

## LCGT Roadmap Special Working Group Report

2011.12.31

### • Scope

The scope of the LCGT roadmap special working group is to make recommendation on the LCGT master schedule, considering following three points: (1) constraints on the LCGT master schedule (2) bottom-up schedule of subsystems (3) framework to control project and subsystem progress. In this report, we summarize the LCGT master schedule for on-site tasks (installation, commissioning, and observation), expecting approval by the LCGT executive committee (EC). This report is a result of extensive discussions in the working group on subsystem plans, consistency with project constraints, and schedule risks.

### • Recommendation

The procedure of on-site tasks of LCGT should be the followings (Fig.1).

- Installation of the vacuum system and cryostat should be completed by the end of FY2014 (2015.3). In parallel with it, installation and commissioning of the laser source, the input optics, the iLCGT interferometer should be started. The initial vibration isolator for iLCGT interferometer should be 'Stack-B' (Type-B payload on a stack).
- First observation run with the iLCGT configuration should be started in 2015.11. Installation of Type-A SAS for test masses should be started after completion of iLCGT isolator installation. For the center interferometer (BS and PRC), the isolator should be upgraded after iLCGT to Type-B SAS. At this point, we should consider about an option to use Stack-B instead of Type-B SAS, with knowledge on performance of isolators, and taking the progress of other tasks into account.
- Full-system test of Type-A SAS, cryo-payload, cryo-system, and Sapphire test mass should be completed by 2016.9 at the end rooms. During that, central interferometer part should be operated with a dual-recycled interferometer configuration to gain technical feasibility of interferometer system.
- Sapphire test masses should be installed for ITM from 2016.10. After that interferometer commissioning with the bLCGT final configuration should be started at room temperature. Operation with cryogenic temperature should be started from 2017.9.
- First observation run with cryogenic interferometer should be started by the end of FY2017 (2018.3). After tuning and noise hunting, long-term observation run should be started from 2018.9.

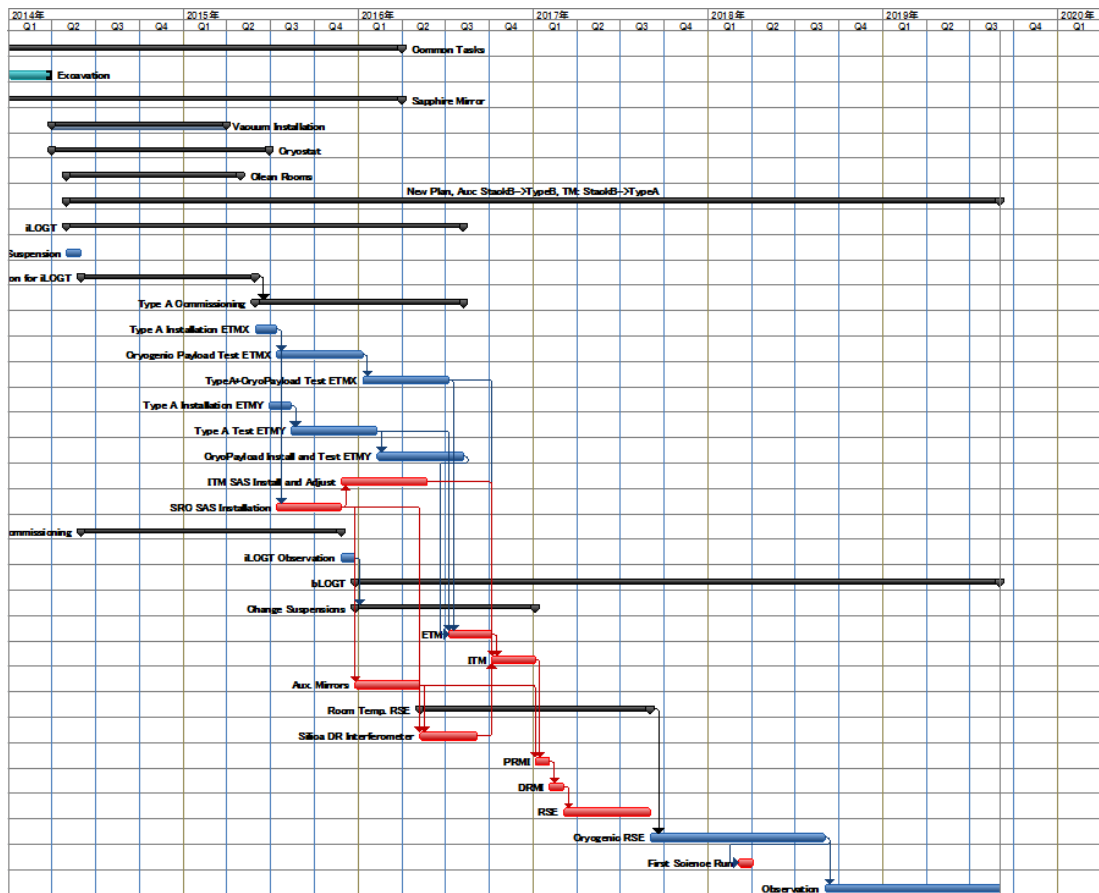


Fig1: LCGT master schedule in this report.

Note: This report is a translated version of the original report submitted to EC, which is written in Japanese.