Academic and research networks

An overview

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1. Purpose of this document

The communications among the SAX SDC and the SAX Local Centres and with the outside community will be handled preferably through existing academic network (to which most scientific institutions are naturally connected very easily) rather than via public networks (e.g. ITAPAC) or fully dedicated lines, which may prove more expensive and heavily demanding on institute resources.

It is felt useful to review in this document the current situation of academic and research networks, at the best of the knowledge of the author. The information is as complete and up-to-date as possible, although possibly biased by the Bitnet experience of the author. As information on networks is mainly available on line in the networks, hints on how to access this are also provided.

2. Overview of the current Academic Network situation

The majority of scientific institutions working in the astronomical fields in Europe and Northern America (with extension to Japan and Australia) are somehow linked to one of the following three networks (a partial exception is the United Kingdom, which has its own national network called JANET):

BITNET
Internet (formerly Arpanet)
interconnected Decnets like SPAN, Hepnet etc.

All those networks, as well as other (minor) networks, are somehow connected (with limitations on the type of traffic) through (mail) gateways (The UK JANET has well established gateways with all three major networks). One of the major problems when communicating is the addressing convention (and, related to it, routing). There are moves towards an international message handling system standard (X.400), which however: has a very awkward look, has not being developed for communication in the academic environment, and has very few and partial implementation by computer vendors. On the other hand a de-facto standard in the academic environment is the RFC822 standard, originally used by the Internet.

We give below an overview of the main characteristics of the networks mentioned above, with particular regards on addressing, on the connectivity within Italy and with Holland, and on implications for the communications with the SAX SDC and Local Centres.

This is documented in a set of documents available by the nearest LISTSERV (in Italy there is one at ICNUCEVM and one at IBACSATA) accessible as:

    TELL LISTSERV AT ICNUCEVM command

where useful commands to start are *HELP* (which sends the basic documentation necessary to start or the usual GET command to retrieve other documents, namely:

LISTPRES MEMO (Presentation), LISTSERV MEMO (Users Guide), LISTFILE MEMO (file server function), LISTDB MEMO (database functions) and others listed in INFO FILELIST.

Some of those documents are necessary to understand the use of Listserv and subscribe to the distribution list, while others are good technical information.