

Report from KAGRA DetChar

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O4 Requirements Document

Online DQ

- Framework of DQ vector production which was used during O3GK is available.
- DQ vector can be provided after the first lock of DRFPMI.
- Definition of DQ vector will be improved during DRFPMI commissioning.

Data Quality Report

- This task was postponed (O3GK) because of GraceDB access issue.
- KAGRA needs the user authentication system to (fully) access GraceDB.
- Some analysis (Omega-scan etc.) may be prepared.
- But we don't have any prospects about timeline and man-power resources now.

Offline Transient Event Validation

- Chihiro who worked on the event validate issue for O3 will leave KAGRA in April.
- We need new corresponding person of this issue.

Offline transient DQ

- KAGRA plan to provide CAT1 for O4.
- HW injection flags was provided during O3GK.
- We need to prepare the conversion script to veto-definer format.
- Discussion is not started yet.

Recent activities of KAGRA DetChar

- **Only 4 people have activities as DetChar.**
 - Chihiro is exclusive to DetChar.
 - Kihyun helps offline DetChar analysis.
 - Shoichi and I (Takahiro) work on CDS, DetChar, site installation, commissioning, etc.
- **Chihiro and Kihyun are now working on hveto analysis for O3GK paper.**
 - Chihiro also works as the paper writing team of this paper.
 - The paper work continues at least next one month.
- **Shoichi works on maintaining SummaryPages.**
- **I (Takahiro) work on constructing DetChar computer environment.**
- **Shoichi and I (Takahiro) are now mainly working on preparing CDS update and helping site installation work such as SUS.**
 - **KAGRA CDS have only 3 members** (Osamu, Shoichi, and me (Takahiro)).
 - We need to replace all Dolphin network instrument in order to update CDS software.
 - The suspension upgrade work (11 suspension plants) is performed by only 2 Kamioka-resident member and 3 members from Tokyo.
 - Most of **Kamioka-resident people need to help the suspension upgrade work** in next half year.

Almost all O4 preparation about DET are now postponed due to the site work and O3 offline analysis.

Prospects of O3 data replay

Plan-1: use simulation data

- Online DQ state vector

- It will be provided as a part of the simulation data.

- Segment production

- It can be done with 1 day cadence (same as O3GK).
- How about the capability of DQSEGDB?

- Glitch search by Omicron

- It can be done with 30-60 min. cadence (same as O3GK).
- Only using simulated $h(t)$.
- Do we need also some auxiliary channels?

- hveto analysis

- If Auxiliary channels will be prepared.
- It can be done with 1 day cadence (same as O3GK).

Prospects of O3 data replay

Plan-2: use past (O3GK?) KAGRA data

- Online DQ state vector

- DQ state vector in full frames will be used.

- Segment production

- It can be done with the 1 day cadence (same as O3GK)
- How about the capability of DQSEGDB?

- Glitch search by Omicron

- It can be done with 30-60 min. cadence (same as O3GK).
- Both $h(t)$ and auxiliary channels can be used.
- But the number of aux. channels should be reduced in order to keep computer resources for O3GK offline analyses.

- hveto analysis

- It can be done with 1 day cadence (same as O3GK).