



## Minutes of the 21<sup>st</sup> Resources Review Board Meeting Held at CERN on 17<sup>th</sup> October 2005

### Present:

#### *Europe*

D. Kuhn (Bundesministerium für Bildung, Wissenschaft und Kultur, Wien, Austria)  
 V. Vrba (Institute of Physics, Prague, Czech Republic), M. Lokajicek  
 J.D. Hansen (Niels Bohr Institute, Copenhagen, Denmark)  
 P. Rebourgeard (CEA-Saclay, Gif-sur-Yvette, France), C. Cavata, J. Ernwein  
 F. Le Diberder (IN2P3, Paris, France), D. Fournier, F. Etienne, P. Royole-Delgieux  
 J. Richter (BMBF, Bonn, Germany), K. Ehret (DESY, Hamburg), K. Kleinknecht  
 (University of Mainz), S. Bethke (MPI Munich), H. Oberlack  
 E. Rabinovici (Racah Institute of Physics, Jerusalem, Israel), G. Mikenberg  
 U. Dosselli (INFN, Rome, Italy), F. Ferroni, L. Mandelli  
 F. Linde (NIKHEF, Amsterdam, Netherlands), A. van Rijn  
 B. Jacobsen (Norwegian Research Council, Oslo, Norway)  
 J. Królikowski (University of Warsaw, Warsaw, Poland), Z. Hajduk  
 G. Barreira, F. Bello (ICCTI, Lisbon, Portugal)  
 V. Zamfir (National Institute for Physics and Nuclear Engineering, Bucuresti, Romania)  
 A. Petrov (Ministry of Education and Science, Moscow, Russia), V. Savrin  
 A.N. Sisakyan (JINR, Dubna, Russia), R. Rusakovich  
 A. Sitarova (Ministry of Education of the Slovak Republic, Bratislava)  
 D. Espriu (University of Barcelona, Spain), M. Cavalli-Sforza (IFAE, Barcelona)  
 A.C. Lagerkvist (Swedish Research Council, Stockholm, Sweden)  
 A. Clark ("CHIPP" Geneva, Switzerland)  
 R. Wade (PPARC, Swindon, United Kingdom), R. Jones, J.N. Jackson (University of Liverpool)

#### *North America*

N. Marcotte (NSERC, Ottawa, Canada), R. Orr  
 J. O'Fallon (DOE, Washington, USA), S. Gonzalez, H. Gordon, M. Tuts  
 M. Pripstein (NSF, Washington, USA), M. Goldberg, M. Coles

#### *Asia*

G. Tong (IHEP, Beijing, China, PR)  
 T. Kondo (KEK, Tsukuba, Japan), A. Mori (University of Tokyo), S. Terakado (Geneva Mission)  
 S.C. Lee (ACSS, Tapei), S. Lin

#### *Australia*

S. Tovey (Australian Research Council, Melbourne)

#### *CERN*

R. Aymar, S. Bergerot, J. Engelen (chairman), P. Geeraert, D. Jacobs, C. Jones (secretary),  
 A.J. Naudi, E. Tsesmelis, D. Schlatter

#### *ATLAS*

P. Fassnacht, F. Gianotti, P. Jenni, M. Nessi, M. Nordberg, S. Stapnes

#### *Scrutiny Group*

M. Morandin

#### *Apologies*

I. Blain (Canada), W. Shen (China, PR), J. Zinn-Justin (France), P. Adzic (Serbia)

## 21<sup>st</sup> Meeting of the ATLAS Resources Review Board RRB, 17<sup>th</sup> October 2005

Documents can be found at the URL <http://committees.web.cern.ch/Committees/LHCRRB/> and are also listed in Appendix 1 of these minutes

### 1. Introduction

**J. Engelen, Chief Scientific Officer**

J. Engelen welcomed RRB delegates to this 21<sup>st</sup> session of the ATLAS Resources Review Board. He recommended strongly that the delegates participate in the visit to the ATLAS experiment which was scheduled just after this meeting.

### 2. Approval of the Minutes of the 19<sup>th</sup> Meeting (CERN-RRB-2005-045)

The minutes of the 20<sup>th</sup> meeting, CERN-RRB-2005-045, were approved without comment. J. Engelen thanked C. Jones for having taken these minutes.

Under matters arising, J. Engelen noted that there was a topic that had been discussed in more than one previous meeting namely how the experiment should deal with funding agencies which consistently refused or delayed payment of their M&O A obligations. He knew that ATLAS, in consultation with its own collaboration, was putting in place a procedure for this situation. He was informed of this procedure, and, if required, the details could be provided to the RRB by the spokesperson. The essential part of this multi-stage procedure was that, in the very last resort, the collaboration felt it had no alternative but to reduce the number of authors associated to this funding source, perhaps ultimately to zero. He was convinced that this would never happen but that, in the end, this was the type of procedure that had been asked for by the RRB. There were no further matters arising.

### 3. Status of the Experiment

Paper CERN-RRB-2005-088

### P. Jenni, Spokesperson

Presentation CERN-RRB-2005-092

#### 3.1 Collaboration News and Management

P. Jenni announced that since the last RRB in April 2005 the admission procedures for the following new Institutions had been concluded, having all been approved unanimously by the Collaboration Board:

- Department of Physics, University of Bologna and INFN Bologna, Italy (RPC muon trigger chambers, luminosity monitor, high level trigger)
- Department of Physics, McGill University, Montreal, Canada (High level trigger)
- Graduate School of Science, Osaka University, Japan (TGC muon level-1 trigger)

In the case of the Osaka University, this Institution would replace the Tokyo University of Agriculture whose only member went into retirement. The RRB was kindly requested to endorse the admission of these three new Institutions to the ATLAS Collaboration.

The admission procedure had been initiated for several new groups from the following Institutions, all of which had submitted formal Expression of Interest letters:

- Institute of Nuclear and Particle Physics, Technical University Dresden, Germany
- Institute of Physics II, Justus-Liebig-University, Giessen, Germany
- Physics Department, Oklahoma State University, U.S.A.
- Physics Department and Center for HEP, University of Oregon, Eugene, U.S.A.
- National University of La Plata, Argentina
- University of Buenos Aires, Argentina

Contacts were being pursued with new groups from Germany, U.S.A., Turkey, and Chile. No action was requested at this stage from the RRB concerning these EoIs and contacts.

As of September 2005 the ATLAS Collaboration stood at 153 institutions from 34 countries amounting to 1623 scientific authors of whom 1320 holding a Ph.D or equivalent.

At the end of 2005 the term of the Collaboration Board Chair S. Bethke would come to an end and he would be followed by his current Deputy C. Oram. He showed the current management organisation chart.

### 3.2 Construction Progress

P. Jenni provided a most detailed report of construction progress of the experiment (CERN-RRB-2005-088) as well as a clear presentation including the latest photographs (CERN-RRB-2005-092). This information is not further summarized in these minutes. In general there had been strong progress and some new problems which had been resolved.

### 3.3 Cost to Completion, and initial staged detector configuration

P. Jenni reminded the RRB that the Cost to Completion (CtC) was defined as the sum of Commissioning and Integration (C&I) pre-operation costs plus the Construction Completion (CC) cost in addition to the deliverables.

He noted that ATLAS was proceeding within the framework agreed at the October 2002 RRB, namely:

**The following framework was accepted at the October 2002 RRB**  
(ATLAS Completion Plan, CERN-RRB-2002-114rev.):

CtC	68.2 MCHF (sum of CC = 47.3 MCHF and C&I = 20.9 MCHF)
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Commitments from Funding Agencies for fresh resources (category 1)	46.5 MCHF
Further prospects, but without commitments at this stage (category 2)	13.6 MCHF

The missing resources, 21.7 MCHF, have to be covered by redirecting resources from staging and deferrals.

The funding situation will be reviewed regularly at each RRB, and is expected to evolve as soon as further resources commitments will become available

He noted that the physics impact of the staging and deferrals was discussed in details with the LHCC previously. It has to be clearly understood that the full potential of the ATLAS detector would need to be restored for the high luminosity running, which was expected to start only very few years after turn-on of the LHC, and to last for at least a decade.

Many constructive interactions continued to take place with Funding Agencies, and the national communities continued actions to secure the funding required to complete the detector. Step by step the overall funding situation was slowly improving, even though ATLAS was still short of resources to meet its initial detector requirements, and therefore would be forced to start up with a significantly staged initial configuration.

At the last RRB, CEA (France) announced inclusion of a further BT work-package as a CtC offer. Since the last RRB, NSERC (Canada) and Switzerland had made highly appreciated commitments to secure the full calculated share of their CtC, and JINR had declared the intention to do so as well.

The present status of the Completion Funding planning was given in the updated table (CERN-RRB-2005-088 and a revision for this meeting).

There remained also a serious issue of cash flow, mainly due to late contributions to the baseline MoU Common Fund construction funding, which would be addressed in the budget discussion by Markus Nordberg later in the meeting.

For the successful implementation of the Completion Plan it is also very important that the funds for deferred items would be made available early on, and documented to the RRB based on ATLAS agreements specifying in a transparent way the corresponding accounting.

The Collaboration was very grateful to all the Funding Agencies that had already agreed to the category 1 completion funding and found new resources, and it hoped very much that the others would be able to support the ATLAS completion as well in the future.

### 3.4 Conclusion

P. Jenni concluded by noting that:

- The ATLAS detector construction was proceeding within the framework of the accepted Completion Plan
- Component construction was (almost) complete for most sub-systems, and the emphasis had moved towards integration, installation and commissioning
- The remaining construction concerns were regularly reported to, and reviewed with, the LHCC referees, in considerable detail. The most recent review had taken place in the previous week with the yearly Comprehensive Review.
- Large-scale surface system tests, in particular the combined test beam runs 2004, had been very major activities in the past years, and the experience and results would be of great benefit for an efficient start-up of the experiment.
- M Nessi would report on the very evident progress of the schedule-critical magnet assembly, and on the general installation status and activities in the cavern.
- Very major software and computing activities proceeded according to plans
- The detector commissioning had started, and the global planning for the early physics phase was well underway

As final remarks he emphasised that ATLAS was on track for LHC physics in 2007, and that to really make a success a great effort was still required from all partners in terms of resources to complete the project.

### 3.5 Discussion

J. Engelen thanked P. Jenni for his very clear presentation. He asked for any questions on the technical part of this ATLAS status report, including any comments on the paper presented by E. Tsesmelis entitled LHCC Deliberations.

M. Pripstein asked whether the installation rate for the muon system which showed a dramatic change was realistically achievable. P. Jenni replied that this would be covered by M. Nessi in his talk and that this was indeed a huge job.

R. Wade wanted to know if it was possible to close the detector in time for the Summer 2007 date. Looking at P. Jenni's graph of milestones he wondered whether this could be done. P. Jenni repeated that M. Nessi would again cover this point but that they planned to have the detector closed and beam pipe installed in June 2007. Most of the activities as of April 2007 onwards would be global commissioning with cosmic ray muons.

T. Kondo noted that P. Jenni had spoken of the RPCs for the barrel trigger chambers, and that some of the early production needed to be re-worked. Were some of these installed in the pit? P. Jenni replied that these were not in the pit but some had already been pre-assembled as stations. G. Mikenberg, the project leader for this part of the detector, replied that 20 stations had to be re-worked and 40 stations had to be upgraded with cables but not reworked. The procedure for doing

this still needed to be defined and this needed to be as early as possible. P. Jenni noted that the main issue here was to eliminate risks for the long term behaviour.

R. Wade wished to propose that in future the RRB should be told clearly in a little more detail which contributions were being made by these new members. Were some of these outside the scope of the TDR? P. Jenni replied that there was only one such contribution which however was covered by a letter of intent to the LHCC and which was encouraged to be developed as a TDR. This was the luminosity monitor which was extremely necessary. In summary, these contributions would be to the core programme with the exception of this necessary luminosity monitor.

The RRB **endorsed** the admission of these new institutes into the ATLAS Collaboration.

#### **4. In-kind Contributions and Common Projects - M. Nessi, Technical Coordinator**

Paper CERN-RRB-2005-098 Presentation CERN-RRB-2005-099

##### **4.1 Status of the Common Projects and the Installation**

M. Nessi presented an update on the common projects and the installation. See his paper and clear presentation for details (which are not re-summarized in these minutes) and for a number of interesting and spectacular recent photographs of the installation in the cavern.

##### **4.2 Overall Schedule**

M. Nessi showed the new ATLAS Overall Schedule (7.09) which had been presented to the Collaboration in September 2005 during the ATLAS week. The main changes from the previous schedule were to:

- take into account 5 weeks delay in BT assembly
- fix moving-in of barrel calorimeter to 26th October (probably now end October)
- fix lowering of endcap toroids to May - side A and September '06 side C
- Wheels assembly in phase with lowering and test of toroids
- give time to magnet and solenoid test and mapping
- install ID barrel just after solenoid mapping (needs both calorimeter endcaps ready)
- install ID endcap in sequence allowing enough time for connections and testing
- delay to '07 installation of pixel

Note: The detailed new Overall Schedule is given on slide 55 of his presentation.

##### **4.3 Summary**

In summary ATLAS was proceeding well and on schedule (master schedule 7.09) with the installation and commissioning work, targeting June 2007 for readiness. The in-time availability of components and services was still the main and critical issue which might affect the overall schedule.

ATLAS kept on its "top watch list", as critical items among others, the readiness of the Endcap Toroids, the Inner detectors (in particular the Pixels), the Muon Big Wheels and the necessary Services (pipes, cables, etc.).

The year 2006 would be very critical for the completion of the Barrel Detectors and their commissioning. The installation of the Endcaps would also start.

The three counting rooms were installed in phase with the detector installation in UX15. They had now entered the effective commissioning period, where installed components were tested and qualified. In spring 2006 the first combined operations between systems would start (B-Fields and cosmic runs). He concluded that ATLAS was turning into a real experiment!

#### **Discussion**

J. Engelen thanked M. Nessi for his presentation. He invited the RRB to make expressions of sentiments or to ask questions. There being no comments M. Nordberg asked the RRB to take note of the accompanying document CERN-RRB-2005-098 which contained more information on the status of the in-kind contributions and common projects.

**5. LHCC Deliberations (paper only)**

**E. Tsesmelis, LHCC Scientific Secretary**

CERN-RRB-2005-080

J. Engelen noted that the RRB should take into consideration the paper on the LHCC Deliberations provided by the scientific secretary of the LHCC, E. Tsesmelis, and which covered the period up to June 2005. The contents were consistent with the previous presentations and confirmed that the LHCC was in agreement with the reports. E. Tsesmelis noted that the LHCC had also met the previous week and given further conformation.

Delegates had no further comments to make and the RRB **took note** of the report of E. Tsemelis

**6. Financial Matters**

**P. Geeraert, Head, Finance Department**

Paper CERN-RRB-2005-072

Presentation CERN-RRB-2005-076

P. Geeraert presented a financial update on the situation reported in his paper referenced above and correct to the 15<sup>th</sup> August 2005. For the Common Fund they had received new contributions of 485 kCHF and made new payments of 5.09 MCHF leading to a positive balance of 17.77 MCHF but with outstanding commitments of 16.57 MCHF.

There were outstanding membership fees for the Common Fund from Greece, Belarus, Brazil, Georgia, Morocco and Russia. This amounted to a total of 75 kCHF due from CERN Member States and 230 kCHF from non-Member States.

For the Construction Completion there were outstanding membership fees from the Member States Greece, Norway and Portugal amounting to 37.5 kCHF for the years up to 2004, and for 54.1 kCHF for 2005. From non-Member States there were outstanding contributions prior to 2005 amounting to 150 kCHF and for 2005 for 580 kCHF from Armenia, Azerbaijan, Belarus, Brazil, Georgia, Russia, JINR and the USA DoE and NSF. (See slide 5 of the presentation for details).

P. Geeraert showed the details of the payments from the Common Fund by detector component.

For the M&O A they had received new contributions of 283 kCHF and made new payments of 22 kCHF and this had taken the negative balance reported in the above paper back into positive territory with a balance of 239 kCHF. Nonetheless this showed how important it was that funding agencies made their M&O A contributions as soon as possible. The additional contributions had been received from the Czech Republic, Japan and Brazil.

The outstanding contributions to M&O A amounted to a very large 1.626 MCHF. See slide 10 for the full details. Amongst the Member States Greece and Poland still owed 89 kCHF up to 2004, and the Czech Republic, Greece, Poland, Portugal and the United Kingdom owed a total of 278 kCHF for 2005. Amongst the non-Member States a total of 225 kCHF was owed up to 2004, and in 2005 there were outstanding contributions amounting to 1.34 MCHF from Armenia, Australia, Azerbaijan, Belarus, Georgia, Morocco, Romania, Russia, Serbia and the USA DoE and NSF.

**Discussion**

J. Krolkowski announced some good news concerning the outstanding M&O contribution from Poland. The difficulties coming from a new law had now been resolved and the experimental groups were now invited by the Ministry to submit their requests for the outstanding money. He expected this to go through the committees around the end of this year. J. Engelen thanked him for his important comment.

G. Barreira noted that for Portugal the outstanding payments were for 2005 and they had now been authorized.

J. O'Fallon noted that some of the substantial outstanding fees were for 2005 and that 2005 was not yet over. J. Engelen understood and welcomed this remark.

S. Tovey noted that the Australia had not received the CERN invoice and that they were checking this.

A. Petrov announced that this problem of debts was being dealt with by their administration and the special decrees were under consideration by the Government and they expected the decision soon. J. Engelen thanked him for his very positive comment.

## **7. Construction Budgets**

Paper CERN-RRB-2005-100

## **M. Nordberg, Resources Co-ordinator**

Presentation CERN-RRB-2005-102

M. Nordberg noted that the full tables and detailed explanations were to be found in the paper, whilst the presentation would contain only summaries. His first slide re-stated a number of definitions that he used in the documents.

### **7.1 Status of the 2005 Construction Budgets**

M. Nordberg reported, at this stage for information only, that the October 2005 budget was within 10% of the April 2005 planned budget. The major change was in the Common Projects where they expected to move some 6 MCHF to 2006 as part of the effort to keep the cash flow under control. The balance at the bottom of the table showed zero, but this was just part of the overall cash flow situation which would be presented later as table 7.

He noted that Morocco still owed more than 50% of its member fee contributions. He was optimistic that the money would arrive but it was a very slow process. He wishes to thank Russia for making huge efforts given the situation in Russia. There was a plan as to how they would finish their membership contributions and common fund contributions. He thanked other funding agencies as well but he felt that special thanks were due to Russia this time.

Concerning the commitments in terms of percentages he showed (slide 5) that more than 98% was committed with one last remaining area namely the trigger DAQ where 70% would be committed by the end of 2005. He also showed the evolution of the payments in percentages. Slides 7 and 8 showed the same information in MCHF.

Table 4 showed the 2005 C&I Income and Payments and showed that on Cat A they had received 2.9 MCHF whilst they were spending 5.8 MCHF as projected. In Cat. B they would receive 2.2 MCHF and spend 3.1 MCHF. Overall this led to a negative balance of -3.8 MCHF. Table 5 presented the 2005 CC-B Income and Payments which showed total contribution of 2.6 MCHF and total payments of 5.5 MCHF for a negative balance of -2.83 MCHF.

## **Discussion**

F. Le Diberder commented that IN2P3 had always been willing to provide the full cost to completion and he could now announce that this would go ahead. There were internal discussions as to the exact profile. The category 2 cost to completion from IN2P3 would soon move into category 1. J. Engelen thanked him for his comment.

### **7.2 Proposed 2006 Construction Budget**

M. Nordberg presented the 2006 budget for approval. The table was again similar to the preliminary budget shown in April 2005 with the exception of the 6 MCH for Common Projects moved into 2006. There were major concerns about baseline (CORE) contribution which might not arrive in 2006 as requested thereby created a cash flow problem. There was a potential income

gap of up to 10 MCHF in the understanding of ATLAS of the plans of certain Funding Agencies. Currently he was not expecting to receive the following sums with respect to the requests:

- Belarus: 0.2 MCHF (due MS fees)
- Canada: 1.5 MCHF
- China: 0.3 MCHF
- Greece: 1.0 MCHF (incl. outstanding non-CF debts)
- Morocco: 0.2 MCHF
- Russia + JINR: 6.0 MCHF (incl. outstanding non-CF debts)
- Sweden: 0.4 MCHF
- US: 1.0 MCHF

They were working on this situation. Some of these Funding Agencies simply had a different timescale for providing these contributions from that needed by ATLAS.

In table 12 M. Nordberg showed the 2006 C&I Income and Payments situation which would lead to a negative cash flow of 2.4 MCHF. For the 2006 CC-B Income and Payments they again foresaw a negative balance of -2.7 MCHF.

Table 7 showed a summary of this information as the projected budget balance. The bottom line showed the cumulative cash flow which was zero in 2005 and foreseen as -12 MCHF in 2006. The problem arose basically because they were missing contributions to the common fund and CORE part, and not from the cost to completion part. The paper CERN-RRB-2005-100 covered in detail the measures that ATLAS was taking to minimize this situation. Nonetheless CERN management had promised to help them if there was a problem. He wished to underline the request to all Funding Agencies to make all of their remaining Common Fund contributions available in 2006.

J. Engelen noted that the -12 MCHF was a very large amount and he considered it a very important step that ATLAS make every effort to reduce the number. Any cash flow relief could only be provided by CERN against reasonable guarantees and it was not that they would solve the problem and see how to get the money later. He hoped this was well understood.

M. Nordberg asked the RRB to approve the 2006 Construction Budget.

There being no remarks from the members the RRB **endorsed** the ATLAS 2006 Construction Budget.

## **8. M&O Budgets**

Papers CERN-RRB-2005-101

## **M. Nordberg, Resources Co-ordinator**

Presentation CERN-RRB-2005-102

### **8.1 M&O Budget for 2006**

M. Nordberg then moved to document CERN-RRB-2005-101 in which figure 1 showed the evolution of the M&O Budget up to 2010 in MCHF and compared the M&O plans of October 2001 with the updated plans of October 2005 which were lower.

Table 1 showed the 2006 Budget broken down in Categories A and B amounting to 9.4 MCHF and 4.4 MCHF respectively, including energy costs. These numbers were consistent with the RRB Scrutiny Group Report. The biggest change with respect to the April numbers concerned the Core Computing. In April they had used 80 kCHF per FTE as the cost estimate for manpower, and in discussion with the Scrutiny Group and the other experiments it was agreed that they should use 88 kCHF including an administrative overhead of 10%. In Cat. B there was an increase in the inner detector because of better technical information linked to the cooling of the cables and gases but there were reductions in other areas, notably in the muon system, the tile calorimeter and in the liquid argon. As a result the integral of the M&O budget up to 2010 had been reduced by about 0.5 MCHF, but there was an increase in the 2006 numbers with respect to the April 2005 prediction by about 400 kCHF.

They had set up, in the M&O B part, internal scrutiny groups for each sub-system. They were also setting up such a group for the Core Computing, and for the Cat. A the national contact physicists would from now on also be involved in looking at the M&O A numbers.

Concerning the in-kind contributions for the M&O A, 875 kCHF were proposed as in-kind contribution to the Core Computing from multiple Funding Agencies named in the document. He wished to clarify that ATLAS was aware that certain Funding Agencies were actually making bigger efforts to provide manpower for Core Computing than were recorded in the document. This was because the internal process finished only after they had completed these RRB documents. It had been agreed that these differences would be visible and available for approval at the next RRB, and that ATLAS would adjust the cash contribution invoices for 2006 already accordingly in November 2005.

## 8.2 Status of MoU Signatures

M. Nordberg showed the list of signatures to the ATLAS M&O MoU. Progress had been made and there were now just three remaining Funding Agencies for whom they were waiting.

Before asking the RRB to endorse the M&O Budget for 2006 M. Nordberg asked M. Morandin, the Chairman of the M&O Scrutiny Group, if he had any comments.

## 8.3 M&O Scrutiny Group Report

M. Morandin confirmed that the numbers in the ATLAS document were consistent with those given to the Scrutiny Group whilst they were making their report. They had looked carefully to some of the most important numbers in the Cat. A table and clearly there was a wrapping up of activities and this was reflected in the increase of support for the operation and technical crews for cranes etc. There was also a visit to the ATLAS Site. There were further details in their report.

They had a discussion with ATLAS of the principle of how to deal with the surplus as presented in the Plenary Session earlier that afternoon. If the RRB would endorse the principle the Scrutiny Group could work with the experiment to make a full proposal.

In response to the question from J. Engelen, M. Morandin confirmed that the findings detailed in the Scrutiny Group report were consistent with the request by ATLAS to endorse the 2006 M&O Budget.

J. Engelen thanked M. Nordberg and M. Morandin for their presentations.

## Discussion

K. Kleinknecht asked how they expected the M&O B to develop once the detector was completed. Should one not then join the M&O A and B together? M. Nordberg replied that this was a good question and that an ATLAS working group led by S. Bethke had considered it and decided to review it in a couple of years' time when they were in operation mode.

J. Engelen asked the RRB whether the ATLAS M&O Budget for 2006 could be endorsed and this was **agreed**.

M. Morandin asked whether the principle of dealing with the budget surplus was also to be endorsed. J. Engelen asked the RRB if there were questions on this point.

U. Dosselli noted that this problem had been with the RRB for many meetings and that now a solution had been proposed which he considered to be workable.

R. Wade agreed that this looked like an acceptable solution, and that it was coupled obviously with how to deal with late or non payments. Given that this point would also be discussed at the other

RRBs as well he asked J. Engelen if he had any understanding as to whether these processes would be common across the four experiments. J. Engelen replied that, in this matter of late payments, they had decided to focus on the two big experiments, ATLAS and CMS, and to seek a solution there, expecting ALICE and LHCb to be able to follow, although they were not quite yet in that position. He believed that it was significant if they would now already endorse this proposal for dealing with the surplus, and that this would not compromise future decisions in this matter.

The principle of the proposal for dealing with the surplus in year N+2 was **endorsed** by the RRB. J. Engelen thanked M. Morandin for chairing the Scrutiny Group.

## **9. M&O Scrutiny Group in 2006**

**J. Engelen**

The composition of the Scrutiny Group in 2006 foresaw three changes, one external member from Germany to replace H. Gutbrod and for whom a proposal had been made, and two internal CERN members to replace A. Ceccucci and E. Tsesmelis. The final composition would be agreed well before the next meeting.

## **10. Summary, Future Activities & A. O. B.**

**J. Engelen**

J. Engelen concluded that ATLAS had given the RRB very good news and there had been positive statements from the Funding Agencies that still had something to settle in financial terms with ATLAS. The detailed financial situation revealed the long-predicted cash flow problem for 2006 at a perhaps slightly decreased but still worrying level. ATLAS would continue to work with those Funding Agencies that could help and also with CERN management.

<p>The next RRB meetings in 2006 will take place at CERN on <b>Monday 24<sup>th</sup>, Tuesday 25<sup>th</sup> and Wednesday 26<sup>th</sup> April 2006</b> and on the <b>Monday 23<sup>rd</sup>, Tuesday 24<sup>th</sup> and Wednesday 25<sup>th</sup> October 2006</b></p>
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There being no questions and no further business, the Chairman thanked the participants and closed the meeting.

C. Jones  
December 2005