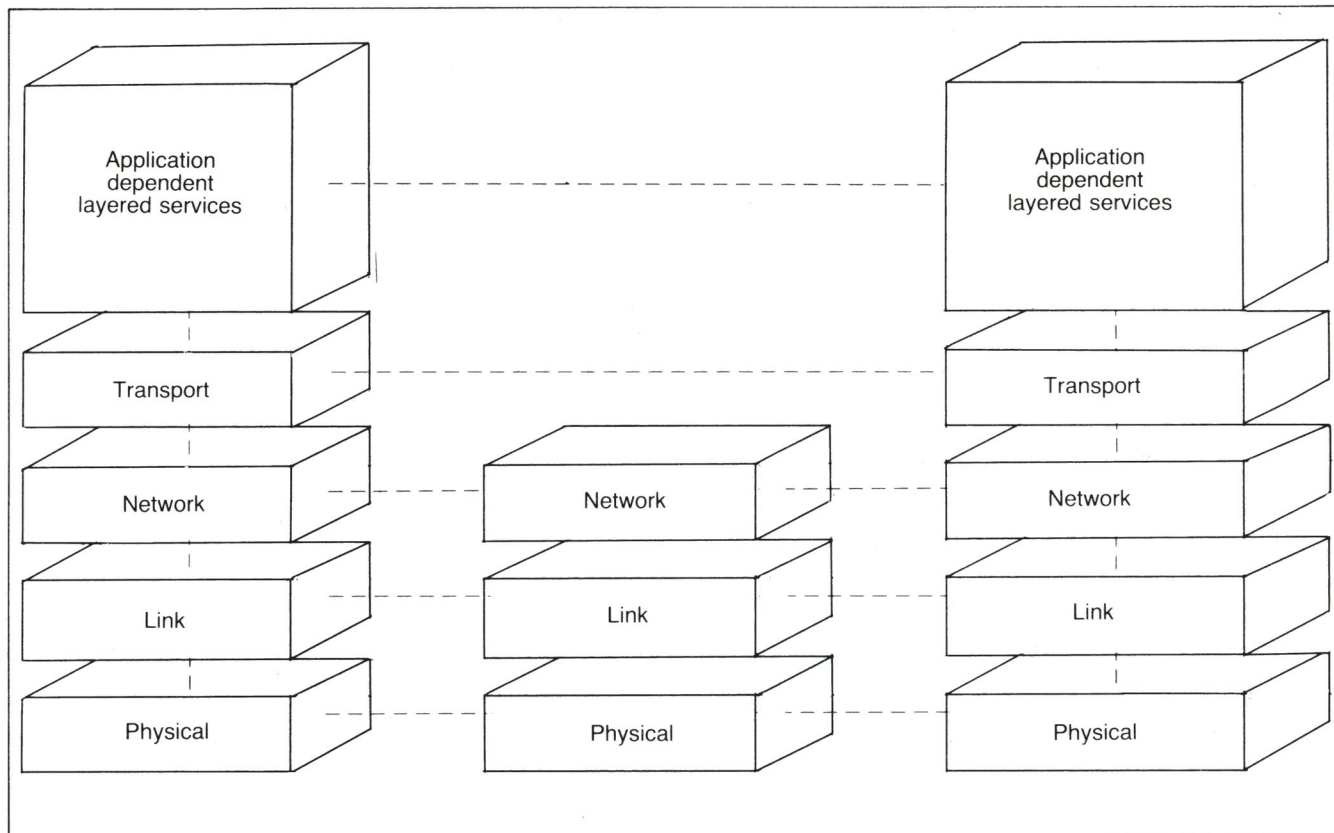# ND 10374 COSMOS Basic Module

COSMOS is Norsk Data's distributed communications environment. It provides communication and application services to augment the user services provided by SINTRAN-III.

COSMOS Basic Module provides the services necessary to run a (minimal) local network. These services are common to all COSMOS installations. Additional options can be added as described by other datasheets.

Refering to the ISO Reference Model for Open Systems Architecture the following services are offered:

At Layer 1: Physical layer.
V24/V28 (RS 232C) up to 19.2kbps, V11/X27 (RS 422) up to 1 Mbps using ND HDLC-DMA or MEGALINK interface hardware.

At Layer 2: COSMOS Local Link Protocol.
Performs secure transmission with flow control and error recovery. Uses HDLC frame formats.

At Layer 3: COSMOS Network Layer.
Provides routing and global delivery of Inter-System datagram PDU's. (PDU = Protocol Data Unit).

COSMOS Network allows for networks containing up to 64,000 systems (nodes or hosts). Since COSMOS handles all routing, the user does not need to be concerned with routing or communication facilities.

At Layer 4: At this layer COSMOS provides the end to end transport function needed by all the higher layers. This basic task-task communication service provides connectionless transmission of datagrams between ports, creation/deletion/ naming of ports, naming of systems, definition of routes, returns datagrams on task abort, etc. The datagram services may be augmented by using the Transport Library (T-Lib), that provides Connection-oriented transport functions that match the Open Systems Architecture Specification.
The interface to T-Lib is much simpler to use but less flexible than calling the datagram services directly. T-Lib is recommended to all user programs. The file access facility described below is based on T-Lib.

At Layer 5/6/7: Depends on COSMOS Application, see below.

The Applications/Services included in COSMOS Basic Module Ver 1.0 are:

Remote Terminal Access

Remote Terminal Access allows a user sitting at a terminal to make this terminal look as if it were plugged directly into another system. This will give access to that system's time sharing services as well as to its real time services.

A simple command is all that is needed:

@CONNECT-TO ND-500
answer: ** Connected to ND-500, TAD no xxx. **

will connect your terminal to the ND-System called 'ND-500', until return is effected by typing the local recall character.

This service is implemented by 2 modules:

1. A local module that packs and unpacks terminal characters and sends/receives these to/from the COSMOS network.

2. A 'Software Interface' called Terminal Access Device (TAD) at the remote site that transforms the packets holding terminal characters to/from SINTRAN-III Timesharing Service.

Remote File Access

The remote file access facility (RFA) allows a program running on one COSMOS system to access random access files on another COSMOS system transparently, implying that all users of ND systems that use random access files may use these facilities. The only difference is that the user must precede the file name with the name of the system on which the file lies:
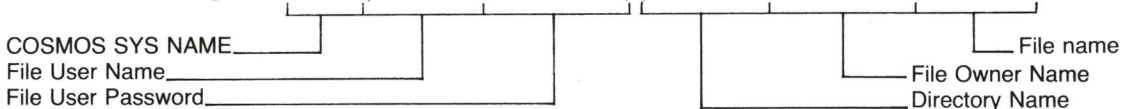
@EDIT ND-500.TRAVEL-REPORT

If the user is not registered on the target system, a valid user name and password must also be specified:

@EDIT ND-500(BIG-BOSS:SECRET).TRAVEL-REPORT

In the extreme case that the file belongs to another user and it may be necessary to specify that user name and perhaps the file directory as well, e.g.:

Note that the file user does not need to be logged into the target system, and that the file user name may be different from the logged-in user name at the local end. If the SINTRAN-III accounting system is enabled, an additional account project number must be specified following the user passwords.

At the remote end the actions on the remote files are performed by File Servers that can each handle approximately 20 open files. The SINTRAN system supervisor can create additional file servers on demand.

File Backup:

The Remote Files Access facility is used by the SINTRAN-III Backup System. This allows save/restore operations across the network.

Remote File Copy

A fast service is available to copy files from one COSMOS system to another. It is activated by the command TRANSFER-FILE, after which the user must specify source and destination COSMOS system names and source and destination file names. All these can take easy defaults, like for instance if only one file name is specified, and the source and destination file names are assumed to be identical.
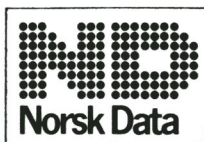
Command Module

The Command Module allows the SINTRAN System Supervisor to define the configuration of the local network, to define or change all COSMOS system names, to inspect the current state of the network, to start or stop local links, i.e. all that is necessary for the daily operation of the network.

PREREQUISITES

– SINTRAN-III generated for COSMOS with the appropriate number of local HDLC-DMA or Mega-links

– For use of wide area networks refer to COSMOS X21 option or COSMOS X25 option (see appropriate data sheets).
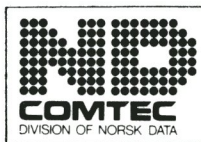
DOCUMENTATION

COSMOS Reference Manual ND-60.168

@EDIT ND-500(BIG-BOSS:PASSWORD:).(PACK-ONE:SECRETARY)FILE-NAME

COSMOS SYS NAME
File User Name
File User Password

File name
File Owner Name
Directory Name