



EU Regional Report

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EU Regional Effort

- The name *EU* suggests a uniformity in the approach that is, a priori, not justified
 - **there are 27 states in the European Union with 23 different languages**
 - not counting Russia and others who are not part of the European Union
 - **each country takes pride in its own educational system and its own approach to support for research**
- The inherent common approach to research in Europe is hence *diversity*
 - **a challenge for international projects like the ILC**



EU Diversity

- evidenced by effort in
 - **universities**
 - **government supported research initiatives in collaboration with universities or industry**
 - John Adams, Cockcroft, etc.
 - HGF Alliance *Physics at the Terascale*
 - Agence nationale de la recherche, ANR
 - **national research programs**
 - CEA, CNRS, DESY, INFN, STFC, ...
 - **European research organizations**
 - CERN and ESA, ESRF, ...
 - JINR



European Organizations

- established through long standing treaties between member states
- to pursue research in a **field of science**
 - at the forefront of research
 - at a fundamental level
 - to the benefit of the public
 - with the consent of the benevolent taxpayer
- One of the most impressive among these facilities is CERN
 - prime example of an international institute for fundamental research



C.E.R.N.

- is the mediator for a European approach to HEP
- has recognized its special role in Europe
- consequently C.E.R.N. Council has formulated its strategy
 - **exploitation of LHC physics**
 - **support for e^+e^- linear collider**
 - ...

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So why are we not sitting in an ILC control room and weighing the Higgs?



LHC

- is the international flagship project of HEP
 - **we are eagerly awaiting turn on and the first physics results**
- is binding resources in Europe well after the moment of commissioning
 - **which is a price we all agreed to afford to enter the Terascale**



C.E.R.N. Council and the Future

- we are aware that the giant projects of our research require
 - **large funding resources and consequently an international approach**
 - **adequate lead times in**
 - technical preparation
 - international science policy
- C.E.R.N. Council
 - **has been fairly successful in securing funding for HEP and LHC specifically**
 - **still has to rise to the challenge of preparing the political scene for future international projects**



Fortunately Europe is diverse...

- The European Community takes an interest in
 - **key science projects**
 - in particular in large projects which are beyond national funding levels
 - **successful international collaboration**
- The European Community has recognized the financial constraints and has reacted...
 - **in Framework Programme 6 (FP6)**
 - **and successor FP7**

HEP is a showcase example and is recognized for its ability to collaborate





European Community Support

- Infrastructure Programs
 - CARE
 - EUDET
 - and several other programs directed towards computing (Grid)
- Design Studies
 - EUROTeV
- Preparatory Phase Projects
 - ILC-HiGrade

the total financial volume
is around 100 M€



European Community

- have recognized the potential of international collaboration in our field
- have recognized the role of C.E.R.N.
- want to act as a facilitator
 - **for the realization of the next flagship projects**
 - prepare the political ground
 - provide their expertise in establishing governance structures
 - develop a framework in which multi-continental finance agreements can be made
 - **and hence support precisely that**
 - and expect us to deliver



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EC is not expected to finance larger parts of the project

- ILC had been recognized as the next big project on the C.E.R.N. Council Strategy list that could be realized after LHC
- It was hence eligible for the ESFRI list of key European Infrastructures
 - **6 European Institutes handed in a proposal to advance the structures for**
 - governance
 - financial modalities
 - political
 - **and to**
 - improve the accelerating gradient to save money for the taxpayer



COMBINATION OF COLLABORATIVE PROJECT AND COORDINATION AND SUPPORT ACTION
 Construction of new infrastructures – preparatory phase
 FP7-INFRASTRUCTURES-2007-1
International Linear Collider and High Gradient Superconducting RF-Cavities
 ILC-HiGrade

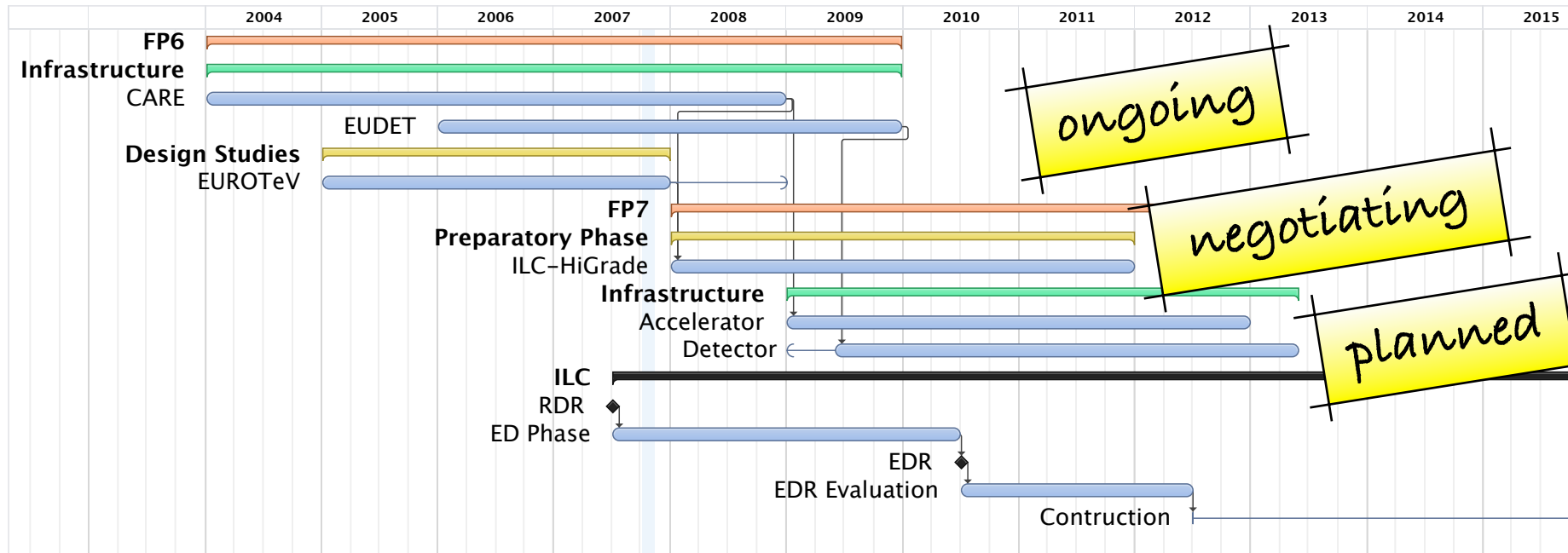
Date of preparation: 1.5.2007

Participant no.	Participant organisation name	Part. short name	Country
1 (Coordinator)	Deutsches Elektronen-Synchrotron	DESY	Germany
2	Commissariat à l'Énergie Atomique	CEA	France
3	European Organization for Nuclear Research	CERN	Switzerland
4	Centre National de la Recherche Scientifique	CNRS/IN2P3	France
5	Istituto Nazionale di Fisica Nucleare	INFN	Italy
6	The Chancellor, Masters and Scholars of the University of Oxford	UOXF-DL	UK



Timelines of EC Programs

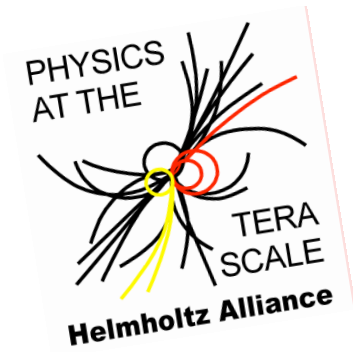
- with relevance for ILC



These programs have greatly helped in forming an accelerator community in Europe with a great sense for collaboration – as is known from the detectors.

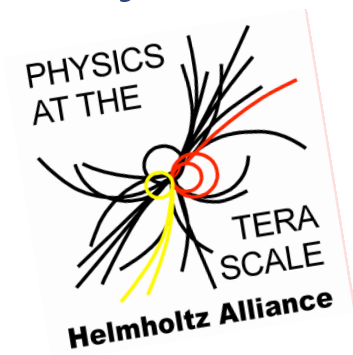
Promotion of HEP Topics

- Helmholtz Strategic Alliance in Germany
 - **Physics (Theory & Experimental)**
 - national analysis facility
 - **Detector**
 - **Grid support**
 - **Accelerators**
- *Physics at the Terascale*
 - **17 German Universities + 1 MPI**
 - **DESY**
 - **FZK (Grid)**
- a five year initiative 2007-2012
 - **to boost HEP in Germany**



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25 M€ over
five years



Support of ILC ED Phase

- EC FP6 and FP7 programs
- National initiatives
 - **PPARC now STFC**
 - **HGF Alliance**
- Synergy
 - **XFEL**
 - with the XFEL being approved the ILC will have a 5% prototype
 - **Common effort for e^+e^- LC research**
 - ILC
 - CLIC
 - Super B factories



Specific Technical Responsibilities

- Civil Engineering
 - (J L Baldy, J Osborne – CERN)
- Damping Rings
 - Area Lead (A Wolski – Cockcroft)
- Positron Source
 - Area Lead (J Clarke – Cockcroft)
- Cavity Processing
 - Area Lead (L Lilje – DESY)
 - supporting the so called S0 program to establish the highest possible gradient for the ILC
 - XFEL Liaison (H Weise – DESY)

XFEL: which ILC questions are answered?

- how to build a 100 accelerator module linac using TESLA Technology
- how to industrialize the SCRF on a 5% ILC scale
- how to extrapolate from TTF / FLASH by a factor of 20
Remark: ILC eq. 20 XFEL
- how to start and organize an international project based on in-kind contributions



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shown by
H Weise @
LCWS07



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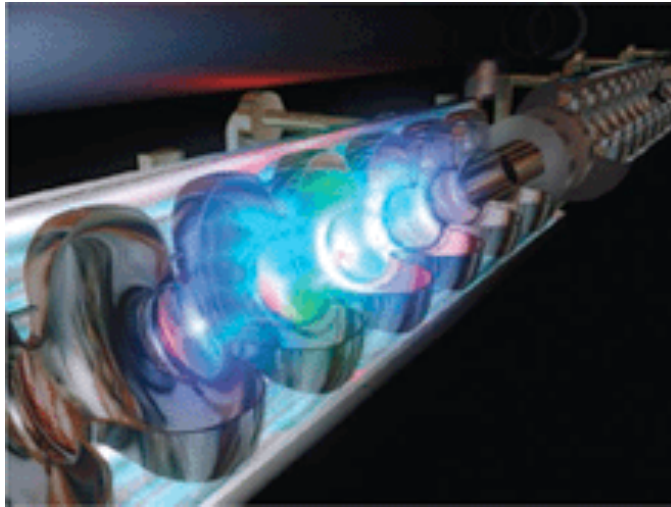
New: strong support
through CEA, LAL,
Milan engagement



Technical Activities

- CFS
 - **siting and costing**
- Cavities, couplers, tuners
 - **high yield & cost effective production process**
 - **cryomodules**
- e⁺ source
 - **undulator, dump, polarization, Compton**
- damping ring
 - **impedance, kickers**
- Monitoring, Controls, ...
 - **LLRF**
 - **diagnostics**
 - **stabilization and alignment**
 - **remote access**

Summary



No shootout? Negotiations over the International Linear Collider have gone smoothly, so far.

from Science Magazine

In the budget negotiations last year for the seventh Framework, the funds for infrastructure were slashed and the program can now only help out with the preparatory stages of projects. But Mitsos believes that, in Europe at least, the E.U. will eventually take on the role of dealmaker and guardian of fairness in international projects. "The possibility to draw such a table exists. I'd be surprised if we didn't try again." As for global facilities, they'll have to continue to make up the rules as they go along.