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The “Host Laboratory” Role

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Fermilab

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Fermilab is dedicated to research in particle physics, with the goal of understanding the fundamental nature of matter, space, and time.

- We
 - build and operate the facilities needed for particle physics.
 - develop new technology that helps support the wide range of accelerator-based science.
- Fermilab is the largest U.S. laboratory for research in high energy physics.
 - 2200 employees
 - 2500 scientist-users



The Large Hadron Collider



- The DOE and NSF collaborated to invest in the LHC so that U.S. physicists could continue to work at the energy frontier.
 - US-LHC: \$110 M of superconducting magnets and other systems
 - US-CMS and US-ATLAS: ~\$170 M each for construction of detector systems, associated software and computing efforts
 - ~400 US physicists in each collaboration
- Fermilab is committed to its central role as the host laboratory for two of these efforts.
 - US-LHC: Magnets and other accelerator components for the LHC
 - US-CMS: Major detector systems and a US home for the research effort
 - We commit some of our best technical experts and project managers to these projects and we oversee them closely.

US-LHC

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- This is a 3-laboratory collaboration, with Fermilab as lead laboratory and Jim Strait as project manager.
 - 75% complete; schedule performance good
 - Technical performance excellent
 - Aggressive management to maintain cost contingency
- US-LHC is building systems for the Interaction Regions(IR)
 - IR quadrupoles and integration (Fermilab)
 - Beam separation dipoles and cable testing (BNL)
 - IR feedboxes and absorbers (LBNL)



Test of Fermilab prototype quadrupole magnet for the LHC

US-CMS

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The progress on US parts of CMS has been very good.

hAbout 68% of work complete.

hschedule and cost performance excellent

hMuch of contingency use has been for increased scope, such as Silicon.

The planning for transition to the CMS research program is well along.

hSoftware and computing project

hHandoff to maintenance and operations

hR&D for upgrades



US-CMS-built hadron calorimeter module at CERN

Possible Roles for Fermilab

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- One of the collaborating US institutions with responsibility for our own contribution
- Provide access to facilities and support for all US collaborators
- “Host laboratory” with management oversight and responsibility for success of the program.

Host Laboratory

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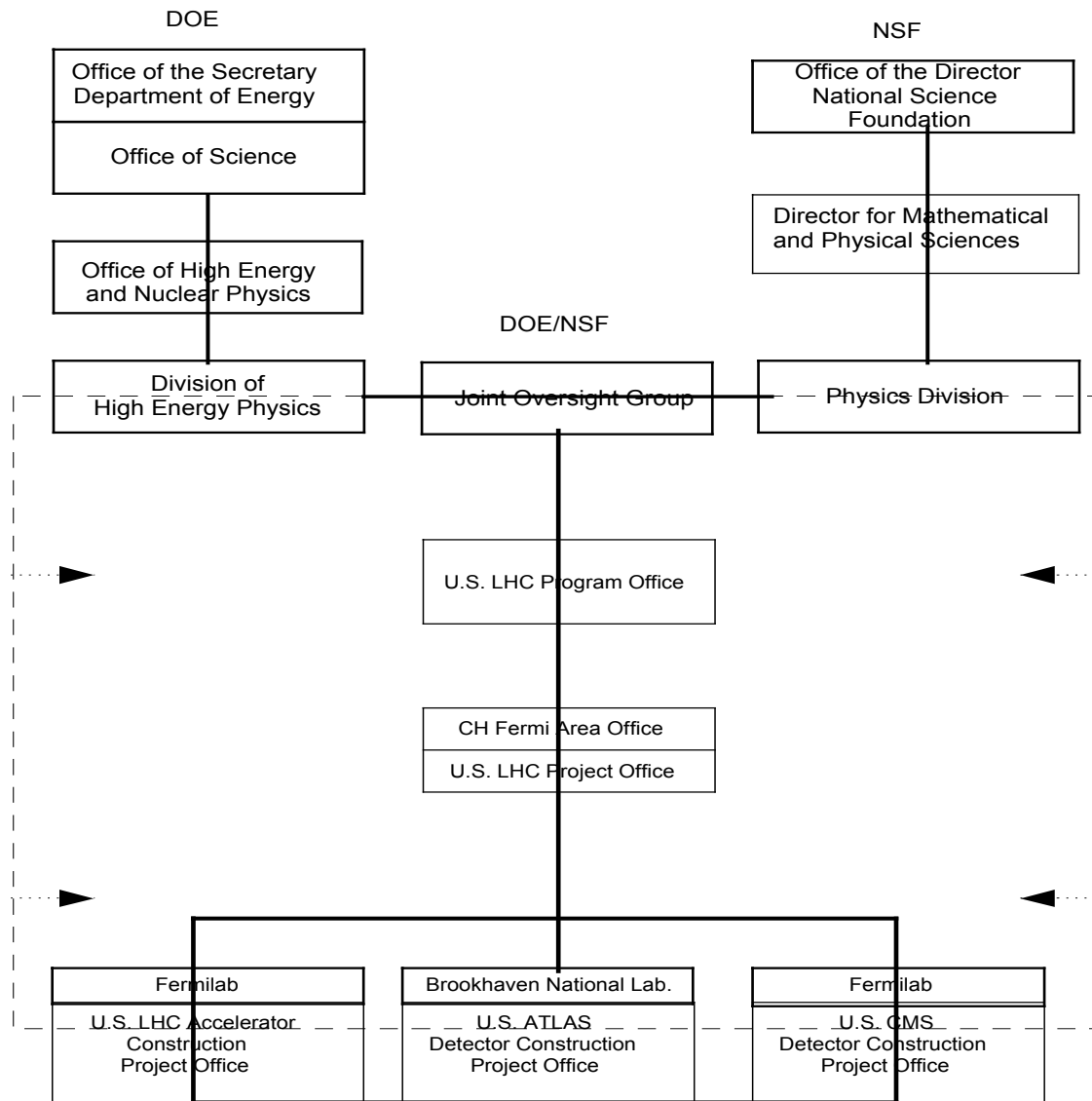
- In a letter dated May 30, 1997, Fermilab was asked by DOE (O' Fallon) and NSF (Eisenstein) to provide management oversight of the U.S. CMS Project.
- A similar letter dated May 30, 1997, asked Fermilab to provide management oversight of the US LHC Accelerator Project.
- Fermilab accepted these responsibilities.

Host Laboratory Role

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Reporting to the Joint Oversight Group:

- Provide management oversight.
- Appoint the Project Manager who reports to the laboratory director.
- Appoint an external advisory body which reports to the laboratory director. Conduct independent reviews. Approve baseline changes.
- Concur in MOUs between CERN and the projects and MOUs between the projects and the collaborating institutions.



— Program Direction and Reporting
 - - - - - Communication and Coordination

Why Host Laboratory?

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- The need for strong, centralized project management to ...
- Deliver project approved scope within cost and on schedule
- Laboratory can provide centralized project management tools (accounting systems, scheduling, earned value,)

Why Fermilab?



- The LHC is an important, high priority part of the US and Fermilab programs
- Existing Facilities and staff at Fermilab are well suited and very valuable for contributing to the fabrication of major U.S. CMS and LHC deliverables

Summary

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- Host lab concept is working well for the LHC projects