

ISOLDE AND NEUTRON TIME OF FLIGHT  
EXPERIMENTS COMMITTEE

Minutes of the twenty-ninth meeting of the INTC  
Held on Monday 21 and Tuesday 22 May 2007

**OPEN SESSION**

Monday 21 May 2007 at 13:30 h, Council Chamber

The Chairman of the INTC, Mark Huysse, opened the meeting and announced the agenda.

**ISOLDE Technical Report**

The AB-ISOLDE representative for the INTC, Mats Lindroos, started by informing the Committee of the new responsibilities of ISOLDE staff from the AB department: Richard Catherall (AB/ATB) is appointed ISOLDE Technical Coordinator, Erwin Siesling (AB/OP) ISOLDE Superintendent, Fredrik Wenander (AB/ABP) REX-ISOLDE Superintendent and Mats Lindroos (AB/ATB) New Projects Manager. The PS Booster and ISOLDE operation sections of the AB/OP group have merged; the new AB/OP/PSB-ISO section is lead by Klaus Hanke (AB/OP).

He then summarized the technical activities and major installations during the shutdown period, including the migration of the scanner and wire grid applications to the Linux environment, the repair of the Boris tube insulators, and the upgrade of the ISOLDE offline separator. The improvements made to the organization of the shutdown work resulted in a relatively smooth start-up in 2007, disturbed by some unexpected CERN-wide control problems. The extension of the REX-ISOLDE beam lines and move of Miniball into the hall extension has been successful. The low energy stage is in a good state, but the setup of the REX-LINAC is considerably delayed. The settings for power calibration still need to be found.

The technical R&D at ISOLDE was then summarized. The Committee was informed that the tendering process for the new RILIS solid state lasers is underway and that off-line tests of the RFQ Cooler and buncher (ISCOOL) are still ongoing with promising results. Preparatory work for the installation of ISCOOL has already been undertaken.

**ISOLDE Physics Report**

The ISOLDE Physics Coordinator, Luis M. Fraile, reviewed the CERN accelerator schedule and the ISOLDE shift situation for the 2007 campaign. Protons were delivered to ISOLDE on 13<sup>th</sup> April 2007 and Physics started on 20<sup>th</sup> April 2007 with two R&D runs. The ISOLDE online

operation will stop on 12<sup>th</sup> November 2007. There will be a one-week technical stop for both separators due to the installation of ISCOOL.

After the INTC meeting in February 2007 there are 714.5 outstanding shifts to be scheduled. Out of these, there have been user requests to schedule 480 shifts in 2007. There are requests for 260 shifts using UC<sub>x</sub> targets, 260 experiment shifts using RILIS (which entail more than 2000 hours of RILIS operation) and 205 shifts using the REX-ISOLDE post-accelerator. All those go above the availability of resources, in particular of RILIS, which has been further limited in 2007 to 1500 hours. The schedule for the first half of the 2007 campaign, taking into account the above data and limitations, was then presented (see epigraph 'Schedule' in <http://www.cern.ch/isolde/>). The second half of the schedule needs to be remade after the installation of ISCOOL has been fixed, and REX-ISOLDE is fully operational.

An evaluation of the key resources for ISOLDE and a forecast for the coming years was then presented by Luis M Fraile. In the period 2004 to 2006 a total of 1056 radioactive ion beam shifts has been delivered by ISOLDE to 101 experiments with an average of 1.78 shifts per day. Out of those, 81% were delivered to experiments approved by the INTC ("*INTC shifts*"), the rest being devoted to research and development runs.

Estimates of the main resources, namely actinide targets, RILIS, REX-ISOLDE and R&D activities were presented. The forecasts are based on the trend over the 2004-2006 period and assume 30 weeks of beam time per year, with a total of 375 delivered shifts, 80% (300 shifts) being *INTC shifts*. In case of longer running time scaling is required. The forecasts also take into account the present schedule limitations arising from the combined operation of both ISOLDE separators, the balance between the use of low energy beam lines and REX-ISOLDE and the need to accommodate user requests for an efficient scheduling.

Actinide targets: half of the target units used in the period 2004-2006 were made of actinides (mostly UC<sub>x</sub>); 58% of the total radioactive beam time was delivered with such targets. Apart from the long construction time they also set a limitation on scheduling due to the need of 72 hours cool down time before the next target change.

The amount of delivered shifts with actinide units is greatly below that requested. The minimum number of target units (for a year with 375 total delivered shifts) would be 13±1, corresponding to around 215 shifts. The number of target units would need to be increased further to meet the user requests (260 *INTC shifts* requested in 2007).

RILIS: half of the *INTC shifts* delivered in 2004-2006 made use of the RILIS. This corresponds to 45% of the total delivered shifts and 5650 hours of online operation (including setup and stable beam operation).

The demand for RILIS is very high and well above the amount of shifts provided to experiments. Due to the high isotope selectivity there is an increasing trend in the beam requests. With the present RILIS system and set-up time it is not possible to schedule more than 50% of the beam time using RILIS. This situation will be alleviated once a solid state laser RILIS system is available and offline developments can be performed in the LARIS laboratory. The minimum number of shifts with RILIS (for a year with 375 total delivered shifts) should be larger than 170, corresponding to a RILIS online time of around 2000 hours. The number of RILIS shifts would need to be increased further to meet the user requests (260 *INTC shifts* requested in 2007), once the operation limitations mentioned above are overcome.

REX-ISOLDE: The number of RIB shifts delivered by REX-ISOLDE has been steadily increasing since 2003 and has reached 40% of the *INTC shifts* in 2006. The number of delivered shifts is well below the user requests; the trend is expected to continue and even increase after the REX energy upgrade.

At present the limit of the schedule due to the REX setup time, the balance between operation and maintenance and the combination with other user requests is about 45% of the *INTC shifts*. This corresponds to an amount of 135 *INTC shifts* (around 150 total shifts) delivered by REX-ISOLDE. This falls below the user requests (205 *INTC shifts* requested in 2007). With the expected rise in beam time requests discussed above an increase to 165 total delivered shifts would be desirable, and even to a larger figure if this can be accommodated by REX and ISOLDE operation.

Target and ion source R&D: Beam development has been asked for in 15 accepted proposals and 10 endorsed letters of intent submitted to the INTC during the period 2004-2006. The requests deal with *a)* enhancement of beam selectivity or purity *b)* development of new beams *c)* increase of beam intensity, faster release of existing isotopes and *d)* improvements in beam manipulation. Based on the ongoing developments, 2 biannual beam R&D projects are required per year, that is, 4 simultaneous R&D projects. Large development projects, like ISCOOL, need extra resources.

### **n\_TOF Technical Report**

The n\_TOF technical coordinator, Paolo Cennini, reported on the technical activities at the n\_TOF facility. Preliminary actions for the removal of the old spallation target are underway, but the removal is hampered by the existing hoist system, which is not adapted to handle a radioactive load. Solutions are under investigation, but they will most likely entail a further delay of 10 to 12 months and extra costs.

A clad lead target is the selected option for the new target. The use of an aluminium alloy for the cladding and the support structure will be privileged. Simulations of the neutron flux, energy deposition and temperature were presented. A visual inspection of the old target and a sample analysis are still needed to verify the feasibility of the design. The simulations need to be concluded before the final design is done and a safety file has to be written.

The ventilation of the target area was discussed next. Simulations have been performed with the FLUKA package by taking into account the release of 39 isotopes for an irradiation of  $3 \times 10^{19}$  protons per year and using the old target characteristics. By assuming a continuous laminar flow the estimated dose for the critical group during a yearly run is of the order of  $1 \mu\text{Sv}$ . A feasibility study has been carried out and a solution will soon be adopted.

**The following proposals, addenda and status reports were then presented:**

1. **CERN-INTC-2007-012 and INTC-P-225**, *Measurement of ground state properties of neutron-rich nuclei on the r-process path between the N=50 and N=82 shells*, Melanie Marie-Jeanne.
2. **CERN-INTC-2007-013 and INTC-P-226**, *Approaching the r-process "waiting point" nuclei below  $^{132}\text{Sn}$ : quadrupole collectivity in  $^{128}\text{Cd}$* , Thorsten Kröll.
3. **CERN-INTC-2007-014 and INTC-P-227**, *Further Studies of neutron-deficient Sn-isotopes using REX-ISOLDE*, Joakim Cederkäll.
4. **CERN-INTC-2007-016 and INTC-P-228**, *Shape determination in Coulomb excitation of  $^{72}\text{Kr}$* , B.S. Nara Singh.
5. **CERN-INTC-2007-018 and INTC-P-229**, *Magnetic dipole moments of High-K isomeric states in Hf isotopes*, Phil Walker.
6. **CERN-INTC-2007-019 and INTC-P-230**, *Investigation of the proton-neutron interaction by high-precision nuclear mass measurements*, Alexander Herlert.
7. **CERN-INTC-2007-021 and INTC-P-231**, *Off-Line Tests and First On-line Installation of the Laser Ion Source Trap LIST – Application for CVC Test and CKM Unitarity*, Klaus Wendt.
8. **CERN-INTC-2007-022 and INTC-P-232**, *Mass measurements and decay studies on isobarically pure neutron-rich Hg and Tl isotopes*, Magdalena Kowalska.
9. **CERN-INTC-2007-023 and INTC-P-233**, *(n,p) emission channeling measurements on ion-implanted beryllium*, Ulli Köster.
10. **CERN-INTC-2007-020 and INTC-SR-007**, *Experiment IS444: Exploring halo effects in the scattering of  $^{11}\text{Be}$  on a heavy target at REX-ISOLDE*, Joaquín Gómez Camacho.

## **CLOSED SESSION**

Tuesday 22 May 2007

**Present:** S. Åberg, Y. Blumenfeld, Ph. Chomaz, L.M. Fraile (Secretary), M. Huyse (Chairman), H. Leeb, M. Lindroos, L. Linssen (part time), G. Neyens, K. Riisager, V. Vlachoudis (for point 4), U. Wahl.

**Apologies:** M. Fanciulli, R. Krücken, C. Rembser, P.J. Woods.

### **1. INTRODUCTORY REMARKS**

The Chairman opened the meeting by reporting that the CERN mid-term plan had been discussed by the Scientific Policy Committee. ISOLDE appears in the planned scientific programme for the period 2007-2011, whereas n\_TOF is under consideration. The HIE-ISOLDE project is described in the fourth theme of the “New scientific activities for the period 2008-2011 to be funded by additional resources”. The plan will soon be discussed by the CERN Council.

### **2. MINUTES OF THE LAST INTC MEETING AND FOLLOW-UPS**

The minutes of the twenty-eighth INTC meeting held on 15 and 16 February 2007 were approved without amendments.

In the previous meeting the Committee decided to request a Status Report from experiments inactive for more than 3 years. The Committee decided to declare the following experiments as completed:

- IS343, INTC-P-064, *Test of a high power target design* [J.R.J. Bennett et al.]
- IS363, INTC-P-090, *Use of radioactive beams for bio-medical research* [G.J. Beyer et al.]
- IS393, INTC-P-140, *Doping Properties of Ferromagnetic Semiconductors investigated by the Hyperfine Interaction of Implanted Radioisotopes* [S. Unterricker et al.]

The Committee was reminded that according to the general conditions applicable to experiments performed at CERN, Users can be registered up to 10 years after the end of an experiment.

The Committee requested Status Reports to be presented for the following projects:

- IS325 (INTC-P-035, *Combined electrical, optical and nuclear investigations of impurities and defects in II-VI semiconductors*), IS391 (INTC-P-133, *Radiotracer spectroscopy on group II acceptors in GaN*) and IS416 (INTC-P-167, *Production of rare earth isotope beams for radiotracer-DLTS on SiC*) [U. Reislöhner et al.]. A combined Status Report for the three experiments should be presented.
- IS406, INTC-P-150, *Precision study of the  $\beta$ -decay of  $^{62}\text{Ga}$*  [J. Cederkäll, Ph. Dessagne et al.]

The Committee was informed that the administrative structure for ISOLDE users has been revised, and users can now be registered at ISOLDE independent from the experiment IS number.

### 3. STATUS OF ISOLDE

The Committee acknowledged the work made during the shutdown period and the smooth start-up. A discussion on the key resources for ISOLDE followed. The Committee regarded with concern that the use of key resources are well below the user requests. The Committee underlined that new scientific opportunities are opened by technical developments pioneered at the ISOLDE facility. A continuous development of the Physics programme calls for an extensive use of these costly resources and the new beams made available to the users. The Committee endorsed the report and urged to at least maintain and if possible increase the availability of the key resources to ensure the success of the ISOLDE Physics programme. In particular the increased demand of RILIS and REX-ISOLDE was noted.

### 4. STATUS OF N\_TOF

The Committee saw with concern the accumulated delays to resume the operation of the n\_TOF facility. The Committee was informed that at present there are no resources available in the AB department to carry out the highest priority task, namely removing the old target. This requires a hoist system to be functional and adapted to handle a radioactive load. The hoist system is also needed to inspect the old target in order to decide on the most suitable design of the new target. The AB department has requested an engineering study of the different options. Meanwhile the MoU has been approved by all parties but not signed yet, and the CERN management has called for a real estimate of the resources needed to resume the facility.

### 5. DISCUSSION ON THE OPEN SESSION AND ON LETTERS OF INTENT

The presentations of the proposals and status reports made during the open session were then discussed.

#### **CERN-INTC-2007-012/P-225**, *Measurement of ground state properties of neutron-rich nuclei on the r-process path between the N=50 and N=82 shells*

The experiment proposes the study of decay half-lives and  $P_n$  values of neutron rich Ge, Se and Sr isotopes between the N=50 and N=82 shell closures, of interest for the astrophysical r-process. The proposal is focussed on the development of the ECR charge breeder at ISOLDE as a purification device, by making use of molecular band selection for  $\text{GeS}^+$ ,  $\text{SeCO}^+$  and  $\text{SrF}^+$  beams. Although the impact on the astrophysics calculations and the understanding of the r-process was not evident, the Committee found the advent of such purification technique to access new nuclei of the highest interest. The Committee decided to **recommend** to the Research Board the approval of **16 shifts** for this project. The proponents are asked to report to the Committee after the measurements.

#### **CERN-INTC-2007-013/P-226**, Approaching the r-process "waiting point" nuclei below $^{132}\text{Sn}$ : quadrupole collectivity in $^{128}\text{Cd}$

The proposal addresses the anomaly in the excitation energy of the first  $2^+$  state in  $^{128}\text{Cd}$ , found to be lower than in  $^{126}\text{Cd}$  contrary to the expectation when approaching the N=82 shell closure. Shell quenching does not provide a consistent interpretation since it is not able to explain the excited structure of this and neighbouring nuclei. Other theories may be able to explain the effect by including deformation. The experiment intends to measure the  $B(E2)$  value of the

excitation from the  $0^+$  ground state by Coulomb excitation. The Committee saw the measurement of the  $B(E2)$  value with interest, although doubts were cast on its ability to discern between the different theoretical approaches. The uniqueness of ISOLDE for this measurement was underlined. The Committee endorsed the Physics case, but before the proposal can be recommended called for a measurement of the  $^{128}\text{Cd}$  yield and clarification of the beam intensity. This should be reported to the INTC at the next meeting.

**CERN-INTC-2007-014/P-227**, *Further Studies of neutron-deficient Sn-isotopes using REX-ISOLDE*

The proposal intends the investigation of the evolution of shell structure in the vicinity of the doubly-magic  $^{100}\text{Sn}$  by means of Coulomb excitation. The proponents aim at studying odd-A Sn isotopes in order to obtain single particle energies together with some information on the two-body matrix elements. The Committee underlined the strength of the Coulomb excitation technique to populate the levels of interest from the  $5/2^+$  ground states, but pointed out the difficulty of identifying single particle levels due to the complexity of the level schemes and the possibility of some collective effects in these odd-A nuclei. The case of  $^{109}\text{Sn}$  was seen as the most favourable due to the production yield and the tentative assignment of a  $1/2^+$  state at around 500 keV. The Committee noted the change in beam request in the presentation compared to the written proposal. The Committee decided to **recommend** for approval by the Research Board **10 shifts** to perform a measurement with  $^{109}\text{Sn}$  and to measure the yields of  $^{107}\text{Sn}$  and  $^{105}\text{Sn}$ . The proponents are asked to report to the Committee and present a revised beam time request.

**CERN-INTC-2007-016/P-228**, *Shape determination in Coulomb excitation of  $^{72}\text{Kr}$*

The aim of the proposed experiment is to study the shape coexistence in  $^{72}\text{Kr}$ , since it is suggested to be one of the few oblate nuclei in the ground state. The first  $2^+$  is predicted to be oblate, but no experimental evidence exists. The sign of the quadrupole moment of this state can be measured via the re-orientation effect in Coulomb excitation at REX-ISOLDE. The Committee found the case of the highest interest and the technique feasible to determine the sign of the deformation as already demonstrated for other nuclei. From the systematics of Kr isotopes the energy difference between the  $0^+$  states of both configurations should be large enough to allow for a very low configuration mixing. Nevertheless the intensity of post-accelerated  $^{72}\text{Kr}$  beam seems to be at the limit for allowing a successful experiment, the most pessimistic prediction being a factor 2.5 below the experiment needs of at least  $200\text{ s}^{-1}$ . Therefore the Committee endorsed the Physics case and recommended to include the development of an intense  $^{72}\text{Kr}$  beam with the highest priority in the list for beam development. A report should be addressed to the Committee on the results of the development before a recommendation can be made.

**CERN-INTC-2007-018/P-229**, *Magnetic dipole moments of High-K isomeric states in Hf isotopes*

The proposal intends the measurement of magnetic dipole moments of high K-isomers in Hf isotopes via magnetic resonance of oriented nuclei at the NICOLE dilution refrigerator setup. The aim is deducing intrinsic g-factors of the isomeric states and collective g-factors, providing

information on correlation effects. Although the extraction of the collective g-factor relies on the value of the quadrupole moment, this quantity is rather constant along the different nuclear states. The Committee saw the proposed measurement with interest, especially for the  $^{177}\text{Hf}$  case, and thought the precision of a few percent to be within reach. It also underlined the technical difficulties to safely perform the experiment, given the specificities of the setup. The group is asked to become acquainted with the running and safety conditions of the NICOLE setup before the experiment can be scheduled. With this provision the Committee decided to **recommend** the approval by the Research Board of **15 shifts**.

**CERN-INTC-2007-019/P-230**, *Investigation of the proton-neutron interaction by high-precision nuclear mass measurements*

The aim of the proposed experiment is to measure the masses of a few short-lived isotopes to extend the investigation of proton-neutron interaction, obtained by double difference of binding energies of neighbouring even-even nuclei,  $\delta V_{pn}$ . The trend of this difference in the vicinity of closed shells can be interpreted in terms of the overlap of proton and neutron wave functions depending on the occupation of orbitals. The Committee appreciated the effort to measure masses of short lived nuclides as a contribution to general knowledge of nuclear properties. The interpretation in terms of  $\delta V_{pn}$  provides a way to pinpoint certain nuclei which may present nuclear structure particularities. It was mentioned that some of the proposed nuclei have already been measured in other facilities. The Committee decided to **recommend** for approval by the Research Board **11 shifts** for the measurement of the proposed Sn, Xe and Rn isotopes. Cd, Nd and Sm beams should be included in the list of beam developments to be done with lower priority (second category in list for target and ion source R&D at ISOLDE).

**CERN-INTC-2007-021/ P-231**, *Off-Line Tests and First On-line Installation of the Laser Ion Source Trap LIST – Application for CVC Test and CKM Unitarity*

The proposals requests the off-line tests and on-line commissioning of the LIST at ISOLDE. The Committee regarded with interest this development to suppress surface ionized ions, particularly if the present limit in efficiency can be overcome. Nevertheless the physics case presented was not convincing, since the masses of  $^{62}\text{Ga}$  and  $^{62}\text{Zn}$  have already been measured and no major improvement in the precision can be achieved. The Committee decided to **recommend** for approval **12 shifts** to perform the online commissioning of the LIST with  $^{62}\text{Ga}$  and encourage the proponents to propose a physics study after that. The Committee supports the allocation of 4 weeks of ISOLDE offline separator, provided resources allow it.

**CERN-INTC-2007-022/P-232**, *Mass measurements and decay studies on isobarically pure neutron-rich Hg and Tl isotopes*

The aim of the proposal is to carry out mass measurements and beta decay spectroscopy of neutron rich Hg and Tl isotopes. Surprisingly very little is known about these nuclei with  $Z < 82$  and  $N > 126$ , one obstacle for their study being the large isobaric contamination. Such a problem can be overcome by trap-assisted spectroscopy, in this case with a new decay spectroscopy setup proposed behind ISOLTRAP. The Committee considered the proposal to be of the greatest interest. The decay spectroscopy represents an important step forward in studying this

inaccessible region. The results will provide important constraints on the effective interaction in the region. The Committee **recommended 22 shifts** for approval by the Research Board.

**CERN-INTC-2007-023/P-233**, *(n,p) emission channeling measurements on ion-implanted beryllium*

It is proposed to performed emission channelling experiments by proton emission induced by neutron irradiation of samples implanted with  $^7\text{Be}$ . The samples would be implanted at ISOLDE with a  $^7\text{Be}$  beam extracted from an irradiated graphite target from PSI, whereas the  $^7\text{Be}(n,p)\text{EC}$  measurements would be carried at ILL. The Committee regarded with interest the proposal for an alternative way of emission channelling. It will allow the study of the lattice location of Be in GaN and AlN III-V semiconductors, and of the amount substitutional Be on Zn sites in ternary  $\text{Zn}_{1-x}\text{Be}_x\text{O}$  compounds. It can also address the dependence of the  $^7\text{Be}$  half-life as a function of host material, and the effect of the distribution of the implanted Be ions in the host sample. The Committee **recommended 8 shifts** for approval by the Research Board.

**CERN-INTC-2007-020/SR-007**, *Experiment IS444: Exploring halo effects in the scattering of  $^{11}\text{Be}$  on a heavy target at REX-ISOLDE*

The proposal puts forward a reaction experiment to study the break-up and elastic scattering of  $^{11}\text{Be}$  on a heavy target in order to understand the mechanism of reactions with halo nuclei. The results of the test run of IS444 requested by the Committee were reported. Although  $^{11}\text{Be}$  and  $^{10}\text{Be}$  events were separated in the test, no discrimination between the  $^{11}\text{Be}$  elastic and inelastic events was possible. The Committee doubted the feasibility of separating the transfer and break-up channels given the breadth of the distributions, and the ability of the experiment to obtain the required statistics with a thin target, as proposed. It was thought that a more advanced setup, as those including gamma and neutron detection used in other facilities, should be employed to discriminate the reaction channels. The Committee considered that the allocation of 22 shifts was not fully justified and decided not to recommend the approval of the experiment. The proponents are encouraged to submit a new proposal with an optimized setup able to harvest all physics information from the reaction study.

**CERN-INTC-2007-015/I-070**, *Direct measurement of the  $^{44}\text{Ti}(\alpha,p)$  reaction of importance to supernovae, using reclaimed  $^{44}\text{Ti}$*

The letter of intent requests the development of a  $^{44}\text{Ti}$  beam for the study of the  $^{44}\text{Ti}(\alpha,p)^{47}\text{V}$  reaction, whose cross section influences the model predictions of the abundance of  $^{44}\text{Ti}$  produced in core-collapse supernovae. The idea is to perform the experiment at ISOLDE by using  $^{44}\text{Ti}$  from the PSI copper beam dump, but the technology for the ionization of Ti does not yet exist. A further issue is the potential problems that a long-lived  $^{44}\text{Ti}$  background may pose for the ISOLDE users. The Committee **endorsed** the letter of intent and supported the development of a Ti beam with stable isotopes. The evaluation of background and safety issues for a possible run with a post-accelerated  $^{44}\text{Ti}$  was also encouraged.

**CERN-INTC-2007-017/I-071**, *Development of short-lived sulphur beams for the accurate half-life measurement of  $^{30}\text{S}$*

The letter of intent requests a test of the production of  $^{30}\text{S}$  at ISOLDE and of the cooling and bunching of this beam in ISCOOL, with the aim of performing a precise decay half-life measurement. This is one of the ingredients needed to determine the experimental  $ft$  value to perform tests of the unitarity of the CKM matrix. The Committee regarded the case with interest but thought that the n-deficient  $^{30}\text{S}$  would be too hard a case to initiate the development of sulphur beams, already difficult in themselves. The Committee thought that the installation of ISCOOL and further development of negative sources should be accomplished before this letter of intent can be endorsed. The proponents are encouraged to find a broader collaboration to perform the experiment and it is recommended to verify the feasibility of the experiment at other facilities.

Out of the **204** radioactive beam shifts requested to the INTC a total of **130** have been recommended for approval by the Research Board.

## **6. CONCLUDING REMARKS**

The Chairman reminded the Committee that this would be the last meeting of Luis M. Fraile as Scientific Secretary; the Committee acknowledged the work done by him and thanked him for his dedication.

## **7. DATES OF NEXT MEETINGS**

The next INTC meeting will take place on **Monday 12 and Tuesday 13 November 2007**. The deadline for submission of proposals is **Sunday 14 October 2007**.

Luis M. Fraile  
Tel. 73809 – 160985  
[Luis.Fraile@cern.ch](mailto:Luis.Fraile@cern.ch)