

**Minutes of the PANS-Workshop  
Technische Universität Dresden  
Dresden**

**November 8 - 9, 2002**

**AGENDA**

**November 8, 2002**

14:00 Opening of the workshop

1. First steps in NUPEX (H.Oberhummer)
2. CD-ROM project: current status (A.Pascolini)
3. Presentation of posters to promote Physics in schools and to the public (A. Macdonald)
4. The energy project: current status (H. Leeb)

19:00 Departure for dinner

**November 9, 2002**

9:00: Continuation of workshop

5. PANS-INFO: current status and future priorities (R. Reyerros-Bienert)
6. Future of PANS:
  - a. reports on discussion with Busquin (C. Leclercq-Willain) and on FINUPHY meeting in Trento (S. Körner, J. Deutsch)
  - b. future direction of activities
  - c. future funding strategies
7. PANS within the Integrated Infrastructure Initiatives of FP6 (Ch. Bargholtz)

12:30 Lunch at Mensa Bergstraße

13:30 Continuation

8. Short report on II Radiation Education Symposium, Debrecen and on Leo Szilard Nuclear Competition in Hungary (S. Ujvari)
9. various items

15:00 End of the workshop

Meeting of the board

Meeting of NUPEX members

**Participants : attached file :participantsdresden.doc**

**Friday, November 8, 2002**

14.00      **Opening and welcome** by Christoph Bargholz (chair)  
“Where is PANS now ? Where is PANS going to move ?”

**Welcome at the Technische Universität Dresden** , Faculty of Mathematics and Sciences by Hartwig Freiesleben (host)  
**Technical announcements and information** on the situation of the city during the flood

Hartwig gives information on the flood (more than 9 meters increase for the water level of the Elbe river) that damages the city 3 months ago. He shows some (incredible) views of what was the situation and tells us about the damages in the old part of the city for the prestigious buildings Museum, Opera  
....

### **1. First steps in NUPEX (Heinz Oberhammer)**

- **Challenges of NUPEX**

Public awareness

Role of new media (difficulty to use internet for the public)

Special case of nuclear science (negative image in the public, and for children 16-18, they see the risks and not the benefits)

We have to convince the public and not the political people, so the first goal is to go to school to inform the young generation.

- NUPEX : a web-based science communication system for nuclear science and its applications <http://www.nupex.org>

**e-learning company : bitmedia** (implementation of Sito Cubix = collaboration, communication and information portal of bitmedia including an e -learning system and a web-based tools for project development) cf: minutes of the Vienna Pans meeting

- For each country : network of teachers involved in the job, curriculum for schools, questionnaire on their interests, set-up of web-contents, collection of web-based materials and writing of the master English modules , translation in the different languages, dissemination and contact with Ministry of education,....)

- Budget 379 K€for 24 months , 11 Institutions.

- Start 1<sup>st</sup> quarter of 2003, next meeting in Vienna, January 2003

Contact with teachers in the different countries, with people active in teachers training. Necessity to have a responsible (small) group of teachers for the different countries. Reference to the teachers network constructed by Christiane Leclercq-Willain, contact with teachers in Poland to have a strong responsible group by Ludwig Dobrzynski, .... Kick-off meeting in Vienna, January 2003, Information portal of Bitmedia: Clemens Widhalm <a href="mailto:Clemens@widhalm.co.at">Clemens@widhalm.co.at</a> and <a href="http://www.bitmedia.cc">http://www.bitmedia.cc</a> For NUPEX: <a href="http://www.nupex.org">http://www.nupex.org</a>
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## 2. CD-ROM project: current status (AlexandroPascolini)

Need sponsor to produce a prototype (including for example a full chapter)

The CD ROM

- will contain 4 chapters ( General, Cosmology-astrophysics, environment's effects, applications), each part with video, historical aspects, games and exercises
- will be produced in 5 languages
- target group is 14 years students, and general public

20 K€ are needed to produce the prototype

If money is available for the prototype, we can go further to find sponsoring to produce a perfectly made CD-ROM to be distribute in different countries (200K€ to go further). To have a CD-ROM of good quality is much expensive than to create a web site.

It is asked to Alexandro Pascolini to write a few pages with pictures to explain the full project. This will serve for the PANS proposal and to get new "fresh" money.

## 3. Presentation of posters to promote Physics in schools and to the public (Averil Macdonald)

Presentation by Averil of three types of posters

- IOP produces posters for schools to change the perspective of physics, to draw attention to physics problems and realisations. Simple messages and images, information on the back for teachers who are very pleasant with such posters.
- Posters more complex with three levels of information (example: Physics and the Universe, Physics and medicine, physics and technology,...)
- Posters to promote the Physics Department in an University (example: Surrey, ...) or to inform on the studies in Physics in one University.

### Discussion

One must have a **basic concept** of the poster to communicate with the **designer** who will propose a draft according to this basic concept, and after dialogue and discussion between both partners will produce the final version.

The publicity budget of the Physics Department of some Universities in England is about 25000 £/year; IOP has a special budget to promote physics in schools. In UK where the experience is done, some people say that the Department that have done this publicity get two times more students in the last years than before! It is however very difficult to see the link between this initiative and the overall increase of the number of students in physics.

The success of this initiative is also in the fact that teachers are asking again every year to have posters.

Estimation is about 3 K€ to design a poster and to have the text in different languages.

It would be interesting to forward the idea to the National Physical Societies and to the physics Department of our Universities.

IOP can spread the posters but one has to inquire about royalties (to the designers).

Copies of existing posters are available on request to Averil (text can be translated and the images can be sent by e-mail) [a.m.macdonald@reading.ac.uk](mailto:a.m.macdonald@reading.ac.uk)

#### **4. The energy project: current status (Helmut Leeb)**

Reported to Saturday morning

##### **Extra reports**

- **On the book (Ray Mackintosh)**

A Czech version will be distributed in January 12003

An Hungarian is in progress

A Swedish version for 200 copies

A Dutch version for 3000 copies

A Portuguese version is on the way

For a version in Germany, one is optimistic

For the French one, no progress, no publisher

750 copies have been sold in UK

New (UK) copies in english by bringing back from John Hopkins University Press (available copies at cheap prize)

Canopus agrees for a new edition of the book but he needs to make it economical. So we have to explore the market (Australian, New Zealand, South Africa,...but these countries are at different levels of educational and economical aspects)

To bring back copies from John Hopkins, to have a new edition in English, to progress in the translation in different languages.

It is asked to Ray Mackintosh to write a few pages to summarise the situation and to argue to get "new" money.

- **A book in Italian (Alexandro Pasolini)**

"Doll'atomo al Cosma" for 8-12 years children. They can read it by themselves

It contains simple experiments that the young can do with the teacher.

It is supported by INFN (20000copies - 13 €- 148 pages)

- **Book on "Radiation and Health" (Finn Ingebretsen)**

Written by T.Henriksen and H. David Maillie

(ISBN 0 415 27162 2 pbk and 0 415 27 161 4 hbk)

**Saturday, November 9, 2002**

9:00: Continuation of workshop

## **5. PANS-INFO: current status and future priorities (Rafael Reyeros-Bienert)**

<http://www.pans-info.org>

site unfinished (program web-site works as a local site)  
the idea is that each partner could take it on his own server (not possible presently)  
lack of money, lack of human resources to work on the site  
no modifications since the PANS Vienna meeting  
no solutions for update, maintenance and support  
no monitoring applications

for the future:

first to get money (10 K€) to have a prototype  
(public information on nuclear power and nuclear physics, target groups will be inform on the best, no place similar to this site, no better way to communicate with bread public, cheaper way to do it, to collect information for people, teachers and students,...)  
arguments are in the statistics: 24,405 files, 14,439 pages, 472 visits in January , without doing any communication to promote the site)

### **Discussion**

Each country “host” is responsible of the content. Each author must go to the host before; he puts the content on the machine but the host is responsible to put it on the web-site.  
One can using links to promote the book, the CD-ROM, etc ....

The members of the meeting proceed with a discussion on the lack of reconnaissance and of consideration for all activities of public awareness (not only concerning a web-site) from the academic world. So it is difficult for an academic people to do the job; it will be easier to have for example 6 months of salary for external people to do it.

Some universities (Ex: Dresden, Brussels,..) have a public relation Department .  
However the chances to appreciate this kind of job at the University is **increasing** (coming) , because it becomes absolutely necessary to attract more students.

Christoph proposes ( when we get the money ) to contact each member of PANS to have 2 or 3 pages on a specific topics; to have only one site to collect information on nuclear physics will be also a credit for our colleagues; The content is first on the responsibility of PANS.  
The members present are requested to volunteer for contributions and propose a tentative title.

To be recognised, we have to speak about PANS as often as possible ; for example to our colleagues at Workshops and Conferences ( Oslo meeting in May, 5<sup>th</sup> Balkan meeting in August,..).

To go further with the web-site, one needs the content. Rafael is asked to demonstrate in a few pages the interests by giving arguments and by producing a prototype for a demonstration.  
This will help to get money .

## 6. Future of PANS:

- **report on discussion with P. Busquin (European Commissar DG Research) (Christiane Leclercq-Willain)**

see attached documents : PANS 6EC.doc and EC address.doc

### Discussion

About “prizes” at EPS :one for particle physics, another for public awareness for general physics.

How to support such prizes after EC, for a long term?

Dialogue on “energy” and opportunity to meet Mrs Loyola de Palacio : one has to see the problem from the point of view of the public and not of the scientists .

A meeting with Mrs de Palacio is not wished for the moment.

A big conference (8000 participants) will be held on November 11 to 13, at Brussels to discuss and present the 2002-2006 European Framework Program. E C will finalise the rules and decide of the calls.

“Women in Science” is discussed and for the next meeting it is proposed to invite the E C person in charge of this program ( Nicole Dewandre).

Once the work program has been agreed (a matter of weeks) it is suggested to organise a second meeting with PANS members and people directly concerned at EC. Waiting for a second meeting at E C with people directly involved in Science and Society or / and in Integrated Infrastructure Initiatives ( a part of PANS could be in I3NS in the future....) to clarify the best place for PANS in the 2002-2006 F P . It is also asked to Christiane to try to invite Nicole Dewandre to the next PANS meeting on the program “Women in Science “.

- **Mail of Rainer Gerhold (E C Science and Society) to Jules Deutsch**

The science and Society program is broader than what was the raising public awareness in the 5<sup>th</sup> F P where PANS and also NUPEX received funding. They are looking to have measures to promote enhancing of science teaching in schools , to continue the European Science week, looking for projects or clusters of projects. They will be looking carefully to another issue : the balance between education and entertainment.

Once the work program has been agreed (a matter of weeks) it is suggested to re-discuss the issue for PANS with the colleagues concerned in E C and in PANS;

- **Report on FINUPHY meeting in Trento (Sissi Körner)**

FINUPHY is preparing a glossy booklet to advertise nuclear physics in Europe. Visit will be organised of research infrastructures (large scale facilities: GANIL and GSI and a smaller laboratory in an University : Louvain la Neuve ).

Preparation of the new long range plan of NuPECC  
Trento-FINUPHY meeting

- access to large facilities
- join research project
- networking

The proposal I3NS for the first year is preparing (E C call in December- probable deadline March 15, 2003) Room is open for entering projects during the running of the network. Possibility for PANS to come later during the running years of I3NS.

#### 4. The energy project: current status (Helmut Leeb)

##### **IAEA participation to meeting of Science officials on “Managing Nuclear Knowledge “**

- More than 80 Delegates from 45 Member States
- Goal: Identify the scope and the nature of the problem of Managing Nuclear Knowledge, to understand how Member States are addressing this problem.
- Problem: There is a world-wide ageing problem of craftsmen and engineers in both university and industry
- Loss of Knowledge of specific techniques

Preserve existing knowledge in nuclear science at all levels: basic nuclear science, technology and engineering and operation

50% working in nuclear technologies are about 50 years old, sever problem to maintain the nuclear industry .

It is a world-wide problem except in Korea that has a lot of young people in nuclear science . Urgent action is needed to sustain the present level of technology , specialist knowledge, level of documentation

Young generation of nuclear scientists: April 2002 in Korea, Toronto 2004

A “World of opportunities”

International Young nuclear Congress IYNC : [www.iync.org](http://www.iync.org)

##### **TARGET: academic and students high school students and teachers**

Series of posters on arguments related to the energy problem

Scope: Attract the interest of the student

Information content minimal but clear hint to a well prepared Web-Site which provides information

- **Posters** for Classroom • Lectures on energy problems - part of curricula- - joined events between Universities
- **Information** of colleagues - nuclear physicists- scientists in general

##### **Procedure:**

Common graphics outline – adapted text to address the problem taking into account the specifics of the given language and country

##### **Finances:**

Posters affecting local students – local sponsoring may work but requires to have certain advertisements on the posters

## Posters topics:

Radioactivity in nature, Applications (medicine, industry), nuclear waste, fission-fusion, from sun towards our control,...

Transmutation of nuclear waste: [www.ph.surrey.ac.uk/npg/transmutation](http://www.ph.surrey.ac.uk/npg/transmutation)

### **The Information on the ENERGY ISSUE must be part of an overall strategy of PANS**

#### **Synergy effects must be used:**

PANS-Info: Energy Site

NUPEX: high quality info on the energy issues

Expertise: Student Workshops

Public Presentations (Adult educational, institutions, ...)

#### **Information on:**

- Euro-Forum activities for high school students ; 2003 next Physics on stage
- Belgian higher Educational network (mainly for engineers)

In France , industry prefers to prepare their specialists themselves (see B. Frois document)

**Attached file:** lisbon JD.pdf and presentation021109.ppt

## **7. PANS within the Integrated Infrastructure Initiatives of FP6 (Christoph Bargholtz)**

PANS is not part of the structure I3NS.

“ a proposal to enhance the role of research infrastructures in Europe in the dissemination of front-line accelerator based research”

### **Extra points:**

#### **Hungarian initiative : “Leo Szilard competition” ( Sandor Ujvari)**

Starts in 1998, 400 students took part to the competition, teachers ask to continue so one has 5 years history of the competition.

Send problems to the schools, the teachers correct the problems

The best (60% solved the problems) go the final competition (solution of 10 more theoretical problems in 2 hours, one computer assisted problem in 1 hour, one experimental problem in 2 hours). The eventual extension of this initiative to the European level was not discussed this time.

More details: [ujvari@mail.datatrans.hu](mailto:ujvari@mail.datatrans.hu)

## **Report on the “Radiation Education Symposium” ” ( Sandor Ujvari)**

Most of the participants were from Europe, Jules Deutsch reported on PANS. Hungarian young physicists organised a discussion on nuclear energy with young people during a Jazz festival. The most usual question was on risks, catastrophes, bombs, ....

**Exhibition in Debrecen:** 5000 registered visitors, 50 researchers and workers are involved in the presentation.

**17<sup>th</sup> European Conference :** report on PANS by Heinz Oberhummer, publication in Nucl Physics A

**18<sup>th</sup> European Conference: September 2004 in Dresden:** New trends in Nuclear Physics technologies and applications.

## **5<sup>th</sup> General Conference of the Balkan Physical Union**

**Belgian Physical Society:** Training centre, Physics on stage 2002.

**European Engineers network** (curricula of the different Universities)

**Creation of a “Nuclear University”:** with engineers essentially; industry want to teach their people by themselves.

Regular organisation of the Accelerators schools in different countries in Europe.

## CONCLUSIONS

Definition of a list of interests:

NUPEX

CD-ROM

PANS-info : content +connection with material for posters

Posters

Women in Science

Initiative of Prizes

Students workshops → dialogue

European schools for undergraduate students and industrial research

Summer schools of communication for scientists

Exchange platform for adult education

**First priority is PANS info** to work

We need a pilot web-site with good quality of content , to be criticism by qualified people.

FINUPHY → RIB, Energy project; Nuclear astrophysics are available.

A group is in charge of the realisation, a list of authors circulates for the different topics.

**For Posters :**

Concept of the image, text according to the topics, the languages , the countries,...

Printing and realisation: local realisation with local financial support.

Local sponsor, and local printing company, proof reading....is better.

**For “Women in Science”**

Not specific to nuclear physics, PANS job in this issue would be to raise vocation in nuclear physics

CD-ROM can include materials on life of women in science.

**Dialogue** Summer schools with a programme that must be at the European level.

To interact wit the broad public we must have a mediator (scientific journalist)

- **FINANCIAL Strategy**
- **To prepare a proposal for the 2002-2006 FP**
- Alternative sources of funding ( NuPECC, Large Nuclear Physics Laboratories, other public institutions, industry,....)National sources : research councils, Foundation,...
- NuPECC will support for going further with the book
- Laboratories have their own public programmes so they are not favourable;
- EPS for marketing PANS in news, to create a poster.
- Heraeus foundation in Germany ( Hartwig Freiesleben will contact this foundation)
- ESF, Euro Science,...

**Next meeting : May 9-10, 2003 at Bergen .**

# Participants

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