% • (C.1.18.1.1, C.1.18.1.6) added to CV X′4696′ a destination MAC address for
% FRPVC

% • (C.1.18.1.3, C.1.18.1.4) updated V.25/V.25bis destination dial address and
% calling identification number information

% • (C.1.18.1.3, C.1.18.1.4, C.1.18.1.5, C.1.18.1.6) changed encodings of Token-Ring
% signalling information from canonical to noncanonical

% • (C.1.18.1.5) retired CV X′4695′ SDLC station role usage for SDLCNS and
% SDLCSW

# The following revisions were made based on review comments to Document
# Number SV40-1010-01/DLUR-8 (APPN DLUR Architecture Reference Version 1.2).
# These changes are indicated by a pound sign (#) throughout the text.

# • (global) introduced interdocument and intradocument links to the softcopy
# version of this document

# • (5.6.2.1.2, 5.6.2.1.3, 13.1.7, 13.4.6, now C.1.20.1, C.2.12) added a new nondis-
# ruptive UNBIND-initiated CP-SVR pipe deactivation sense data to permit the
# DLUR to immediately reinitiate CP-SVR pipe activation while requiring the
# DLUR to select a different DLUS for the new pipe

# • (5.6.3.2) updated the DLUR REQDISCONT processing to return a
# RSP(REQDISCONT) upon receipt of RSP(REQDACTPU)

# • (5.7.3.2) clarified the sense code used in -RSP(BIND) or UNBIND for
# “surprise” CP-SVR pipe activation

# • (new 5.8) added CP-SVR pipe performance considerations

# • (new 6.1.5, 12.1.2, 13.1.7, now C.1.20.1) added the DLUR support for FID2
# Encapsulation (X′1500′) GDS variable blocking

# • (6.2, 6.2.1, 6.2.2, new 6.2.4, 6.3, 6.3.1, 6.3.3, 12.1.2, 13.1.2, 13.1.7, C.1.3.1,
# C.1.3.1.1, now C.1.20.1) added the DLUR support for forwarding PU/LU names

# • (8.1.2) updated the DLUR processing of CV X′0C′ on +RSP(ACTLU)

# • (8.1.4) updated the DLUR processing to unextend an extended BIND

# • (8.1.4) updated the DLUR BIND adaptive session pacing processing

# • (8.1.5) updated the DLUR +RSP(BIND) processing to include the Route
# Selection (X′2B′) control vector

# • (8.2) updated the EN DLUR tail vector registration processing

# • (8.2.1) updated the DLUS processing for setting the receipt of TDUs support
# DLUS capability

# • (13.3.1, C.1.8, new C.1.15) added the Route Selection (X′2B′) control vector to
# the SESSST format X′03′ RU

# • (appendix C) updated formats appendix, removing change bars for format
# changes published in SNA Formats editions GA27-3136-15 and GA27-3136-16,
# and adding section on information about common fields (which cleaned up
# the unresolved references in the formats)

# • (now C.1.19.1.1, now C.1.19.1.5) added an optional subfield for V.25bis desti-
# nation dial address and calling identification number

### # 6.1.5 Blocking Multiple FID2 Encapsulations

# The DLUR can send or receive multiple FID2 Encapsulation (X′1500′) GDS variables in a single BIU on
# the CP-SVR pipe. The DLUR indicates its support of FID2 Encapsulation blocking by setting on byte 9,
# bit 5 in the DLUR/S Capabilities (X′51′) control vector at CP-SVR pipe activation. The DLUR will
# perform blocking only if the DLUS also sets the same bit on in its CV X′51′ during CP-SVR pipe acti-
# vation.

# It is a DLUR implementation option to determine when to block; however, no timers should be created
# for this function - just block if there is more than one GDS X′1500′ to be sent.

# Chapter 12. DLUR Option Set Content

## 12.1 DLUR Tower Requirements

Any product that implements the DLUR tower must implement the following functions as described in this document:

### 12.1.1 CP-SVR Pipe

The DLUR node will have to be able to establish the CP-SVR pipes in conjunction with the activation or reactivation of a given SSCP-PU session as described in Chapter 5, “CP-SVR Pipe” on page 5-1. This will specifically include the ability to:

1. Support the new CPSVRMGR mode and COS.
2. Know the DLUS node to be contacted when a PU requires ACTPU.
3. De-activate CP-SVR pipes when idle.
4. Bring down a conwinner session when the conloser fails.

### 12.1.2 SSCP-PU & SSCP-LU Session Activation/Encapsulation

The DLUR node will also be required to activate SSCP-PU and SSCP-LU sessions over the CP-SVR pipes. This will include both logic to establish the sessions as well as logic to encapsulate and de-encapsulate the associated flows. Specific requirements include the ability to:

1. Generate an FQPCID for a PU requiring activation.
2. Correlate SSCP-PU and SSCP-LU sessions to PU images on the basis of the FQPCID.
3. Generate the REQACTPU RU and understand related responses and sense codes.
4. Interrogate ACTLU commands to build a table that relates SLU names to the PU image that supports them.
5. Maintain an active session count for each dependent LU.
6. Examine +RSP(ACTLU) for extended BIND and network-qualified name support information.
7. Examine INIT-SELF to acquire PLU name and URC information.
8. Optionally provide SDDLU NMVT support to allow for dynamic dependent LU definition in the DLUS (required only if dynamic definition is supported).
9. Detect ACTPU race conditions and resolve them appropriately.
10. Generate the REQDACTPU RU and understand related responses and sense codes.
11. Encapsulate and de-encapsulate SSCP-PU and SSCP-LU FID2 PIUs.
12. Send and receive multiple FID2 Encapsulation (X′1500′) GDS variables in a single BIU.
13. Support network name forwarding.

© Copyright IBM Corp. 1993, 1997

New subfields in the range X'92'-X'F0' are being defined to carry the signaling information, e.g., addresses and dial digits, that is appropriate for each DLC and physical interface type. At present, subfields X'92' to X'96' have been defined.

### 13.1.7 DLUR/S Capabilities (X'51') Control Vector

This is a new control vector which describes the capabilities of the DLUS or DLUR to its partner.

For this, the initial level of DLUR/S support, there is:

- a one byte release field indicating Release 1 DLUR/S support (X'01'). Future releases will have their own values to aid in uplevel/downlevel support determination.
- a one byte indicator specifying whether the node is a NN (X'00') or an EN (X'01').
- a one byte indicator specifying whether the node is a DLUR (X'00') or a DLUS (X'01').
- a four byte Flow Reduction Sequence Number (FRSN)
- a one byte support indicator field, including:
  - an indicator for support of the RECEIVE_TDU_TP (X'22F0F0F4') service transaction program - when set, the sending node supports receipt of TDUs on this session
  - an indicator for limited DLUR support of ANS - when set, the DLUR only supports ANS=STOP; when not set, the DLUR supports both ANS=CONT and ANS=STOP
  - an indicator for limited DLUR multi-subnet support - when set, the DLUR responds to dependent LU searches with the OCR bit set; when not set, the DLUR responds to dependent LU searches with the OCR bit set
  - # an indicator for network name forwarding support - when set, the DLUR will, if requested by the DLUS, forward Network Name control vectors on ACTPUs and ACTLUs to DLUR-served PUs and their associated LUs; when not set, the DLUR will always remove Network Name control vectors from ACTPUs and ACTLUs for DLUR-served PUs and LUs (for more details about PU/LU network name forwarding, see 6.2.4, "PU/LU Network Name Forwarding" on page 6-25)
  - # an indicator for nondisruptive DLUS-DLUR session deactivation type X'08A0 000B' support - when set, the DLUR will process an UNBIND with X'08A0 000B' as described in 5.6.2.1, "UNBIND-Initiated CP-SVR Pipe Deactivation" on page 5-29; when not set, the DLUR cannot process this type of UNBIND
  - # an indicator for FID2 Encapsulation (X'1500') GDS variable blocking support - when set, the DLUR can, if also supported by the DLUS, send and receive BIUs on the CP-SVR pipe which include more than one GDS X'1500' (for more details about FID2 Encapsulation blocking, see 6.1.5, "Blocking Multiple FID2 Encapsulations" on page 6-7)
- four reserved bytes (for future use)

### 13.1.8 DLC XID Information Field

% A new XID3 bit (byte 15, bit 1) has been defined to be the DLUR ACTPU Indicator. This bit will have % significance when the ACTPU Suppression Indicator is reset (signifying an ACTPU is requested of the % adjacent node). Setting the new bit will signify that the DLUR would prefer to receive the ACTPU over % the CP-SVR pipe; resetting the new bit signifies no preference (received either on the TG dependent % flow or encapsulated over the CP-SVR pipe).

## C.1.20 DLUR/S Capabilities (X'51') Control Vector

### C.1.20.1 DLUR/S Capabilities (X'51') Control Vector

The DLUR/S Capabilities control vector is exchanged by the dependent LU requester and the dependent LU server to describe their DLUR/S capabilities once a DLUS-DLUR session is activated.

**DLUR/S Capabilities (X'51') Control Vector**

| Byte | Bit | Content |
|---|---|---|
| 0– 1 | | Vector header; Key=X'51' (see C.1.27.1, "Substructure Encoding/Parsing Rules" on page C-52 and Table C-1 on page C-52) |
| 2 – n | | Vector Data |
| 2 | | Dependent LU support level:<br>X'01' Release 1 |
| 3 | | Node type:<br>X'00' APPN network node<br>X'01' APPN end node |
| 4 | | DLUR/S node type:<br>X'00' DLUR<br>X'01' DLUS |
| 5– 8 | | Flow-reduction sequence number: a value that identifies the latest Topology Database Update GDS variable received by the sender of the DLUR/S Capabilities control vector from the receiver of the DLUR/S Capabilities control vector |
| 9 | | Support indicators (bit is set to 1 if the sender supports the function): |
| | 0 | RECEIVE_TDU_TP (X'22F0F0F4') service transaction program supported: The sending CP supports receipt of TDUs on this session. |
| | 1 | Limited DLUR auto network shutdown (ANS) support: The DLUR terminates all LU-LU sessions immediately when connectivity to the DLUS is lost. |
| | 2 | Limited DLUR multisubnet support: The DLUR will not respond to dependent-LU searches when the Owning CP Respond (OCR) bit in the Find is set to 1. |
| | 3 | Network name forwarding supported: The sender supports DLUR forwarding of Network Name control vectors on ACTPUs and ACTLUs to DLUR-served PUs and their associated LUs. |
| | 4 | Nondisruptive DLUS-DLUR session deactivation type X'08A0 000B' supported: The sender supports the use of UNBIND with sense data X'08A0 000B' for CP-SVR pipe deactivation. |
| | 5 | FID2 Encapsulation (X'1500') GDS variable blocking supported: The sender supports sending and receiving more than one FID2 Encapsulation (X'1500') GDS variable in a DLUS-DLUR session BIU. |
| | 6– 7 | Reserved |
| 10– 13 | | Reserved |