



**Attachment OPS to the
Memorandum of Understanding LIGO-M970077-00
between the German/British Collaboration (GEO 600) for the
Detection of Gravitational Waves (GEO600)
and the
Laser Interferometer Gravitational Wave Observatory (LIGO)
For The Period
August 15, 2008 - August 14, 2009**

This Attachment OPS to the Memorandum of Understanding LIGO-M970077-00 defines the role of the German/British Collaboration (GEO 600) for the Detection of Gravitational Waves (GEO600) as a Member of the LIGO Scientific Collaboration (LSC) in the areas of detector commissioning, detector characterization, and operations support in the initial LIGO interferometers. The period of performance for the activities in this Attachment is from August 15, 2008 - August 14, 2009.

1. Collaboration

Together, the LIGO Laboratory and the LIGO Scientific Collaboration (LSC) are responsible for implementing and exploiting the initial LIGO detector through its science data runs. LSC groups are encouraged to contribute to the commissioning, characterization, and operation of the LIGO detectors, as members of working groups established by the LIGO Laboratory and the LSC.

2. Participation

During the period August 15, 2008 - August 14, 2009, the members of GEO600 will participate in the initial LIGO detector research program in the following areas:

a. Detector Commissioning

Not Applicable

b. Detector Characterization

Not Applicable

c. Detector Operations

The astrowatch mode will continue throughout 2008 and early 2009. During this time we will continue the preparation for GEO upgrades and investigation of noise sources. With the end of the astrowatch program when Enhanced Ligo detectors will start acquiring science data GEO600 will start to undergo a number of sequential upgrades, labelled as the 'GEO-HF' program. Likely then around spring

2009 (depending on LSC-wide consensus when astrowatch will end) we will install a new vacuum chamber for the OMC and a new Faraday isolator.

Together with this, we will implement a squeezed vacuum source for application at the anti-symmetric port of GEO. When shot-noise limited performance is reached, we will try to increase the injected laser power. Upgrades of the input modecleaner optics and of the laser are foreseen for this purpose, and may follow throughout 2009 or later.

d. Other Contributions

Not Applicable

3. Resource Sharing

The LIGO Laboratory will contribute resources including allocation of appropriate scientific and engineering personnel, research facilities, and funding in support of the effort in Item No. 2, as indicated below.

- a. Research accommodations for GEO600 group members while on LIGO research assignment at any LIGO Laboratory site.

Not Applicable

- b. Access to LIGO data through established LSC channels in support of this work.

Not Applicable

4. Coordination and Reporting

GEO600 will perform research within the structures established by the LIGO Laboratory and the LSC where appropriate.

In particular, with reference to activities described above:

2a will be carried out in coordination with the LIGO Laboratory Commissioning Leader.

2b will be carried out within the Detector Characterization Working Group of the LSC.

2c will be carried out in coordination with the LHO or LLO Site Head.

This includes keeping the Group leaders informed of activities and plans, reporting to the group at meetings and telecons, and through technical documents submitted to the LIGO Document Control Center.

In addition, an annual report will be submitted with the update to this Attachment, giving a summary status on research by topic as indicated in Item No. 2, including progress against the milestones if any, significant accomplishments such as new insights/discoveries or publications, issues of concern if any, and an indication of invested time.

This Attachment will be updated at least annually with a plan of activities for the succeeding one-year period. These documents will be due one month before the close of the period of performance under this Attachment.

5. Computer Code

All computer code delivered to the LSC under this Attachment must be developed in consultation with the LSC Data Analysis Software Working Group (DASWG) and archived, documented and reviewed as determined by that group.



Jay Marx
LIGO Laboratory Director



Karsten Danzmann
**Principal Investigator(s)
GEO600**



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