

# Our mandate has been completed

## The physics and detector perspective of the ILC-TDR

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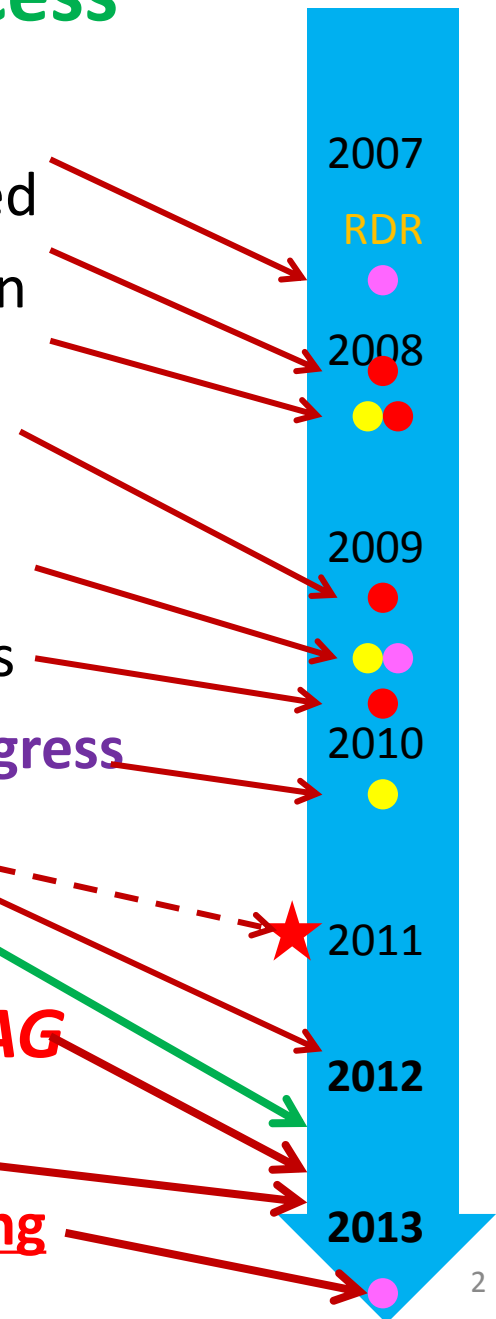
ECFA-LC2013@DESY

Finalization of DBD

Looking back the LOI process

# The time line of the LOI process

- **Oct. 2007: Call for LOIs was made by ILCSC**
- Jan. 2008: Detector management was formed
- Mar.2008: IDAG formed, 3 LOI groups known
- **Mar.2009: 3 LOIs submitted**
- Summer 09: **IDAG recommendation for validation and ILCSC's approval**
- Oct 2009: Work plan of the validated groups
- **Mar:2009: IDAG began monitoring the progress**
- **End 2011: Interim report completed**
- **Apr.2012 DBD outline monitored by IDAG**
- **Oct. 2012 DBD Draft Reviewed by IDAG**
- End 2012: Review by PAC
- **Early May 2013: The final version for printing**



# What happened after the last LCWS

**During LCWS in Arlington,**

**each chapter of DBD draft was reviewed IDAG.**

**By end November, polishing was done, and the final draft was submitted to ILCSC for the PAC review.**

**(The updated version was sent to IDAG, too.)**

**PAC review in December (14/15) at KEK:**

PAC expanded with auxiliary members,  
the IDAG chair and its two more members

**Each chapter of DBD was reported by relevant speaker  
(convener, author or editor)**

**(M. Peskin, J. Fuster, K. Buesser, C. Clerc, W. Lohmann, A. Miyamoto,  
A. White, T. Barklow, Y. Sugimoto )**

**M. Davier reported the IDAG reviews through the entire procedur in detail.**

***PAC respected the through review of DBD by IDAG.***

***On December 16 the reviewed draft was handed to the ILCSC chair  
in the hand-over event in Tokyo together with the DGE's TDR draft .***

# The final brushing

Through January to March, there were much to do.

- Finalizing **1 TeV simulation**
- Preparation of the **summary table** of all the benchmarks and other physics channels.
- Drafting the physics/detector parts of the **executive summary, TDR VOL.-I.**
- **Conversion to the new LaTeX format** for printing  
**The page layout was changed to put more in one page.**  
**(Very heavy load on T. Behnke and M. Stanitzki)**
- **Collection of signatory**

# The final shape of the 2 volumes of TDR

In the new format, the size was reduced to about 70 % of the initial one.

**Physics volume (TDR Vol.-II): ~170 p.**

**Detector volume (TDR Vol.-IV): ~350 p.**

**(excluding the signatory pages)**

The final pdf can be found (temporarily) at

[http://www.desy.de/~stanitz/ILCTDR\\_print\\_VOL2\\_PHY.pdf](http://www.desy.de/~stanitz/ILCTDR_print_VOL2_PHY.pdf)

[http://www.desy.de/~stanitz/ILCTDR\\_print\\_VOL4\\_DET.pdf](http://www.desy.de/~stanitz/ILCTDR_print_VOL4_DET.pdf)

The entire TDR-pdf will be made open after the compatibility check with various pdf viewers.

# Signatory

We invited contributors in any of the volumes and supporters to join. *Signatory does not mean exclusive support of ILC over other collider programs.*

**The same list appears at the end of all the TDR volumes.**

**The total number reached was 2400 as of end of April.**

## List of Signatories

The following list of signatories represents a comprehensive list of those people who have contributed to the R&D and design work, for both the accelerator and the detectors, which is summarised in this report. The list also includes those people who wish to indicate their support for the next phases of the worldwide ILC effort.

It should be noted that inclusion in this list does not indicate any formal commitment by the signatories. It does not indicate commitment to the specific detector designs presented, nor exclusive support for ILC over other collider programs.

A. Abada<sup>171</sup>, T. Abe<sup>24</sup>, T. Abe<sup>298</sup>, J. M. Abernathy<sup>379</sup>, H. Abramowicz<sup>265</sup>, A. Abusleme<sup>231</sup>,  
S. Aderhold<sup>47</sup>, O. Adeyemi<sup>333</sup>, E. Adli<sup>357,251</sup>, C. Adloff<sup>164</sup>, C. Adolphsen<sup>251</sup>, K. Afanaciev<sup>209</sup>,  
M. Aguilar<sup>31</sup>, S. Ahmad<sup>93</sup>, A. Ahmed<sup>382</sup>, H. Aihara<sup>375</sup>, R. Ainsworth<sup>237,139</sup>, S. Ain<sup>154</sup>,  
M. Aizatskiy<sup>208</sup>, T. Akagi<sup>73</sup>, M. Akemoto<sup>71</sup>, A. Akeroyd<sup>367</sup>, J. Alabau-Gonzalvo<sup>108</sup>, C. Albajar<sup>46</sup>,  
J. E. Albert<sup>379</sup>, C. Albertus<sup>281</sup>, J. Alcaraz Maestre<sup>31</sup>, D. Alesini<sup>174</sup>, B. Alessandro<sup>128</sup>,  
G. Alexander<sup>265</sup>, J. P. Alexander<sup>43</sup>, A. Alhaidari<sup>243</sup>, N. Alipour Tehrani<sup>33</sup>, B. C. Allanach<sup>323</sup>,  
O. Alonso<sup>311</sup>, J. Alwall<sup>210</sup>, J. W. Amann<sup>251</sup>, Y. Amhis<sup>167</sup>, M. S. Amjad<sup>167</sup>, B. Ananthanarayan<sup>83</sup>,  
A. Andersson<sup>325</sup>, M. Andersson<sup>325</sup>, J. Andersson<sup>325</sup>, M. Andersson<sup>325</sup>, D. Anderson<sup>116</sup>, K. Anderson<sup>325</sup>

**The name list is 9 pages long followed by a list of 408 institutions (8 pages).**

## DBD presents our achievements

- **We believe we have reached the expected goal of the LOI process.**

### In the DBD:

- ✓ The case of ILC physics could be presented.
- ✓ The feasibility of the detectors and software technologies could be proven.
- ✓ The capability of the detectors to accomplish aimed physics was demonstrated.
- For the last point, good communication with the GDE teams was crucial and was kept.  
e.g. IR design, Push-pull issues, SB2009, beam parameters/b.g.

# What we've made during the LOI process

- Validation of the two detector groups with the help of IDAG
- Detailed design of two complementary detectors for ILC
- Feasibility proof of the deployed technologies, both on hardware and software
- Integration studies with the accelerator, including the push-pull mechanism
- Study of physics possibilities at ILC
- Demonstration of the detector performance for the expected reactions through realistic simulations under the expected beam condition.



# A few remarks

- **The resources were tight from the beginning,** e.g. the black December right after the start!
- **The management did not(could not) provide any budget for R&D.**
- ***The participating groups had to work hard also for resources.***
- **Engineering power was extremely limited.**  
**The cooperation with CLIC detectors was helpful.**
- **The discovery of the new Higgs-like boson gave a good boost.** While we wished and expected this, it made our final year very hectic and also our final report more promising.
- IDAG helped and supported us much all the way through.

# Expectation for the next phase

- We have finished the basic design stage and hope ILC project advance to be realized.

*The LCC sets up its goal to be “ILC Project realization”.*

**We do look forward to it!**

- **The concept groups need to continue more R&D and to go ahead toward engineering design phase.**
- **More precise costing through detailed engineering studies including installation studies.**
- **Here, the resources are crucial for these tasks.**
- **LCB is requested to pay serious attention to the resource issue.**

*The community can either concentrate on these efforts or evaporate.*

**(a support budget in the Common fund ?)**

# Summary

- We have completed our work of the LOI period.
- The entire management wishes to thank you for your intensive efforts and cooperation even through the difficult years.
- We do hope the strong wish of the community be realized in the next phase.
- For the community to continue, the resource needs to be obtained.