法規名稱：PROPOSALS FOR SCIENTIFIC COOPERATION 1991 [BETWEEN NATIONAL SCIENCE COUNCIL AND FRENCH INSTITUTE IN TAIPEI]

簽訂日期：民國 80 年 02 月 13 日

生效日期：民國 80 年 02 月 13 日

February 13,1991

Mr. Hou Ching-Piao

Vice President

National Science Council

106, Hoping east Rd., sec.2,

Taipei

N/ref. CL 16/91/PM/tl

Dear Mr. Vice-President,

Please find enclosed herewith the proposals of the French side concerning the scientific cooperation program between our two c-ountries for the year 1991.

I hope that they will meet the agreement of the National Science Council.

Thanking you in advance for your answer. I remain, Dear Mr. Vic-e-President,

Yours Sincerely,

[Signed]

Pierre MALLET

Deputy Director

Proposals for Scientific Cooperation 1991

I Short duration grants

They will concern the usual fields of cooperation: applied m-athematics, geology, medical sciences, oceanography, unclear sciences, biotechnologies.

a. Applied mathematics

INRIA (National Institute for Research in Computer Science and Automatisms) will remain the scientific coordinator of the French side (Prof. Alain Bensoussan and Olivier Piron-neau).

One grant has been included in this field in the scientif-

ic cooperation programm between the two countries. The duration, the research programm, the dates of the stay will be conveyed later to NSC.

b. Geology

Professor J. Angelier of Paris VI University will remain the scientific coordinator of the French side.

Mr. Horng Chrong-shern will undertake a research study for six months beginning the 18th of February 1991 at the CNRS "Laboratorire des Faibles Radioactivites" under the supervision of Professor Carlo Laj. This scholarship was granted under the 1990 program.

There will not be any another grant this year in this field, most of the cooperation in geology being shifted to oceanography.

c. Medical sciences

Professeur Pierre TRAN Ba Huy will remain the French coordinator.

- one grant of eight months (including a two month language training program) will be awarded.
- requirement: the candidate will be specialized in other-rhyno-laringology and have already practiced in that field.
- date of the stay: 1st November 1991-20 June 1992. the period of the stay could be extended for another period of six months (1st July-31st Dec. 1992).
- language training: the candidate will follow a five month course at the Alliance Francaise of Taipei before his departure and a two month intensive training in France. (1st Nov. -31st Dec. 91).

d. Nuclear Sciences

CEA (Atomic Energy Committee, Mr. Billecocq) will be the French coordinator.

One grant will be awarded in 1991.

The duration, the research program and institution, the dates of the stay, will be conveyed later to NSC.

e. Biotechnologies

CNRS (MM. Paoletti and Jordan)
will be scientific coordinators.
One bilateral seminar and joint evaluation missions will take place in 1991 (cf.infra) which should lead to the implementation of a cooperation program for the years to come.
No decision will be taken concerning the grants before knowing the requirements of both parties.

f. Oceanography

IFREMER (Dr. Yves Henocque) will remain the scientific coordinator.
Four grants will be given this year:

- one of 3 months in the field of oceano-chemistry (Laboratory of CNRS, Bordeaux);
- One of 5 months in the field of sedimentology (Laboratoire of CNRS, Perpignan);
- Two of 3 months in the field of oceano-physics (Laboratoire of CNRS, Toulouse and Paris).

The selected candidates must be approved by the Chinese coordinators of the cooperation program in oceanography who are:

- Prof. K.K. Liu From Academic Sinica for the first two grants;
- Prof. C.T. Liu from National Taiwan University for the two grants in oceano-physics.

They will not undertake any language training, the duration of their stay in France being too short and the French scientists who will welcome them being able to work in English.
The exact topic of their research and the dates of their stay in France will be communicated later to NSC.
General conditions:

- During their stay in France the candidates will receive a monthly allowance of 5000 FF (apart from those in oce-

anography who will receive a monthly allowance of 8000 FF.)

- They will get a fully comprehensive insurance (securite sociale);
- They must be under the age of 35 (except in the oceanography field).

Ⅱ Seminars

Three bilateral seminars will be organized in 1991.

a. One in biotechnology on "Virology and Endocrinology of Fish and their applications to aquaculture" wil be held in Taipei (late April) in collaboration withe Academia Sinica and universities, with the participation of at least 7 French scientists (CNRS,IFREMER, others institutions).

b. One in mathematics organized by Academia Sinica which will be held in Taipei (14-18 October) on "Combinatorics and Computing" with the collaboration of the CNRS and the universities Paris Ⅶ and Paris-Sud. Six French mathematicians will attend this seminar.

c. One in mathematics organized in Paris by INRIA. The dates, the topic and the participants have not yet been fixed. These informations will be conveyed later to CNS.

According to our general understanding, the organization of the seminars will be the responsibility of the inviting side and the travel expenses at the charge of the invited scientists.

Ⅲ Missions

Seven French scientists will come to Taipei at the invitation of NSC for a period of one to two weeks:

- four in biotechnology (evaluation mission);
- one in applied mathematics:
- one in geology;
- one in medicine.

The name, the dates of arrival and the duration of stay of these scientists will be communicated later to NSC.

Ⅳ Invitation

The French side will invite to France, for one week, M.Hou C-hing-Piao, Vice-President of the National Science Council.

Scientific Program 1991

SUMMARY

1 Short duration scholarships: 7

- Applied mathematics: 1 (INRIA)
- Medical sciences: 1 (Hopi-al Lariboisiere)
- Oceanography: 4 (CNRS, IFREMER)
- Nuclear sciences: 1 (CEA)

2 Seminars: 3

- Mathematics: 2 (one in Taipei, one in Paris)
- biotechnologies: 1 (in Taipei)

3 Missions: 7

- Biotechnologies : 4
- Mathematics : 1
- Geology : 1
- Medecine : 1

4 Invitation: 1

****

March 12,1991

Mrs. Cynthia T. Lee

National Science Council

N/ref. CL 29/91/PM/tl

Dear Ms. Lee,

Referring to my letter n°16/91 dated February 13, please find hereunder the complementary information concerning the grants of the Sino-French scientific program for 1991.

1 Applied mathematics. Short duration grant

The candidate must have the equivalent of a Master of Sciences in Applied Mathematics and Computer Sciences. He must know C, UNIX and have some knowledge of COMPUTER VISION.

His field of research will be: "Adaptive analysis of a stereo pair from a priori given 3-D geometric model of a scene", (a

more detailed note on the research subject is joined herewith)
.
His field of research will be: "Adaptive analysis of a stereo pair from a priori given 3-D geometric model of a scene", (a more detailed note on the research subject is joined herewith)
.
This training will last eight months at INRIA, starting from the 1st of November 1991, under the supervision of professor Andre Gagalowicz. The knowledge of French language is not compulsory.

2 Nuclear Sciences. Short duration grant

The applicant must have a BA or MA in nuclear engineering and several years of experience in the unclear fuels field.
The scope of the training in France will be:

- to familiarize the candidate with the French R & D in fuel design, manufacturing and testing;
- undertake research in two related fields:
  - qualification of a new fuel assembly in his own country, either at the level of the utility, and/or at the level of the regulatory atomy body;
  - methodology for the establishment of a fuel fabrication facility in his own country.

French language is not a prerequisite. The training session will take place in concerned labs and industrial firms in English Language. Nevertheless a minimum amount of French language knowledge should be acquired before departure in order to make daily life in France more confortable.
The training period will last eight months, starting from the 1st of November 1991. If required by NSC, an intensive French language course would take place in France during the first two months (1st Nov. -31st Dec. 1991).

I remain, dear Ms.Lee

Yours sincerely,
[Signed]
Pierre MALLET

Deputy Director

RESEARCE SUBJECT

TITLE: Adaptive analysis of a stereo pair from a priori given 3-D geometric model of a scene.

This subject is tightly related to the main research of SYNTIM project directed by A. Cagalowicz. This project consists of t-he creation of a feedback loop between computer vision and co-mputer graphics through generic application which is the synt-hesis of a "real" 3-D office. We propose the following proced-ure to fullfil this application we analysis a 3D office using two cameras on an horizontal plane in a stereo position, that could be mounted on a robot head. The analysis phase has to p-roduce a synthetiable model of the scene. Such a model consis-ts of two parts:

- a geometric part describing all the objects of the scene us-ing a polyhedral approximation, but also the location and e-xtent of light sources (described using planar facets also!) .
- a photometric part describing the reflectance properties of the objects (faces) but also the emittance properties of the light sources.

It is then possible, to develop a synthesis algorithm, using the obtained model as input, in order to produce an image (or astereo pair) of the scene related to the same scene/camera p-osition. The idea is to compare the synthesized image(s) with the real image output of the cameras, visually and numerically in order to improve the model which in its turn requires the adaptation of the analysis and synthesis techniques to minimi-ze the crror between the two types of images.

The crucial part of this approach is the production of synthe-tisable models. After three years of research in our laborato-ry, we partially solved the problem of the computation of the geometrical part of the model. We now start the analysis of t-he photometrical part of the model.

The solution of the geometrical interpretation is obtained th-

rough the use of a world model that we compare to the computed geometry of the scene. This comparison provides a displacement between the world model coordinate system and the scene coordinate system which minimizes the mismatch between faces of both models.

SUBJECT:

Starting from the measure of this displacement, we want now to develop a supervised and adaptive analysis technique, the control of the analysis task being performed through the use of the world model and the world-to-scene displacement which infers the geometrical interpretation of the scene observed by the two cameras. Model controlled segmentation, region matching and stereo algorithms have to be produced. As the displacement meansured gives an idea of the projection of the various faces of the objects seen by the cameras on the two image planes, we can search, based on the two original images, homogeneous regions on the vicinity of what the world model proposes and then enhance the original segmentations, regions matchings and 3-D facet reconstructions (stereo algorithm) obtained by the initial approach.