

Comprehensive DAQ upgrade Manuscript

Preparation plan & Progress

<https://www.overleaf.com/read/pfkqgzbfpzhv>

Target journal

- NIMA
 - *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*
 - Impact Factor: **1.335**

Manuscript content

Manuscript title?

To be decided...

Few suggestions...

- **Upgrade & performance evaluation of the Belle II DAQ for high-luminosity operation of SuperKEKB**
- Performance evaluation of the upgraded Belle II DAQ
- Commissioning of upgraded Belle II DAQ system: PCIe 3.0-based readout
- ...
- ...

List of authors

- Belle II DAQ Upgrade and DAQ Team members
- A few members from each of the sub-detector groups (in-charge, experts)
 - TOP: Martin, Hulya, ?
 - KLM: Dipta, Vipin, Kindo-san, Chris, ?
 - ARICH: Yun-Tsung, ?
 - ECL: Mikhail, ?
 - SVD: Katsuro-san, ?
 - CDC: Nanae-san, Nakazawa-san, Xiaodong, ?
 - TRG: ?
- Other contributors from the DAQ group or other groups
 - S. Suzuki-san, Vasily, ?
- External contributors
 - P. Kapusta, Oskar Hartbrich, ?

Layout of the manuscript

- Introduction
- Belle II DAQ
 - Overview of Belle II DAQ
 - Old Belle II DAQ setup
- Upgraded Belle II DAQ setup
- PCIe40 firmware and driver development
- Readout software development
- Slow-control tests and performance
- DAQ tests and performance
- Commissioning with upgraded Belle II DAQ setup
 - Performance in Physics runs
- Planned improvements in the near future
- Cross-point switch
- Optical timing and trigger distribution
- Acknowledgment
- References

Responsibilities

Young authors

(Worker bees)

Manuscript/section writers

- Me (H. Purwar)
- Q. Zhou
- D. Levit
- T. S. Lau
- Y. T. Lai
- S. Park
- S. Yamada
- S. Suzuki
- ...

Experienced authors

(Queen bees)

Manuscript/section editors

- G. Varner
- S. Yamada
- M. Nakao
- P. Robbe
- D. Charlet
- T. Higuchi
- R. Itoh
- ...
- ...

Status as of today

- No major progress
 - I myself have been a bit occupied, I assume the same for others!

Request to all worker bees:

- Please start writing/dumping figures, notes, etc. in your free time.
 - If you put a figure that has already been included in some publication, please do add a reference in figure caption.
- Our target should be to wrap it up, before LS1 ends, at the least have a first draft ready for Queen bees to review.
- Also, please do let me know if you can't access the manuscript on overleaf, I can resend the overleaf invite. The first invite was sent weeks ago!

Thank you for your time and attention.

- Harsh Purwar
purwar@hawaii.edu