



International Linear Collider and High Gradient Superconducting RF-Cavities

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The FP7 proposal being drafted...



ILC-HiGrade

Proposal full title: ***International Linear Collider and High Gradient Superconducting RF-Cavities***

Proposal acronym: ***ILC-HiGrade***

Type of funding scheme: ***Combination of Collaborative Project and Coordination and Support Actions***

Work programme topics addressed: ***INFRA-2007-2.2.1.33***

Draft and subject to changes

due May, 2nd, 2007

Participants

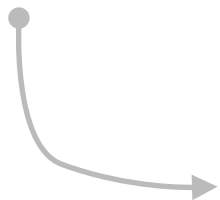
Participant no.	Participant organisation name	Country
1 (Coordinator)	Deutsches Elektronen-Synchrotron (DESY)	Germany
2	John Adams Institute for Accelerator Science (JAI)	UK
3	Commissariat à l'Énergie Atomique (CEA)	France
4	European Organization for Nuclear Research (CERN)	Switzerland
5	CNRS - Laboratoire de l'accélérateur linéaire (LAL)	France
6	INFN – Laboratorio Acceleratori e Superconduttività Applicata (LASA)	Italy

Table 1b – List of other organisations involved in the Preparatory Phase

Organisation name	Country	Description of the Organisation / Specific role or contribution to the preparatory phase
ILC Global Design Effort	Global	The geographically dispersed organisation for the design of the International Linear Collider

Objectives

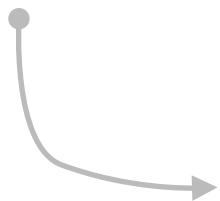
1) There is no doubt that the major technical challenge of the ILC in the preparatory phase is to ensure that the superconducting accelerating structures, currently produced in laboratory conditions in excess of the ILC specification, can be industrially produced with the required reproducibility and field gradient.



Test facility for high gradient cavity and proof of production process.

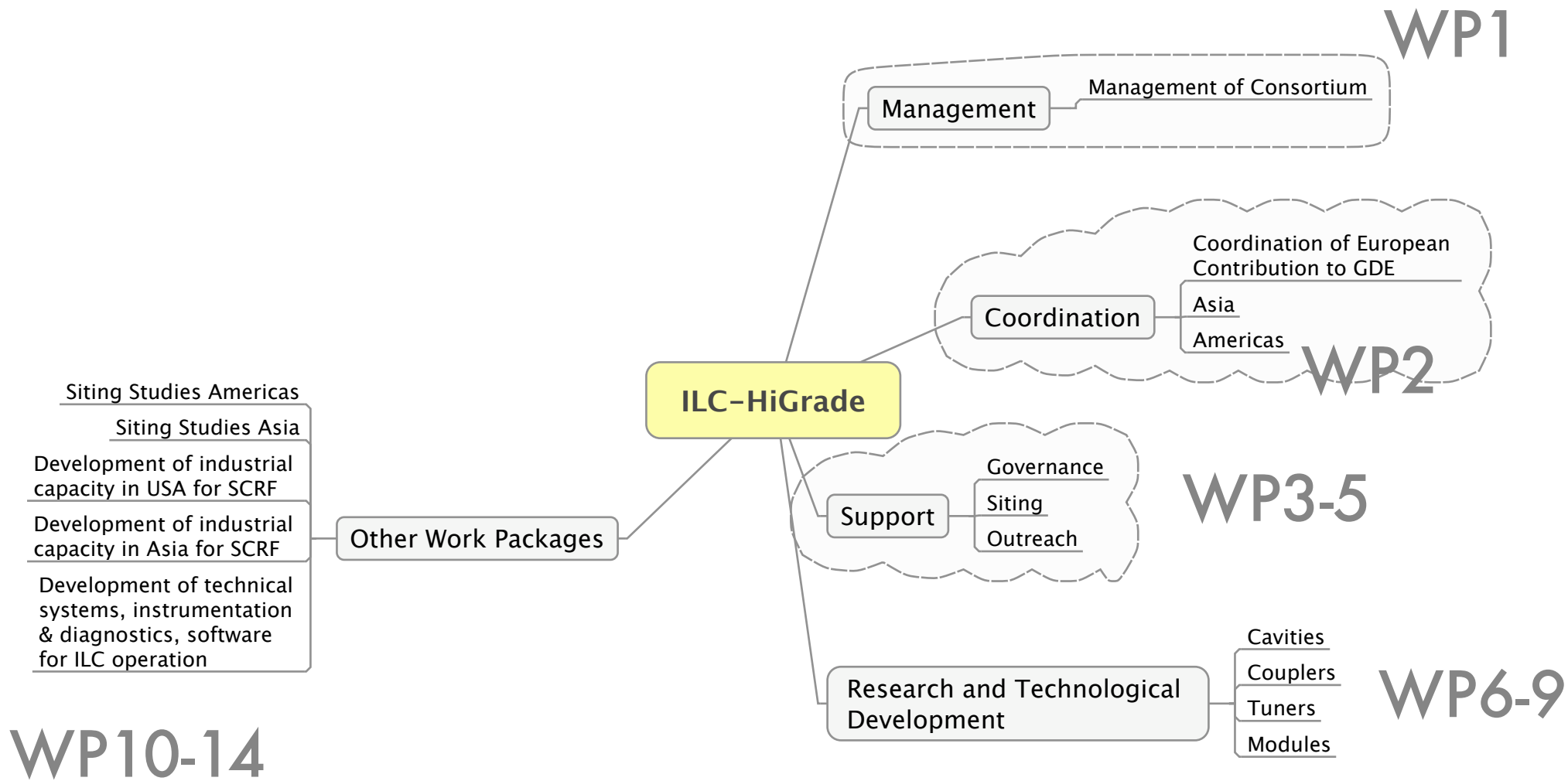
Objectives

2) The second main goal of the preparatory phase is the development of appropriate organisational infrastructure and governance structures to supervise the preparation of the ILC project for submission to stake-holding governments for approval. The ILC is a global project with a well developed international management structure...



Close collaboration with GDE

Overview Work Packages



Technical Framework

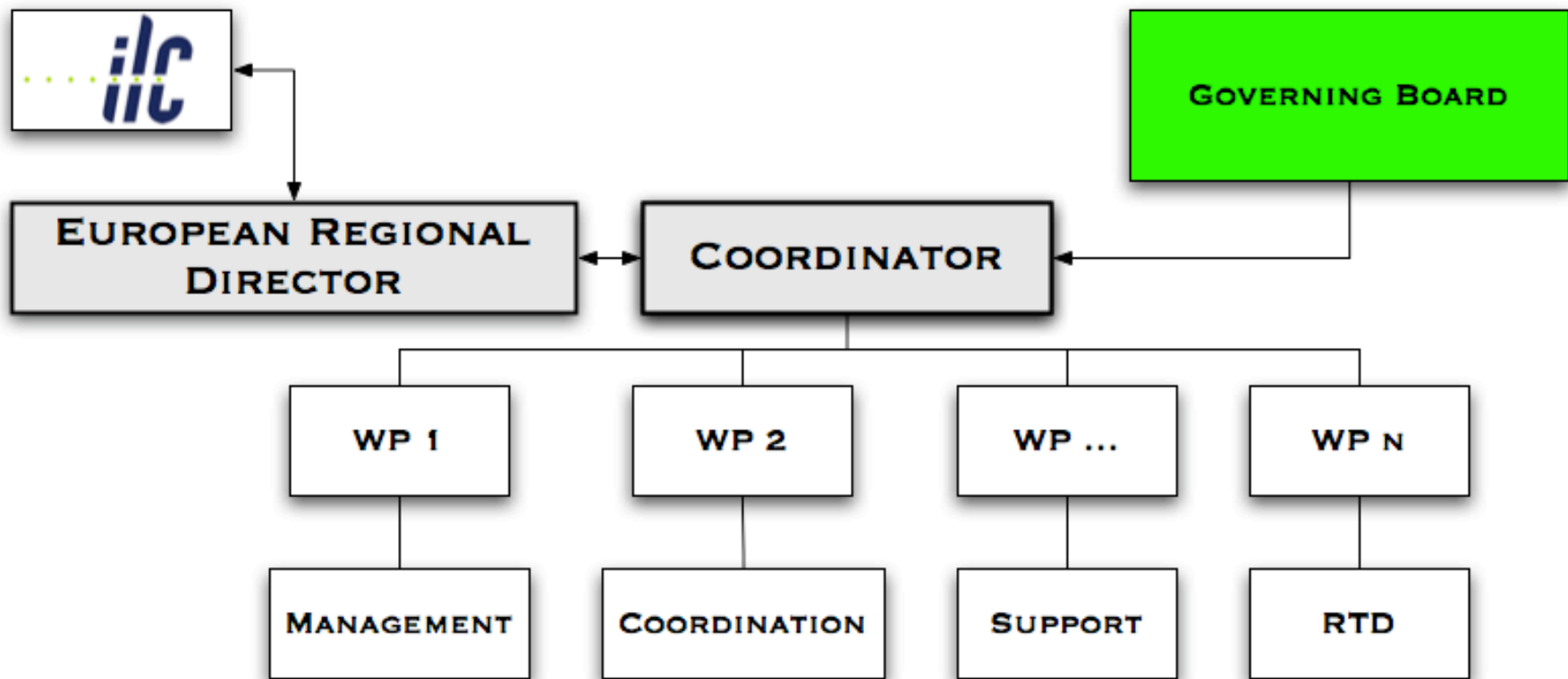
using existing infrastructure

- 30 fully dressed cavities, TESLA style
- DESY orders cavities (incl. $150\mu\text{m}$ EP)
 - Treatment DESY (and possibly 10 Saclay)
- LAL couplers and conditioning
- LASA tuners + He tank

Effect of 30 cavities(of 960)

- Basic treatment of cavities is established
- Improve yield @ high gradient by
 - better process control
 - fine polishing (3-20 μm EP only)
 - rinsing and cleaning (sulphur etc.)
- Show that the current GDE S0 plan is viable – Europe is 1 of 3 such efforts

Governance part



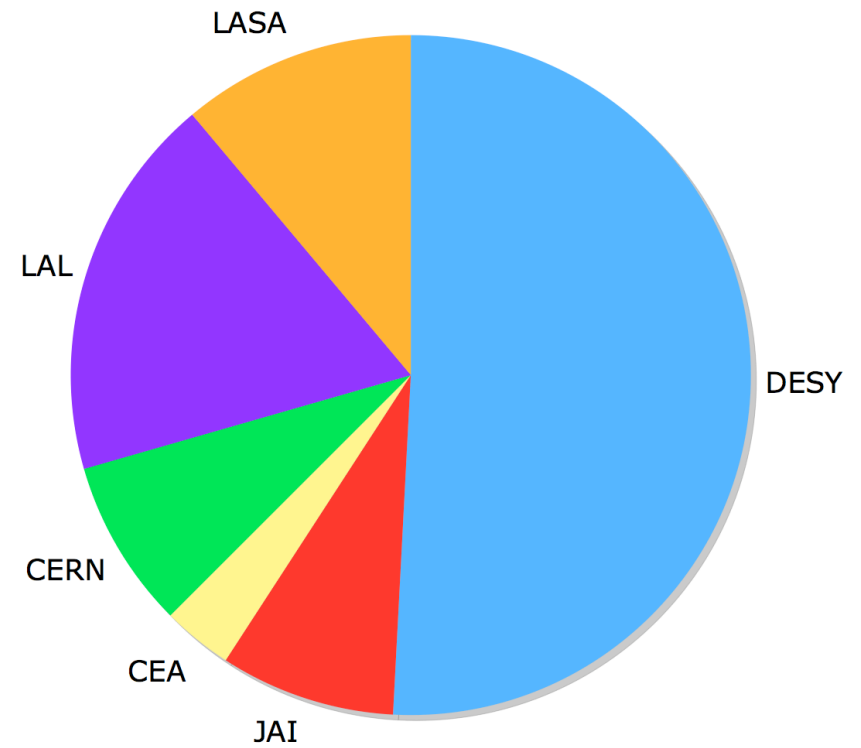
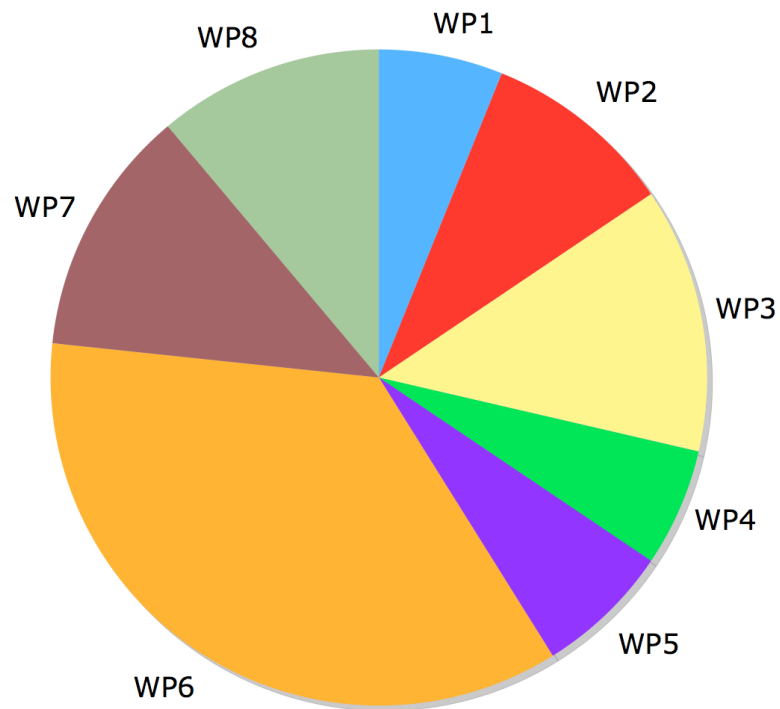
Proposal is fully endorsed by GDE

Staff effort

Participant no. / short name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total person months
DESY	48	24	72	48	24	120			6	342
JAI		38	30		28					96
CEA						20				20
CERN		24	24	6						54
LAL			18	6	24		54			102
LASA								30		30
Total	48	86	144	60	76	140	54	30	6	644

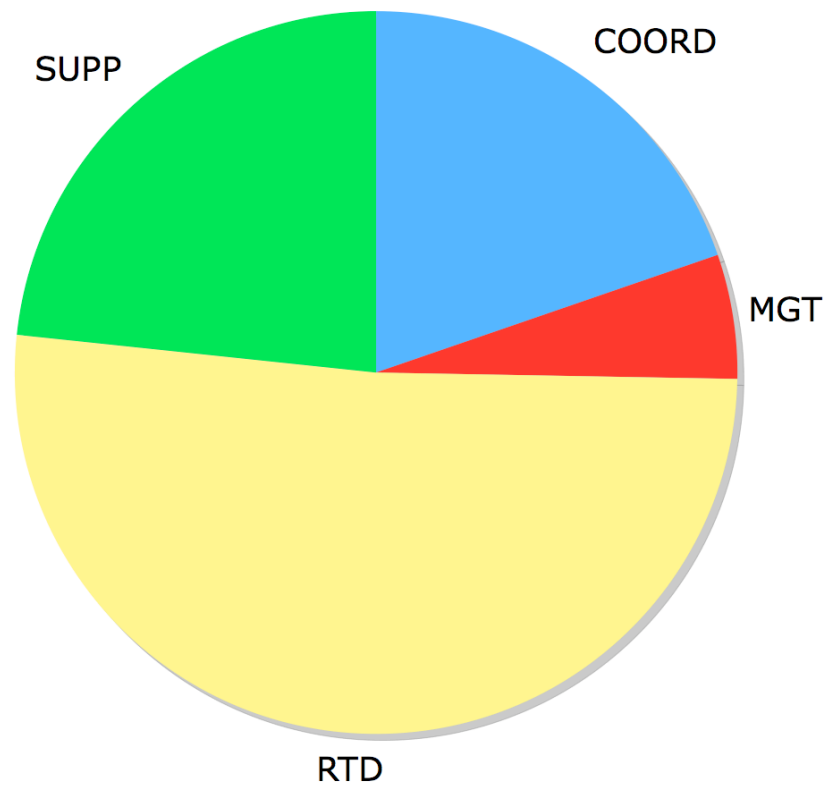
Funding

TotalCost 7,2 M€

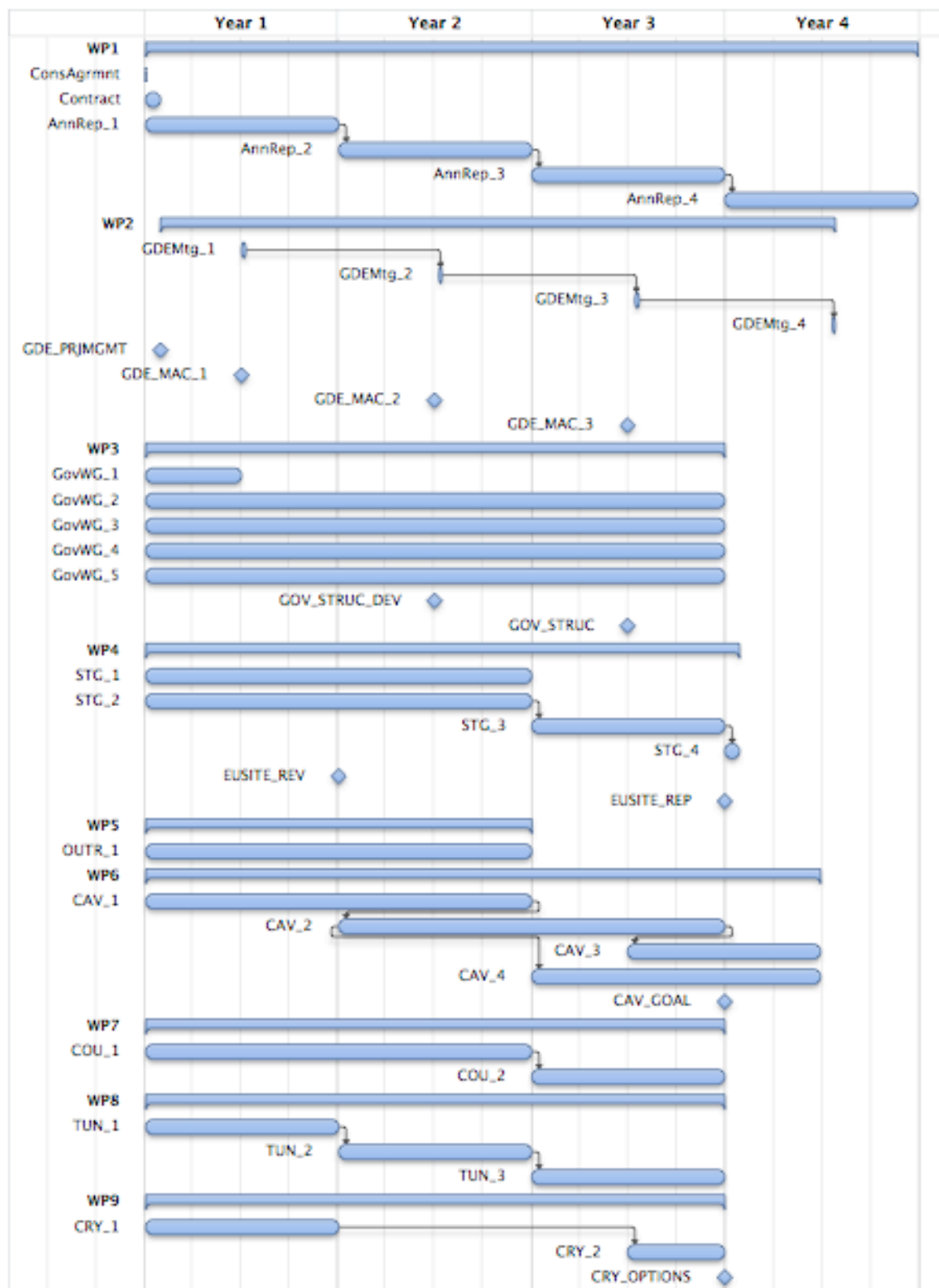


Funding by Activity

DirectCost 5,2 M€



Milestones & Deliverables



Conclusion

- ILC-HiGrade
 - integral part of the global activities to establish high gradients
 - relevant to raise the ILC to the political levels in phase with the technological developments and the completion of the EDR