Accredited Standards Committee* **X3S3.3/92-159**
X3, INFORMATION PROCESSING SYSTEMS **X3S3/92-064**

20 April, 1992

A. Lyman Chapin
BBN Communications 20/5b
150 Cambridge Park Drive
Cambridge, MA 02140
(617) 873-3133
lyman@bbn.com

To: X3S3

From: ASC-Accredited Task Group X3S3.3 (Network and Transport layer standards)

Subject: Proposed U.S. ballot comments to ISO/IEC DIS 10733, Network Layer Management

Please find attached the U.S. proposed ballot comments related to the Network Layer Management DIS 10733. There are six (6) Major Technical issues raised (four (4) of these are common comments against the DIS10737-1 Ballot for the Transport Layer Management).

The U.S. votes NO with comments to ISO/IEC DIS10733 - Information Technology - Telecommunications and Information Exchange Between Systems - Elements of Management Information Relating to OSI Network Layer Standards

1.0 General Concerns:

COMMENT #: 1.1

LOCATION: Section 5.0

QUALIFIER: m

CHANGE: Add an inheritance tree with description.

RATIONALE: This will make the document much more readable and useful.

COMMENT #: 1.2

LOCATION: Clause 5.6, Page 14; Clause 5.7, Page 20, Clause 5.8, Page 30, Clause 5.10, Page 34:

QUALIFIER: m

CHANGE: Replace all occurrences of:
"Rec. X.721|ISO/IEC 10165-2:1992" : administrativeState GET,
with the following:
"Rec. X.721|ISO/IEC 10165-2:1992" : administrativeState GET-REPLACE,

RATIONALE: We suggest making administrativeState GET-REPLACE to reflect the intent of the attribute as defined in ISO/IEC 10164-2. This attribute is intended to allow control of the resource by management. All State Management should conform to 10164-2.

COMMENT #: 1.3

LOCATION: Clauses 5.10, 5.11 and 6.0, and the Inheritance and Containment Trees

QUALIFIER: M

CHANGE: Replace the managed object class definitions currently defined in support of X.25/8208 (clauses 5.10 and 5.11, and the associated parts of the Inheritance and Containment Trees, and of Clause 6.0) with the recommended managed object class definitions and structure, as defined in the CCITT Study Group VII Liaison to ISO/IEC JTC1/SC6 on Definition of Management Information for the Network Layer (DIS 10733).

RATIONALE: The U.S. recommends ISO adopt the CCITT Study Group VII alignment to Recommendation X.25 of the applicable Network Layer Management Object Class definitions. The U.S. is also aware of the particular effort applied by CCITT to fully support the IEC/ISO 8208 requirements found in the current DIS 10733 in producing this alignment, and in the separation of the DTE-only from the DCE-only definitions.

COMMENT #: 1.4

LOCATION: ANNEX C

QUALIFIER: M

CHANGE: Remove ANNEX C entirely, and redirect all references to the GMI:1992..

RATIONALE: The DIS version of the GMI: 10165-5:2/20/92 captures these definitions.

COMMENT #: 1.5

LOCATION: General Issue related to CREATE and DELETE for entities, and the DELETE for connections.

QUALIFIER: M

CHANGE: Please reconsider the usefulness of CREATE and DELETE for entities and the usefulness of DELETE for connections.

RATIONALE: Although we agree that these resources typically come into existence through non-management means, CREATE allows previously unmanaged Entities to be added to the management view. DELETE would allow management control over connections for fault or performance management. Without these operations, distributed management capabilities are severely diminished.

COMMENT #: 1.6

LOCATION: Throughout document for ISO/IEC 9542 timer support

QUALIFIER: m

CHANGE: Need to add resetting time behaviour from ISO 10589, clause 11.2.1.1, Page 69:
"Rec. ISO/IEC 10589:1992":resettingTimer-B BEHAVIOUR
to ISO 9542 timers in DIS 10733.

RATIONALE: Need to apply the resetting time behaviour, as specified in ISO 10589, to the timers used in support for ISO 9542. A "worst" case type of human error could create a configuration timer with a value of 100 years. The means we can provide to reset this type of mistake have already been established in ISO 10589.

2.0 Clause 5.1 Managed Object Hierarchy:

COMMENT #: 2.1

LOCATION: Clause 5.1.1.1, last paragraph, Page 6:

QUALIFIER: m

CHANGE: Need to add ISO 10030 to CONS parenthetical expression list.

RATIONALE: Required for support of ISO 8208.

3.0 Clause 5.3 The Network Subsystem MO:

COMMENT #: 3.1

LOCATION: Clause 5.3, Network Subsystem Class, Page 10:

QUALIFIER: M

CHANGE: Allow multiple *networkSubsystem* MO's per network layer subsystem by:

Change the "INITIAL VALUE" to a "DEFAULT VALUE" for the subsystemId attribute.

Change the Managed Object comment to allow multiple Subsystem Managed Objects.

RATIONALE: The *networkSubsystem* MO should not be restricted to a single instance per network layer subsystem. Reference GMI (ISO 10165-5) which allows multiple subsystem MOs per OSI Basic Reference Model layer subsystem. The Network Layer Management standard defined a subclass of GMI:subsystem and restricted its usage to a single *networkSubsystem* MO per network layer subsystem. That restriction was stated both in the description of the *networkSubsystem* MO class and in the fact that its naming attribute has a fixed value ("network subsystem").

DISCUSSION: There is a question of practicality for a manager to determine the non-default system id when used, the procedure may involve potentially extensive management dialogue.

Current acceptance is based upon:

1) It appears to be an acceptable management resource;
2) The requested change is easily accomplished by changing the attibute value from the currently defined: "Initial Value" to a "Default Value".
3) The given rationale based upon the GMI is sufficient reason.
4) If done in the Transport layer then it also MUST be done in the Transport Layer and the Data Link layer. Inclusion in each of the upper layers is beyond the scope of this committee.

COMMENT #: 3.2

LOCATION: Clause 5.3, MO comments, Page 10

QUALIFIER: m

CHANGE: Change : 'and the X.25 PLE MOs and IVMOs'
To : 'and the "SNPA" MOs'

RATIONALE: The Network Subsystem MO will be used by all SNPA's within the Network Layer.

4.0 Clauses 5.4 The Network Entity Managed Object:

COMMENT #: 4.1

LOCATION: Clause 5.4, cLNSSystemTypes, Page 11

QUALIFIER: m

CHANGE: The *cLNSSystemTypes* should be renamed as the "*systemTypes*" attribute (also, throughout the document).

The "DEFINED AS" clause should be extended to define the actual roles supported by a particular instance of the CONS protocol machines. This might be accomplished by including the operationalSystemTypes attibute in the CONS managed object.

RATIONALE: CONS supports both ES and IS as per ISO 10177. CONS also supports ES and IS in RecommendationX.327, which is of particular importance to CCITT.

DISCUSSION: It was noted that the utility of having an operationalSystemTypes attribute in the cONS MO should be studied.

COMMENT #: 4.2

LOCATION: Clause 5.4, new notifications, Page 11

QUALIFIER: M

CHANGE: Add the following notifications:
"Rec. X.721|ISO/IEC 10165-2: 1992":objectCreation,
"Rec. X.721|ISO/IEC 10165-2: 1992":objectDeletion,
"Rec. X.721|ISO/IEC 10165-2: 1992":attributeValueChange,
under NOTIFICATIONS in the networkEntity MANAGED OBJECT CLASS template.

RATIONALE: Object Creation/Deletion and AttributeValueChange should be included in the Network Layer Entity object. This is needed to support the functions of ISO/IEC 10164 parts 1, 2, and 4. Without these notifications and attributes, management will not know when entities are created, deleted, or changed.

5.0 Clause 5.6 The Connectionless-Mode Network Service MO:

COMMENT #: 5.1

LOCATION: Clause 5.6. checksum Processing, Page 15:

QUALIFIER: m

CHANGE: Add a "checksum" attribute in support of ISO 9542 PDU's.
Add to the linkage-MO, Page 20, the package:

```
linkageISO9542Checksum-P Package
    BEHAVIOUR linkageISO9542Checksum-P-B BEHAVIOUR
        DEFINED AS When present checksum generation is
            controlled by the EnableChecksum attribute;;
    ATTRIBUTES
        enableChecksum REPLACE-WITH -DEFAULT
            DEFAULT VALUE NLM.false
            GET-REPLACE;
REGISTERED AS (NLM.poi linkageISO9542Checksum-P (?) };
```

RATIONALE: Checksum processing is required by for support of ISO 9542.

COMMENT #: 5.2

LOCATION: Clause 5.6. cLNS8473-P PACKAGE, supportedProtocols attribute, Page 15:

QUALIFIER: m

CHANGE: Move the attribute back into the cLNS-MO. It seems to have been mistakenly moved to the 8473 Package when the other CLNS attributes were moved there.

RATIONALE: The supportedProtocols attribute is also useful at the cLNS-MO level.

COMMENT #: 5.3

LOCATION: Clause 5.6, cLNS8473-P PACKAGE, Page 15

QUALIFIER: E

CHANGE: Correct Managed Object Template format.

RATIONALE: The behavior definition has no delimit characters.

COMMENT #: 5.4

LOCATION: Clause 5.6, cLNSChecksum-P PACKAGE, Page 15

QUALIFIER: m

CHANGE: Change "8473EnableChecksum" to "enableChecksum".

RATIONALE: The attribute definition on Page 18 refers to this attribute as: "enableChecksum".

COMMENT #: 5.5

LOCATION: Clause 5.6, cLNS8473-P PACKAGE, Page 15

QUALIFIER: m

CHANGE: Add the following attribute:
"Rec. X.721|ISO/IEC 10165-2: 1992":alarmStatus GET-REPLACE ADD-REMOVE, under ATTRIBUTES in the cLNS8473-P PACKAGE template.

RATIONALE: Recommend adding AlarmStatus to the cLNS8473-P package (where Communications Alarm is defined). We assume status attributes were avoided while ISO/IEC 10164-2 was at DIS level, but these attributes are now stable in the IS and should be used where applicable.

COMMENT #: 5.6

LOCATION: Clause 5.6, cLNS8473-P PACKAGE, Pages 15-16

QUALIFIER: m

CHANGE: Add the following text to the cLNS8473PImportedNotifications-B BEHAVIOUR template (at the end of the existing text) :
"The communicationsAlarm notification may also be used to report any cLNS managed object event corresponding to probableCause values listed in Rec. 733 | ISO/IEC 10164-4."

RATIONALE: Recommend expanding definition of CommunicationAlarm behaviour to allow reporting of other conditions than the single condition stated in the DIS (for examples of other conditions, refer to Probable Cause in 10164-4).

COMMENT #: 5.7

LOCATION: Clause 5.6, missing attribute, Page 19

QUALIFIER: m

CHANGE: Add the attribute: *segmentsSent* as a counter, defined as: "all data and error report NPDU's sent after segmentation processing occurs."

RATIONALE: The counter *segmentsReceived* exists, it requires a counterpart in the other direction.

6.0 Clause 5.7 Linkage:

COMMENT #: 6.1

LOCATION: Clause 5.7, Conditional Packages, Page 20:

QUALIFIER: m

CHANGE: Change the wording of the PRESENT IF clause to:
"PRESENT IF operating ISO 8473 over either ISO 8208 or CO Datalink Service"

RATIONALE: The conditional packages: linkageInitialMinimumTimer-P, linkageReserveTimer-P, and linkageIdleTimer-P have misleading PRESENT IF clause text. The existing text implies that these packages appear to be used for both ISO 8208 and 8473 management.

COMMENT #: 6.2

LOCATION: Clause 5.7, Default Values in Linkage MO, Page 20:

QUALIFIER: m

CHANGE: Need to add the DEFAULT values for the following attributes of the linkage-MO:

idleTimer	(in linkageIdleTimer-P PACKAGE);
initialMinimumTimer	(in linkageInitialMinimumTimer-P PACKAGE);
iSConfigurationTimer	(in linkage-ISO9542IS-P PACKAGE);
suggestedESConfigurationTimer	(in linkage-ISO9542IS-P PACKAGE);
reserveTimer	(in linkageReserveTimer-P PACKAGE).

The actual default values are found in the DIS version of ISO/IEC 10589.

RATIONALE: There are a few missing defined default values relating to CLNS 10589 and ES-IS 9542. This applies to all of the applicable non-X.25 managed objects (especially the timer values).

These default values were defined in the earlier DIS version of ISO 10589, which is the suggested source for the actual definitions.

7.0 Clauses 5.8 The Connection-Mode Network Service MO:

COMMENT #: 7.1

LOCATION: Clause 5.8, Note at end of cONS MO, Page 30

QUALIFIER: M

CHANGE: Need to define the CONDITIONAL packages referenced in the note for support of: ISO 8878, ISO 9574 and ISO 10030.

RATIONALE: Each of the above ISO standards do define attributes.
For instance, in ISO 8878 attributes are needed in support of:
-- retry to establish a new Virtual Call (OLD SVC) in support of a NC (Network Connection), before reporting failure to establish the NC;
-- range of QOS parameters supported;

8.0 ANNEX A:

COMMENT #: 8.1

LOCATION: ANNEX A, Page 69

QUALIFIER: E

CHANGE: The linkage-MO is CONTAINED IN (cONS), it should also be CONTAINED IN (cLNS)

RATIONALE: Required for GDMO defined Template consistency.