ILC Cryogenics Work Package Status and Plans

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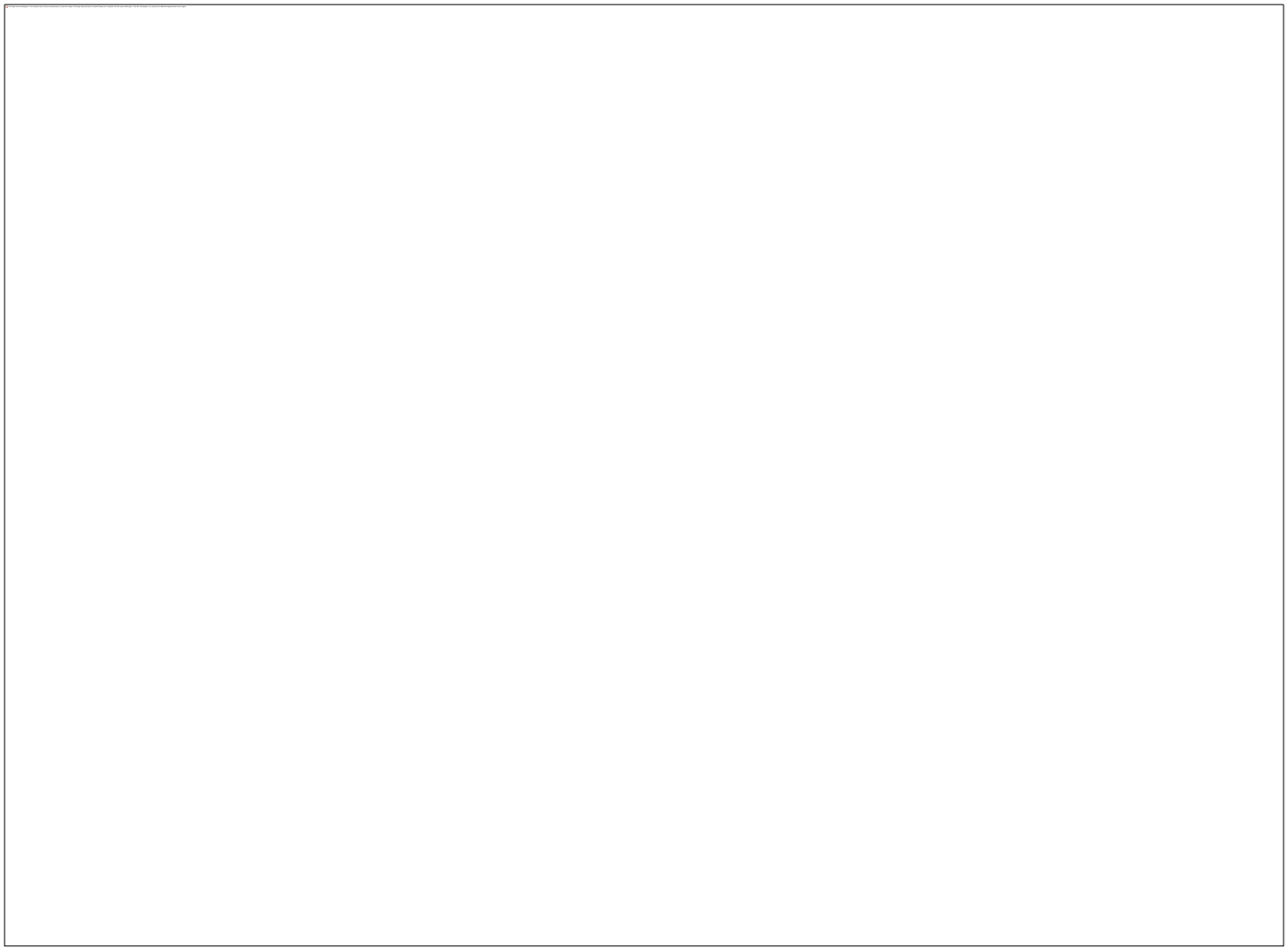
ILC Cryogenics Work Status

- RDR cryogenic system effort totalled less than 1 FTE for the duration of the RDR effort
- Early technical design phase (TDP) work package development (2007) suggested tripling that to 3 FTE's (one from each region) for the duration of the TDP
- For the past year (2008) we have had less ILC cryogenics effort than during the RDR
- Result -- only a few minor updates to the ILC cryomodule heat load estimates and cryoplant size estimates have been done

Outlook for 2009

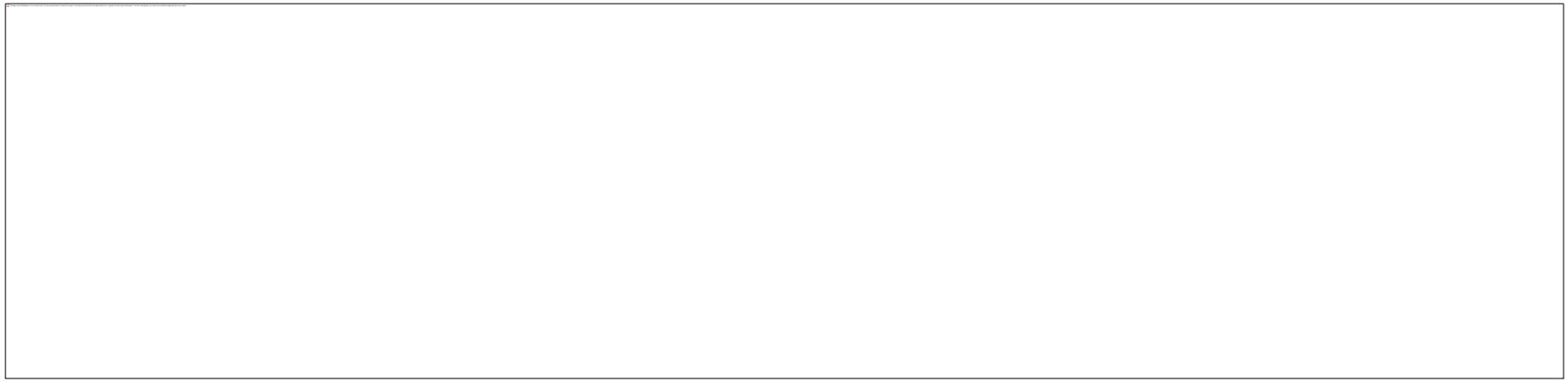
- In 2008, the scope of funding and resources for ILC limited work to certain critical R&D and planning tasks, mostly not cryogenics.
  - **Cryogenics for ILC is relatively well-understood since we have LHC and Jlab cryogenics as similar systems**
  - **Issues like cavity processing for consistently high gradient need more R&D attention**
- The 2009 budget outlook indicates that we could get back up to about the RDR level of 1 FTE (1/2 FTE in U.S. plus KEK effort on cryogenics, plus small effort in Europe from INFN and DESY)

Summary of tasks for 2009

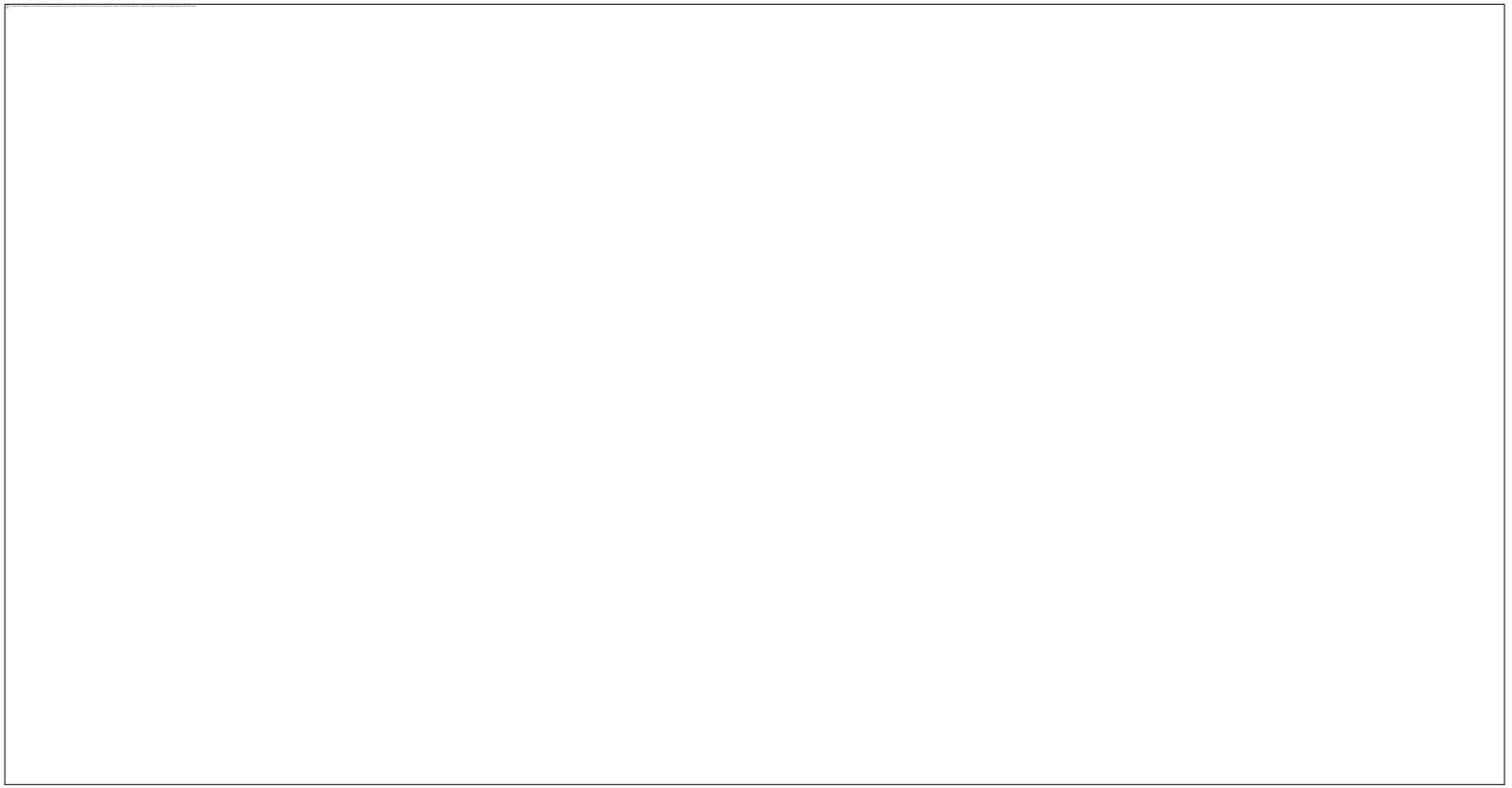


Some Project X synergy

- Although no ILC effort is foreseen for item 1.4.4, below, Project X effort has begun with respect to tunnel arrangements, string lengths, segmentation, and maintenance scenarios which, although for a smaller system, will be relevant for ILC.
  - **Klebaner (FNAL), Peterson (FNAL), Theilacker (FNAL)**



Postponed tasks



Summary: 2009 work packages

- 1.4.1 Heat loads
  - **Peterson (FNAL), Ohuchi (KEK), Pierini (INFN), Petersen* (DESY)**
- 1.4.2 Cryogenic process design, cryoplant design, and surface impact
  - **Klebaner (FNAL), Peterson (FNAL), Arenius (JLAB), Ganni (JLAB), Tavian* (CERN)**
  - **Jefferson Lab (Arenius, Ganni) will provide assistance**
- 1.4.3 Venting, pressure limits, and piping and vessel standards
  - **Peterson (FNAL), Nakai (KEK), Hosoyama (KEK), Petersen* (DESY)**
- 1.4.4 Tunnel cryogenic system design and integration with Main Linac
  - **Part of Project X cryogenic effort but relevant to ILC**
- * CERN and DESY effort involves primarily just provision of information from their work on XFEL and LHC.