

# LCGT Roadmap special working group

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## External Review (End of February)

Some recommendations on the LCGT schedule and subsystem development plans, in particular at the iLCGT stage.  
→ Require discussions and consensus with multiple subgroups.



The scope of roadmap special working group has been expanded

Previous : to recommend the roadmap to realize bLCGT

Now : to recommend the roadmap to realize LCGT

→ LCGT schedule plan including design, research, development, performance test, installation, and shakedown.

# Previous Master Schedule

Draft for discussion

- 3 Major stages

iLCGT (2010.6 - 2014.9) Stable operation on large-scale IFO

→ 3km FPM interferometer at room temperature,  
with simplified vibration isolation system

~1 month (TBD) observation run

bLCGT (2014.10 – 2017.3) Observation run with final configuration

→ RSE, upgraded VIS, cryogenic operation

OBS (2017.4 -) Long-term observation and detector tuning

2011

2012

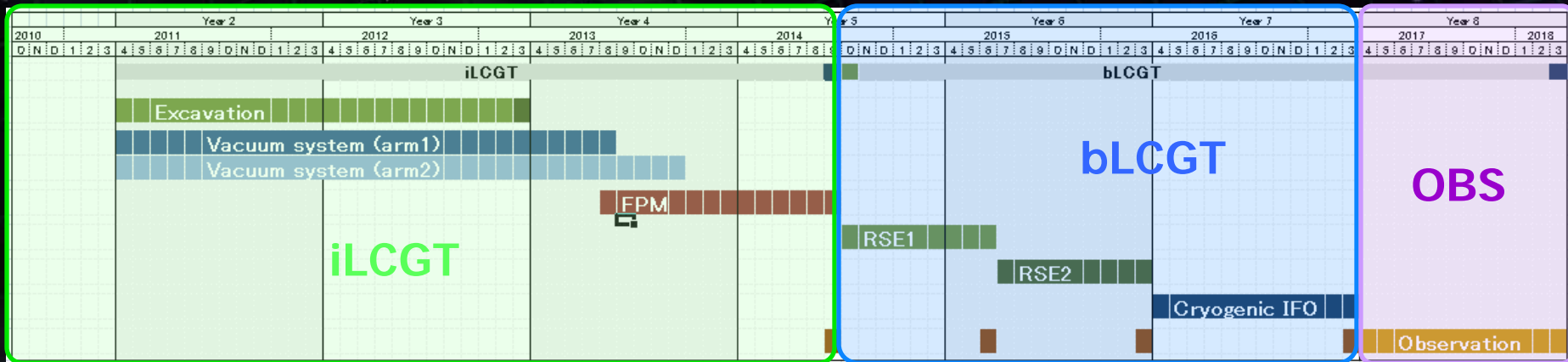
2013

2014

2015

2016

2017



# Recommendations

## On project

- Plan to employ established technology with minimum modifications.
  - Integrated system test to minimize the risk of late surprises.
  - Enhanced scope of iLCGT and possible change of schedule for it.
    - Integrated system test to reduce risks and to compress schedule.
- Possible astrophysical output in the iLCGT stage.

## Vibration Isolation

- Employ the full-scale type-B isolation system for test masses from the first phase of iLCGT installation.
- Rapid development of the full-scale type-B system.

## Mirror

- Consider contingency options that do not depend on the early delivery of high-quality sapphire input test masses.
- Possible plan: cool only the end masses at first.
  - This may require a thermal compensation system.

# Status

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## Status and plan

- Discussion on the iLCGT and bLCGT construction plan.
- Two meetings after the external review (April 11<sup>th</sup> , April 20<sup>th</sup>).
- Next meeting on May 11<sup>th</sup>.
  
- Will summarize the recommendation by June 10<sup>th</sup> , 2011.