

ISOLDE AND NEUTRON TIME OF FLIGHT  
EXPERIMENTS COMMITTEE

Minutes of the twenty-fifth meeting of the INTC  
Held on Monday 20 and Tuesday 21 February 2006

**OPEN SESSION**

Monday 20 February 2006 at 13:30 h, Council Chamber

The Chairman of the INTC, Juha Äystö, opened the meeting and announced the dense agenda. He revealed that the meeting would be his last one as Chairman of the INTC.

The ISOLDE Technical Coordinator, Mats Lindroos, reported on the technical activities at the facility during the shutdown. The GPS front-end has been tested after a change of extraction electrode and it now holds the nominal high voltage of 60 kV. The GPS switchyard has been opened and the different problems successfully addressed. The RFQ cooler and buncher has recently been moved from the mechanical workshop to building 275 and the off-line commissioning has started. He explained that REX-ISOLDE roughing pumps will be moved to the shielded area and recovery tanks for the exhausts will be installed. Air-tight doors for the separator areas will be installed during the shutdown.

He then reported on the plans for moving the Miniball detector array and associated equipment into the new ISOLDE hall extension, to be accomplished by March 2007. He also described further ongoing activities related to the HIE-ISOLDE, and in particular the start of a study to decide on the suitable technology for the REX-LINAC upgrade. He also informed the Committee about the upgrades of the ISOLDE RILIS system, which are partially funded by an external grant of 2.4 MCHF from the Wallenberg foundation in Sweden.

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

1. **CERN-INTC-2005-027** and **INTC-P-199**, *Shape effects along the Z=82 line: study of the beta decay of  $^{188,190,192}\text{Pb}$  using total absorption spectroscopy*, A. Algora.
2. **CERN-INTC-2006-010** and **INTC-P-206**, *Exploring halo effects in the scattering of  $^{11}\text{Be}$  on heavy targets at REX-ISOLDE*, M.J.G. Borge.
3. **CERN-INTC-2006-003** and **INTC-P-201**, *Ultra fast timing measurements at  $^{78}\text{Ni}$  and  $^{132}\text{Sn}$* , H. Mach.
4. **CERN-INTC-2006-011** and **INTC-P-207**, *Experiments with the newly available Carbon beams at ISOLDE - Resonance scattering and decay studies*, H. Fynbo.

5. **CERN-INTC-2005-025** and **INTC-P-162-Add-2** (IS414), *Advanced Time-Delayed coincidence studies of  $^{31,32}\text{Mg}$  from the  $\beta$ -decays of  $^{31,32}\text{Na}$ : Addendum: Conversion Electron Study to Identify the Deformed  $0^+_2$  State in  $^{30}\text{Mg}$  via its  $E0$  Decay*, P. Thirolf.
6. **CERN-INTC-2006-004** and **INTC-P-202**, *Diffusive, Structural, Optical, and Electrical Properties of Defects in Semiconductors*, M. Deicher.
7. **CERN-INTC-2005-028** and **INTC-P-144-Add-1** (IS398), *Electron conversion and gamma-gamma measurements complementary to the study of the beta decay of  $N$  near  $Z$   $Kr$  and  $Sr$  nuclei with a Total Absorption Gamma-ray Spectrometer*, B. Rubio.
8. **CERN-INTC-2006-012** and **INTC-P-208**, *The role of  $Fe$  and  $Ni$  for  $s$ -process nucleosynthesis in the early Universe and for innovative nuclear technologies*, J.L. Tain.
9. **CERN-INTC-2006-005** and **INTC-P-203**, *Mössbauer studies of dilute magnetic semiconductors*, M. Fanciulli.
10. **CERN-INTC-2006-002** and **INTC-P-127-Add-2** (IS386), *Studies of electric dipole moments in the octupole collective regions of heavy Radiums and Bariums*, H. Mach.
11. **CERN-INTC-2006-006** and **INTC-P-204**, *Proposed study of the neutron-neutron interaction at the CERN nTOF facility*, P.A. Assimakopoulos
12. **CERN-INTC-2006-014** and **INTC-SR-005** (IS415), *Magnetic moments of Coulomb excited  $2^+_1$  states for radioactive beams of  $^{132,134,136}\text{Te}$  and  $^{138}\text{Xe}$  isotopes at REX-ISOLDE*, R. Krücken.
13. **CERN-INTC-2006-016** and **INTC-P-209**, *Angular distributions in the neutron-induced fission of actinides*, L. Tassan-Got.
14. **CERN-INTC-2006-001** and **INTC-SR-004** (IS413), *High-precision mass measurements of exotic nuclei with the triple-trap mass spectrometer ISOLTRAP - Status Report 2005*, F. Herfurth.

## **CLOSED SESSION**

Monday 20 and Tuesday 21 February 2006

**Present:** S. Åberg, J. Äystö (Chairman), H. Börner, P. Cennini, J.-P. Delahaye, H. Doubre, J. Engelen (part-time), L.M. Fraile (Secretary), M. Huyse, R. Krücken, M. Lewitowicz, M. Lindroos, G. Neyens, E. Radermacher, K. Riisager, M. Streit-Bianchi, V. Vlachoudis, P. Woods.

**Apologies:** T. Butz, F. Priolo

### **1. MINUTES OF THE LAST MEETING**

The minutes of the twenty-fourth INTC meeting held on 31 October and 1 November 2005 were approved without amendments.

### **2. REPORT FROM THE CHAIRMAN ON THE PREVIOUS RESEARCH BOARD MEETING**

Juha Äystö reported on the discussion held in the Research Board meeting of 1 December 2005, where he presented the outcome of the NuPAC meeting and of the INTC meeting of 31 October for 2005.

For ISOLDE the Research Board strongly endorsed the recommendation of continuing the operation of the facility, exploiting its unique capabilities and reinforcing the technical R&D activities. Concerning the resources for the upgrade plans for ISOLDE and REX-ISOLDE (HIE-ISOLDE), the Research Board requested a complete report prepared by the AB Department in consultation with the ISOLDE Collaboration, and with input from the TS, PH and AT Departments, in time for a decision to be taken at the Research Board meeting of 7 June 2006.

Concerning n\_TOF, the Research Board endorsed the principle of the recommendation of resuming the operation of the facility, but stressed that the running will depend on the strength of the interested community and the scientific case of the experiments proposed. The discussion of the technical recommendations (including the launch of a design study for a second target area at a shorter neutron flight path) was deferred until proposals for experiments have been received.

### **3. STATUS OF ISOLDE**

Mats Lindroos has been appointed to be in charge of compiling the report and the budget study of the HIE-ISOLDE project for the AB Department, in consultation with the rest of the CERN Departments involved and with the ISOLDE Collaboration. The report will be presented to the AB and AT Management Boards on 15 May for discussion and then presented in the Research Board meeting of 7 June 2006. An important decision to be taken concerns the REX-LINAC technology, either changing to superconducting or continuing with IH structures. For this particular purpose a pre-study and external review will take place by the first week of May.

With respect to the 2006 campaign, protons will be delivered to ISOLDE from 18 April 2006 and the physics experiments will start on 24 April 2006. The on-line operation for ISOLDE will end 28 weeks later, on 6 November 2006. There are 503.5 remaining shifts for approved experiments to be scheduled, and further requests for 268 more shifts during the present INTC meeting. Apart from the user requests, the main constraints for the schedule are (i) the limitation to a maximum of 10 UC<sub>x</sub> targets that can be made available during 2006 by the AB-ATB-IF group (ii) the operation of the RILIS (iii) the integration of the research and development activities and (iv) the REX-ISOLDE operation.

#### 4. STATUS OF n\_TOF

A design study on the upgrade of the neutron spallation target is being carried out. After an estimated 3-months design period the construction of the new target will start, lasting around 9 months. Other maintenance and upgrade work will go on in parallel. A Memorandum of Understanding between CERN and the n\_TOF Collaboration is presently under discussion.

An application to the EFNUDAT (European Facilities for Nuclear Data) program of EURATOM (NUWASTE-2005/6-3.2.3.1-1) for an Integrated Infrastructure Initiative by ten European neutron facilities including n\_TOF has been successful. The program aims at networking the experimental facilities in Europe for nuclear data measurements, and for n\_TOF will result in approximately 250 k€ funding during a 4 years period, aimed at covering running costs.

The preparatory work for the nTOF-11 experiment has commenced in the n\_TOF tunnel; the experiment will only run in 2007.

#### 5. DISCUSSION ON THE OPEN SESSION

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

##### **CERN-INTC-2005-027/P 199** *Shape effects along the Z=82 line: study of the beta decay of <sup>188,190,192</sup>Pb using total absorption spectroscopy*

The proposal aims at applying the total absorption technique to the study of the shape effects in neutron-deficient <sup>188,190,192</sup>Pb nuclei in order to determine the Gamow-Teller strength distribution in the daughter nuclei and to extract the ground state deformation of the decaying Pb nuclei by comparison with recent theoretical calculations. The Committee regarded with interest the introduction of the total absorption technique in this region of nuclei where shape co-existence (spherical, prolate, oblate) has been shown. Although the technique provides independent determination of the shape of those nuclei in the ground state, the outcome of the measurement is expected in this case (spherical). Furthermore the Committee found that there was not sufficient information in the proposal about the known level structure of the Tl isotopes of interest that could justify that the total absorption technique will provide the required information without further need of high resolution spectroscopy measurements. The Committee decided to **recommend 7 shifts** for approval by the Research Board for a test study of the most interesting case, <sup>188</sup>Pb, where the Q window is larger and high resolution spectroscopy data are required.

**P201 (CERN-INTC-2006-003/P 201)** *Ultra fast timing measurements at  $^{78}\text{Ni}$  and  $^{132}\text{Sn}$*

The P201 proposal intends the measurement of level lifetimes in the ps and ns range in two distinct regions of the nuclear chart, in the vicinity of the doubly magic  $^{78}\text{Ni}$  and  $^{132}\text{Sn}$  nuclei. The proposed technique was judged well established and the Collaboration highly capable of successful measurements. The physics case was thought to be excellent, in particular the investigation of  $^{136}\text{Te}$  case was judged highly compelling and complementary to studies with accelerated beams. The Committee felt that systematic spectroscopy studies are required in the Ga region and therefore the Collaboration was urged to concentrate on the Sn/Sb/Te region, where complementary data exists. With this aim the Committee decided to **recommend 19 shifts** for approval by the Research Board. The Committee urged the group to finish the data analysis and publish the results of their previous successful experiments.

**P206 (INTC-2006-010/P 206)** *Exploring halo effects in the scattering of  $^{11}\text{Be}$  on heavy targets at REX-ISOLDE*

This proposal aims at studying the effect of the  $^{11}\text{Be}$  neutron halo on reaction mechanisms at energies around the Coulomb barrier. The Committee appreciated the general interest of the investigation of reaction mechanisms with weakly bound systems, but did not find the feasibility of the proposed experiment sufficiently defined. In particular the ability of distinguishing between the inelastic and elastic channel should be clarified. Therefore the Committee decided to **recommend** to the Research Board the approval of **9 shifts** with  $^{11}\text{Be}$  at the optimum chosen energy in order to elucidate the feasibility of the method.

**P207 (INTC-2006-011/P 207)** *Experiments with the newly available Carbon beams at ISOLDE – resonance scattering and decay studies*

This proposal intends to take advantage of target and ion source developments for the production of C beams to perform a resonance scattering experiment of  $^9\text{C}$  on a proton target on one side, and to study the decay of  $^{17-19}\text{C}$  on the other. Although the connection to  $^{10}\text{Li}$  is not clearly defined, the physics case for the investigation of low-lying structure in the unbound nucleus  $^{10}\text{N}$  by means of resonance scattering of  $^9\text{C}$  was judged of high significance. The technique has proven its validity for similar kind of studies, and the case was judged of interest in the context of ab-initio calculations for light nuclei. Concerning the decay part, the proposal was thought premature as the ingredients for the target development need to be combined and tested with the involvement of the local ISOLDE target group. Thus the Committee resolved to **recommend** the allocation of **15 shifts** for  $^9\text{C}$  experiment at REX-ISOLDE **and 3 more shifts** to test the production of n-rich C isotopes with a  $\text{HfO}_2$  target for decay studies. The proponents are invited to report to the Committee after such tests.

**INTC-2006-002/P 127 Add. 2 (IS386)** *Studies of electric dipole moments in the octupole collective regions of heavy Radiums and Bariums*

The addendum proposes the search of the alpha decay branch from the 3.5 eV state in  $^{229}\text{Th}$  and the measurement of its half-life by alpha decay spectroscopy. This exceptionally low energy

state offers the possibility to study the interplay between nuclear and atomic physics and provides a way of observing the nuclear-spin mixing expected to occur for hydrogen-like  $^{229}\text{Th}$  ions circulating in a storage ring. The Committee judged that the experiment had a high level of risk but was sufficiently attractive from the atomic and nuclear physics point of view, with an approach using a mass separated sample not tried before. The Committee showed its concern on the background arising from Rn, but judged the case worth exploring on-line. With this aim **4 shifts** were **recommended** for approval by Research Board.

**INTC-2005-028/P 144 Add.1 (IS398)** *Electron conversion and gamma-gamma measurements complementary to the study of the beta decay of N~Z Kr and Sr nuclei with a Total Absorption Gamma-ray Spectrometer*

The addendum proposes high resolution spectroscopy measurements in the N~Z region of the Sr and Kr nuclei, complementary to those successfully performed by the total absorption technique. The physics case had already been judged compelling, and the total absorption technique has been successfully applied to several nuclei in the region. The Committee found that the need for more detailed high resolution spectroscopy data, only found after the data-taking with the total absorption spectrometer, was fully justified in this case. This information, including level energies and gamma and electron branching ratios, is required in order to unfold the TAGS data and obtain the beta feeding. Therefore **15 shifts** were **recommended** for approval by the Research Board. The Committee stressed that a future programme of measurements with this technique will require more detailed information on the need for high resolution data.

**CERN/INTC-2005-025/P162 Add.2 (IS414)** *Advanced Time-Delayed coincidence studies of  $^{31,32}\text{Mg}$  from the beta-decays of  $^{31,32}\text{Na}$ ; Addendum: Conversion Electron Study to Identify the Deformed  $0^+_2$  State in  $^{30}\text{Mg}$  via its E0 Decay*

This addendum proposes to verify the assignment of the  $0^+_2$  state in  $^{30}\text{Mg}$  by the direct measurement of the E0 decay to the  $0^+_1$  ground state. A test measurement has already been attempted, showing that an improvement of the sensitivity of the setup is required. The physics case was judged appealing as the measurement could shed light on the shape coexistence of this light isotope. Nevertheless the E0 strength is difficult to estimate, and the improvement in background suppression of the new setup was not sufficiently convincing, as some effects including scattering or losses in the windows might not have been taken care of. Therefore the Committee decided not to approve the proposal, but instead support 2 shifts for tests with  $^{96}\text{Zr}$  in order to demonstrate that the experimental technique can set a reasonable limit on the E0.

**INTC-2006-004/P 202** *Diffusive, Structural, Optical, and Electrical Properties of Defects in Semiconductors*

The proposal is a compilation of different experiments investigating important issues in semiconductor physics by means of isotopes produced at ISOLDE. The experiments propose to study (a) anomalous diffusion in II-VI semiconductors, (b) donor energy levels in ZnO, (c) structure of DX centres in II-VI semiconductors, and (d) native defects in Si. The group has the

expertise in the field and is well equipped for the measurements. Although the research topic is of the highest relevance, the Committee thought that the proposal lacks prioritization and is not well focused. Therefore it resolved to **recommend 20 shifts** for approval by the Research Board following the work plan presented in the oral defence of the proposal, namely diffusion studies with  $^{111}\text{Ag}$  and  $^{113}\text{Ag}$ , investigation of donor energy levels in ZnO with  $^{71}\text{As}$ , structure of DX centres with  $^{117}\text{Cd}$  and native defects in Si using  $^{42}\text{K}$ . The proponents are asked to submit a status report after the first year of data-taking detailing the research priorities and a time schedule for the measurements.

#### **INTC-2006-005/P 203** *Mössbauer studies of dilute magnetic semiconductors*

The proposal concentrates on the study of dilute magnetic semiconductors, and in particular Mn-doped ZnO, by means of Mössbauer spectroscopy using  $^{57}\text{Mn}$ . The Committee considered that the proponents have longstanding expertise in the field and have demonstrated the large potential of the Mössbauer technique. The proposal is well focussed on ZnO, with a trend in initiating the exploration of new materials,  $\text{HfO}_2$  being the main priority. The Committee **recommended 20 shifts** for approval by the Research Board.

#### **Status Report INTC-2006-001/SR-004 (IS413)** *High-Precision Mass Measurements of Exotic Nuclei with the Triple-Trap Mass Spectrometer*

The Committee judged the 2005 ISOLTRAP running campaign as very fruitful, and acknowledged the continuous upgrades of the setup. The measurement programme for 2006 involves measurements relevant for the study of halo nuclei, tests of CVC hypothesis and of the isobaric multiplet mass equation, and for the mapping of the mass surface in the medium and heavy regions. The 30 radioactive shifts requested for 2006 involve isotopes which were already included in the initial proposal and are well justified, so the Committee decided to endorse the report and **recommend 30 shifts** for allocation by the Research Board.

#### **Status Report INTC-2006-014/SR-005 (IS415)** *Magnetic moments of Coulomb excited $2^+_{11}$ states for radioactive beams of $^{132,134,136}\text{Te}$ and $^{138}\text{Xe}$ isotopes at REX-ISOLDE*

The status report described the first g-factor measurement carried out at REX-ISOLDE in May 2005 by means of Coulomb excitation of a  $^{138}\text{Xe}$  beam in combination with the transient magnetic field technique in ferromagnetic Gd. The technical difficulties of the measurement were illustrated. One of the main problems arose from the lower REX beam energy (2.8 MeV/u instead of 3.0 MeV/u), which increased the straggling of the beam ions in the thick multilayer target. Several targets need to be optimized for different beam energies for future experiments. Furthermore, proper beam shielding of the particle detector and optimization of the collimator positions at the target chamber need to be accomplished. The Committee had previously judged the physics case and the measurement technique of the highest interest and therefore **recommended** the allocation of **12 shifts** for the measurement with the improved setup. The Committee strongly supports the development of n-rich Te beams for future measurements.

**CERN-INTC-2006-012/P208** *The role of Fe and Ni for s-process nucleosynthesis in the early Universe and for innovative nuclear technologies*

This proposal intends a comprehensive set of measurements of neutron capture cross sections in Fe and Ni isotopes with precisions down to 3%. The experimental cross sections have astrophysical consequences in the weak s-process component related to the element production in massive stars of different mass and metallicity, and impact the abundance patterns in ultra metal poor stars and the overall galactic chemical evolution. The measurements will be performed on 9 metal samples with very high isotopic enrichment.

The Committee judged the physics case very well established, and the accurate (n, $\gamma$ ) measurements at the n\_TOF facility with state-of-the-art detector setups and in a broad energy range of primary importance, although the particular choice of the Fe/Ni was not fully justified. It was stressed that the measurement programme will benefit from second n\_TOF beamline with a shorter-flight path. Although the request of beamtime surpasses a full annual n\_TOF running campaign the Committee decided to **recommend** the proposal for approval of  $1.8 \times 10^{19}$  protons on target.

**CERN-INTC-2006-006/INTC-P-204** *Proposed study of the neutron-neutron interaction at the CERN nTOF facility*

The purpose of this experiment is the measurement with high precision of the neutron-neutron interaction scattering length and the effective range via the reaction  ${}^2\text{H}(n,nn)p$ , with two neutrons in the final state. A kinematically complete study is proposed with incident neutron energy ranging between 30 and 75 MeV and at the specific angles of detection that enhance  $nn$  final-state interaction.

The Committee found the physics case compelling. The expected uncertainties of the order 1% per energy bin, with 18 bins, will certainly improve the 2% error bars from latest experiments. The main concern is the interpretation of the data in order to extract the relevant interaction parameters and the associated systematic errors. The broad E range available at n\_TOF was seen as a clear advantage to achieve consistent results and the possibility of running in parallel mode as very time effective. Therefore the Committee **recommended** the approval of this proposal.

**CERN-INTC-2006-016/INTC-P-209** *Angular distributions in the neutron-induced fission of actinides*

The proposals aims at the measurement of the angular distribution of fission fragments produced in the fission of actinides induced by neutrons. This distribution is not well-known above 10 MeV and it is a key ingredient for the understanding of the fission mechanism, and of significance for nuclear technologies. The Committee judged the experiment of relevance for the understanding of anisotropies in the angular distributions and of the total cross sections previously measured. A total of  $1.5 \times 10^{18}$  protons on target were **recommended** for approval by the Research Board.

## 6. DISCUSSION ON ADDENDA TO P156 AND P191

**CERN-INTC-2006-013/ INTC-P-156 Add. 3** *Coulomb excitation of neutron-rich  $A \sim 140$  nuclei*

The addendum presents an extension of the systematic study of reduced transition probabilities between the ground state and first excited  $2^+$  state in neutron-rich nuclei around  $A=140$  by means of Coulomb excitation, to the more collective  $^{140,148,150}\text{Ba}$  isotopes. The physics case had been previously discussed and the Committee found the addenda a natural continuation of the successful measurement in Cd and Xe isotopes, in order to understand the isospin and neutron pairing dependence of  $B(E2)$  strengths. A total of **15 shifts** were **recommended** for approval by the Research Board for this experiment. The development effort for the Ba beams at REX-ISOLDE and the implementation of the slow extraction from the REX-EBIS are strongly supported. The Collaboration is urged to finalize the data analysis from earlier experiments and publish the results, which will give confidence on the reliability of the extracted  $B(E2)$  values.

**CERN-INTC-2006-007/INTC-P-191 Add.1** *A Study of the  $r$ -Process Path Nuclides,  $^{137,138,139}\text{Sb}$  Using the Enhanced Selectivity of Resonance Ionization Laser Ionization*

The addendum intends the continuation of the investigation of the decay Sb isotopes relevant for the astrophysical  $r$ -process, in order to determine half-lives, delayed neutron branches, and daughter gamma rays. In the initial campaign in 2005 the half-lives of  $^{137}\text{Sb}$  and  $^{138}\text{Sb}$  have been determined and the possibility of extending the measurement to  $^{139}\text{Sb}$  has been investigated. Although at the limit of feasibility for  $^{139}\text{Sb}$ , the Committee judged the experiment of relevance for the understanding of the isotopic abundances around  $A=138$ , and decided to **recommend** the approval of **15 shifts** for the continuation of this study.

## 7. LETTERS OF INTENT

**CERN INTC-2006-008 / INTC-I-063** *Astrophysics Using Post-Accelerated Aluminum Beams at REX-ISOLDE*

This letter of intent addresses the development of short-lived  $^{25}\text{Al}$  and  $^{26\text{m}}\text{Al}$  accelerated beams for the study of key reactions related to the production cycle of  $^{26}\text{Al}$  in the universe, and renews the request for Al beams at ISOLDE. The Committee judged the physics background of the highest importance, and regarded the development of short-lived Al beams as eventually beneficial for the nuclear physics community. The Committee **took note** of the Letter of Intent.

**CERN INTC-2006-009 / INTC-I-064** *BoloSources2006*

The letter of intent describes the need of electron sources for the calibration of large underground bolometers used for dark matter searches within the EDELWEISS and ROSEBUD Collaborations, and requests the collection of  $^{109}\text{Cd}$  and  $^{133}\text{Ba}$  at ISOLDE. Although these

sources are commercially available the Committee understood that the request may be justified by the requirement of low activity, high purity and implantation depth. Therefore the Committee decided to **take note** of the letter of intent and recommended that the local ISOLDE group arrange the practical procedures.

**CERN INTC-2006-015 / INTC-I-065** *Development of the RILIS research laboratory at ISOLDE*

The aim of this letter of intent is the consolidation of the success of the laser ion source, which approaches 2000 hours of operation per year. The main stages are (a) the upgrade and development of the RILIS laser setup with the implementation of solid state lasers replacing the existing Copper Vapour Lasers, (b) the development of new resonance ionization schemes by using a dedicated laser spectroscopy setup and (c) research on improvement of the RILIS selectivity by investigation of new hot cavity materials and by implementation of a so-called laser ion source trap (LIST). The Committee found the proposed developments very timely, **took note** of this letter of intent and showed its strongest support. The INTC would like to thank the Wallenberg foundation for its generous grant that keeps the facility in the forefront of this kind of research.

## **8. CONCLUDING REMARKS**

Jos Engelen acknowledged the excellent work done by Juha Äystö chairing the INTC and his passion for the physics dealt with by the Committee. He introduced and warmly welcomed Mark Huyse who will take over as chairman of the INTC from the next meeting on, and he asked that the continuity between the outgoing and incoming chairmen be assured.

## **9. DATES OF NEXT MEETINGS**

The next INTC meeting will take place on **Monday 22 and Tuesday 23 May 2006**. The deadline for submission of proposals is **Friday 21 April 2006**.

The dates of the remaining INTC meeting in 2006 are 30 and 31 October 2006.

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