Status Report for January, 2006

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Monthly budget, schedule and technical status report for the Memorandum of Understanding between SLAC and UCLA titled:

Technical Addendum D to the Memorandum of Understanding between the Stanford Linear Accelerator Center and the University of California at Los Angeles

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Budget and Schedule Status

WBS Task Deliverable Reporting

The WBS task deliverables and budget are defined by the MOU as shown in table 1.

WBS Number	Task Deliverables	Fund Type	Budget (K$)	EDIA (K$)	M & S (K$)
2.1.1.8	FEL Physics Analysis	R & D	173.7	155.5	18.2

Table 1 WBS Deliverable Definition

Progress on each WBS task for the reporting month **January, 2006** is shown in table 2.

WBS Number	Task Deliverables	% Task Complete	% Budget Used	Scheduled Completion Date	Expected Completion Date
2.1.1.8	FEL Physics Analysis	10	100	Sep 2006	Sep 2006

Table 2 WBS Deliverable Status

The above January numbers are calculated with respect to last year's budget. So far UCLA has not received any money according to the new MOU.

Technical Status and Planning for 2.1.1.8

This Month

Work has been done to update the routines to calculate the wakefields within the undulators according to the latest development in the theory. Namely, the model includes now parallel plates for the resistive wall wakefields and the losses due to transitions in the vacuum chamber geometry. Using these updated wakefields extensive time-dependent runs have been done in preparation of the Lehman review in February.

Next Month

- The runs for the design case have to be continued in particular for the best tapering gradient in order to compensate the undulator wakefield. In addition, a scaling factor has to be applied to the resistive wall wakefields of the order of 25% more than for the case of the parallel plate configuration, which is only an approximation for the elliptical vacuum chamber.
- A more theoretical study is under way to examine the limitation of electron beam conditioning to remove emittance effects in the case of LCLS.