

Real-time front-end control code is extremely specialized and highly customized to each subsystem. **Developing the required expertise takes significant time and dedication.** We urge the project to invest in this capability as early as feasible.

## Answer by O. Miyakawa

- We keep distributing the stand alone digital system to subsystems and requesting all subsystems to invest in developing real-time-front-end codes.

## Distributed systems: 5 stand-alone systems

Pre-isolator test (VIS/ICRR), Data pre-processing (NAOJ/DetChar),  
Interferometer control (CLIO), R&D (U-Tokyo),  
Cryo-payload (KEK/CRY) ????

We recommend **postponing commercial computing hardware purchases as long as possible**, as this will provide more computing power for a given budget.

## Answer by N.Kanda:

- We agree to this, and have scheduled it as late as possible.

## Changes after the previous external review:

- National budget for data analysis and multi-messenger astronomy was approved. So, some fraction of data transfer system (low-latency transfer system) will be prepared before iKAGRA observation.
- We are planning to use the next-generation (2014-2019) computer system at ICRR, which will have sufficient performance for KAGRA. Kanda and Miyoki is members of the committee to determine its specifications.