

Istituto di Radioastronomia - INAF

IRA structure: Headquarters in Bologna,

Sections in Florence, Noto and Cagliari

Labs and instruments: Medicina, Florence, Noto, S.Basilio (Ca)

Formerly a CNR institute, as of 1/1/2005 IRA is one of the largest structures within INAF (Istituto Nazionale di Astrofisica):

Permanent staff: 52 scientists, 45 admin. and technicians

IRA operates two 32-m telescopes, the Northern Cross interferometer, and is constructing SRT, 64-m antenna in Sardinia

IRA in an international context

Since 1984 in EVN; agreements with NRAO, CSIRO, SHAO,...

Major partner in JIVE and Radionet, involved in development of SKA, possibly of LOFAR

Extensive use of major interferometric facilities (EVN, VLA, VLBA, IRAM-PdB, ATCA, WSRT...)

Experience with observations in mm/submm (OVRO, SEST, JCMT, IRAM-PV&PdB)

The ALMA perspective

Italy strong supporter of the project within ESO

Strong interest in: planetary sciences, star formation, stellar evolution, galaxy formation, high-redshift universe, cosmology (connection with CMB projects e.g. Planck, Sport, Boomerang,...).

INAF recognizes the importance of supporting and developing the national ALMA community; ALMA Commission established in June 2004.

Commission report indicating the need of a national Centre. ALMA science day held in Rome on Dec. 14, 2004: attended by 80 scientists from almost all Observatories and many University Departments.

IRA/Italy ARC proposal

Create a node in Bologna. Aim: provide support to the community/ies interested in the use of ALMA (data processing, software development, hardware)

Support development of additional functions (e.g. advanced simulations, specialized pipelines, (re) processing of large datasets).

Create expertise in radiointerferometry, instruct young scientists (schools, post docs, Marie Curie), prepare observing programmes. Open to external communities (other countries), key-programmes, future instrument developments.

Coordinate and develop Italian activities (presently Florence and Trieste and Bologna).

Logistics and support

Proposed location: Bologna headquarters. Easily reachable.

Office space available (≥ 3 offices) at IRA

Proposed staff: 1 FTE provided by IRA-staff; 1 administrator; 1 system manager; 4 post-docs (over 10 yrs).

Computer support (see next slide)

INAF support for temporary positions, hardware and logistics.

Initial budget already allocated by INAF in f.y. 2005

IRA - Computer Centre

Present and future activities:

Maintains ca. 100 workstations; responsible for comp. networks in local Research Area (ca. 10 Research Institutes); hosts main computer node for INAF admin.

Located close to one of main nodes Italian GARR-network.

Planned installation of 2.5Gbit/s opt. fiber connection with GARR (currently 32 Mbit/s). Well-suited for efficient transfer ALMA-data.

Intended developments in case of ARC:

100 Tbyte storage capacity. Computing power provided by 64-bit CPUs (parallel Beowulf systems of at least 16 stations).

GRID-technology