

# 11<sup>th</sup> meeting of the CERN-Korea Committee (CKC)

CERN, 23rd April 2012

## Present:

Co-Chairmen: Y.-H. Pang (MEST), R. Voss (CERN).  
Rep. of Korea: I. Park (CMS), J. Park (Korean CERN coordinator), I.-K. Yoo (ALICE),  
U.K. Yun (NRF)  
CERN: T. Camporesi (CMS), F. Caminati (ALICE), S. Foffano (CERN),  
Y. Schutz (ALICE), J. Incandela (CMS), U. Wiedemann (CERN-TH)  
Observer: H. Kim (NRF), B.-H. Lee (Sogang Univ.)  
Invited: M. Storr /CERN, P. Paolucci /CERN

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The agenda and meeting material is available from INDICO at the following link:

<https://indico.cern.ch/conferenceDisplay.py?confid=185628>

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## Welcome

R. Voss welcomes the participants to the 11<sup>th</sup> CKC meeting and introduces 2 new members; S. Foffano who has become Scientific Secretary replacing H. de Groot following his retirement, and J. Park, Director of the Office of American-European Affairs, Centre for International Affairs of the National Research Foundation of Korea.

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## Minutes of the last Meeting ([Minutes](#))

There is a comment from H. Kim on the Matters Arising which mentions a Task Force set up for the KoRIA Project. R. Voss suggests a short email suggesting alternative phrasing should be sent to S. Foffano. Once this alternative wording has been included the minutes can be considered approved. [The alternative wording was received on 2nd May 2012, and the minutes of 10th CKC meeting updated accordingly].

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## Introduction

Y.-H. Pang thanks R. Voss for the warm welcome and mentions the Cooperation Agreement signed between CERN and Korea in 2006, and the active cooperation since leading to an increase in the budget and the number of M&O Category A personnel working with ALICE and CMS. The successful results of the research fellows sent to the CERN theoretical physics group are recalled. The Korean Team plans to join the R&D program related to the LHC detectors upgrade in 2017 by securing the budget for the participation of the program (worth KRW 500 Million) during this year.

Y.-H. Pang announces that due to personnel changes within the National Research Foundation in Korea, Jeongho Park, the Director of Office of American & European Affairs at NRF, took over the position of CKC coordinator. R. Voss congratulates J. Park on his new appointment and welcomes the timely decision for both ALICE and CMS with respect to their detector upgrade activities.

R. Voss proceeds with some general news from CERN. Since the last meeting in October 2011, LHC had a successful run ending with 5 times the integrated luminosity compared to the intention at the beginning of 2011. LHC has recently been successfully restarted at 8 TeV with already almost  $1 \text{ fb}^{-1}$  reached, an exciting future run ahead and hopefully  $15 \text{ fb}^{-1}$  in 2012.

News is given on the CERN enlargement with 5 countries now in the pipeline for full membership: Israel, Serbia, Turkey, Cyprus and Slovenia. An agreement was signed with Israel in October 2011 and one with Serbia in January 2012 who now have Associate Member status in a pre-stage to full membership. An application for Associate Membership was received from Ukraine and discussions are on-going with a number of other countries including Brazil, India and Russia.

I.-K. Yoo requests the relative number of participants from these countries to see how it compares to the Republic of Korea. R. Voss agrees and suggests locating the information and showing it later in the meeting under AoB.

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### **Matters Arising**

Y.-H. Pang informs the Committee that the CERN cooperation program was reviewed comprehensively during 2011 in terms of the management of the researchers, funding management, utilisation of research outcomes, related regulations and the management system. An advisor system for the CERN programs was introduced as a result of this review.

The advisor will participate in the CERN-Korea Committee and Resources Review Board to enable continuous checks of the above-mentioned items. Professor Bum-hoon Lee was introduced as the CERN advisor, who is expected to play an important role to promote the collaboration.

A change to the management system of the CERN theoretical physics group is presented by Y.-H. Pang. In the past system, individual principal research institutes controlled the selection of researchers and support for their research activities. Now the NRF is in charge of the call for participation and the candidate evaluation, reflecting each institute's specialty in the program.

Y.-H. Pang informs the committee that Korea is currently performing R&D on the technical design report of the heavy ion accelerator as a central research facility in the International Science and Business Belt, and putting a lot of effort in having a strong collaboration program with leading research institutions in the field of accelerator science, in order to successfully complete its construction by 2017. ISOLDE provides the worldwide variety of radioisotopes and accelerated ions among its existing facilities with unprecedented experience and knowhow in the field of the rare isotope on-line separator. As CERN plans to enter into design and construction of HIE ISOLDE, Y.-H. Pang hopes for close collaboration and partnership with CERN in the area of the ISOLDE facility and superconducting Linac development, mentioning the benefits for the KoRIA project.

R. Voss welcomes B.-H. Lee as permanent NRF representative of the CKC. Concerning the comments on ISOLDE, he suggests follow-up after the meeting with Y. Kadi to see how ISOLDE can be integrated into the next CKC.

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### **ALICE – Y. Schutz (Slides)**

Y. Schutz, replacing P. Giubellino, presents a brief report on the status of ALICE. He recalls the list of institutes involved in ALICE mentioning KISTI GSDC who changed from Associate to Full member of the ALICE collaboration and who have recently become an Associate Tier-1 already providing 5% of the ALICE required computing resources for which ALICE is very grateful. The WLCG MoU is in the process of being signed. There is a comment suggesting the Tier-1 could be included in future CKC meetings as a separate agenda item which R. Voss notes.

Y. Schutz gives information about new institutes in the collaboration and recent nominations before concentrating on the status of the detector, ALICE operations statistics in 2011 and planned operation for 2012; 150 days of pp at 8TeV, then 24 days of pPb(Pbp) at 3.5TeV.

The future planning of ALICE is presented; Long Shutdown(LS) 1 in 2013/2014, PbPb running in 2015-2016 aiming for 250  $\mu\text{b}^{-1}$ /year, LS2 in 2018 during which the ALICE upgrade will be installed, PbPb, pPb, eventually ArAr running from 2019 with a goal to reach 10  $\text{nb}^{-1}$ .

Physics publications since the last CKC meeting and the improved physics performance and selected physics results are presented and finally some details about the upgrades and the status of the 2 documents approved by the collaboration which have already been submitted to the LHCC, the preparation of the upgrade Letter of Intent to be presented to the LHCC in June 2012, and the subsequent discussions planned with the Funding Agencies. Y Schutz concludes that ALICE has had a great start and looks forward to new physics in the near future.

Conclusion: we had a great start and are looking forward to new physics.

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## **ALICE – I.-K. Yoo (Slides)**

The 38 Korea ALICE (KoALICE) Collaboration participants are presented detailing their qualification, university and whether they are currently resident at CERN or in Korea. The different activities in which the participants from each university are involved are outlined, and the breakdown of the 2011 budget is given. The Korea ALICE Collaboration meetings in 2011 and 2012 are listed including the monthly KoALICE meetings, and finally the outlook for 2012 is presented including news that a contribution to the ALICE Upgrade Project has been fixed.

The discussion which follows includes progress reporting on the new ALICE Tier-1 as part of the CKC. R. Voss encourages follow-up on this outside the meeting by J. Park to ensure progress and information can be presented at the next CKC meeting.

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## **CMS – J. Incandela (Slides)**

J. Incandela welcomes the Korean colleagues and mentions that he has not included M&O-related information as a full report will be given by A. Charkiewicz at the RRB meeting.

The papers published and Higgs update since February 2012 are presented with the message that the main focus will be on the Higgs in 2012 following the work of 2011 which restricted the range to roughly 115 to 127 GeV and excluding SM Higgs from 127 up to 600 GeV.

Looking for SUSY is getting more difficult, the many models involve more difficult searches provoking difficulties to get all the necessary data on tape; an important message for the RRB. The chart of publications is shown including the link to the website of papers on 2010 and 2011 data with 2012 papers increasing rapidly, 150 publications being planned within the next

few months.

The lessons learned from the last run enabled correction to the event processing time and memory usage with significant savings, these gains coupled with the detector which is working very well has set the scene for good running conditions in 2012 at a higher level of efficiency. New CMS concepts for the 2012 run include trigger scouting to look for new physics and data parking to tape at the Tier-1s to study the Higgs, and look for SUSY and B-physics. These concepts have been commended by the LHCC.

The Upgrades in 2013-14 and beyond and the preparation for LS1 from November 2012 – September 2014 including the main CMS objectives are presented with the upgrade cost profile and financing of common items via the upgrade common fund.

J. Incandela concludes by mentioning Korea as an active and strong contributor to CMS involved in many areas of physics and making major contributions to the upgrade of ~970K CHF with a new contribution under discussion for the RPC of ~140K CHF for which CMS is extremely grateful. CMS is making good progress and is looking forward to, and preparing for, the future which would not be possible without the support of countries like Korea.

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## **CMS – I. Park (Slides)**

For the benefit of the new CKC members, I. Park presents a brief history of the CKC. The “Prehistoric” era between 1980 and 1990 based on individual participation, the LEP era from 1990 to 1998 during which research groups from Korea participated in ALEPH, L3 and CHORUS, the LHC preparation era from 1998 to 2006 during which 12 universities funded by MOST participated in CMS superconducting magnet platform, forward RPC production and online DAQ hardware activities. From 2007 onwards the LHC era enabled federations of universities to participate in CMS, ALICE and Grid computing, the Korea-CERN theory fellowship programme and high-school teacher education.

The 7 Korean institutes participating in CMS with around 70 collaborators are presented with some highlights of 2011 including Korean authors in CMS physics papers and RPC step3. Looking forward the Korean activity in the RPC chamber production and the CMS upgrade in LS1 and LS2 are presented with the future plan to enhance the Korean activities and their visibility.

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### **Theory Collaboration - U. Wiedemann (Slides)**

R. Voss introduces U. Wiedemann who has been instrumental in setting up the CERN-Korea theory collaboration. The CERN-Korean fellows are presented; 3 currently present with 1 leaving in May 2012 and a new one starting in October 2012 all with extremely good results. The Fellows are hosted within the Theory Group, they collaborate with junior and senior staff members as well as with other fellows and visitors, and they are fully included in the activities of the group including presentations of their work at Les Houches.

Following a mis-understanding in the past about Fellowship costs which led to budgeting based on standard costs, the breakdown of Fellow costs is presented including basic salary and allowances for pension, health insurance, installation and removal grants and school fees depending on personal circumstances. The specific amount per Fellow is shown to ensure the costs are fully understood for the future.

U. Wiedemann concludes that the collaboration is working well from the point of view of selection and performance of the Fellows, he hopes for continuity in order to strengthen the collaboration and contribute to High Energy Physics in Korea. R. Voss encourages MEST to take note and continue with typically 1 new Fellow per year in future.

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### **High School Teacher's Programme - M. Storr**

M. Storr, coordinator of HST at CERN and instrumental in the programme with Korea, is introduced by R. Voss.

The planning for Korean HST 2012 is presented with a similar agenda to that of 2011: lectures, visits, hands-on activities and meetings with Korean Scientists at CERN. 21 participants will be accompanied by Chang-Hwan Lee from 4<sup>th</sup>-12<sup>th</sup> August and will stay in the CERN hostel.

The immediate feedback after HST 2011 was very positive. M. Storr remarks the key to success is to ensure the programme is delivered in Korean, participation from the Koreans at CERN or people collaborating with them is therefore very important. When questioned if 3 students from SNU can join the event as observers, M. Storr agrees on condition their participation is confirmed quickly.

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### **AoB**

To answer the question raised at the start of the meeting by I.-K. Yoo (requesting the relative number of participants from the new Associate Member countries in comparison to the Republic of Korea), R. Voss shows the April 2012 official numbers of CERN Users by Institute with 91 users registered for Korea showing the comparison with the recently joined members. The official numbers shown at the meeting are appended to these minutes for information.

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### **Next Meeting**

The next meeting will take place on the Monday morning prior to the Autumn 2012 RRB meetings, provisionally fixed on 29 October 2012, to be formally approved at the RRB plenary session [following the CKC meeting this provisional date was approved].

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