NORSAR

ROYAL NORWEGIAN COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH

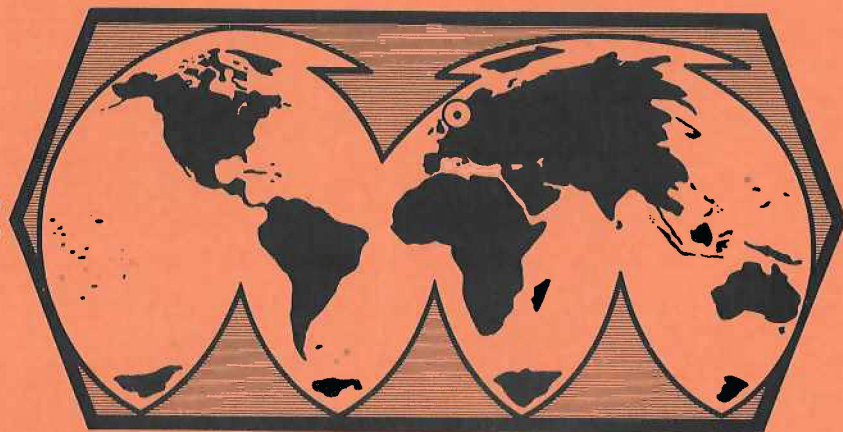Scientific Report No. 6-73/74

SEMIANNUAL TECHNICAL REPORT
NORSAR PHASE 3

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R. THE NORSAR ARPANET CONNECTION

The ARPANET Terminal Interface Processor (TIP) and associ-
ated equipment, including communications lines to London
and Alexandria (Seismic Data Analysis Center (SDAC)) have
showed stable performance, with only sporadic and short
failures. A tendency towards better transmission of
seismic data on the shared link between NORSAR and SDAC
has been observed, although the transmission appears to be
not quite up to pre-TIP standard. Throughout this period
the access to the ARPANET given by the TIP has been used
actively, either from local terminals (2) or from terminals
in neighbor institutions (2).

Since our trial account on the PDP-10 computer at the
University of Southern California Information Science
Institute was brought to an end, we have been registered
as a user only on the PDP-10 (TENEX) machine at the Stanford
Research Institute Augmentation Research Center (SRI-ARC).
With the establishment of OFFICE-1 for network users willing
to pay for the resources offered (NLS, etc.), we remained
at SRI-ARC. Some use has been made of the NLS facility
there, for document generation and text file manipulation.
Also, this has been our "network address", from where we
could send and receive messages, using the SNDMSG facility.
However, to use compilers for computational high level
languages, we have had to use the facilities offered at
"free" Hosts in the network (like the Host at the
Stanford University AI project). Source files for programs
to be used have been stored at SRI-ARC and transferred
(with the File Transfer Protocol process) to the Server
in question for compilation and execution.

Since the beginning of May we have regularly delivered
our seismic bulletin to the U.S. Geodetic Survey (USGS)
through the ARPANET, thus speeding up the delivery and at

the same time presenting the data in a form more directly
usable by the USGS. The data are delivered to the message
file of the directory established for USGS at the OFFICE-1
Host computer in the network, with the use of the SNDMSG
facility at SRI-ARC.

Two terminals (Tektronix 4023 and Data Dynamics 390) were
connected remotely to the TIP from Sandefjord, Norway, some
100 miles from Kjeller, during the course of the NATO Ad-
vanced Study Institute held there on "Exploitation of
Seismograph Networks", between 23 April and 3 May. Several
demonstrations were held, such as retrieval of seismic
data from the CCA Datacomputer, remote batch processing
and interactive processing. A small scenario had been
compiled and gave interested participants of the seminar
an opportunity of trying out some of the "free" resources
in the ARPANET.

An additional terminal (Tektronix 4010-1 display terminal)
was attached to the TIP at the end of May, giving NORSAR
an additional ARPANET access. The new terminal facilitates
the scanning of directories and files. In addition, it
has a graphics capability, which may be useful in the future,
and a hard copy unit attached (Tektronix 4610).

Source listings of the Network Control Program (NCP) imple-
mented on the IBM 360/44 at the Seismic Data Analysis Center
(SDAC) have been studied extensively. With the arrival
of the necessary Host-Imp interface unit (on order), we
eventually plan to implement this NCP on our B-machine,
opening up another access to the ARPANET as a User Host.
Also, valuable experience is obtained for the task of
implementing an NCP for the on-line transmission of seismic
data at SDAC.

Presently, as seen from the above-mentioned facts, our
use of ARPANET resources are rather limited. With the
present trend in ARPANET, where the number of "free"
resources is reduced to zero, our plans for using the
ARPANET to do interactive computing (which could be very
useful for the analysts), seem to dwindle. If we also
should lose our account at SRI-ARC, our ARPANET access
will not be of very much use to us at the present time.

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