# DataGrid Project Status

Fabrizio Gagliardi – Project Manager
Fabrizio.Gagliardi@cern.ch

# **Outline**

- Introduction to the review

- *General project status*
  - *Middleware, Testbed, Networking, Applications, Dissemination, Project management*

- Project deliverables

- Project budget

- Summary

- Conclusions

# **Introduction to the Review**

◆ Review structure

- Today (AM): 2003 Overview and current status

- Today (PM): Application assessment, dissemination and quality, Application demos

- Tomorrow (AM): Middleware development, security, summary

◆ Details are provided in the deliverables and periodic reports

◆ Need to follow the agenda firmly so please hold questions till the end of presentations

# Themes of 3rd year of the project

- ◆ Complete the work as described in the technical annex

- ◆ Delivery and support the grid software for production infrastructures (LCG, Grid.it, etc)

- ◆ Define migration plan for future projects

- ◆ Elaborate exploitation plans

# DataGrid Summary

- Leading vehicle for Grid Research and deployment over the last three years
  - **Europe's flagship Grid Project**

- 2001
  - **Established organisational structures**
  - **Gathered/analysed requirements and surveyed software toolkits**
  - **Assembled large scale grid testbed and defined middleware architecture**

- 2002
  - **Improved services provided to application groups (quality issues in software, creation of documentation, tutorial programme)**

- 2003
  - **Built on solid technical base to provide advanced functionality to application groups and Grid related projects around the world.**

  → The results will form the basis of EGEE

# DataGrid Achievements

- **Successful deployment of middleware for use by applications**
  - Sept. 03: third major release of EDG middleware made available
  - Important improvements included in final EDG version 2.1 deployed end Nov. 03

- **Successful delivery of middleware to the LCG production infrastructure:**
  - ➔ EDG software installed on more than 40 sites throughout the world. Next generation LCG-2 to be deployed beginning 2004

- **Datagrid Middleware being exploited by other projects and production facilities:**
  - ➔ LCG, EU Crossgrid Project, EU Grace Project, Italian INFN grid/grid.it, Dutch Dutchgrid, DataTAG
  - ➔ OPENLAB: Involvement of industrial partners in Grid-related activities
  - EDG middleware being ported to different platforms such as IA64 as part of the CERN openlab project. (HP, IBM, Intel Corporation, Oracle…)
  - WP4 Quattor computing management tool now deployed at the CERN computing centre (1700 nodes). Other sites have expressed interest

# DataGrid Achievements II

- **Application Working Group (AWG) relaunched**
  - March 2003 - Chaired by Vincent Breton (WP10)
  - Interactions with GridLab Project
  - Valuable recommendations and requirements
  - ➔ Excellent forum for discussions

- **Europe-wide network activity**
  - Upgrade of numerous National research and Education networks National networks inter-connected with GEANT.

  - ➔ Grid data transport at GBit/s speed anticipated confidently Close collaboration maintained with DataTAG and DANTE

- **Active participation in international standards bodies**
  - Providing contributions to different GGF Working and Research groups

# DataGrid Achievements III

- ◆ **Coordination and cooperation with related Grid Projects**
  - DataTAG, CrossGrid, GRIDSTART, GRACE, GridLab…

- ◆ **Open-style Software license established**
  - Used throughout 2003 and suggested for approval as an OSI compliant license; model for CrossGrid and Globus license.

- ◆ **Tutorials**
  - "Education & Outreach Manager" assigned to coordinate and lead tutorial activities.
  - More than 600 people trained in over 25 events

- ◆ **Evolution of EDG results after the project**
  - Proposal for a pan-European Grid infrastructure: EGEE
  - ➔ results of EDG directly contribute to one of the largest Grid infrastructures world-wide
  - All partners committed to continue development/exploit results in local, national and international follow-up projects

# DataGrid Third Year Deliverables

D1.6, d2.5, d3.5, d4.5, d5.5, d6.7: Components and documentation for the third project release

D1.7, D2.6, D3.6, D4.6, D5.6: Final Evaluation report

D6.8: Final evaluation of testbed operation

D7.4: Final report on network infrastructure and services

D7.7: Final security report

D8.4: Report on the results of HEP applications at run #2 and final application report

D9.4: EO application platform interface

D9.5: EP application processing testbed demonstration and final report

D10.4: Final report including report on the 2nd bio-testbed release

D11.6: Second annual conference and grid forum

D11.7: Final conference

D11.9: Contribution to international standards

D12.13-16: Third year quarterly reports

D12.19: Third year annual report

*D6.6, D8.3, D9.3 and D10.3 which had been rescheduled for the first quarter of the third year were also delivered*

# Mware stuf...

- Level 1
  - Level 2
    - Level 3
      - Level 4
        - Level 5

# WP12 Project Management

◆ Project Office

Issues: maternity leave of second project administrator

◆ Second Project Review successfully passed and followed-up

◆ Third Project Review organized

◆ Project conferences held (Barcelona and Heidelberg)

◆ *Architecture group (ATF)*

◆ *Globus support contract activated with Argonne (ANL) and being processed with Univ. S. California's Info Sciences Inst. (ISI)*

◆ *Software license established*

# WP12 Project Management

- *Co-ordination and collaboration with other projects:*
    - *RN Geant, LCG, DataTAG/iVDGL, PPDG/GriPhyN, CrossGrid, GRIDSTART*

- *Quality group launched and coordinated*

- *Launched application task forces (Atlas and CMS) successfully managed by the applications and coordinated by WP8*

- *Major contribution to dissemination and standards (GGF, conferences, EDG tutorials) **-> Rosy***

# Project Major Issues

- *Deliverables related to the second testbed major release rescheduled*

- *Relations with other Grid projects, LCG in particular (real production use with LCG, keeping track of new technology standards (OGSA/OGSI/WSRF…)*

- *Persistency of project results (exploitation of project results including EGEE)*

- *Globus and other tools support (migration to OGSA)*

- *Project Office resources (maternity leave)*

- *Third year funding marginal with some partners*

# Project Budget

| Partners | Cost basis | Original Plan Y1 | Reimbursed | Deviation Y1 | Original Plan Y2 | Reimbursed | Deviation Y2 | Original Plan Y3 | Claimed | Deviation Y3 | EU ceiling | Total planned | Overall Deviation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CERN | | 494 597 | 393 547 | -20% | 588 221 | 640 957 | 9,0% | 463 761 | 541 404 | 17% | 1 546 579 | 1 575 908 | 1,90% |
| CERN coord. | | 130 666 | 88 682 | -32% | 120 055 | 126 922 | 5,7% | 169 372 | 157 269 | -7% | 420 093 | 372 873 | -11,24% |
| Total CERN | AC | 625 263 | 482 229 | -23% | 708 276 | 767 879 | 8,4% | 633 133 | 698 673 | 10% | 1 966 672 | 1 948 781 | -0,91% |
| ITC-irst | FC | 102 170 | 78 033 | -24% | 88 920 | 66 511 | -25,2% | 83 120 | 127 660 | 54% | 274 210 | 272 204 | -0,73% |
| UH | AC | 90 624 | 13 775 | -85% | 91 820 | 71 206 | -22,5% | 93 394 | 159 600 | 71% | 275 838 | 244 581 | -11,33% |
| VR | AC | 124 844 | 0 | | 123 466 | 132 999 | 7,7% | 123 636 | 197 890 | 60% | 371 946 | 330 889 | -11,04% |
| ZIB | AC | 90 156 | 76 487 | -15% | 93 156 | 105 785 | 13,6% | 93 156 | 94 193 | 1% | 276 468 | 276 465 | 0,00% |
| EVG HEI UNI | AC | 90 156 | 59 436 | -34% | 93 156 | 79 657 | -14,5% | 93 156 | 121 748 | 31% | 276 468 | 260 841 | -5,65% |
| CNRS | FF | 278 547 | 251 686 | -10% | 314 111 | 338 368 | 7,7% | 318 732 | 343 791 | 8% | 911 390 | 933 845 | 2,46% |
| CSSI | FF | 165 100 | 177 828 | 8% | 165 100 | 181 371 | 9,9% | 165 200 | 138 092 | -16% | 495 400 | 497 291 | 0,38% |
| CEA | FC | 60 264 | 62 281 | 3% | 61 377 | 62 700 | 2,2% | 62 604 | 92 963 | 48% | 184 245 | 217 944 | 18,29% |
| IFAE | AC | 64 392 | 70 740 | 10% | 64 392 | 38 983 | -39,5% | 0 | 19 061 | | 128 784 | 128 784 | 0,00% |
| ESA | AC | 206 452 | 206 042 | 0% | 254 873 | 274 437 | 7,7% | 183 675 | 164 522 | -10% | 645 000 | 645 001 | 0,00% |
| INFN | AC | 319 189 | 256 610 | -20% | 300 592 | 455 860 | 51,7% | 300 592 | 219 127 | -27% | 920 373 | 931 597 | 1,22% |
| DATAMAT | FF | 151 629 | 141 968 | -6% | 175 974 | 156 218 | -11,2% | 142 406 | 159 360 | 12% | 470 009 | 457 546 | -2,65% |
| CNR | FF | 89 836 | 101 040 | 12% | 89 836 | 91 382 | 1,7% | 90 836 | 78 218 | -14% | 270 508 | 270 640 | 0,05% |
| CESNET | FF | 45 656 | 51 071 | 12% | 45 656 | 50 101 | 9,7% | 45 706 | 47 766 | 5% | 137 018 | 148 938 | 8,70% |
| FOM | AC | 77 136 | 68 349 | -11% | 69 919 | 121 221 | 73,4% | 71 125 | 81 868 | 15% | 218 180 | 271 438 | 24,41% |
| KNMI | FC | 59 655 | 66 580 | 12% | 59 778 | 49 613 | -17,0% | 39 504 | 42 425 | 7% | 158 937 | 158 618 | -0,20% |
| SARA | FC | 71 300 | 66 346 | -7% | 55 696 | 52 775 | -5,2% | 46 622 | 48 727 | 5% | 173 618 | 167 848 | -3,32% |
| PPARC | AC | 396 916 | 97 504 | -75% | 386 404 | 386 310 | 0,0% | 414 005 | 431 160 | 4% | 1 197 325 | 914 974 | -23,58% |
| MTA SZTAKI | FF | 88 850 | 95 629 | 8% | 94 367 | 94 417 | 0,1% | 98 543 | 95 163 | -3% | 281 760 | 285 209 | 1,22% |
| IBM | FC | 77 218 | 92 911 | 20% | 79 429 | 85 604 | 7,8% | 81 707 | 79 170 | -3% | 238 354 | 257 685 | 8,11% |
| Total | | 3 275 353 | 2 516 543 | -23% | 3 416 298 | 3 663 397 | 7,2% | 3 180 852 | 3 441 177 | 8% | 9 872 503 | 9 621 117 | -2,55% |

# Summary

- *Successful deployment of M/W for use by real applications:*

*LCG + others projects such as CrossGrid, DataTAG, GRACE, others (South Korea, Chili, Russia, etc.)*

- *Applications heavily involved in all phases of the project*

*Joint Technical Boards of the WP8-9-10 successfully relaunched.*

- *Continued international network activity (via DataTAG, RN Geant)*
  - *Many upgrades within the NRN area*
  - *Good collaboration with Geant in defining EGEE networking plans*

- *Continued Active participation in international standard bodies (GGF etc.)*

- *High-level coordination with related Grid projects (CrossGrid, GRIDSTART, DataTAG, GRACE, etc.)*

- *Open source license published*

- *Continued Major dissemination success with tutorial and road-shows*

# Conclusions

◆ *Difficulties arise from finding balance between support of the current s/w and effort devoted towards advance solutions and migration to new emerging standards*

◆ *Functionality and performance of software and testbed(s) completed according to the original plans.*

◆ *Confirmed the value of EDG technology as adopted by many projects including LCG for one of the largest scientific enterprises to date*

◆ *Follow on project successfully proposed and being launched (EGEE)*

◆ *Continue in its way to fulfil the role of EU Grid flagship project*