

**ATLAS**10<sup>th</sup> May 2007

## **Minutes of the 24<sup>th</sup> Resources Review Board Meeting**

**Held at CERN on 24<sup>th</sup> April 2007**

**Present:***Europe*

J. Niederle, (Academy of Sciences, Prague, Czech Republic), V. Vrba  
J.D. Hansen (Niels Bohr Institute, Copenhagen, Denmark)  
J. Zinn-Justin (CEA, France), J. Ernwein  
F. Le Diberder (IN2P3, Paris, France), D. Fournier, C. Diaconu  
J. Khubua (HEPI TB. St. University, Georgia), A. Sharmazanashvili  
K. Ehret (BMBF, Germany), H. Bojahr  
S. Bethke (MPI Munich, Germany)  
N. Wermes (DESY, Germany)  
E. Gazis (National Technical University, Greece)  
E. Rabinovici (Racah Institute of Physics, Jerusalem, Israel), G. Mikenberg  
F. Ferroni (INFN, Italy), L. Mandelli, M. Curatolo  
A. van Rijn (NIKHEF, Amsterdam, Netherlands),  
B. Jacobsen (Norwegian Research Council, Oslo, Norway), F. Ould-Saada  
J. Królikowski (University of Warsaw, Warsaw, Poland), M. Turala  
G. Barreira, (LIP, Portugal)  
F.D. Buzatu (National Institute for Physics, Bucharest, Romania), L. Puscaragiu  
Y. Koslov (Russian Federal Agency of Science and Innovation), V. Savrin  
R. Lednicky (JINR, Dubna, Russia)  
A. Sitarova (Ministry of Education of the Slovak Republic, Bratislava)  
M. Mikuz (Jozef Stefan Institute, University of Ljubljana, Slovenia)  
F. Barreiro (Universidad Autonoma de Madrid, Spain)  
P. Karlsson (Swedish Research Council, Stockholm, Sweden), T. Ekelöf  
A. Rubbia (ETH Zurich, Switzerland), A. Clark  
R. Wade (STFC, United Kingdom), J. Seed

*America*

I. Blain (NSERC, Ottawa, Canada), R. Orr, W. Davidson (Observer, NRC)  
J. O'Fallon (DOE, Washington, USA), S. Gonzalez, T. Ferbel, H. Gordon (BNL)  
M. Pripstein (NSF, Washington, USA), J. Shank, M. Tuts

*Asia*

X. Fu (Ministry of Science and Technology, China), S. Hu, C. Jiang (IHEP, Beijing)  
Y. Zhang (National NSF, China), Q. Chang, R. Qiao  
H. Iwasaki (KEK, Tsukuba, Japan)  
S.C. Lin (ASGC, Taipei), L. Shih-Chang (Institute of Physics, Academia Sinica, Taipei)

*Australia*

S. Tovey (Australian Research Council, Melbourne)

*CERN*

R. Aymar, J-J. Blaising, J. Engelen (chairman), D. Jacobs, C. Jones (secretary), S. Lettow,  
S. Schmeling, E. Tsesmelis, P. Geeraert, F. Sonneman, E. Van Hove

*ATLAS*

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

G. Lafferty (Chairman of the M&O Scrutiny Group)

**24<sup>th</sup> Meeting of the ATLAS Resources Review Board RRB, 24<sup>th</sup> April 2007****1. Introduction****J. Engelen, Chief Scientific Officer**

J. Engelen welcomed RRB delegates to this 24<sup>th</sup> session of the ATLAS Resources Review Board.

**2. Approval of the Minutes of the 23<sup>rd</sup> Meeting (CERN-RRB-2006-125)**

The minutes of the 23<sup>rd</sup> meeting were approved with no corrections. J. Engelen thanked C. Jones for having taken these minutes. There were no matters arising.

**3. Status of the Experiment**

ATLAS had decided to invert the traditional order of the presentations for their status report. The Technical Coordinator, M. Nessi, would report first on the status of the hardware and in particular on the installation of the experiment. The Spokesperson, P. Jenni, would continue the report at the point of the data acquisition and would continue to cover managerial matters and funding.

**3.1 Detector construction and installation (including Common Projects)****M. Nessi**

Paper CERN-RRB-2007-016  
CERN-RRB-2007-017

Presentation CERN-RRB-2007-020

The ATLAS Technical Coordinator, M. Nessi, showed an impressive set of slides and photographs illustrating the major changes and most substantial progress with the installation since the previous RRB. He presented the achievements and successes, as well as the list of problems that they had faced and overcome. He showed the latest version of the completion schedule.

M. Nessi also presented a paper for information on the Proposals for In-Kind Contributions and Status of the ATLAS Common Projects and Construction Completion.

**Discussion**

J. Engelen thanked M. Nessi for this presentation and asked for any questions at this stage of the status report. J. Królikowski asked for a clarification whether the two low voltage power supply problems that ATLAS had experienced were related. M. Nessi replied that they were not.

**3.2 General status of the experiment (including status of completion financing)****P. Jenni**

Paper CERN-RRB-2007-016

Presentation CERN-RRB-2007-021

The ATLAS Spokesperson, P. Jenni, continued the ATLAS Progress Report covering the data acquisition and trigger, computing and physics preparation, LHCC milestones and activities as ATLAS moved towards operation of the experiment. These are clearly described both in his paper and in the presentation and are not repeated in these minutes. P. Jenni turned to managerial considerations.

**3.2.1 Collaboration News and Management**

P. Jenni announced that, since the last RRB in October 2006, no new institution had been admitted to the Collaboration. A new expression of interest would be considered, at the next meeting in July of the Collaboration Board, from the University of Göttingen, Germany. Constructive contacts were being pursued with two universities in Chile (PUC Santiago and UTFSM Valparaiso) which in due time would submit an EoI as a joint team, and with a university in Colombia (UAN Bogota) for which an EoI was also in preparation. At this stage no action was requested from the RRB.

As of the April 2007 there were 35 Countries, 164 Institutions and 1900 Scientific Authors (1500 with a PhD, for the calculation of the M&O share) in total in the ATLAS Collaboration.

At the last two Collaboration Boards the ATLAS Management was re-appointed, all with a term of office ending in February 2009. This corresponded to a partial mandate period for the spokesperson and deputies. The Executive Board composition had been completed, and adapted where necessary, following the planned smooth transition into the commissioning and operation phases as outlined in the ATLAS Operation Model. P. Jenni showed the new Organisational Chart. The Collaboration had also approved some constitutional changes in view of the forthcoming operation phase. The most prominent change was that the future spokesperson's term of office would be two years (reduced from three), renewable once with a 2/3 majority.

### 3.2.2 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)
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 detail with the LHCC previously. It had 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.

### 3.2.3 Main Funding Issues today

There were outstanding contributions to the baseline & Common Fund at risk which amounted to 9 MCHF, of which 4 MCHF were in the process of being paid. Furthermore, not all the calculated 2002 CtC (CC and C&I) shares had been pledged, leaving missing funds amounting to 3 MCHF. This situation looked better than it was in reality because CERN had committed 5 MCHF more than its calculated share. P. Jenni showed a table (slide 40) giving the Status of the Cost to Completion funding as shown in his paper (CERN-RRB-2007-016, correct to 31<sup>st</sup> March 2007).

At the previous RRB P. Jenni had proposed a strategy to the RRB for covering the remaining funding gap, including the new 2006 CtC. This had evolved since the last meeting and currently could be summarized as:

1. Expect all outstanding baseline and Common Fund contributions according to the Construction MoU,
2. Urge all Funding Agencies to pledge their full CtC share as determined in October 2002,
3. As CERN had committed 5 MCHF above its calculated share, this would cover the new 2006 additional CtC costs of 4.4 MCHF.

Since the previous RRB, they had decided not to ask, at this stage, for an extension of the membership fees. However, a strong solidarity from all funding partners was necessary in order to overcome this last financial hurdle.

P. Jenni showed on slide 41, an updated Financial Overview.

<b>Financial Overview</b>	<b>MCHF</b>
<b>Financial framework:</b>	
Initial Construction MoU 1995	475.0
Updated construction baseline	468.5
Additional Cost to Completion (accepted in RRB October 2002) based on the Completion Plan (CERN-RRB-2002-114)	68.2
Additional CtC identified (mentioned at the last RRB, and now announced in CERN-RRB-2006-069)	4.4
<b>Total costs for the initial detector</b>	<b>541.1</b>
<b>Missing funding at this stage:</b>	
Baseline Construction MoU, mainly Common Fund	9.0
2002 Cost to Completion (CC and C&I) calculated shares (assuming that the U.S. will provide their remaining 4.5 MCHF on a best effort basis)	3.0
<b>It must be stressed that all these resources, already specified in the 2002 Completion Plan, are needed to complete the initial detector</b>	
<b>Note that not included are:</b>	
- This assumes beam pipe closure end August 2007, later dates would imply additional manpower costs of 200-400 kCHF per month	
- No provision for future 'force majeure' cost over-runs	
- Restoration of the design-luminosity detector, estimated material costs of parts not included in present initial detector (CERN-RRB-2002-114)	20.0
- Forward detectors parts (luminosity) not funded yet	1.5

### 3.2.4 Conclusion

P. Jenni concluded by noting that:

The ATLAS project was proceeding within the framework of the accepted 2002 Completion Plan, and all the resources requested in that framework were needed now in order to complete the initial detector.

The construction period was coming to an end and the emphasis had fully shifted onto the installation, commissioning, and start-up of operations.

The most critical detector issue was the delay of the Inner Detector installation, which had an impact on the overall installation completion. Other critical issues remained the calorimeter and the muon power supplies.

Very major software, computing and physics preparation activities were underway, using the Worldwide LHC Computing Grid (WLCG) for distributed computing resources.

Commissioning and planning for the early physics phases were in full swing.

ATLAS was eager, and on track, for LHC physics.

ATLAS expected to remain at the energy frontier of HEP for the next 10 –15 years, and the Collaboration had already set in place a coherent organization to evaluate and plan for future upgrades in order to exploit future LHC machine high-luminosity upgrades.

## Discussion

J. Engelen thanked P. Jenni for his very clear presentation. He noted the important progress on the experimental floor, and the very clear financial presentation which certainly merited discussion at this board. He invited first questions on the technical progress presented, including the deliberations of the LHCC which delegates had received on paper. After that the RRB would come back to a discussion on the slides presented on the financial situation.

S. Tovey asked whether a two year period as spokesperson in the operation phase was not rather short. P. Jenni replied that the logic that had prevailed in discussion was that as many colleagues as possible should be given the chance to lead the collaboration, compatible with a leave of absence at universities typically limited to two years..

T. Ferbel asked what ATLAS would do if it became clear that the experiment would do better with stage 3 hardware but that the money for that would not be available. P. Jenni replied that an important part of stage 3 was going to the full luminosity and putting sufficient computing power in the high level trigger. This could be done in a relatively short time and he trusted that, when necessary, they would be able to convince the RRB that this was important. He considered that it would be wise to have some operational experience before doing this. Experience would show in an effective way where best to put new resources.

J. Engelen asked M. Nessi about the endcap toroid installation which he considered to be a huge operation. M. Nessi agreed that this was a major installation. They had been working on this for about a year and they had selected a major European company. They had worked with the safety people at CERN and they considered that they had now a sound proposal. As of today they had no indication that this would cause problems.

J. Seed asked about the low voltage power supplies and the possible need to replace the whole system. How would this be handled within the collaboration and where would the responsibilities lie? P. Jenni replied that, of course, such a step would come back to the RRB. It might have to come back as a maintenance operation, albeit a radical one. It would have to come back to the RRB and he considered that one Funding Agency alone should not be expected to handle this.

J. Engelen proposed to move to questions concerning the financial matters. Were there any comments from delegates on the provision of the missing funds?

I. Blain could not confirm today that they had resolved the issue of the missing \$1.5 M for the Common Fund, but there had been discussions with the physicists involved in ATLAS Canada and the group has committed to explore some newly announced sources for the funding, either as funding per se or for equipment.

X. Fu reported that China had now finalized the procedures necessary and they confirmed their support for the project, also including the money for the Common Fund from earlier times. P. Jenni thanked him very much for this positive statement.

J. O'Fallon reaffirmed their commitment to provide the remaining \$4.5 M on a best effort basis.

J.D. Hansen reported that Denmark had applied for the money but it was not yet clear whether they would receive this. It would have to be taken from other sciences.

J. Engelen concluded that the derivative for getting this funding was positive and not small and that this was a satisfactory conclusion for this meeting. It was also clear that at the next RRB these numbers would have to be further reduced, otherwise they would have to start discussing which emergency measures to introduce.

**4. LHCC Deliberations (paper only)****E. Tsismelis, LHCC Scientific Secretary**

CERN-RRB-2007-038

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. Tsismelis. The contents were consistent with the previous presentations and confirmed that the LHCC was in agreement with the reports. Delegates had no further comments to make and the RRB **took note** of the report of E. Tsismelis

**5. Financial Matters**

Paper CERN-RRB-2007-008

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

Presentation CERN-RRB-2007-013

P. Geeraert presented a financial update on the situation reported at the end of February 2007 in his paper referenced above. For the Common Fund, CC and C&I they had received new contributions from Canada, Argentina, Greece, Norway, Portugal, and Taipei amounting in total to 1.35 MCHF. Additional payments for 783 kCHF had been made in the period, leaving a positive balance of 1.17 MCHF but with large open commitments amounting to 9.5 MCHF.

In terms of membership fees, a (small) total of 500 CHF was outstanding from Member States, whilst 653.8 kCHF was missing from non-Member States (Armenia, Azerbaijan, Belarus, Brazil, Georgia, Morocco, Russia, and JINR) for a total of 654.3 kCHF.

In terms of cash contributions, a total of 3.13 MCHF was outstanding from Member States (France IN2P3, Italy and UK), and 9.39 MCHF from non-Member States (Australia, Canada, China, Israel, Japan, Morocco, Russia, JINR, Slovenia, US DoE and NSF) for a total of 12.52 MCHF.

Considering the quite old outstanding membership fees for the common fund for the period up to 2003, which totalled 917 kCHF, there were still outstanding bills from Brazil, Morocco, Belarus and Russia which should be cleared up as soon as possible (slide 5).

On the outstanding membership fees as part of construction CC\_A, there was a total of 471.7 kCHF still unpaid, of which 283.7 kCHF concerned the period 2004-2005. A total of 188 kCHF was still owed for 2006.

For the M&O-A budget they had received new contributions of 1.53 MCHF and made new payments of 243 kCHF, resulting in a balance of 2.98 MCHF with outstanding commitments of 475 kCHF.

The outstanding contributions to M&O-A, up to the end of 2005, showed missing contributions from Armenia, Azerbaijan, Belarus, Brazil, Morocco and Russia (Protvino). The total missing money was thus 479 kCHF up to end 2005, 700 kCHF from 2006 and 6.06 MCHF from 2007 (see slide 9).

**Discussion**

J. Engelen thanked P. Geeraert for this presentation of the financial facts. He asked whether the situation at this time of the year was considered normal or alarming. P. Geeraert replied that the 2007 situation was normal or even positive but that CERN was in a difficult financial situation and, from the point of view of cash flow, it was becoming increasingly difficult to help the collaborations. They were living from short term borrowing. This should increase the message to the collaborations that they should pay up in time.

M. Nordberg wished to comment that a couple of the small sums such as those from UK, Portugal and Brazil were due to currency fluctuations rather than a failure of the Funding Agency to do there job.

## 6. Extension of the MoU for Construction J. Engelen

J. Engelen noted that the delegations should all have received an email suggesting that they should agree to the extension of the period of the existing construction MoU, which would otherwise expire at the end of 2007. It was clear that the construction of the detector would now take a little longer than this, and it was necessary to keep the framework in place to cover the period up to 2010. It was not the case that this implicitly implied new money, as he had been asked by one delegation. He suggested that, in the absence of any comments at this meeting, that they could agree at this point to the extension in this meeting and record that in the minutes.

The USA stated that they needed to discuss the details of this proposal to extend with J. Engelen and they would defer their decision until such time as they had had time to discuss.

There were no further comments and this extension was **agreed** by all Funding Agencies except the USA at this stage.

## 7. Construction Budgets

Paper CERN-RRB-2007-018

## M. Nordberg, Resources Co-ordinator

Presentation CERN-RRB-2007-022

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 Baseline and Cost to Completion Budgets

M. Nordberg showed a snapshot of the development of the commitments in the construction budget. It was clear that essentially everything had been committed except for the trigger DAQ part, where 85% of the initial DAQ was committed by the end of 2006. In terms of the payments, with respect to the previous presentations, M. Nordberg had added the CtC at 72 MCHF as accepted. From the graphic it could be seen that there were still about 30 MCHF still to be spent.

M. Nordberg showed the status of the baseline and CC-A payments for 2006, where contributions received amounted to 23.9 MCHF whereas payments made were 27.6 MCHF, which meant a negative balance of 3.6 MCHF at the end of the year. For the 2006 C&I budget, total contributions amounted to 3.7 MCHF whilst total payments came to 2.3 MCHF for a balance of 1.4 MCHF. For 2006 CC-B budgets total contributions amounted to 1.6 MCHF and payments to 1.9 MCHF leaving a balance of -0.3 MCHF. He emphasized that for a complete picture he would come back to the overall cash flow situation later (Table 17).

### 7.2 Baseline Construction Budget 2007

M. Nordberg moved to the 2007 baseline construction and CC-A budget which was for information only for the RRB. Total contributions were projected at 20.4 MCHF and payments were calculated at 17.0 MCHF, thus leaving a balance of 3.6 MCHF. This assumed all due contributions from 2006 would be paid in 2007. As P. Jenni had already announced they would not, at this stage, be requesting additional membership fees.

For 2007 C&I, the payments planned were 0.9 MCHF whilst the expected contributions were 2.0 MCHF, leaving a positive balance of 1.1 MCHF. For 2007, CC-B income and payments contributions would be 0.6 MCHF, and payments were foreseen at 3.1 MCHF, leaving a negative balance of 2.5 MCHF. Slide 11 summarized the status of remaining contributions.

Slide 12 presented a summary of why there were budget and cash flow problems. He wished to mention specifically Russia and Dubna, who were making very special efforts to pay their dues, and they were very pleased and encouraged by this. Overall around 2.7 MCHF of the CtC remained unpledged. In view of the decision not to ask for extended membership fees, ATLAS would like to invite Funding Agencies who have completed their present obligations to make

additional voluntary contributions towards this missing amount, in order to avoid future cash flow problems. This would be credited against the future.

M. Norberg returned to the overall projected budget balance (Table 17). By 2010 there would be a budget deficit of 3 MCHF. In case this problem did not disappear, the purchase of trigger DAQ equipment for this sum had not yet been committed. They had time until 2009 to collect this money before they had a real problem.

## Discussion

K. Ehret was concerned at the large differences in certain tables between contributions and payments, for example in Table 9 for the tile calorimeter. M. Nordberg noted that, in the case of the CtC, the payment profile as requested by the project did not match the income that was coming from the Funding Agencies. He was acting as the banker for such cases.

The RRB **approved** the 2006 ATLAS construction budget and took note of the 2007 budget.

## 8. M&O Budgets

Papers CERN-RRB-2007-019

## M. Nordberg, Resources Co-ordinator

Presentation CERN-RRB-2007-022

### 8.1 2006 M&O A and B

M. Nordberg then moved to document CERN-RRB-2007-019. He presented the final M&O-A payments which amounted to 9.0 MCHF. The major components of this were technical services (at 3.9 MCHF), magnet operation (at 2.2 MCHF), core computing I&S (at 1.4 MCHF), on-line computing (at 1.0 MCHF) and energy (at 0.4 MCHF).

He reported the M&O-B payments for 2006 which amounted to 3.5 MCHF. Major cost components were technical services (at 1.5 MCHF), consumables (at 0.9 MCHF), gases and coolants (at 0.7 MCHF) and 130 FTEs of detector and core computing effort coming from the Institutes.

M. Nordberg showed the status of the due M&O-A and M&O-B contributions up to 2007. Negotiations were on-going with the Funding Authorities to make recovery plans. In total they were missing around 1.4 MCHF in M&O-A and 0.6 MCHF in M&O-B.

### 8.2 2008 M&O A and B Budget Estimates

M. Nordberg showed the preliminary budget estimates for M&O in 2008. The M&O-A was foreseen at 13.8 MCHF and M&O-B at 6.4 MCHF, with a breakdown shown in each case. These numbers were evolving and would be discussed with the Scrutiny Group before the October RRB. In the paper he had explained that some numbers had been moved from category B to category A.

ATLAS proposed a new sharing of M&O-B. According to Article 9.5 of the M&O MoU, (CERN-RRB-2002-035), the sharing of the Category-B costs should be proposed by the Collaboration. In 2002, ATLAS proposed using construction MoU responsibilities as the basis for sharing, up to the end of the construction period. Following an internal ATLAS working group, (OTSMOU) on Operation Tasks and updated M&O-B sharing, the Collaboration proposed to move towards authors-based sharing, modulated by construction MoU responsibilities (CORE):

- ATLAS institutes grouped based on their original CORE responsibilities
- New joining institutes contribute based on their available resources
- New scheme valid until 2012 (M&O MoU expiration date)

It was emphasized that due contributions were not forgotten in this proposed scheme.

## Discussion

J. Engelen thanked M. Nordberg for his presentation and asked if there were any questions.



E. Gazis asked for a clarification of “communications” in Table 4. M. Nordberg replied that this included (for M&O-A) collaborative tools, GSM phones, video-conferencing, and archiving. For M&O-B this was essentially the use of GSM phones.

N. Wermes asked whether category B would still exist after the proposed change to be based on authors, since both categories would be essentially the same. M. Nordberg agreed that, from a funding point of view, for some Funding Agencies this would make little difference. P. Jenni pointed out that Category B contained also some system specific manpower, which made sense, and he thought that the distinction should be maintained.

J. Seed was concerned about this change to M&O-B which was not quite so simple. The Scrutiny Group had oversight and scrutiny of the M&O-A numbers but not, up to now, of M&O-B. Since the latter would now be author-based, rather than based on those having responsibilities for the detectors, the process of scrutiny was less clear, and might have to involve more the Scrutiny Group. P. Jenni noted that the M&O-B was submitted to the Scrutiny Group and was reviewed at some level. G. Lafferty, the new Chairman of the Scrutiny Group, noted that, in the formal brief to the Scrutiny Group, they were asked to take note of the category B numbers rather than to scrutinize them, so there was a formal difference in how these two sets of figures were treated. They did not get M&O-B figures from all of the experiments, although from ATLAS they did get this information. The Scrutiny Group would be prepared to consider the M&O-B.

F. Ferroni thought this was going too fast. There was a fundamental difference between M&O-A and M&O-B. Once the SG had approved the M&O-A the Funding Agencies were supposed to pay without much discussion. For the M&O-B, this body took note, the Funding Agencies were independent with respect to the process, the agencies being free to look at the numbers and referee as appropriate. The basis of this was that M&O-B was related very closely to the detectors; the agency concerned with the construction of a specific detector being qualified to look at the particular numbers concerned. The M&O-A was more general, and hence the RRB had charged the SG with this. If one wanted to charge the SG to look at M&O-B, then this was a lot of work, and the working of the SG would probably have to be changed. However, one had to have a goal in mind. One wanted to change the process of approval, but this needed to be discussed within the RRB, otherwise this was not a useful work. As far as INFN was concerned, they tried to look at all the M&O-B for each detector in which they participated, and to understand whether what they proposed was fair or not. They were happy with the process in principle, and they would propose to leave things as they were. He did not see the need for this big change.

P. Jenni explained that one of the basic reasons why they wished to go to a system based on numbers of authors was to have the M&O-B costs shared by everybody; otherwise new groups joining would not contribute fairly to M&O-B. He was sure that the RRB would agree with this principle of fairness. F. Ferroni replied that this was a change of algorithm and not a change of philosophy. This did not require changing the fact that M&O-A and M&O-B were scrutinized in different ways. It was ATLAS' privilege to change the algorithm itself.

J. Engelen concluded that one would try to find a practical solution for the implementation. They would see whether the additional load on the SG was a reasonable addition to their load or not.

The RRB **endorsed** the 2006 M&O Budgets and **took note** of the preliminary 2008 M&O Budget.

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

**J. Engelen**

J. Engelen concluded that the meeting had been rather positive, with financial concerns that were not new but for which progress had been made. They would have to see at the next RRB whether this positive process had continued. He considered that the next six months of ATLAS would be as crucial as the past six and that October should show the RRB the complete detector, essentially fully installed.

<p>The next RRB meetings in 2007 will take place at CERN on <b>Monday 22<sup>nd</sup>, Tuesday 23<sup>rd</sup> and Wednesday 24<sup>th</sup> October 2007</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  
May 2007