To: Dr Rafael Rebolo
Instituto de Astrofísica de Canarias
C/ Vía Láctea s/n
38200 La Laguna
Tenerife

4 May 1998

Dear Rafael,

I am writing to confirm the Isaac Newton Group's wish to collaborate with the Instituto de Astrofísica de Canarias over the construction of two infrared instruments, namely LIRIS (to be built by the IAC) and INGRID (to be built by the ING). Both instruments will be deployed on the William Herschel Telescope at the Observatorio de Roque de los Muchachos on La Palma. This collaboration is being undertaken in accord with the International Protocols signed between the Governments of Spain and the United Kingdom in 1979 for the co-operation in astrophysics at the Canarian observatories of the IAC.

This collaboration places no legal of financial obligation by one party on the other, but serves to establish the aims of the collaboration and the intention of each party. The details are set out overleaf as an Annex to this letter.

I would be grateful for your confirmation that the IAC is in agreement with the aims of this collaboration.

Yours sincerely,

René G. M. Rutten

Director of ING

cc. Carlos Martinez
Mary Barreto
Gordon Talbot
Les Edwins

IAC - ING LIRIS/INGRID COLLABORATION

Introduction

The aim of this collaboration between the IAC and the ING is for the construction of two infrared instruments, namely LIRIS (to be built by the Instituto de Astrofisica de Canarias, IAC), and INGRID (to be built by the Isaac Newton Group of Telescopes, ING). Both instruments will be deployed at the William Herschel Telescope and interface to the common-user instrumentation control systems and share the same data acquisition infrastructure of the ING.

The aims of this collaboration are to:

A) Minimize technological risk involved in their development.
B) Economy of effort through sharing of technology.
C) Increase in knowledge base through sharing of information.

This memorandum sets out the term of the collaboration between the IAC and ING to achieve these goals. Ultimate responsibility for the LIRIS instrument lies with the IAC, and for INGRID with the ING.

Terms of agreement

1. The IAC shall provide effort towards the design and implementation of the EPICS instrument control software specifically for INGRID. This will serve as a model for the computer upgrades project standard EPICS interface for instrument control. This work is expected to include the design, implementation, and testing of the VME EPICS control subsystem running under VxWorks, and the graphical engineering interface based on EPICS. The EPICS VME subsystem should use the Instrument Control Interface based on CIALib provided by the ING. The ING shall provide the IAC all the VME hardware necessary to develop the EPICS instrument control software. This hardware shall be available at the IAC headquarter for the duration of this task.

2. The ING shall have in place within the time frame required by LIRIS (November 2000 at the start of the Assembly, Integration and Verification (AIV) phase at telescope level), the complete user interface and high level infrastructure for instrument integration and control to LIRIS requirements. This infrastructure will interface through three defined ports to the LIRIS Instrument, these being:

    2.1. Instrument control interface.
    2.2. Data acquisition interface.
    2.3. Configuration control interface.

The ING shall provide to the IAC within the time frame required by LIRIS (April 2000 at the start of the AIV phase at the IAC), an emulator of the user interface and instrument control for the WHT. This system should be representative of the final telescope infrastructure in the following points:

    2.4. The configuration of the interfaces to the LIRIS Instrument (2.1, 2.2 and 2.3).

    2.5. The user interface excluding the telescope control system.

Emulator software shall be provided by ING. Hardware shall be defined by ING and paid by IAC.

3. The ING invites the IAC to participate in the definition, design, and implementation of the data acquisition system for the computer upgrades project. Specific areas for participation are open to further discussion.

4. The ING shall participate in the design and implementation of the data acquisition system for LIRIS. This work is expected to include the design, implementation, and testing of the array operation and data acquisition software under the responsibility of the ING. The possibility of having the participation of the IAC in this work is open to further discussion. The ING shall provide the IAC with the necessary documentation to assure the maintenance and modification of this software. The development of the architecture for the array control hardware shall be the responsibility of the IAC. The ING shall also provide complete and unrestricted access to all software and hardware documentation generated by ING for the SDSU controller within the INGRID project. The documentation shall be made available once it is ready.

General conditions

I. To attain the above objectives the requirements of both instruments will be mutually derived as compatible as possible.

II. All travel expenses generated by work done for one instrument in the framework of this agreement will be paid by the instrument owner institution.

Signed in Santa Cruz de la Palma
on .....
For the ING

Signed in La Laguna
on .....
For the IAC

René Rutten
Director

Rafael Rebolo
Head of Research

Carlos Martinez
Head of Technology