recvd from COPPERs [MB/s] : scale to 30kHz
- Sent to HLT [MB/s] : scale to 30kHz
DATA FLOW TO/FROM ROPC (JUN.6) AND SCALE TO 30KHZ (3)

ECL

- Received from COPPERs [MB/s]: run2076 on Jun.6
- Sent to HLT [MB/s]: run2076 on Jun.6
- Received from COPPERs [MB/s]: scale to 30kHz
- Sent to HLT [MB/s]: scale to 30kHz

KLM

- Received from COPPERs [MB/s]: run2076 on Jun.6
- Sent to HLT [MB/s]: run2076 on Jun.6
- Received from COPPERs [MB/s]: scale to 30kHz
- Sent to HLT [MB/s]: scale to 30kHz
Hardware task: todo before the fall run

Additional nodes
- TRG COPPER: 2 COPPERs (4 links)
  - Installation was done.
- TRG ROPC: Add trg03 (+trg04)
  - Installation of trg03 was done.
-> SLC setup is not yet done.

Network throughput
- SVD: Done before phase 3 (x2GbE)
- ECL: to do before the fall run

Replacement
- Cdc06: frequent disk? Trouble
  - Replace with a new server
Summary

➢ ERRORS detected by COPPER and ROPCs
   ➢ SVD : mainly after receiving large events
   ➢ CDC : belle2link seems unstable in some links
   ➢ TOP : event # jumps. FW work by TOP experts is ongoing.
   ➢ ARICH : Stable. B2link errors in several COPPERs at the same time.
   ➢ ECL : b2link is stable. Sometimes no events arrives at some COPPERs
   ➢ KLM : Stable.
   ➢ TRG : Event # jump.

➢ Event size
   ➢ Currently, the event size is within the expectation. ( except for SVD with larger occupancy. )