Proposal of IN_2P_3 Institutes to join
The $D\O$ Collaboration

IB
7/01/98

The IN_2P_3 management approved by the end of October 97 the participation to $D\O$ of the following institutes :

- CPPM Marseille

Eric Kajfasz, Elemér Nagy, Sylvain Negroni (student)

- ISN Grenoble

Marie-Laure Andrieux

- LAL Orsay

Philip Bambade, Laurent Duflot, Michel Jaffré,
Jean-François Grivaz, Pierre Pétroff

- LPNHE Paris 6 et 7

Ursula Bassler, Gregorio Bernardi, Fréderic Fleuret,
Didier Lacour

Discussions are going on with :
IPN Lyon and LPNHE Ecole Polytechnique.
High probability that IPN Lyon joins us early 98

History since July 97

- July 97 2 Proposals CDF and $D\emptyset$

  roughly same number of institutes and physicists

- Sept.97 LPNHE Paris $\rightarrow$ $D\emptyset$

- Sept.97 LAL Orsay $\rightarrow$ $D\emptyset$

- Sept.97 IN_2P_3 SC

  final choice CDF/$D\emptyset$ to be taken by IN_2P_3 management

- Oct.97 SACLAY $\rightarrow$ $D\emptyset$

- Oct.97 Visit at Fermilab

  The IN_2P_3 management visited both experiments

- End of Oct. 97 $\rightarrow$ $D\emptyset$

- December letter to John Peoples

- Discussion with "pro" CDF people

  mainly IPN Lyon and LPNHE Ecole Polytechnique

IN_2P_3 Participation to $D\emptyset$

Our participation will be based on :

- Hardware

  Upgrade of the on-line calibration of the calorimeter

- Software

  General Software + $\rightarrow$ Saclay

  Calorimeter Reconstruction

  Tracking reconstruction + $\rightarrow$ Saclay

  Physics Analysis + $\rightarrow$ Saclay

On-line calorimeter Calibration

- Responsability of the upgrade

The high voltage pulser and its distribution boxes are replaced by a set of low voltage pulsers with a new distribution and new cables

- Contact: Hervé Lebbolo

- Technical Staff :

Pierre Imbert, Gisèle Martin, Christophe de la Taille (LAL)
Hervé Lebbolo, Alain Vallereau (LPNHE)

- Physicists :

U. Bassler, G. Bernardi, P. Pétroff

General Software

Contact: Michel Jaffré and Alain Pluquet

$\rightarrow$ Software installation on french platforms

DOGstar has been installed thanks to Saclay's staff !

$\rightarrow$ USA-France link, videoconferencing

$\rightarrow$ IN_2P_3 computing center

- IBM and HP workstations
- Robot DLT + 50Go Redwood cartridges + drives

\+ Disk space $\nearrow$

$\rightarrow$ massive simulation productions

$\rightarrow$ data analysis

IN_2P_3 Computing Center $CCIN_2P_3$

Partner: CEA-Saclay

- 2 Workstations Farms

$\rightarrow$ BASTA 12 IBM RS6000 + 25 HP735

Computing power : 80 specint-95 (320 Tiny) $\sim$ 3200 MIPS

$\rightarrow$ ANASTASIE 14 IBM RS6000 + 18 HP735

Computing power : 90 specint-95 $\sim$ 3600 MIPS

Total $\sim$ 7000 MIPS $\nearrow$ 98/99

- Storage capabilities

DLT mini-robot 12 Redwood drives ($1M)

4000 Redwood 50Go cartridges ($.35M)

Disk space: few Terabytes

36 full time employees (26 engineers)

Calorimeter Reconstruction

Contact: Ursula Bassler and Laurent Duflot

- Offline calibration

→ With Z's, J/PSI, Υ (CPPM/ISN)

→ Low energy calibration with E/P (LAL/LPNHE)

→ Jets energy scale improvement (LPNHE)

- Reconstruction Algorithms

→ "Reco machinery" July 98 deadline (LAL)

→ Electron identification (LAL)

→ Energy optimisation : tracks/calorimeter cells (LPNHE)

- Contribution to OO/C++ rewriting

Technical Staff : Guy Le Meur and François Touze LAL

Tracking Reconstruction

$\rightarrow$ Discussions between CPPM/IPN Lyon

- track reconstruction
- b tagging
- Saclay/IN2P3

Physics Analysis

Contact: Gregorio Bernardi

- Top (LPNHE)
- SUSY (CPPM/ISN/LAL)
- RUN I analysis
  - → W-mass measurement with the endcaps (LPNHE)
  - → R-parity SUSY violating (CPPM)

Manpower

- Physicists :

$\rightarrow$ 6 FTE (98) 9 FTE (99) $\geq$ 15 FTE beyond

- Engineers in electronics :

$\rightarrow$ 3 FTE (98) 3 FTE (99) 1 FTE beyond

- Engineers in computing :

$\rightarrow$ 1 FTE (98) 2 FTE (99 and beyond)

- $\geq$ 4 persons at all time at FNAL $\geq$99

$\rightarrow$ $\geq$ 2 persons permanently (one in 98)

$\rightarrow$ 2 persons commuting

Budget

- Hardware : \$.25M

- $CCIN_2P_3$ $equip^t$: \$.25M

$\rightarrow$ Redwood drives, cartridges, disks

- General contribution : $\sim$ \$.3M

$\rightarrow$ to be worked out in detail between $D\emptyset$ and IN_2P_3

- Travel money : \$.35M/year

Conclusion

- Physicists + Technical Staff

$\rightarrow$ Participation in Hardware and Software

- strong links Saclay/IN2P3

$\rightarrow$ Strong French Group with good expertise

- NEED your approbation NOW