	EUROPEAN COMMISSION RESEARCH DG	CP-CSA Periodic Report

Project No: 206711

Project Acronym: ILC-HiGrade

Project Full Name: International Linear Collider and High Gradient Superconducting RF-Cavities

CP-CSA Periodic Report

Period covered: from 01/02/2009 **to** 31/01/2010

Start date of project: 01/02/2008

Date of preparation: 25/11/2010

Date of submission (SESAM):
25/11/2010 14:40:26 CET

Project coordinator name:
Prof. Eckhard Elsen

Project coordinator organisation name:
STIFTUNG DEUTSCHES
ELEKTRONEN-SYNCHROTRON DESY

CP-CSA Periodic Report

PROJECT PERIODIC REPORT

Grant Agreement number:	206711
Project acronym:	ILC-HiGrade
Project title:	International Linear Collider and High Gradient Superconducting RF-Cavities
Funding Scheme:	FP7-CP-CSA-Infra
Date of latest version of Annex I against which the assessment will be made:	27/05/2008
Period number:	2nd
Period covered - start date:	01/02/2009
Period covered - end date:	31/01/2010
Name of the scientific representative of the project's coordinator and organisation:	Prof. Eckhard Elsen, STIFTUNG DEUTSCHES ELEKTRONEN-SYNCHROTRON DESY
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Declaration by the scientific representative of the project coordinator (1)

I, Prof. Eckhard Elsen, STIFTUNG DEUTSCHES ELEKTRONEN-SYNCHROTRON DESY, as scientific representative of the coordinator of the project ILC-HiGrade and in line with the obligations as stated in Article II.2.3 of the Grant Agreement declare that:

The project has fully achieved its objectives and technical goals for the period.

The attached periodic report represents an accurate description of the work carried out in this project for this reporting period.

The public website is up to date, if applicable.

To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project (section 6) and if applicable with the certificate on financial statement.

All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section 5 (Project Management) in accordance with Article II.3.f of the Grant Agreement.

Name	Prof. Eckhard Elsen, STIFTUNG DEUTSCHES ELEKTRONEN-SYNCHROTRON DESY
Date	25/11/2010

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1. Publishable summary

Publishable summary

A linear e+e- collider continues to be the next major project in High Energy Physics following the commissioning of the Large Hadron Collider (LHC). It has been prominently positioned in the European Strategy for Particle Physics agreed by CERN Council, which serves as the basis for ESFRI recommendations for High Energy Physics (HEP). As the first data of the LHC are being recorded and physics results extracted one can hope to get more guidance from the LHC physics results on the detailed design decisions for such a linear collider, in particular the energy reach of such a facility. The European Strategy will hence be updated over the next couple of years.
In the energy range from 500 to 1000 GeV a design for such a machine exists: the e+e- International Linear Collider (ILC). It is well understood today that the ILC will constitute the precision tool for the Terascale, the scale of electroweak symmetry breaking. The ILC complements the potential of the LHC, which will initially chart this unknown territory. - If a much farther leap into the Terascale is suggested by the physics results one will have to revisit the optimisation of the layout and time scales.
The ILC-HiGrade consortium concentrates on the rapid realisation of the International Linear Collider ILC and brings together the key players in Europe. They constitute a large fraction of the European element of the Global Design Effort (GDE) that has led to the publication of the Reference Design Report (RDR) in 2007. The report forms the basis for the Technical Design Phases I and II of the ILC, which the GDE will complete by mid-2012. The proposal for the ILC will then be presented to the global stakeholders, i.e. governments and funding agencies to seek approval. The technically driven schedule envisages start of construction as early as 2012. Project approval and start of construction is a two-stage process.
Starting in 2008, the ILC-HiGrade Consortium began to address important elements in this two-stage process with siting of the facility as one major ingredient. Currently site proposals for all three regions Japan, US and in Europe exist. Their benefits are being evaluated and the international framework in which the project will be realised will be developed. ILC-HiGrade encompasses the European side in this global endeavour. The participating laboratories and universities contribute their long-standing experience in conceiving large-scale experiments and the organisation of large collaborations to a process that establishes the global framework for an organisation that will support start of construction matching the technical timelines.
The linear accelerator sections of the ILC constitute a major cost-driver. Their design and their cost depend on the achievable accelerating gradient for the ILC. The global gradient development programme of the GDE will establish a realistic operational gradient for the ILC by employing proven preparation techniques, with European laboratories leading the effort. In the course of ILC-HiGrade, the partners are preparing at least 24 fully dressed cavities, which will initially serve as a technical reference for the decision on the choice of gradient and eventually as the industrialisation of the high-gradient process. While their delivery is pending till 2011 important steps have been made to prepare the facilities and the instrumentation for analysis and full diagnostics.
The timelines of this 4-year project are well aligned with those of the Global Design Effort, aimed at establishing the technical basis for proposing the ILC by mid-2012. It thus matches the timelines of the iteration on the European Strategy for the High Energy Physics. If chosen, the ILC construction could commence soon after.
From a European perspective, all crucial elements necessary to produce this outcome, both technical and political are reinforced and explicitly supported in the ILC-HiGrade project.

2. Core of the report

Project objectives, Work progress and achievements, and project management during the period

The Project Summary Pdf document contains the core of the report.

3. Deliverables and milestones tables

Deliverables (excluding the periodic and final reports)

WP no.	Del. no.	Deliverable name	Lead beneficiary	Nature	Dissemination level	Delivery date from Annex I (proj month)	Delivered Yes/No	Actual / Forecast delivery date	Comments
	1	ILC-HiGrade 1st Annual Report.zip				13	Yes	01/08/2009	
2	6	Organisation of GDE Mtg, 1st and 2nd ADI Workshop	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	Other	PU	18	Yes	25/11/2010	
5	3	Siting Study	EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH	Report	PU	24	Yes	25/11/2010	
6	2	Cavity Process	STIFTUNG DEUTSCHES ELEKTRONEN-SYNCHROTRON DESY	Report	PU	24	Yes	25/11/2010	
7	4	Coupler Report	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	Report	PU	24	Yes	25/11/2010	
8	5	Tuner Report	ISTITUTO NAZIONALE DI FISICA NUCLEARE	Report	PU	24	Yes	25/11/2010	

Milestones

Milestone no.	Milestone name	Work package no	Lead beneficiary	Delivery date from Annex I	Achieved Yes/No	Actual / Forecast achievement date	Comments

3	European Site Preparation	5	3	01/02/2010	Yes	01/02/2010	
4	MAC Report 2	2	6	01/08/2010	Yes	01/08/2009	Since 2007 the Machine Advisory Committee (MAC) has been recreated by the International Linear Collider Steering Committee as the Physics Advisory Committee (PAC). The PAC met in Vancouver, Canada in May and in Pohang, Korea in November 2009.
5	Development of new Governance Structures	4	6	01/08/2009	Yes	01/08/2009	

4. Explanation of the use of the resources

STIFTUNG DEUTSCHES ELEKTRONEN-SYNCHROTRON DESY

Work Package	Item description	Amount	Explanations
1,2,3,5,6	Personnel Cost	518799.19	Salaries
6	Material	47193.92	Construction of Optical Scanner
3,6	Travel	2067.83	Travel to CERN and ILC related conferences
6	Consumables	953.11	Miscellaneous electronic components for scanner development
	Total:	569014.0499999999	

COMMISSARIAT A L'ENERGIE ATOMIQUE (CEA)

Work Package	Item description	Amount	Explanations
6	Personnel Cost	15526.58	Salaries
6	Remaining direct costs	915.53	
	Total:	16442.11	

EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Work Package	Item description	Amount	Explanations
4,5	Personnel Costs	119797.10	Salaries
	Total:	119797.1	

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)

Work Package	Item description	Amount	Explanations
3,4,7	Personnel costs	49210.84	Salaries
4	Travel	5195.67	Travel to ILC meetings (TILC09, ALCPG, ILCSC)
	Total:	54406.509999999995	

ISTITUTO NAZIONALE DI FISICA NUCLEARE

Work Package	Item description	Amount	Explanations
4,8	Personnel costs	83565.08	Salaries
8	Consumables	12242.31	CuBE pipe, LiHe, LVDT displacements sensor
8	Travel	12691.82	Representation at ILC meetings and conferences
	Total:	108499.20999999999	

THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD

Work Package	Item description	Amount	Explanations
2,3,4	Personnel costs	73406.95	Salaries
	Total:	73406.95	

Attachments	Core_report.pdf
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