

**BULGARIAN ACADEMY OF SCIENCES**

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To the Secretariat of  
SCAR

29 November, 2005

The Bulgarian Academy of Sciences, as an organization adhering to ICSU, that represents the scientific community in Bulgaria is herewith submitting the following

**Application for full membership of Bulgaria to SCAR****Introduction**

Bulgaria is presently an Associate Member of the Scientific Committee on Antarctic Research (SCAR) since March 5, 1995 and the National Committee of Antarctic Research was established to communicate with SCAR in the same year. The Committee is working very closely with the Bulgarian Antarctic Institute- National Operator of the Bulgarian Antarctic Program.

The Bulgarian Antarctic Institute and the National Committee of Antarctic Research has organized a series of workshops and symposia over the past 10 years to present research activities by Bulgarian scientists to a broader audience and by invited foreign scientists to report on key areas of research in the polar regions. These activities have proved to be highly encouraging and have resulted in a number of joint research projects in diverse fields and categories.

**A brief history of the Bulgarian Antarctic activities**

Bulgaria started its polar activities in Antarctica as early as 1967- 1969, when two Bulgarian meteorologists took part in the Soviet Antarctic Expeditions. In the

austral summer season of 1987-1988 six Bulgarian scientists participated in joint projects with the British Antarctic Survey and the Soviet Institute for Antarctic and Arctic Research. This Bulgarian program was aimed at gathering valuable experience both in carrying out scientific research and the organization of the logistics in Antarctica. During this Antarctic season, a refuge was established on Livingston Island (South Shetland Islands) on a spot located on the northeast side of the South Bay.

In the period between 1993 and the year 2005, Bulgaria organized twelve successive Antarctic campaigns. A summer base named “St. Kliment Ohridski” was established that is able to accommodate a total staff of 15 persons, offer normal work conditions and could be used permanently if necessary.

### **Organization of the National Antarctic Program**

The Bulgarian Antarctic institute is the National operator of the Bulgarian Antarctic activities. The Institute organizes annual Antarctic campaigns and operates the Bulgarian Antarctic base “St. Kliment Ohridski”. A Vice-Minister of Foreign Affairs represents the Bulgarian Government on the Executive Council of the Institute. Antarctic activities are planned by the Executive Council on recommendation by the Scientific Board of the Institute. The National Antarctic Program is guided and financed by the Ministry of Foreign Affairs for its logistic part and by the Ministry of Education and Science and Ministry of Environment and Waters for its scientific part. The Bulgarian Antarctic activities are under the aegis of the President of the Republic of Bulgaria.

The scientific part of the Program was implemented by scientific teams, provided with contracts, approved by the Antarctic expert commission at the Ministry of Education and Science. The main research topics are in the field of Earth sciences (geology, geophysics, physics, glaciology, geomorphology, meteorology, cartography), Life sciences (zoology, botany, ecology) and Human medicine. Research work is implemented by means of 3-years projects undertaken by Academic and University based scientists. Emphasis is given on multidisciplinary and integrated approaches towards understanding patterns and

processes in the main polar natural systems and of their evolution. The volume “Bulgarian Antarctic Research – Life Sciences” is being published since 1996.

### **Accession of Bulgaria to the Antarctic Treaty and the Madrid Protocol**

Bulgaria has acceded to the Antarctic Treaty in 1968 as a Non-Consultative Party recognizing the main principles of the Treaty as in line with Bulgarian foreign policy. The active scientific research in Antarctica was the main reason Bulgaria to become a Consultative party to the Antarctic Treaty in May, 1998. Bulgaria ratified the Madrid Protocol for environmental protection of Antarctica in April, 1998, all its Annexes and has been active Member of the annual meetings of the Committee for Environmental Protection (CEP). Bulgaria is Full Member of COMNAP since 1994, Full Member of the European Polar Board since 2002 and partner of the European Polar Consortium.

### **Future activities and Research Programs**

The research activities of the Bulgaria in Antarctica are organized in the framework of the National Antarctic Research Program with main activities in the field of Earth Sciences, Biology and Ecology, and Human medicine. The research priorities include:

#### **1. Earth Sciences**

##### **1.1. Geology and Physical Geography of Livingston Island**

- Geodynamical reconstructions
- Stratigraphy, sedimentology and fossil contents of sediment complexes
- Petrology of magmatic and volcano complexes
- Mass balance and dynamics of glaciers
- Interactions between climatic conditions and local glaciations

##### **1.2. Geophysical research**

- Paleomagnetism
- Gravimetrics
- Measurements of the ozone contents, ultraviolet radiation and the natural gamma phone

#### **2. Biology and Ecology**

### **2.1. Biodiversity, adaptations and evolution of Antarctic organisms and their communities**

- Biodiversity, taxonomy and evolution of Antarctic organisms
- Molecular, biochemical, physiological bases of adaptations to Antarctic environments
- Composition, structure and biotopical distribution of Antarctic terrestrial and marine sub-littoral communities

### **2.2. Structure and functioning of Antarctic ecosystems**

- Role of biodiversity in the functioning of Antarctic terrestrial ecosystems
- Characteristics of marine sub-littoral and littoral ecosystems

### **3. Human medicine**

- Physiology and adaptation to extreme conditions
- Dietetics
- Medicine of accidents
- Telemedicine
- Medical-psychological problems of living in isolation in extreme conditions

In the future the Bulgarian Scientific Program is expected to broaden by including marine research topics and also activity in other polar regions.

### **Participation of Bulgaria in the SRPs and SSGs**

The Bulgarian scientists will be actively involved in the following SCAR Scientific Research Programmes (SRPs): Antarctic Climate Evolution (ACE) and Evolution and Biodiversity in the Antarctic (EBA)- the response of life to change and also in in the SCAR's Action and Expert Groups: Geosciences, Life Sciences And Physical Sciences.

Scientific Secretary General

Prof. Naum Jakimoff PhD, DSc