

SOCIETÀ ITALIANA DI FISICA

ATTI DI CONFERENZE PROCEEDINGS

4th Workshop

A2-26

Italian Research on Antarctic Atmosphere

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Porano, 21-23 October 1991

IST. EL. INF.
BIBLIOTECA

Fos. A2-26

EDITRICE COMPOSITORI · BOLOGNA

ITALIAN PHYSICAL SOCIETY

CONFERENCE PROCEEDINGS

VOLUME 35

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Villa Paolina - Istituto Agroselvicoltura, CNR



Italian Physical Society
Bologna - Italy

SOUTH POLE

A PROGRESS REPORT ON THE ITALIAN SYSTEM FOR ANTARCTIC DATA EXCHANGE

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ABSTRACT

Phase 1 of the project concerning the Italian Antarctica Data Exchange System (South Pole project) is close to an end. Soon a Directory of the available Antarctica data will be accessible via a computer network. Some data concerning the Italian research in Antarctica and a short description of the global project for data exchange are reported in this paper.

1.- Introduction

The preliminary phase of the Italian Antarctica Research Program (PNRA) came after 5 years to an end. A new bill to regulate the Italian research in Antarctica was passed by the Government and a 5 year budget was approved.

It was therefore believed to be useful to establish a system capable to control the output of the various research teams and to release to the scientific community the data collected.

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This system was called the South-Pole system (1, 2, 3) and consists of a "federation" of data-banks (one for each scientific field) linked together via a computer network accessible to the national and to the international communities.

The first step of the project was to investigate the different research topics, to check the data already collected and to set the scientific goals.

Results of this investigation were put into the "South-Pole Directory", which summarizes the result of the efforts of the first 5 years of the Italian presence in Antarctica.

2.- The South-Pole Directory

All the groups who had the opportunity to plan or carry out research in Antarctica by assignment of the PNRA were demanded to fill a form on their research. The informations requested were a) the description of the research, b) the list of the papers published on the subject and c) the quality and availability of the data.

The informations were then processed and a data-base according to the Data Interchange Format structure was established (NSSDC Rep. 90-27, 199.0). It was therefore possible to insert the South-Pole Directory as a part of the International Network Directory (ESA/P.I.D. software) via the ESA center (ESRIN) in Frascati.

The direct compatibility with the other international systems (e.g. the IGBP) was therefore assured.

3.- Information and Statistics

The IEI/CNR in Pisa, which took care of the data entry and of the information processing, carried out the statistic evaluation of the data: the results are shown in fig 1a and b and are briefly summarized here.

One hundred eighty two research groups which were part of the Antarctica project during the first 5 years of the PNRA were demanded to fill their file for the South-Pole Directory.

Fig 1 a. shows the percentage of the distribution of the groups by the different PNRA research fields: the largest contribution to the Italian research in Antarctica was given by Earth Science, this was recognized by the new bill when the Scientific Committee was defined.

In the early stage the answers to the inquiry were only 77 (the percentage is shown in Fig 2 a), but the entries for the Directory rose to 100 after a direct contact with the leaders of the various groups was established.

This result is considered highly positive since:

- 1) non all the groups had already actively been involved in Antarctica
- 2) indifference -and sometimes even hostility- must be considered normal in early stages of a new project; actually unsolicited files, with the request to be enclosed in the Directory, continue to arrive now that the Directory almost completed.

Contacts with the ESA Group in Frascati gave allowed to enter the International Network Directory.

A joint team of CNR and ENEA research workers tested the files adequacy to the ESA/P.I.D. software and to the data file-entry.

The Directory is expected to be included into the SPAN network by the end of April 1992. As soon as the goal is reached the scientific community will be notified.

4.- Future Development

As already mentioned (1,2), there is also a phase 2 to the South Pole project which aims to establish a system of Antarctic field-data-bases.

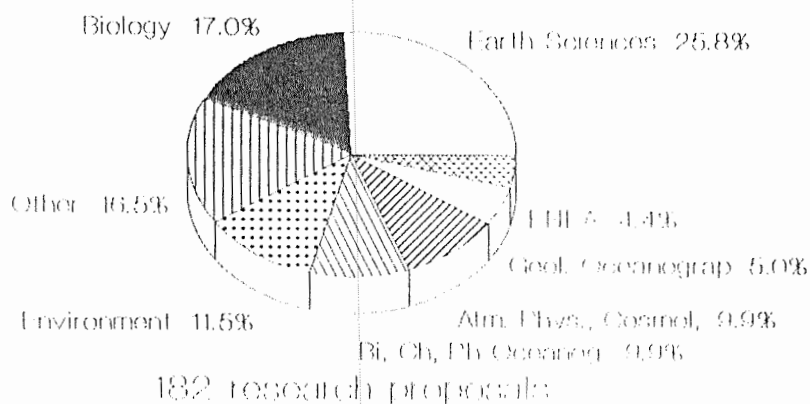
This second phase is underway and the research groups were invited to apply to become Resident-data-base Centers or Data-user-support centers.

In fact, the global scheme of the South-Pole project (Fig 2) allows the user to obtain either the data or the assistance in the data handling.

The plan is, if the PNRA components (ENEA, CNR, Universities,...) will continue to support this ENEA/CNR joint project, to have the complete South-Pole System

Fig. 1 a

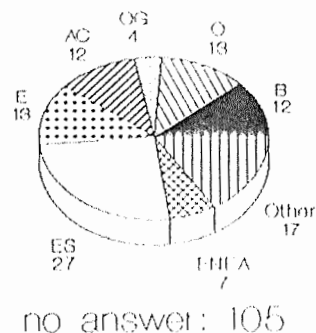
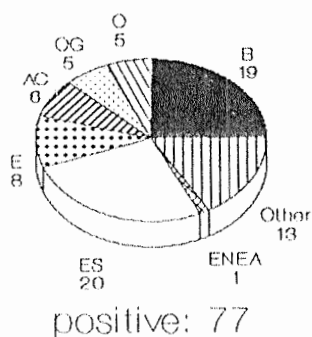
South-Pole Directory % research fields



IEI/CNR data

Fig. 1 b

South-Pole Directory Answer analysis (first answers)



B: biology ES: earth sciences
E: environment AC: atmos., cosmol.
O: bi, ch, ph ocean. OG: geol. oceanog.

IEI/CNR data

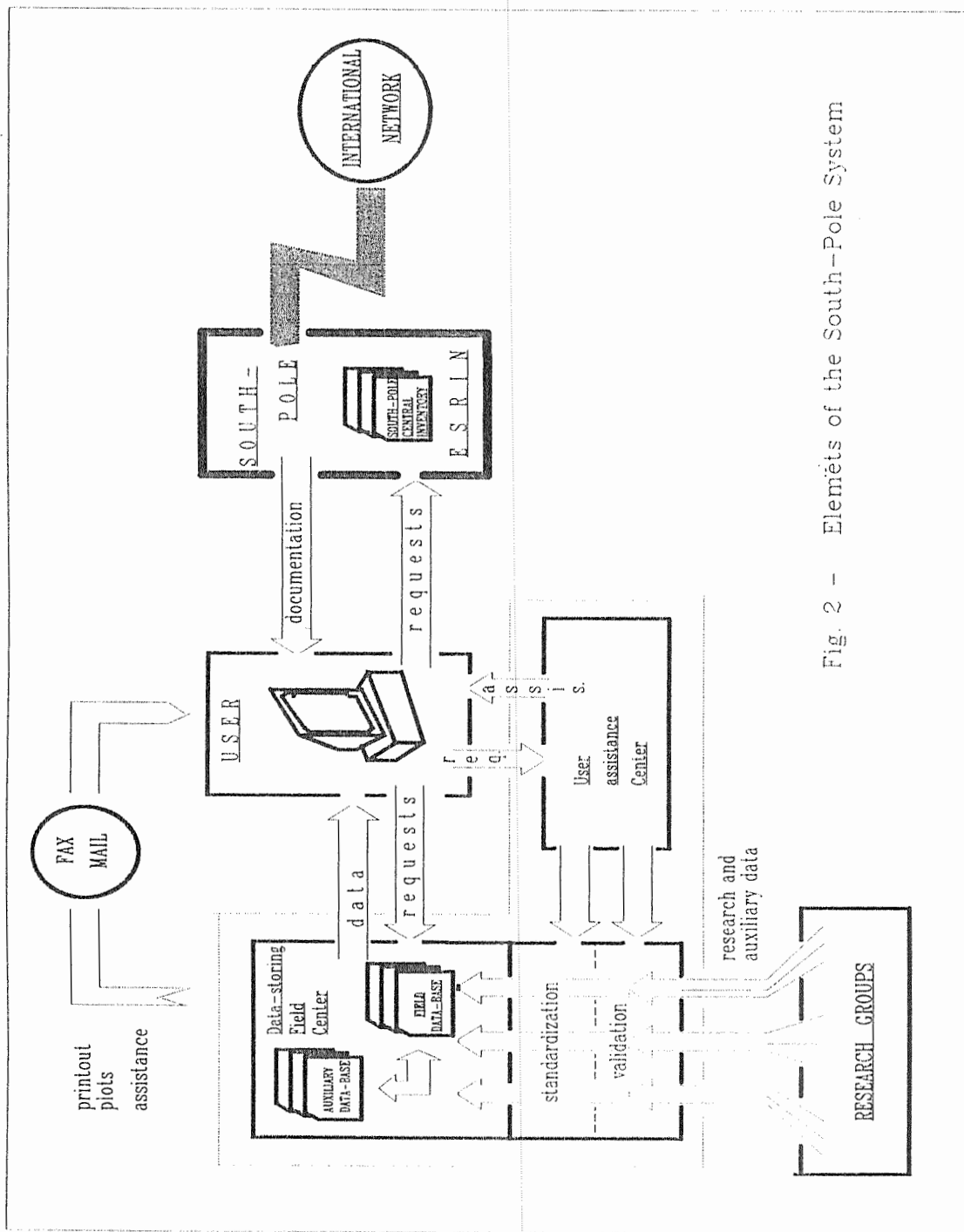


Fig. 2 - Elements of the South-Pole System

implemented by the end of 1995.

5.- International awareness

It is worthwhile to point out that Italy's project on the data-base-system has anticipated similar efforts by other Countries.

The interest on the project and on its advance is often shown in the International Meetings and by direct contacts. The International Antarctic Center (IAC) in Christchurch (NZ) has, for example, demanded a South-Pole team member to give a series of talks to illustrate the outline and the present status of the project. The IAC itself is planning to establish a similar system on an international base.

ACKNOWLEDGEMENTS

We hope that neither internal competition among the members of PNRA, nor resistance by the research groups to help establish the field data bases will hinder the success of the global project. The South-Pole team, while thanking the research groups for completing the information files, asks the Antarctic scientific community to collaborate actively to this second phase so decisive to the realization of the project. Lack of support will damage what we believe would represent the PNRA nationally and internationally.

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