

A Science VO Matures Its IdM: LIGO Progress the Past 6 Months

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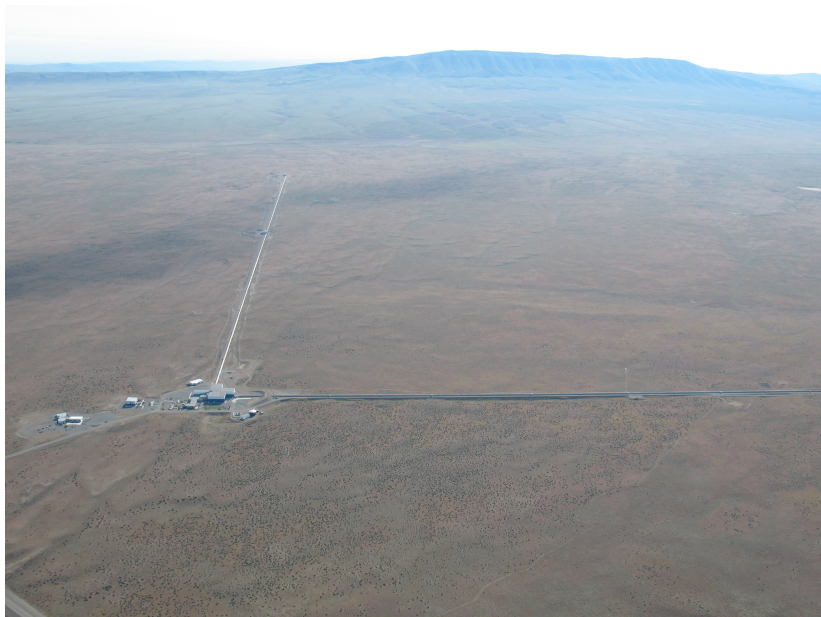
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LIGO Science Mission

LIGO, the Laser Interferometer Gravitational-wave Observatory, seeks to detect gravitational waves – ripples in the fabric of spacetime. First predicted by Einstein in his theory of general relativity, gravitational waves are produced by exotic events involving black holes, neutron stars and objects perhaps not yet discovered.

LIGO Hanford, WA Observatory

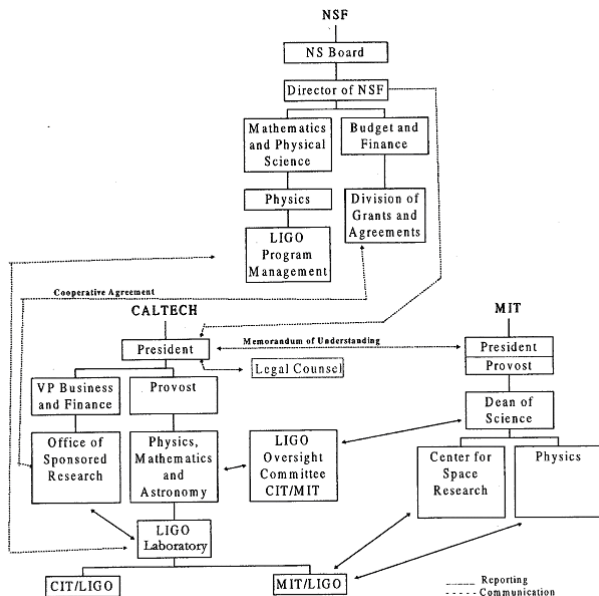


LIGO Livingston, LA Observatory



LIGO Laboratory =
LIGO Caltech + LIGO MIT +
LIGO Hanford Observatory +
LIGO Livingston Observatory

LIGO Laboratory



LIGO Scientific Collaboration

The LIGO Scientific Collaboration (LSC) is a self-governing collaboration seeking to detect gravitational waves, use them to explore the fundamental physics of gravity, and develop gravitational wave observations as a tool of astronomical discovery. The LIGO Scientific Collaboration was founded in 1997 and currently has more than 800 members from 70 institutions worldwide.



LIGO Scientific Collaboration



Universität Hannover

LIGO IdM in 2007

What IdM?

- ▶ Official membership roster tracked in Excel spreadsheet
- ▶ Multiple web servers across world
 - ▶ Most require unique accounts and passwords
 - ▶ Some use a collaboration-wide shared passwords
- ▶ Login to Linux clusters using X.509
 - ▶ Users manage their own certificates and keys
- ▶ No group management
- ▶ No single electronic identity
- ▶ No single sign-on

LIGO IdM in 2011

- ▶ Single electronic identity for each LIGO person
 - ▶ Kerberos based
 - ▶ `albert.einstein@LIGO.ORG`
- ▶ MyLIGO user portal
 - ▶ Registry and workflow management
 - ▶ Password reset and management
 - ▶ Interface to group and collaboration management
 - ▶ MyLIGO 2.5 built on COmanage (March 2012)
 - ▶ Two LIGO developers with commit access
- ▶ Production SAML 2 (Shibboleth) Infrastructure
 - ▶ Production IdP with 2 distributed hot backups
 - ▶ 50+ SPs
 - ▶ Users drive admins into hooking into the infrastructure
- ▶ Production Grouper (1.6.3) managing all ACLs

Internet2 middleware is in the critical path for LIGO

LIGO IdM: Next step is federation

- ▶ First hurdle was LIGO Security Committee
 - ▶ Can we trust those “other” guys?
 - ▶ Silver IAP helps, but...
 - ▶ Much concern on secret management
 - ▶ Want to review each audit and POP
- ▶ Actively working to join InCommon
 - ▶ Participation Agreement at version 3
 - ▶ Maybe this week?
- ▶ Actively pursuing international federations
 - ▶ SURFnet driven by LOFAR project
 - ▶ U. of Tokyo and GakuNin driven by LCGT

LIGO's InCommon Federation Pain

12. Insurance

Participant covenants and agrees to obtain and maintain in force, at its own expense, throughout the term of this Agreement, commercial general liability insurance coverage with a combined single limit of not less than \$3,000,000.00 each occurrence or its equivalent, whether such insurance is maintained through self-insurance or through third party insurance, against claims, regardless of when asserted, that may arise out of, or result from, Participant's participation in the Federation.

LIGO's InCommon Federation Pain

LIGO is not a legal entity

- ▶ Put the virtual into Virtual Organization (VO)
- ▶ Cannot enter into contracts
- ▶ Cannot purchase insurance
- ▶ Relies on Caltech for purchasing

Asking Caltech to sign on behalf of LIGO

- ▶ Assume liability for LIGO people all over world?
- ▶ Caltech understandably concerned

LIGO's InCommon Federation Pain

At this point in InCommon's evolution is the Insurance clause still necessary?

or

Should the definition of a research organization be broadened and a different type of participation agreement be drafted to support large international research organizations?

(Sorry, do not mean to tell InCommon its business...just explaining where the pain was found...)

LIGO's InCommon Federation Pain

- ▶ Caltech operates LIGO via cooperative agreement with NSF
- ▶ Causes “NSF flowdowns” into contracts
- ▶ Means another round of negotiation with InCommon
- ▶ (May be simple boilerplate but I don't know yet)

LIGO's InCommon Federation Pain

As the size of InCommon grows and pace of joining picks up would a mentoring program help?

Someone other than John Krienke (who is already very busy!) to explain the philosophy of the participation agreement, why it is structured the way it is, and the best way to engage when edits needed?

Knowledge transfer is important

- ▶ Science VOs have little IdM experience
- ▶ Need consulting to prevent repeating old mistakes
- ▶ Please continue to share your people!

