CERN/FOCUS 2000-011
Minutes 20
20th December 2000

FOCUS

FORUM ON COMPUTING: USERS AND SERVICES

MINUTES OF THE 20th MEETING OF FOCUS HELD ON THURSDAY 7th DECEMBER 2000

Present: J.Altaber, T.Cass, M.Cattaneo (Secretary), M.Delfino, M.Ernst, F.Gagliardi*), B.Gobbo, R.Gokieli, F.Hemmer, H.-F.Hoffmann*), S.Jarp, P.Jeffreys (Chairperson), M.Kienzle, J.Knobloch, L.Mapelli, N.McCubbin*), H.Meinhard, A.Norton, S.O'Neale, F.Ranjard, K.Safarik, A.Sandoval, J.Shiers, A.Silverman*), P.Vande Vyvre, W.von Rüden*), R.Voss

Invited: A.Koppanyi (replacing M.Marquina), O.Martin*), R.Többicke*), T.Smith

Apologies: F.Etienne, A.Grant, V.Innocente, M.Marquina, E.Valente

Absent: R.Cashmore, D.Jacobs, W.Lerche, J.May, M.Mazzucato, M.Pimiä, H.Renshall, L.Robertson

*) Part time

1 AGENDA
1.1 Consideration of Agenda
1.2 Minutes of last meeting and matters arising
1.3 Discussion of Chairman's review of the year presented to HEPCCC

2 COCOTIME allocations for 2001 (Helge Meinhard)

3 Status of the Windows 2000 migration (F.Hemmer)
(Ref: FOCUS-2000-002, minutes of 17th FOCUS meeting, 2nd March 2000)

4 Status of CERN external connections and CIXP (O.Martin)

5 Home and Mobile Computing - current plans (R.Többicke)

6 Review of Public Computing Platforms and RISC decommissioning
6.1 RISC decommissioning schedule (Tim Smith)
6.2 User reactions to RISC decommissioning schedule (Marco Cattaneo)
6.3 2001 supported platforms/compilers (Jürgen Knobloch)
6.4 Conclusions of ad hoc working group on SUNDEV (Helge Meinhard)

7 Update on computing at DESY (Michael Ernst)

8 CERN/IT review of the year and plans for next year (Manuel Delfino)

9 Actions outstanding

10 A.O.B. (includes raising of user issues not covered by agenda)

1.1 CONSIDERATION OF AGENDA

1.2 MINUTES OF THE LAST MEETING

The minutes had already been approved by E-mail. There were no further comments.

1.3 DISCUSSION OF CHAIRMAN'S REVIEW OF THE YEAR PRESENTED TO HEPCCC (see slides)

The chairman had received no feedback on the slides presented at HEPCCC. For this discussion he concentrated on slide 18 of his presentation, where he asks whether a change to the FOCUS mandate is needed. He asks whether the current mandate is still valid, whether the two-year timescale is correct, and whether FOCUS should address the computing services provided by CERN, or the wider issue of computing on the CERN site, regardless of provider.

Hans Hoffmann confirmed that FOCUS should continue to review, on a two-year timescale, computing on the CERN site for all physics users (and not just LHC). He therefore sees little overlap with the "Computer and Software Steering Committee" to be set up by the Review of LHC Computing, whose mandate will be to oversee common projects and solutions for LHC computing only, and on the timescale of LHC start-up, not only at CERN but also in the LHC collaborations as a whole and at regional centres. The CSSC should have a lifetime of 2-3 years. There is also little overlap between FOCUS and COCOTIME, the latter being concerned with the short timescale allocation of resources for the coming year and with coordination and scheduling in the current year.

The chairman concluded that the implication is that FOCUS will have a slight change of emphasis and will oversee computing activities at CERN, whether or not they are funded by CERN.

2. COCOTIME ALLOCATIONS FOR 2001 (H. Meinhard) (see slides)

Helge briefly summarised the 2000 COCOTIME round, which is essentially completed. There is an approximate shortfall of 10% in the draft budget for the "approved programme" which could be absorbed at least in part by lower than expected prices. There is a more serious shortfall for the planned expansion of the LHC "*Testbed*", which is costed at 2.8MCHF, whereas only 1.2MCHF are available in the Medium Term Plan. For this reason, the configuration of the *Testbed* for 2001 is still under review.

Helge highlighted a number of trends:

- A lot of progress has been made towards the "Linux+1" platforms - in 2001 lxbatch will be upgraded by 30% and lxplus by 100%, to replace capacity removed from *rsplus/rsbatch* (closed for physics in 2001) and from *dxplus/hpplus* (open only to the LEP community in 2001). The new "*SUNDEV*" cluster groups together all the requests for Sun capacity. *CSF* will close in 2001 and *pcsf* will be migrated to Linux.
- Disk requests will be satisfied by IDE disk servers, which have reduced the cost of disks to 40 kCHF/TB. Even so, disks represent the lion's share of the dedicated investment for experiments: while requests for CPU are being satisfied by public services, disks remain private.
- Managed storage (Castor) is replacing tapes, which will no longer be available for new data. Storage in Castor will be charged at 2CHF/GB for five years of storage. All new data will be in Castor, with the exception of "user tapes" which will continue in HPSS. Experiments are encouraged to migrate their tapes to Castor, and we will migrate out of Redwoods in 2001.
- Dedicated funding for experiments represents an ever-decreasing fraction of the physics computing budget of IT division. In 2001 the split is 364 kCHF for the LHC experiments, 178 kCHF for the LEP experiments and 300 kCHF for the fixed target and ion experiments.

The policy of charging groups for 100MB/s connections to the desktop has been confirmed. Concerning licenses, the existing database licenses cover the needs for 2001. A long-term deal with NAG for the C developer license is being prepared, for a decision at the March FC.

Sverre Jarp expressed concern at the under-funding of the *Testbed*. Hans Hoffmann explained that this facility is part of the LHC computing and therefore has to be approved by the CERN committees in that context, hopefully in June 2001. The under-funding impacts since we want to begin to put in place the facility already this coming spring.

FOCUS thanks Helge for the report on COCOTIME allocations for 2001. It notes that* lxbatch *will be upgraded by 30% and* lxplus *doubled in size. It recognizes that the "Testbed" has a central role and represents a significant investment, which at this stage is not fully funded.

3. STATUS OF THE WINDOWS 2000 MIGRATION (F. Hemmer) (see slides)

Frédéric summarised the progress made in the W2K project since the last presentation to FOCUS in March 2000. A lot of lessons have been learnt from the pilot project and Frédéric thanked all those who participated; two particularly annoying features for users is that they cannot log in to both NT4 and W2K (due to incompatibility problems with the user profiles) and that they must never leave the CERN domain when unconnected (e.g. when travelling) because they will be unable to rejoin it until they reconnect their portable to the CERN network.

In the last months, the following progress has been made:

- The Netware servers were migrated to Windows 2000. This was much more difficult than estimated, due to the large number of files and users, the historical situation, and hardware failures. The short-term plans are to migrate home directories to the DFS structure and to separate Mac/NFS users onto a different server.
- The NT domain has been migrated to Active Directory. This was mostly transparent and allows using CCDB/LANDB to get information about the main user of a PC, which is used for granting local administrator rights.
- A NICE 2000 installation diskette is available.

Applications are now local. This makes them more robust but they need to be managed (upgrades etc.). The advantage is that files are cached locally, so documents can be carried everywhere on a laptop and resynchronised each time one reconnects to the network. A long list of applications available on NICE 2000 was shown. The NICE 2000 management tools are available as Web applications with encryption, allowing for remote usage at other labs, and can be used for Web site management and protection.

A migration task force (w2kmtf) has been set up whose task is to identify any showstoppers and to propose a migration schedule and a freezing date for NICE 95/NT, to be proposed to the DTF and to FOCUS (ACTION). The repackaging of applications, to allow management with MSI, will involve considerable work.

In response to an action item, Frédéric completed his presentation with a demonstration of how Internet Explorer 5 (IE5) can be used to browse and manage remote directories via ftp, in a way that is seamless with the W2K Explorer interface. Inter-laboratory DFS has not yet been tried due to other labs being less advanced in W2K deployment, and due to the potential security holes.

Helge Meinhard stressed that the W2K/NT profile incompatibility is serious, since this implies having separate accounts. He is also concerned about the future of Netscape c.f. IE5, since adoption of IE5 would remove the little compatibility that exists between Windows and Unix. Unfortunately this is unavoidable, because IE5 is the Explorer interface on Windows 2000.

Florence Ranjard asked when she could move to NICE 2000, since she experiences problems on NT since the move to W2K servers. It should be possible early next year, but depends on the applications she needs. The w2kmtf is defining groups of applications for groups of users, and also preparing training sessions.

The chairman asked whether the physics community is well represented on w2kmtf. The impression is yes, since there are two EP division members, one representing the division and the other the experiments. But it is up to experiments themselves to follow the work of the task force if they feel concerned.

FOCUS thanks Frédéric for presenting the status of the W2K migration. It notes the lessons learnt from the pilot, the progress made, and the benefits of NICE 2000.

4. STATUS OF CERN EXTERNAL CONNECTIONS AND CIXP (O. Martin) (see slides)

Olivier had a large number of slides, a complete summary of which is beyond the scope of these minutes. An important message was that Wide Area Networking is no longer seen as a bottleneck, the external networking capacity of CERN will, at least, double every year. The Internet connectivity of CERN has greatly benefited from the CERN Internet Exchange Point (CIXP), which gives CERN free, direct access to the fibre optic infrastructure of many Telecoms providers (as those who suffered the many road works on the roads approaching CERN may be well aware!). CERN is negotiating to become a Point of Presence on the future European Gigabit Network (GEANT) which will give CERN direct access to GEANT's full capacity (initially 2.5-10Gbps, probably increasing to 100Gbps within 4 years), dedicated to the research and education community. Multiple 2Gbps circuits from CERN to Tier1 centres will be possible by 2003-2005.

Unfortunately, high bandwidth does not mean high throughput on long distance paths. The current Internet model is not optimised for high-speed file transfers over large bandwidth networks, and much work is needed to enable ordinary users to attain full network data rates. The Web 100 project has been set up to provide a software suite to achieve this goal, and it is important that the experiments invest effort in this. More information is available at http://www.web100.org.

FOCUS thanks Olivier for a comprehensive review of CERN external connections and CIXP.

5. HOME AND MOBILE COMPUTING - CURRENT PLANS (R. Többicke) (see slides)

Rainer described the status and plans for the ACB service. ACB is used for simple Internet access (which could easily be outsourced to commercial ISPs), but also for full access to the CERN Intranet when working from home (e.g. for access to the CERN file base, to control equipment etc.), and by CERN suppliers. This has more stringent security requirements because it places the user inside the CERN firewall. Users are identified by the call back to their registered phone number. Unfortunately the implementation of ACB is troublesome due to the lack of standards and the wide variety of home computing equipment. Also, it addresses the requirements of the home user, but not of the traveller.

An alternative that is under investigation is Dial-In with calling line identification, possibly used in conjunction with an 0800 number. Identification using a SmartCard/CryptoCard (SecureID) is also a possibility. Two projects are ongoing in this area, one home made and one outsourced to Swisscom, both using “RAS” technology. It is likely that the Swisscom solution will be dropped because it does not work in France.

While Dial-In may be appropriate for telephone connections in the local area, it would not work with access via xDSL, cable (and TV) modems, UMTS etc., or for long-distance telephone access. These users would have an Internet only link to CERN. A possible solution is the use of Virtual Private Networks to implement the security and authentication.

Manuel Delfino and Jacques Altaber explained that these pilots had been launched to explore the wide variety of technologies that have suddenly become available. It should be possible to make strategic choices in the first quarter of 2001; the solution chosen will have to be as generic as possible. This is likely to be VPN, possibly supplemented by Dial-In in the local area.

FOCUS thanks Rainer for presenting the options for home and mobile computing. It recognises the difficulties with call back and the advantages of the alternatives (home made and Swisscom RAS) under investigation.

6. REVIEW OF PUBLIC COMPUTING PLATFORMS AND RISC DECOMMISSIONING

6.1 RISC decommissioning schedule (T. Smith) (see slides)

Tim assumed that people had read the memorandum that he had distributed after the last FOCUS meeting, and concentrated on developments since then.

For the non-LEP experiments, the original proposal was for a transition to Linux+Solaris as soon as possible, and the implementation of the SUNDEV public Solaris cluster for software development. The recent COCOTIME round endorsed these plans, with all requests for Sun capacity being concentrated in SUNDEV and with additional Linux capacity funded to replace the RISC capacity to be phased out.

For the LEP experiments it was originally planned to keep the RISC hardware until 2003, but to freeze the operating systems earlier, and to investigate alternative hardware and software for longer-term analysis. The recent SGI security incident has shown that it is not practical to freeze the OS, so these operating systems will have to be supported until 2003, or stopped at the planned freezing date. Disk hardware plans have been evolving, with the advent of IDE disk servers.

The user registration has been split to allow different levels of access to rsplus, dxplus+hpplus and lxplus, depending on the affiliation and role of users. Concerning SUNDEV, negotiations are ongoing to reconcile the requirement of the experiments for commissioning as early as possible, against Sun's delivery schedule for the most up to date hardware.

6.2 User reactions to RISC decommissioning schedule (M. Cattaneo) (see slides)

The Secretary summarised the responses he received from the experiments concerning the decommissioning schedule originally proposed in Tim's memorandum. All experiments who replied agreed to the schedule. Most of them (not just LHC experiments) requested access to SUNDEV to allow them to continue to develop software on a second platform, and some expressed concerns about the availability of tools on Linux, such as FrameMaker, userreg, and fully functional compilers and debuggers for Fortran.

Steve O'Neale pointed out that replies were received from a large majority of experiments, and not just a few as stated on the slide.

The conclusion was that decommissioning could go ahead as proposed.

6.3 2001 supported platforms/compilers (J. Knobloch) (see slides)
Jürgen presented the plans for platforms and compilers to be supported for physics software next year.

For FORTRAN software (CERNLIB), no new functionality and no ports to new platforms are planned. The final release in spring 2002 will be only on Linux, Solaris, HP and DUX, with maintenance for one more year after that. Limited support will be available until end 2003.

For C and C++ software, the supported platforms for next year are Linux/Intel (RH6.1 + gcc-2.91.66, later gcc-2.95.2 to coincide with the Objectivity release 6) and Solaris/Sparc (2.6 + SC 4.2 now, plan to move to 2.7 + SC 5.1 during 2001). HP (10.20 + aCC A.0.23) and DUX (4.0d + 3.11 - C++ 6.1) enter "run down" mode, meaning that they are supported but there will be no new compiler versions. CLHEP and GEANT4 will still be available on Windows (VC++ 6.0).

In the medium term only Linux and Solaris will be supported; a full release of ANAPHE will be done only on these two platforms. In particular, IT division proposes to FOCUS to formally withdraw support for physics software on the Windows platform.

Marco Cattaneo said that LHCb was aware of the proposal to withdraw support for Windows and had prepared a memorandum to be distributed to FOCUS after the meeting, which explains why LHCb has chosen Windows as second platform, and in which LHCb reluctantly accepts the IT division proposal, provided the following points are met:

- IT/API group takes all reasonable measures when making technology choices (e.g. choice of windowing toolkit) to ensure that these choices do not prevent the porting of software to the Windows platform.
- IT/API group distributes the Windows port through the same distribution channels as the officially supported code.
- Any code modifications required for the port will be promptly accepted for inclusion back into the official code base.
- Efforts will be made to avoid wherever possible code constructs which are known to cause problems to the Visual C++ compiler.

Jürgen accepted the first three points, and said that he had to come back to FOCUS for the fourth point, following consultation (ACTION).

Marco also pointed out that the supported OS version for DUX should be 4.0f and not 4.0d. Steve O'Neale expressed concern that SGI does not appear in the list of supported platforms. This is true for C++ software; CERNLIB will be recompiled, including also modifications required for Castor. Benigno Gobbo asked whether we would stay with RH6.1 on Linux throughout next year; we will change if the situation evolves. Following a discussion on Fortran compilers for Linux, Jürgen promised that efforts would be made to solve this issue (ACTION). In response to concerns from Ryszard Gokieli regarding problems experienced when making large builds in AFS, Manuel Delfino proposed a transition to "build servers" such as will exist on SUNDEV next year, to be discussed at a future FOCUS meeting (ACTION).

Jürgen concluded by offering to provide a script on lxplus which would permit transparent execution of FrameMaker commands on a Solaris server, if Adobe drops support for FrameMaker on Linux at the end of 2000, as advertised.

6.4 Conclusions of ad hoc working group on SUNDEV (H. Meinhard) (see slides)

Helge reminded us of the original SUNDEV proposal made at FOCUS 19, and described the memorandum sent to COCOTIME and FOCUS by the ad hoc working group on SUNDEV that had been set up as a result of the discussion at FOCUS 19.

The conclusions of the memorandum are that:

- A second platform is indispensable for validation and verification of the software and of the computing model. The current choice is Solaris on Sparc, on up to date hardware.
- A common shared facility is acceptable if it implements transparently the experiment environment and can be partitioned to run different software environments, to deliver allocated shares and temporary increased capacity, and to address the needs of librarians.
- Access restrictions, if at all, should be by experiment and not by user.
- Most of the usual interactive tools are required (including web browser, mail etc.), with software development tools in addition. Xdmcp is not required
- A significant amount of data processing capacity is required, with the same access to data as from Linux, as an indispensable part of the validation and verification process. CMS estimate this requirement to be about one eighth of the Linux capacity.

The implications for material costs (investment, infrastructure, system administration) are well understood, and have been included in the PDP planning for the 2001 request, which has been approved by COCOTIME. The implications on personnel are less well understood by the experiments, who would like IT management to explain better the differences between a "1%" farm and a "10%" farm in terms of manpower. Manuel Delfino explained that perhaps in 2005 there will be no difference, but this is not true today, due to the lack of farm management tools.

The CERN management had prepared a statement in response to this memorandum, which concludes that "The CERN Management has discussed this issue and come to the conclusion that CERN lacks the human and materials resources to deploy and maintain such a service. The Director for Scientific Computing will communicate this conclusion to the spokespersons of these experiments and suggest that they invite their collaborating institutions to contribute such a service" (ACTION).

In the discussion Hans Hoffmann and Manuel Delfino again stressed that the need for a development platform is not questioned and that its size can be debated, but that CERN does not have the manpower to provide a batch service with full data access. They fail to understand why, in a distributed computing environment, the requested "10%" production platform cannot be provided outside CERN.

FOCUS is pleased to endorse Tim's RISC decommissioning schedule. It concludes that the decommissioning can go ahead as proposed. It notes that the final release of CERNLIB will be in 2002 on Linux, Solaris, HP and DUX. It accepts the proposals for the set of supported platforms/compilers in 2001. It thanks IT/API for the offer to provide a FrameMaker service.

FOCUS recognizes that further work is needed to rationalize the plans for the second public computing platform. The experiments believe that significant batch with full data access is an indispensable part of the service required, while the CERN management position is that it lacks the human and material resources to deploy and maintain a second public platform beyond the scope of the development service in 2001. FOCUS requests the CERN management to contact the experiments to explore the possibility of providing outside CERN a SUN batch service offering remote data access (ACTION).

7. UPDATE ON COMPUTING AT DESY (M. Ernst) (see slides)

Michael gave an overview of computing at DESY, in the context of the ongoing upgrades of the HERA luminosity and of the analysis chains of the experiments. After reviewing the organisational structure, he showed how the computing model has evolved from SMPs with locally mounted disk arrays, to a model where "the network is the back-plane", with PC compute farms and PC disk servers attached to the HIPPI network. The likely evolution is to multiple IDE compute and storage servers interconnected by a GigaBit Ethernet network fabric.

He then outlined five work areas:

1. **Linux**. DESY has had Linux farms for four years and a centrally supported installation service since 1998, based on the SuSE distribution. It is planned to provide a DESY wide configuration and installation framework which can be customised, a fully functional desktop including an Office Suite, compatibility with NT and hardware peripheral support, and integration with the DESY MSS services.
2. **Windows NT / Windows 2000**. Trying to address the conflicting requirements of high autonomy of groups versus a common and coherent framework. The strategy is to work with the users to understand their needs and to evolve services according to their requirements. Migration to Windows 2000 will be done by building a parallel domain and attracting users to it, at their will. This leads to problems of interoperability between the two domains, and requires extra hardware and some duplication of services. Once the Windows 2000 service is in production and stable, the Windows NT service can be frozen and users pushed to migrate.
3. **Mass Storage**. Currently each experiment has experiment specific solutions (e.g. stageing pool management) to interface to the laboratory's HSM system. It is planned to provide a large centralised disk cache as intermediate layer, to optimise the data flow between applications and tape facilities. The project aims to explore the use of inexpensive storage technology and to hide explicit stageing of tapes behind a unique namespace for the data.
4. **Distributed file systems**. The future of AFS is unclear, work is needed in this area
5. **Local Area Networks**. The network topology is being transformed to address the challenges of increasing bandwidth needs and the explosion of network applications.

In summary the strategic directions are:

- Platform consolidation: Linux on Intel as primary platform for scientific computing, Sun/Solaris as a proprietary alternative, and Windows NT / 2000 primarily for office and engineering applications
- Distributed file services: to understand the implications of recent AFS developments
- Develop integrated information services
- Outsourcing and out tasking - people and services must be prepared.

8. CERN/IT REVIEW OF THE YEAR AND PLANS FOR NEXT YEAR (M. Delfino) (see slides)

Manuel gave a comprehensive overview of strategies and directions for IT Division.

It is important to move services to mainstream, widely used products, reducing CERN specials, to make outsourcing possible. It is also important to reduce OS diversity: we must concentrate on Linux for physics and Windows for everything else, on Intel PCs whenever possible, and with Solaris on Sparc as the alternative. It is intended to exploit the web as a worldwide pseudo-file system. Strategic software activities include participation in GEANT4 and writing of well engineered modular libraries.

Infrastructure projects include:

- The new central web service, based on Windows/Intel PCs. Tools have been provided to make web authoring accessible to all. It is planned to integrate the Web services with the e-groups infrastructure, together with outside institutions, and to achieve a single login/password (CLASP project).
- Windows 2000. This year has been one of prototyping and of migration out of Netware. The migration of users will start in January and take 12-18 months. It will be possible to progressively outsource operations. Wide-Area and backup aspects will have to be studied.
- Gigabit Ethernet Backbone. This year all HIPPI and FDDI in the CORE network were eliminated, next year the FDDI campus backbone will continue to be replaced by GigE. Convergence of data, video and audio on the IP network is taking place, IPX has been eliminated and the phones and accelerator networks have been entrusted to IT division.
- Security has been a hot topic this year, with a number of major incidents and the publication of new Computer Security Rules. Additional resources will be invested next year, and a web server scan performed to identify and close unmaintained servers.

Physics specific computing services include:

- Mass Storage has seen a major evolution: hsm and Castor have gone into production, AFS hardware has been completely refreshed but its future is in doubt so alternatives must be sought. The Objectivity service is building up, whereas HPSS is stable but expensive to operate. The Managed Storage proposal, to be deployed next year using Castor, reflects the changing economics of tape storage.
- LXPLUS/LXBATCH has seen a major increase in power for all users, and LSF has allowed flexible partitioning. Problems have been due to AFS, compiler quality (especially Fortran) and the Linux kernel itself (e.g. security holes). Next year ASIS and SUE should be reengineered using widely available products, users should be educated to use AFS-safe methodologies, and a fully integrated desktop environment should be developed. All Linux services should be merged into one large partitionable fabric.
- Steps have been taken towards an LHC computing testbed. The Alice and CMS data challenges, and COMPASS CDR, have been useful but more formal coordination of resources is needed in future. A common testbed is proposed for next year if the money can be found. It is proposed to investigate Central Data Filtering and Recording (i.e. doing also some event filtering in the computer centre) and to make data challenges progressively more intelligent, with analysis-like operations and WAN access.
- GEANT4 has achieved a smooth development cycle; the focus is shifting towards physics models and comparisons with data, and training. The software engineering effort is showing big payoffs. In future the use of GEANT4 must be encouraged, and documentation improved. CERN specific deployment and maintenance must be addressed and there has to be a strong push to compare with as much data as possible.
- The LHC++ project had mixed success. Several components have become widely used, others were rejected by users. There has been much progress in experiment frameworks, the time has come to consolidate and productize what exists, under the ANAPHE acronym. The philosophy is the same as CERNLIB - an application is built using specific as well as ANAPHE modules. IT provides a few "out of the box" applications, such as Lizard (as a PAW replacement).
- XML is the choice for data modelling and description. Activities have begun in experiments to describe geometry data in XML, to be read by diverse applications such as GEANT4, reconstruction and analysis. Similar developments have taken place in the LHC machine description in the context of EDMS. Next year the community should invest in understanding XML and explore it as a means to describe event and histogram data.

Manuel then emphasised that the division, like the rest of CERN, faces a severe reduction in personnel. During the last two years large investments have been made to prepare for this, in

formally defining and categorizing activities and assigning material and personnel costs to them. Two major management meetings have revealed a few disturbing things: staff are overloaded and in "fire-fighting" mode, and users continuously request new things without accepting to turn off existing ones. It is inescapable that services must be reduced in number and scope to preserve the quality of the remaining ones. It is essential to outsource many services and also to change the culture of users, who for historical reasons have come to expect prompt expert help in all areas, which it is no longer possible to provide - this has sometimes led to frustration and rage directed towards the support staff.

This year FOCUS has agreed on RISC reduction, which has also been accepted by the Accelerator and Technical sectors. 2001 is a key year to consolidate some services and reduce others. Complete outsourcing of services also existing in other organizations will be evaluated, and user feedback will be analysed to refine already outsourced services. IT's "core business", on which staff should be concentrated, will be defined together with users and management.

Manuel concluded by requesting continued help and involvement of users in this process.

The presentation raised a few questions. Pierre Vande Vyvre asked for clarification of the CDFR proposal: is it intended to do level 3 triggering in the computer center? Marco Cattaneo pointed out that for LHCb this would mean also level 2, since there is no clear boundary between the two. Manuel confirmed that he was thinking of level 3, but just intended to keep options open in the light of the advances in networking. Pierre also asked why ROOT was not considered in the software strategy; the answer being that what has been done so far has been to consolidate existing modules such as CLHEP, and not complete solutions. The Review of LHC Computing will make recommendations on the next steps.

Further questions were adjourned to the IT party immediately following the meeting…

9. ACTIONS OUTSTANDING

There being no time left to discuss the pending actions, the following table was updated by the secretary and the chairman outside the meeting.

Minuted/Section	Action	Who	Status
02/12/1999 16/4	Determine policy for future use of FORTRAN CERN libraries	IT Division, FOCUS	Review of requirements planned for FOCUS 21
02/12/1999 16/6 02/03/2000 17/5 08/06/2000 18/4.1 12/10/2000 19/6.2	Second software validation platform. Form ad hoc group to define scope of SUNDEV service before COCOTIME meeting of 6th November 2000.	M.Pimiä, N.McCubbin IT/PDP	See these minutes, section 6.4 CLOSED
02/03/2000-17/2	Report on LHC Computing Review at next meeting	D.Jacobs	Postponed to FOCUS 21
02/03/2000-17/4	Organise discussion on freezing of NICE95/NT	M.Cattaneo, P.Jeffreys	See these minutes, section 3. Date to be agreed at w2kmtf and proposed to DTF, FOCUS
02/03/2000-17/4	Proposal for centralised migration of Windows home directories to DFS	IT Division	See these minutes, section 3. CLOSED
02/03/2000-17/4	Organise discussion of remote access to Windows home directories	M.Cattaneo, P.Jeffreys	See these minutes, section 3. CLOSED
02/03/2000-17/5	Definition of LEP long term analysis strategy.	R.Cashmore H.Hoffmann	Waiting for action on written report requested by R.Cashmore
08/06/2000-18/3	Organise presentation on Linux/Windows migration at a future meeting	M.Cattaneo, P.Jeffreys	See these minutes, section 3. Linux presentation after creation of migration task force in 2001
08/06/2000-18/4.2	Identify full set of software to be maintained	Experiments	To be addressed by meetings of

	in frozen operating system	with IT.	experiments with IT link persons. PENDING
08/06/2000-18/4	Document RISC decommissioning schedule and definition of frozen O.S.	IT Division	See these minutes, section 6.1 CLOSED
08/06/2000-18/5.1	Ensure external network connections are optimised and appropriate for import/export data transfers (protection against breaks, reliability, ease of transfers)	IT Division together with external partners	See these minutes, section 4 CLOSED
08/06/2000-18/5	Refine questions on experiments' needs for remote backup and archive, including needs for any features unique to ADSM	IT Division	Postponed to 2001
08/06/2000-18/6	Request experiments to specify requirements for large shared LHC computing test-bed	M.Cattaneo, P.Jeffreys	Spring or Summer 2001. Hans Hoffmann would like to tests with real data, not just MDC
08/06/2000-18/7.2	Finalise with FOCUS details of User Revoking Policy, following discussion at December ACCU	M.Delfino	Not yet discussed at ACCU.

10. A.O.B.

There was no A.O.B.

PENDING ACTIONS

Minuted/Section	Action	Who	Status
02/12/1999 16/4	Determine policy for future use of FORTRAN CERN libraries	IT Division, FOCUS	Review of requirements planned for FOCUS 21
02/03/2000-17/2	Report on LHC Computing Review at next meeting	D.Jacobs	Planned for FOCUS 21
02/03/2000-17/4 07/12/2000-20/3	Propose to FOCUS date for freezing of NICE95/NT	F.Hemmer	Freezing date to be agreed at w2kmtf. Planned for FOCUS 24
02/03/2000-17/5	Definition of LEP long term analysis strategy.	R.Cashmore H.Hoffmann	Waiting for action on written report requested by R.Cashmore
08/06/2000-18/3	Organise presentation on Linux migration at a future meeting	M.Cattaneo, P.Jeffreys	After creation of migration task force in 2001. Discussion planned for FOCUS 21
08/06/2000-18/4.2	Identify full set of software to be maintained in frozen operating system	IT with experiments.	To be addressed by meetings of experiments with IT. Discussion planned for FOCUS 21
08/06/2000-18/5	Refine questions on experiments' needs for remote backup and archive, including needs for any features unique to ADSM	IT Division	Planned for FOCUS 22
08/06/2000-18/6	Request experiments to specify requirements for large shared LHC computing test-bed	M.Cattaneo, P.Jeffreys	Planned for FOCUS22. Hans Hoffmann would like to tests with real data, not just MDC
08/06/2000-18/7.2	Finalise with FOCUS details of User Revoking Policy, following discussion at ACCU	M.Delfino	Planned for FOCUS 21.
07/12/2000-20/6.3	Define IT/API position concerning LHCb request to avoid code constructs known to cause problems to the Visual C++ compiler	J.Knöbloch	
07/12/2000-20/6.3	Propose solution to Fortran compiler problems on Linux	J.Knöbloch	
07/12/2000-20/6.3	Arrange FOCUS discussion on build servers	M.Cattaneo, P.Jeffreys	
07/12/2000-20/6.4	Explore with the LHC experiments the possibility of a SUN batch service outside CERN	H.Hoffmann	