



# EUROTeV 4<sup>th</sup> Scientific Workshop Summary & Conclusion

---

E.Elsen





# A Noble Environment

- Oldest Swedish University – founded in 1477
- Uppsala a place of academic excellence
- Key interest in understanding nature ... and its anatomy and so built appropriate laboratories

*With the ILC, we would like to do the same at a few orders of magnitude smaller scale.*



Gustavium

# EUROTeV – a Design Study

---



- EUROTeV has been special in the Global Design effort
  - it was approved before the technology decision
  - to do scientific studies for the **design** of a TeV linear collider
- It hence was not the result of a "work breakdown structure" but rather matched the research interest of the individual institutes
  - nonetheless EUROTeV constitutes an essential part of the European contribution to the Reference Design of the ILC
  - EUROTeV had a lot of freedom to pick up the topics and still continue in a broader approach, including CLIC



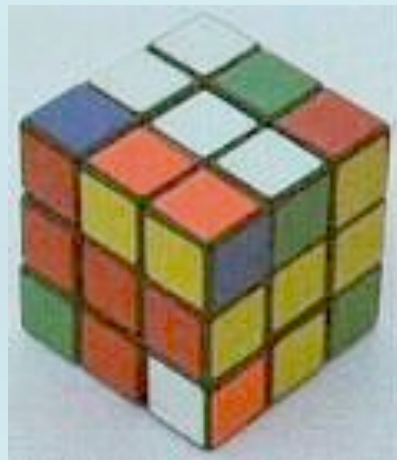
# Integration into the Global Process



## **EUROTeV** and the GDI

First major challenge for the GDI

From chaos...



...comes order!

GDI



**AND for EUROTeV !!**

# Final Scientific Meeting



- 2008

- Uppsala

## after meetings

- 2007

- LCWS Hamburg

- 2006

- LAL Orsay

- 2005

- Royal Holloway

The poster is a vertical rectangular layout. At the top left is the Uppsala University logo and name. Below it is the EUROTeV logo. The main title 'Final EUROTeV Scientific Workshop' is in large red and black text. Below the title is the text 'European Design Study Towards a Global TeV Linear Collider'. The bottom left features a photograph of a building with a golden dome. The bottom right features a photograph of a large university campus. At the very bottom, the dates '26-29 August 2008' are displayed in large bold text, followed by the homepage URL, contact names, and email addresses.

Uppsala  
UNIVERSITET

SIXTH FRAMEWORK PROGRAMME

**Final  
EUROTeV  
Scientific Workshop**

EUROTeV

**European Design Study  
Towards a Global TeV  
Linear Collider**

**Uppsala University,  
Ångström Laboratory**

**26–29 August 2008**

Homepage:  
[www.fysast.uu.se/EUROTeV2008/](http://www.fysast.uu.se/EUROTeV2008/)

Contact:  
Arnaud.Ferrari@fysast.uu.se  
Eckhard.Elsen@desy.de

# EUROTeV in the public



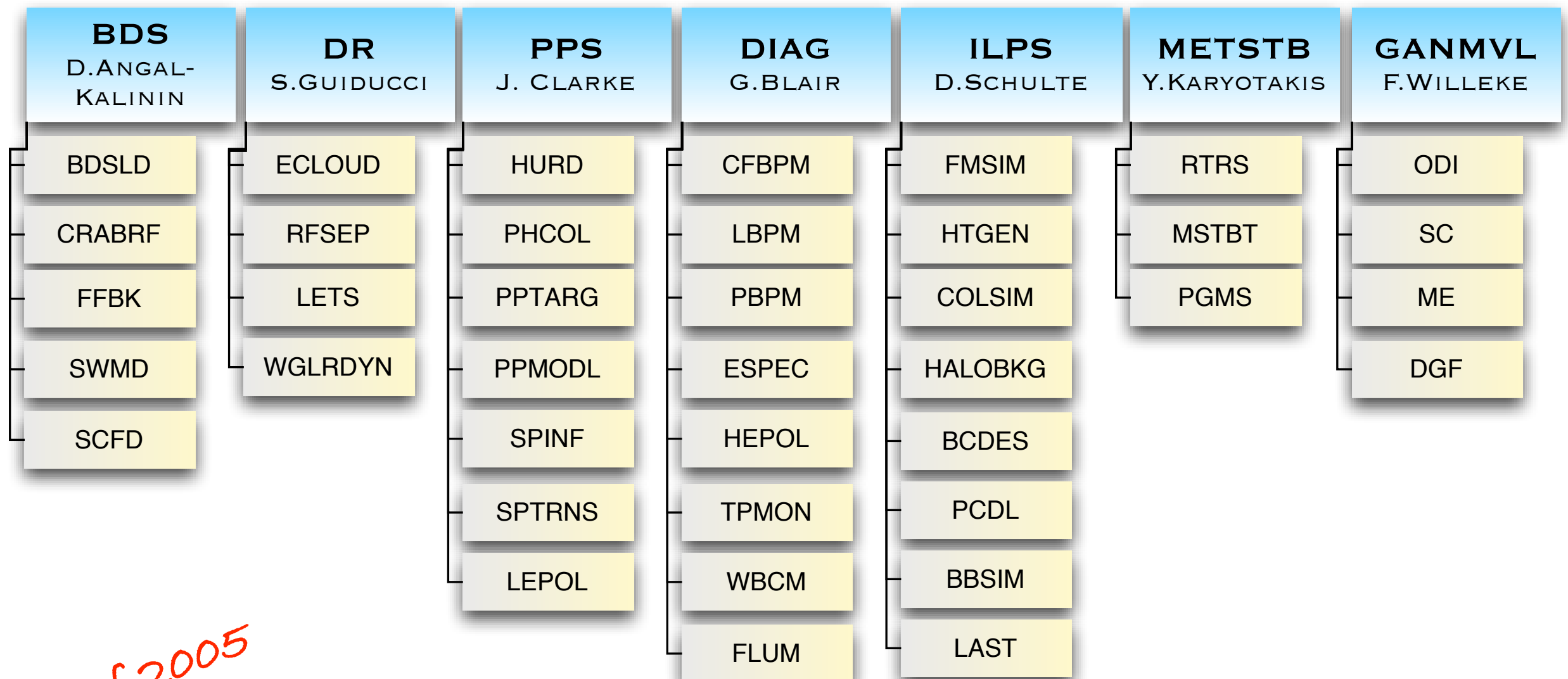
Year	EUROTeV Reports
2005	28
2006	106
2007	73
2008	>53...

- **EUROTeV** yields 7770 entries in Google (27.8.2008)
- Many contributions at the large accelerator conferences: EPAC, PAC, ...
- Fostered new collaborations
  - ATF
  - CsrTA

# EUROTeV Engagements



## EUROTeV WORK PACKAGES & TASKS (EXCEPT MNGMNT)



as of 2005



# Looking at the work packages

---

- from some distance
- with a personal view / emphasis
  - May serve as a start to present the findings in the Scientific report
- by no means exclusive



# WP2 – Beam Delivery System

---



- Significant contributions to the reference design of the 14 mr solution
- Home of the small angle studies
  - 2 mr crossing angle
  - Head-on collision

*Special emphasis*

*We should properly document the small angle solution!*



# WP3 – Damping Rings

---

- Significant contributions to the down-select from various options
  - dog-bone to rings
  - size of rings
  - selection of the many variants
- Electron cloud and FII studies
- Fast Kicker

*Thanks to  
Susanna and  
Andy*

*Work to be continued  
for Dafne and CEsR TA*



# WP4 – Polarized Positron Source

---

- Undulator Prototype
  - superconducting
- Polarization
  - Generation
  - Transport
  - Measurement

*tests ongoing*

*unique,  
globally*

# WP5 – Diagnostics

---



- Beam monitoring at all scales
  - a few nanometer to hundreds micrometer
  - Laserwire
  - Energy Measurement
  - Polarization

*often driven by  
CLIC  
requirements*

*A whole research field  
originated: experimenting  
at test facilities*





# WP6 – Integrated Luminosity Performance

---

- (almost) full simulation of the beam transport
  - from bunch compressor to post-collision diagnostics
- addressing many issues in the design
  - curved vs laser straight
  - failure modes
  - halo
  - collimation
  - ...

*making nanometer  
precision a (virtual)  
reality*

*We have not yet demonstrated  
integrated luminosity as claimed.  
Importance of ATF etc.*



# WP7 – Metrology and Stability

---

- Understanding vibrational modes
  - and mitigation
- Characterizing sites and devices
  - incl. cold cryomodule
- Rapid survey on a large scale
- ...

Tests at ATF & DESY



# WP8 – Global Accelerator Network ...

---

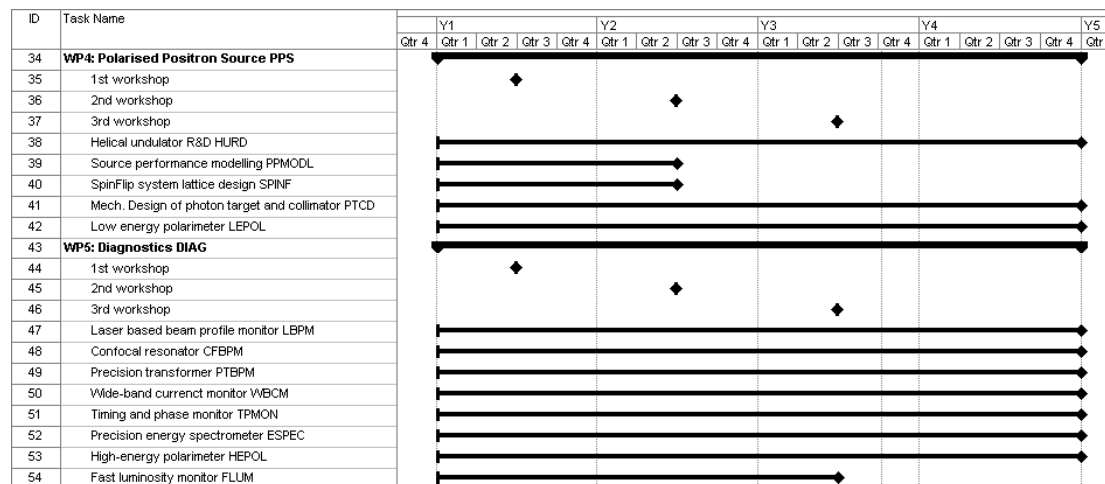
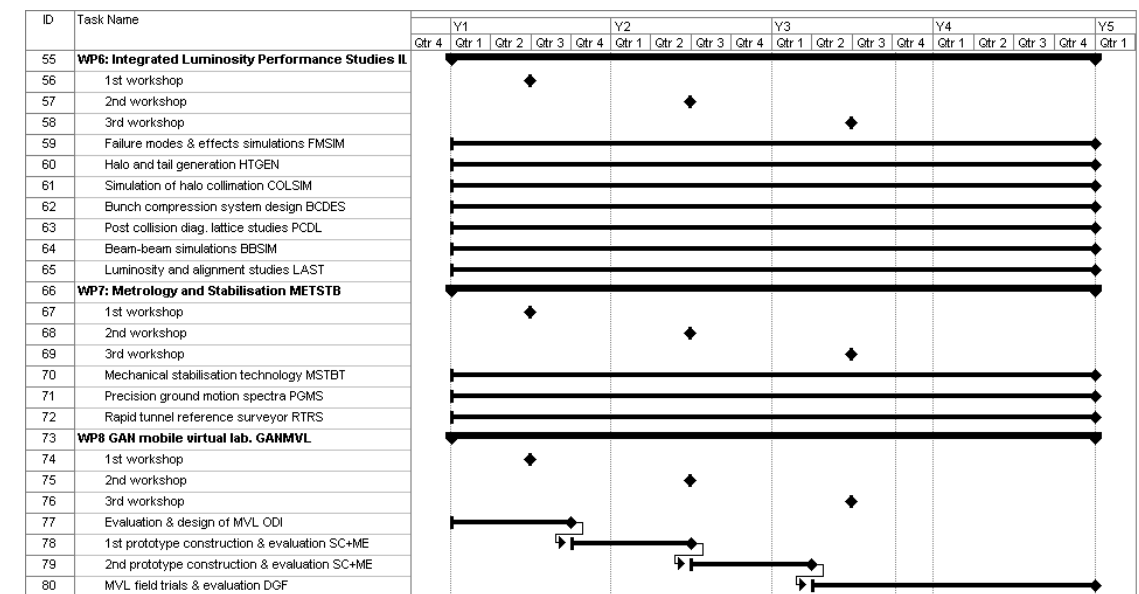
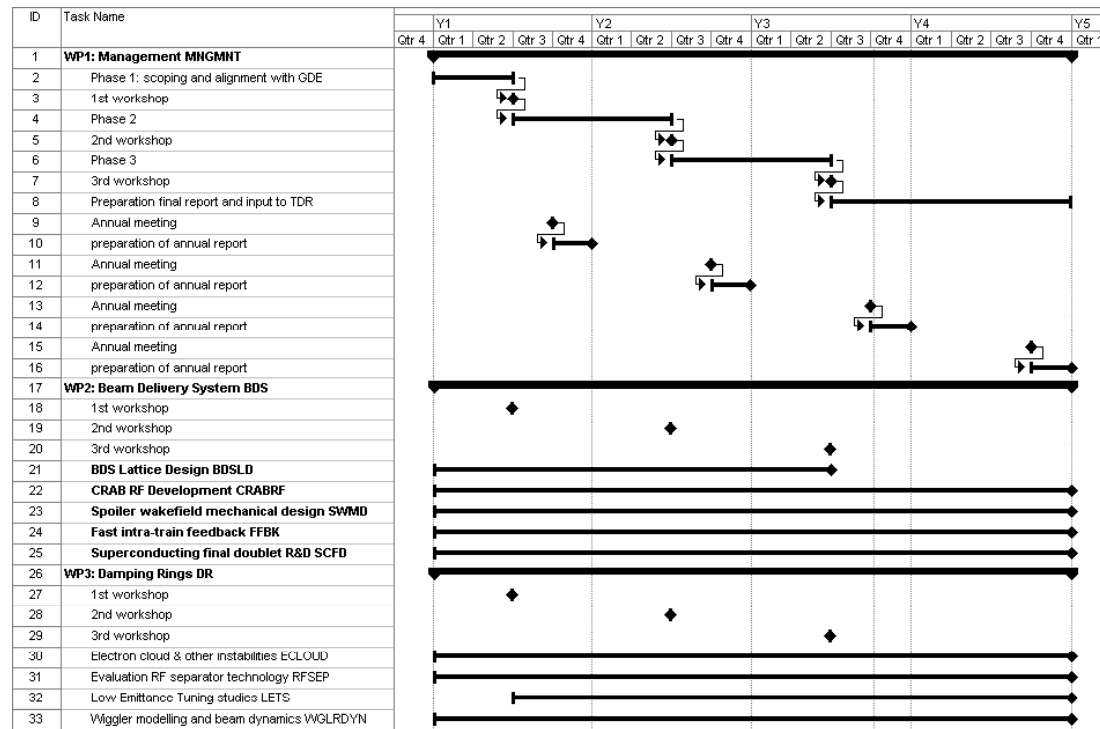
- Significantly advance the concept of remote participation
  - understanding human hesitation
  - Prototype building
  
- Remote control rooms now become a reality
  - FNAL LHC control center
  
  - CALICE control room

*remote injection into  
ELETTRA*

*turning night into day-  
shift*

*This field is certainly moving on*

# EUROTeV 2005 – 2008 Schedule



Most dates of deliverables have been moved to end 2008

*from amended contract*



# Finishing up

---



- Please provide the reports for those areas where we promised a "deliverable"
  - We need a reference everywhere
  - Have discussed individual solutions in cases where the goals have not been met literally
  - The reports are necessary latest for the Annual Report for which the first version will be prepared before Christmas
- Annual Report
- Scientific Report
  - *The EUROTeV Book in your shelf*

# Conclusion

---



- EUROTeV has been quite a success story
  - Let us conclude properly
    - Scientific report end of the year
    - Make good use of the financial resources
- Collaboration will continue in various forms
  - to support ILC in TDP I
  - to carry accelerator research forward

*No reason to say good-bye since we meet again.*

*A big Thank-you for the support and fun with  
EUROTeV*