

Industrial Participation

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- **Why industrial participation?**
- **Industry interest**
- **Examples of current participation**
- **On-going industrial cost study**
- **Next steps**

- It is expected that U.S. industry must play a large role in the production of mass produced cavities and cryomodules.
- Limited experience currently exists in U.S. industry, particularly for cavity fabrication and processing.
- U.S. industry has expertise in reducing mass production costs, particularly if engaged early in the development cycle.
- A small group of industrial companies has already formed a network to stimulate interest and participation in the ILC.



Linear Collider Forum of America



Fermilab

- (from LCFOA mission statement) LCFOA provides a formal network for its U.S. industry members with a common business interest to interact with U.S. government funded R&D efforts during the design and siting of the ILC
- Formed in September 2005 and has met three times (~twice per year).
- Lists 24 members, six of whom contributed to the RF Unit cost study.

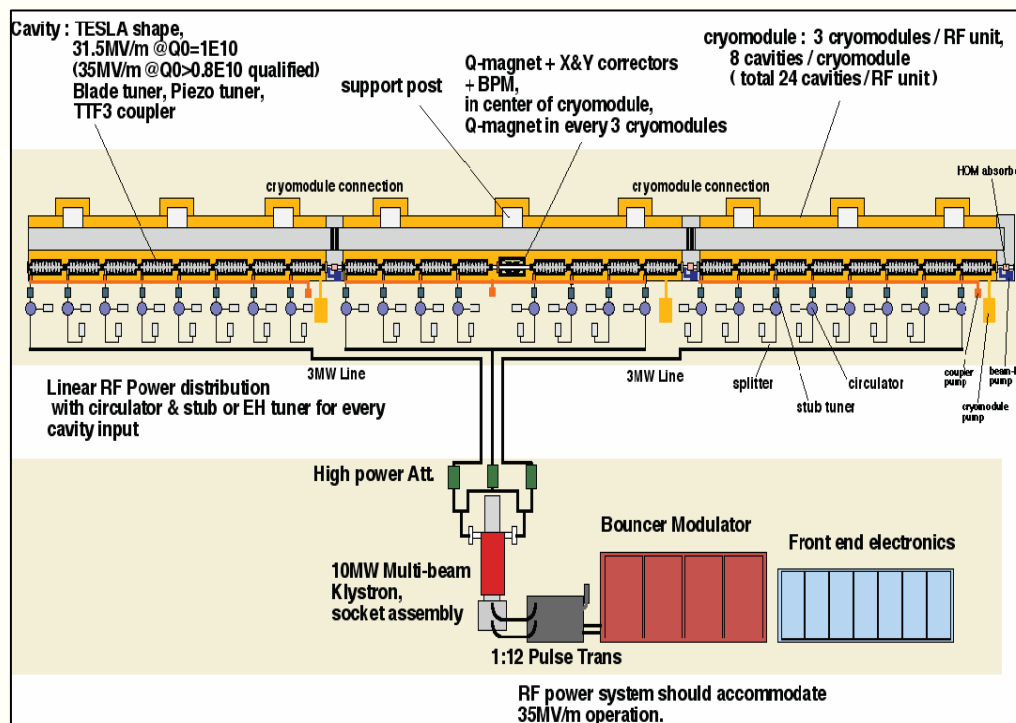


Current Discussions & Contracts



Fermilab

- **CPI:** Producing six 3.9 GHz couplers. Ordered twelve 1.3 GHz couplers based on DESY drawings and specifications. Fabrication scheduled to immediately follow the DESY TTF order.
- **AES:** Contract to fabricate four 9-cell 1.3 GHz TESLA design cavities. Order placed for six 9-cell GHz cavities with equal end group lengths. (Order for eight cavities of this type placed with ACCEL.) Plan to order 24 additional cavities in FY07.
- **Niowave:** Contract to design HPR system, including fabrication specifications and drawings.
- **Roark & Niowave:** Three phase contract to produce 1-cell 3.9 GHz, 1-cell 1.3 GHz and 9-cell 1.3 GHz cavities. Has subcontract with Niowave to do pre-weld chemistry.
- **ABLE Electropolish:** Chicago area company. Met with Fermilab a couple of times and visited JLab. Will send a person to JLab for six months.



- Three cryomodules, eight cavities in each, with a magnet package in one cryomodule.
- Also includes: Klystron, Modulator, RF distribution, RF power couplers and Low Level RF.

- **Contracted with AES (and team members Meyer and CPI) for an industrial cost study of an RF Unit.**
- **Order placed on July 26, 2006. Work is on schedule to be completed at the end of January 2007.**
- **Thus far, estimates have been finalized (and provided to us) for 75 of 103 WBS items.**
- **Identified potential for cost reductions of up to 25% in cavity fabrication and 35% in power coupler fabrication.**
- **Identified other areas to pursue for cost reductions.**

- **Close out AES RF Unit cost study contract and analyze information.**
- **Use cost study information to target cost drivers for cost reductions (i.e. DFM / value engineering, etc.)**
- **Early emerging targets: cavity and end group parts, power couplers, helium vessels, vacuum vessels, magnet package, cryomodule assembly....**
- **Establish contracts with various companies to: assist in DFM, reduce fabrication costs, transfer technology, develop experience, qualify as vendors,**

- **There is no debate – U.S. industry needs to be involved in our pursuit of the ILC.**
- **Industry needs to be involved early to have the greatest impact on our designs.**
- **We need to develop industrial sources of competition for the components and systems we will purchase – now to support development, and in the future to support construction of the ILC.**