# IBM 3745
IBM 3746 Nways
Multiprotocol Controllers
Models 900 and 950

December 2, 1997
(Revision 5)
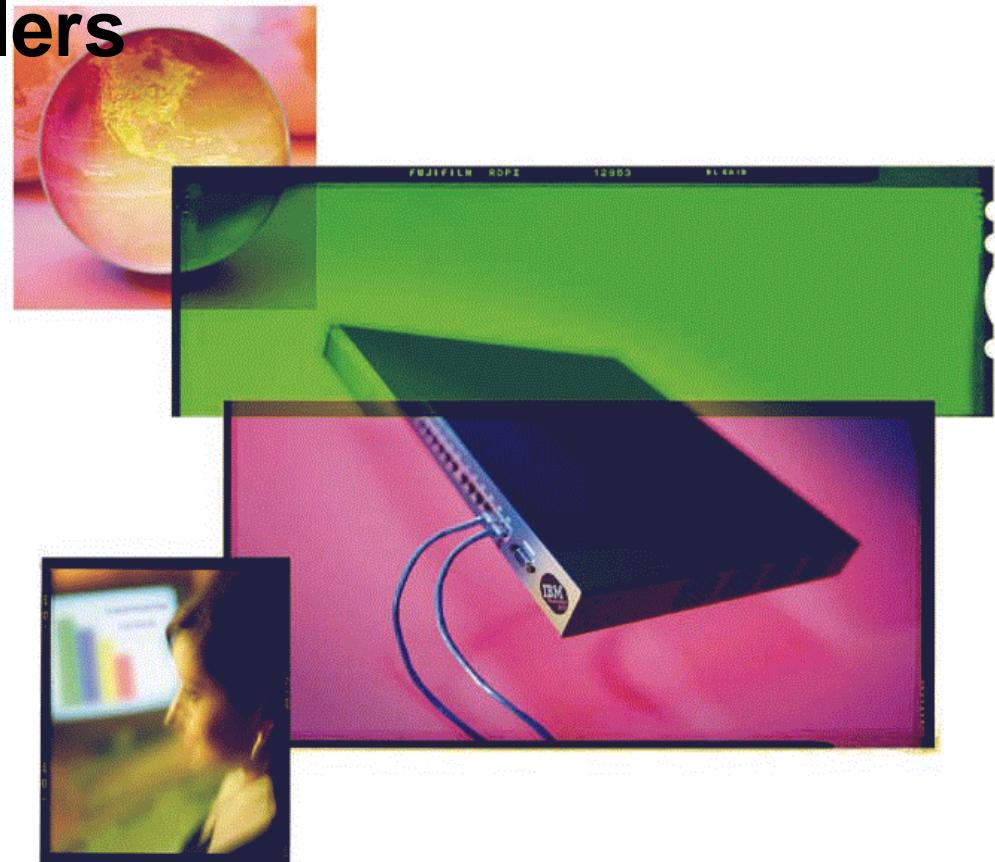
X.25 Support
(NPSI, X25_ODLC)

IBM 3745/3746-900 X25 NPSI Support

IBM

3 7 4 5   3746-900

N C P

NPSI

2

1

C L P

up to 2 Mbps

X.25   X.25

(1) Available
   basic NCP + NPSI support

(2) Available since 6/30/95
   NCP 7.3, NPSI 3.8

▸ APPN
▸ SNA (T1, T2.0, T4)
▸ non_SNA/APPN

▸ APPN
▸ SNA (T1,T2.0, T4)
▸ non_SNA/APPN

IBM 3745/3746-900 X25 NPSI Architecture

3745-xxA

3746-900

Lvl 3

NCP (SNA, APPN (CNN))

non SNA traffic | SNA traffic

N P S I

LUSIM

DATE **(LLC4)**

PCNE

PAD **(LLC5)**

GATE **(LLC4)** FC FTPI

Q L L C

P S H

(LLC0)

(LLC3)

(LLC2)

non SNA traffic | SNA traffic

Lvl 2

PLP (X.25 Layer 3)

LAP B (X.25 Layer 2)

NCP V7R3 + NPSI V3R8

Lvl 1

LSS HSS

Leased V24 V35, X21 (Up to 2 Mbps)

Leased V24 V35, X21 (Up to 2 Mbps)

LIC11 LIC12
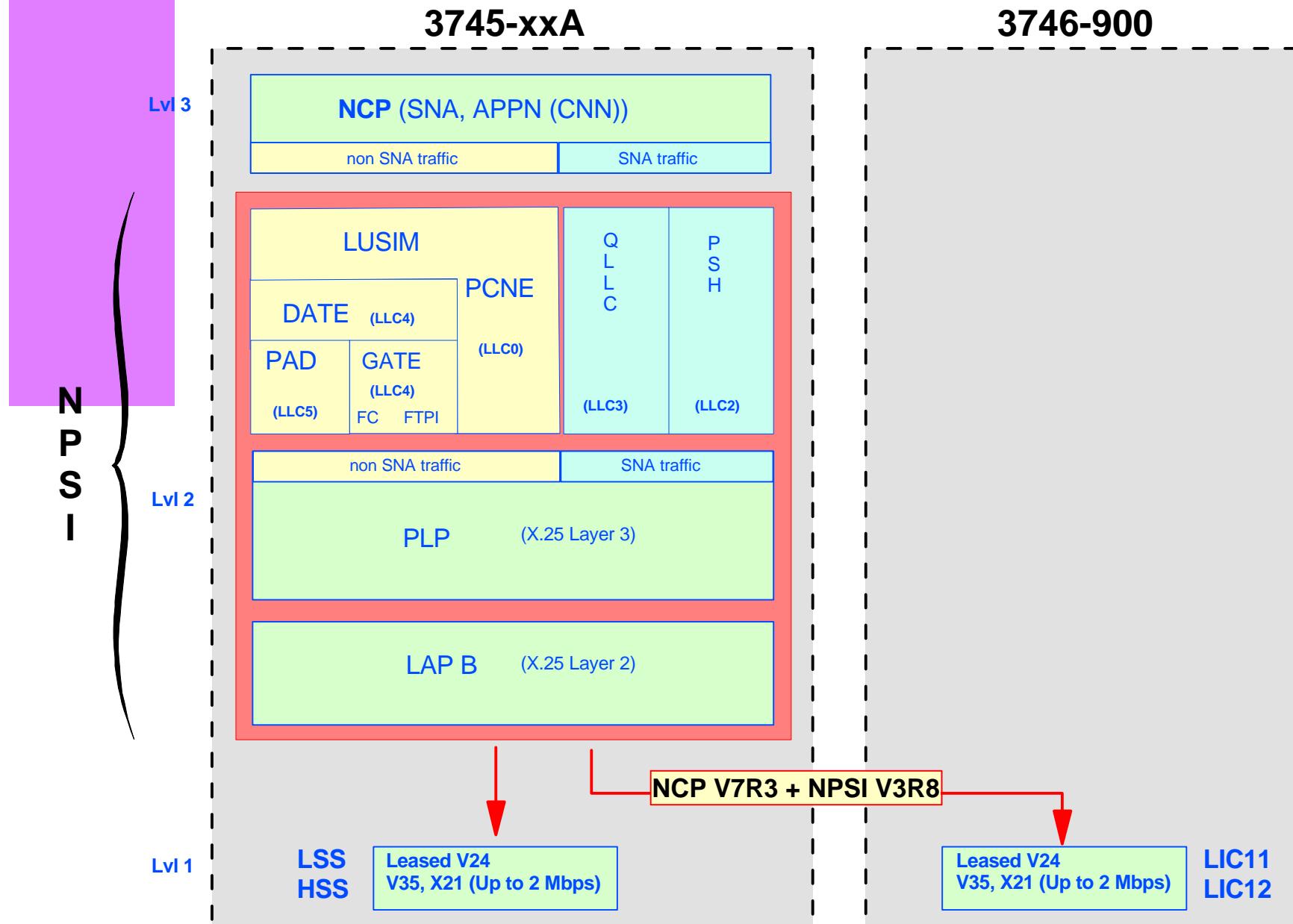
IBM 3746-900 - X25 Support

IBM

SNA/X25
NPSI Independent

3 7 4 5

3746-900

N C P

NPSI

3

2

1

C L P

X25

up to 2 Mbps

X.25

X.25

(1) Available
basic NCP + NPSI support

(2) Available since 6/30/95
NCP 7.3, NPSI 3.8

(3) Availability 3/29/96
NCP 7.4, no NPSI, 3746 FC # 5030

➤ APPN *
➤ SNA (T1, T2.0, T4)
➤ non_SNA/APPN

➤ APPN *
➤ SNA (T1,T2.0, T4)
➤ non_SNA/APPN (NPSI)
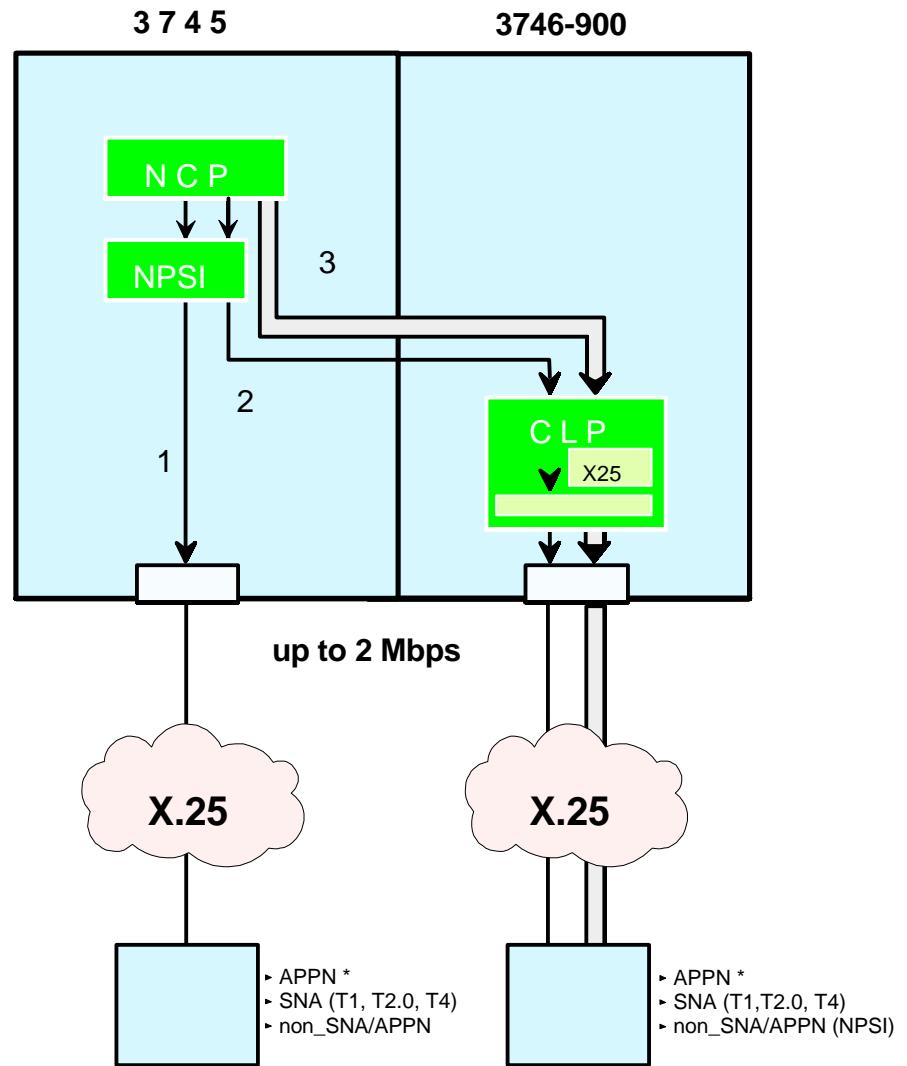
* Supported by NCP/VTAM Composite Network Node

IBM 3746-900 X25 DLC Support

IBM

Lvl 3

NCP (SNA, APPN (CNN))
V7R4

SNA traffic

Q
L
L
C

(LLC3)

F
C
#
5
0
3
0

Lvl 2

SNA traffic

3746 PLP   (X.25 Layer 3)

3746 LAP B   (X.25 Layer 2)

3746 LIC11/LIC12

Lvl 1

Leased V24, V35, X21 (Up to 2 Mbps)
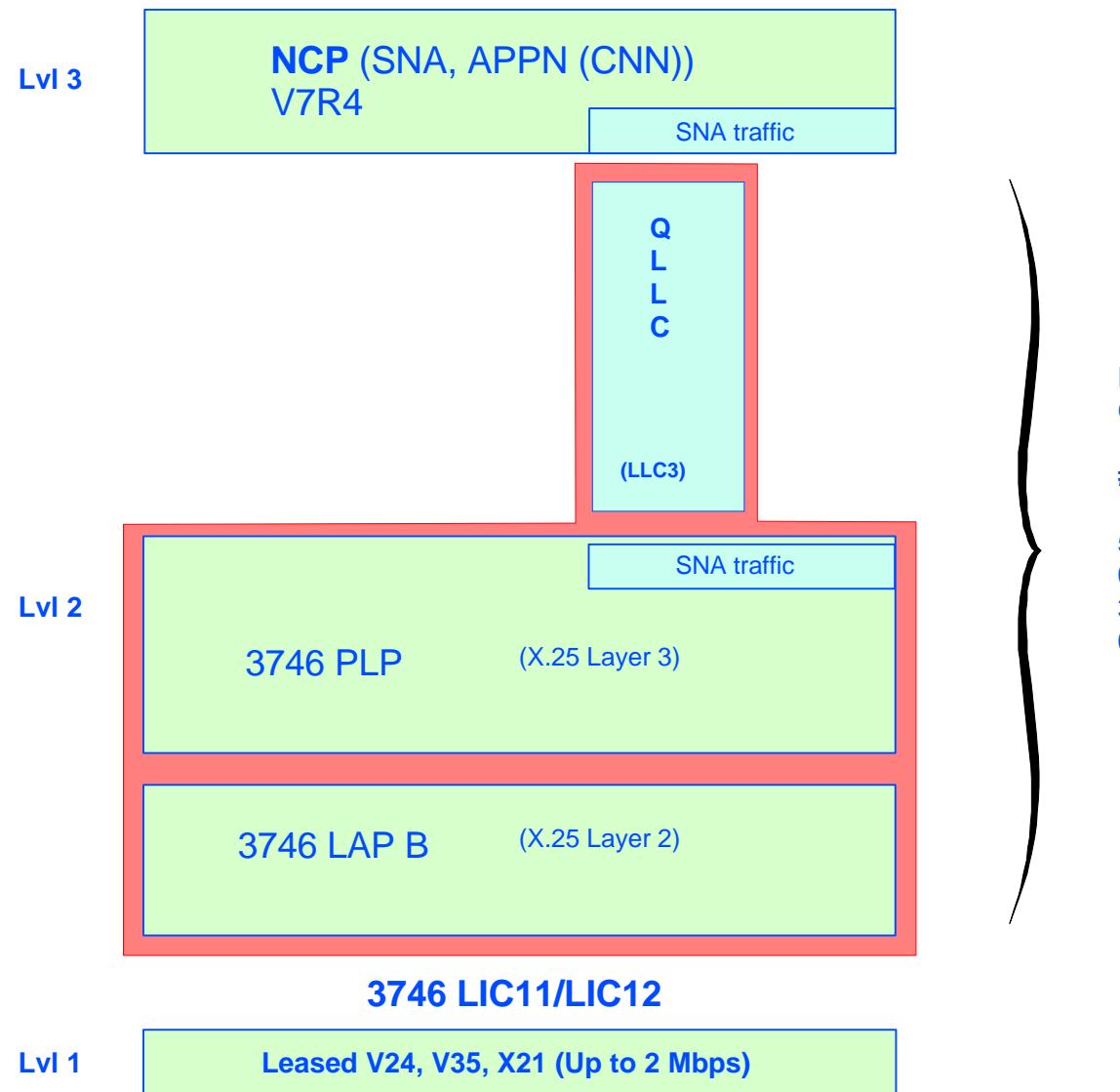
IBM 3745/3746-900 X25 NPSI Architecture

IBM

3745-xxA

3746-900

NPSI

Lvl 3

NCP (SNA, APPN (CNN))

| non SNA traffic | SNA traffic |

NCP V7R4

Lvl 2

LUSIM

PCNE

DATE (LLC4)

(LLC0)

PAD

GATE (LLC4)

(LLC5)

FC   FTPI

Q L L C

(LLC3)

P S H

(LLC2)

Q L L C

(LLC3)

F C # 5 0 3 0

| non SNA traffic | SNA traffic |

PLP   (X.25 Layer 3)

PLP   (X.25 Layer 3)

LAP B   (X.25 Layer 2)

LAP B   (X.25 Layer 2)

NCP V7R3 + NPSI V3R8

Lvl 1

LSS
HSS

Leased V24
V35, X21 (Up to 2 Mbps)

Leased V24
V35, X21 (Up to 2 Mbps)

LIC11
LIC12

IBM 3746-900 X.25 Benefits
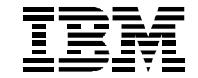
- **Performance increase**
  - **Up to 10000 pps (3745-31A / 3746-900)**
    - **(up to 10 times NPSI performance)**
  - **3745 CCU cycle reduction**
    - **(up to 90 % vs NPSI support)**
  - **Up to 100% efficient line utilization**
    - **(up to 2 Mbps)**

- **Cost savings**
  - **Lines consolidation**
  - **Attractive line tariffs for higher speeds**
  - **No NPSI licence**

- **Investment Protection**
  - **Adds traffic capacity to installed machines**
  - **Evolution towards 3746-950**

IBM 3746-900 - X25 DLC Functions

IBM

- **Network operations over X.25**
  - **PVC, SVCs**
  - **Protocols: SNA, APPN (CNN)**
  - **Subarea connections to remote 3745, 3746-900...**
  - **Peripheral connections to remote DTEs**
  - **Direct attachment of X.25 DTEs (ISO 7776, ISO 8208)**

- **Hardware support (3746-900)**
  - **Current adapter (CLP, LIC11, LIC12)**
  - **Up to 3000 stations (Virtual Circuits) per CLP**
  - **X.25 support feature (FC # 5030)**

- **Software support (3745)**
  - **NCP version 7 Release 4**

IBM 3746-900 NN - X.25 Support

Availability 6/30/97

3 7 4 5

3746-900 NN

(3)

N C P

C P

NPSI

4   5

DLUR

2

C L P

X25

1

up to 2 Mbps

X.25

X.25

- ▸ APPN
- ▸ SNA (T1, T2.0, T4)
- ▸ Non_SNA/APPN

- ▸ APPN
- ▸ T1, T2.0
- ▸ T4 (2,3)
- ▸ Non_SNA/APPN (2)

(1) Available
   basic NCP/NPSI support

(2) Available since 6/30/95
   NCP 7.3, NPSI 3.8

(3) Available since 3/29/96
   NCP 7.4, no NPSI, 3746 FC # 5030

(4) & (5) SNA/DLUR, APPN/HPR
   no NCP, no NPSI
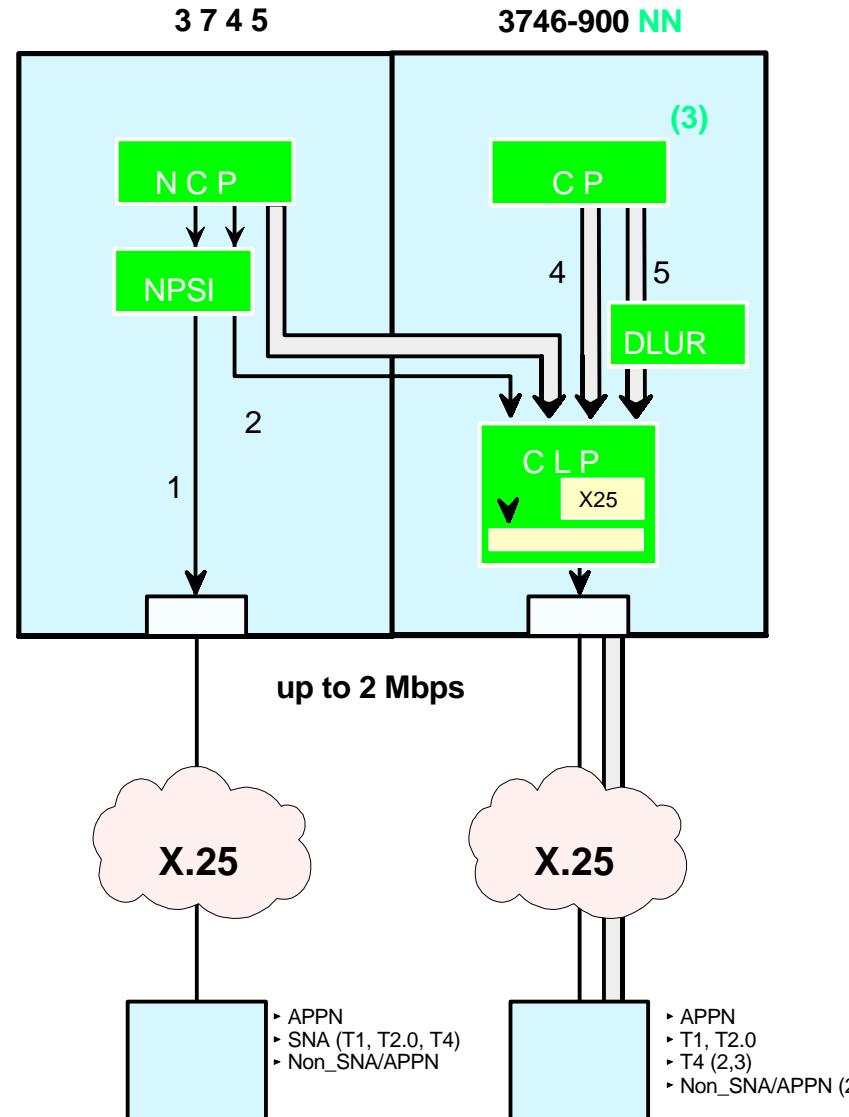
**(3) APPN/HPR Control Point**

IBM 3746-950 - X.25 support

Availability 6/30/97

3746-950

(3)

C P

4   5

DLUR

C L P

X25

up to 2 Mbps

X.25

(4) & (5) SNA/DLUR, APPN/HPR
   no NCP, no NPSI
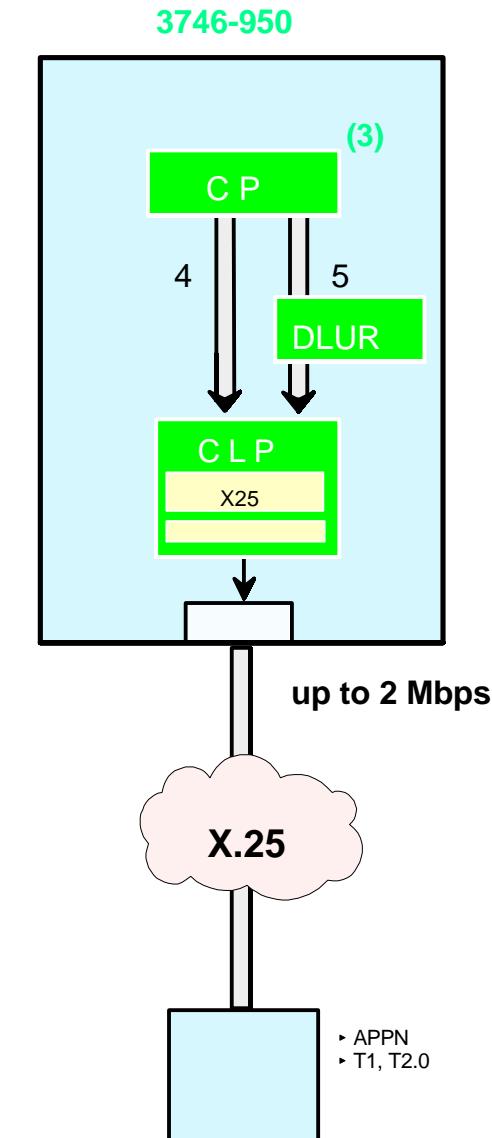
‣ APPN
‣ T1, T2.0

(3) APPN/HPR Control Point

IBM 3746 - X25 Architecture

IBM

Lvl 3

3746 **APPN** Control Point
(SNA/DLUR, APPN/HPR)

SNA traffic

Q
L
L
C

(LLC3)

Lvl 2

SNA traffic

3746 PLP   (X.25 Layer 3)

3746 LAP B   (X.25 Layer 2)

F
C

#

5
0
3
0

3746 LIC11/LIC12

Lvl 1   **Leased V14, V35, X21 (Up to 2 Mbps)**

IBM 3746 - X.25 support
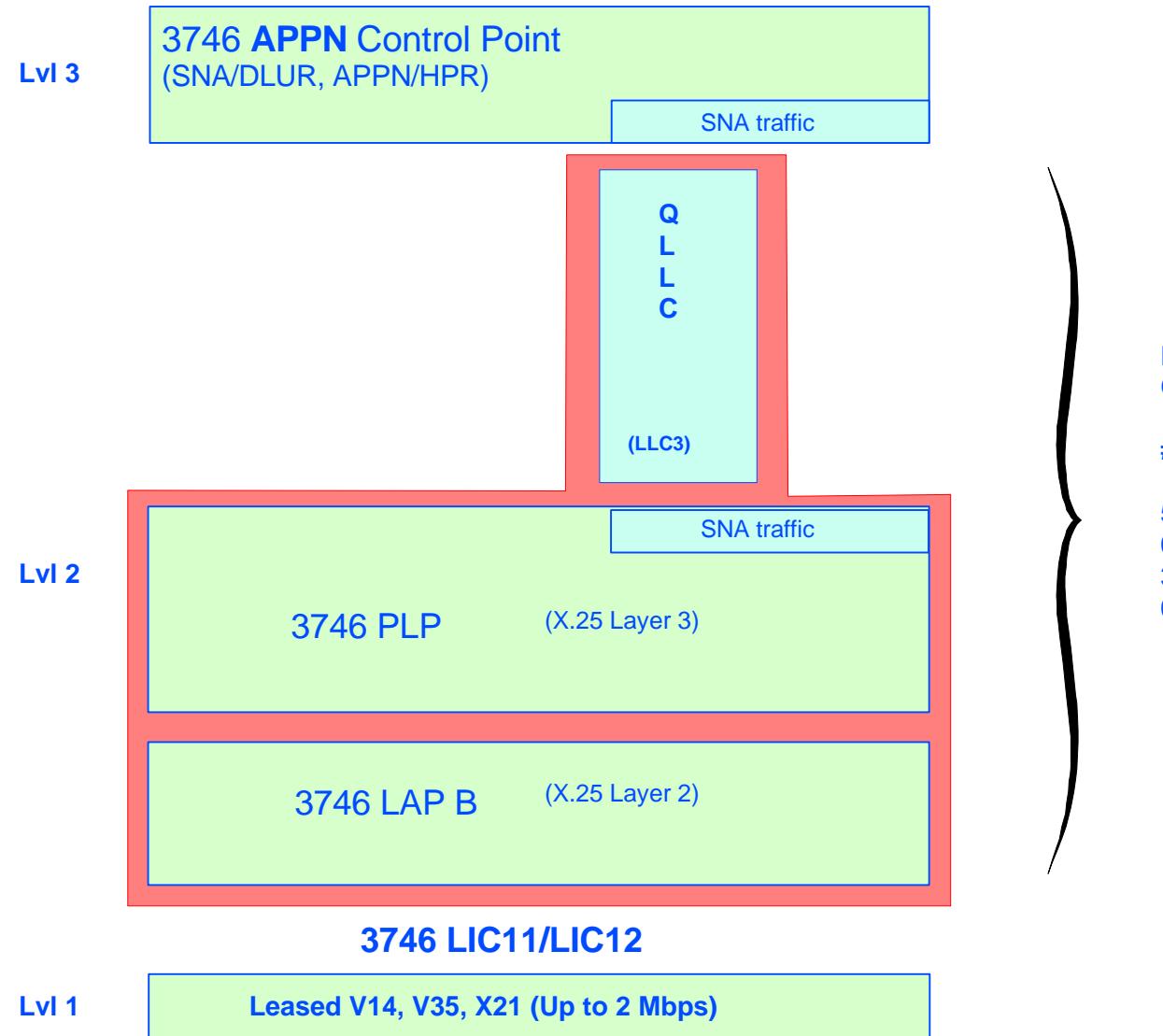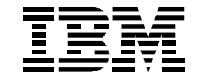
- **SNA/DLUR, APPN/HPR routing in the 3746 (CLP)**

- **Performance increase**
  - **Up to 5 times 3745-210**
    - **(projection versus NPSI traffic)**
  - **Efficient line utilization**
    - **(up to 2 Mbps)**
  - **3746-900 NN : full offload of 3745 processor**

- **Cost savings**
  - **Lines consolidation**
  - **Attractive line tariffs for higher speeds**
  - **No NPSI, No NCP charges**

- **Investment protection**
  - **Adds traffic capacity to installed machines**
  - **Migration path: 3745 ==> (3746-900 NN) ==> 3746-950**

NCP

NPSI

IBM 3746-900 NN - IP over X.25
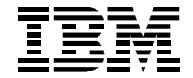
IBM

Availability 6/30/97

3 7 4 5

3746-900 NN

(3)

N C P

IP

NPSI

4

2

1

C L P

X25

up to 2 Mbps

(1) Available
basic NCP + NPSI support

(2) Available since 6/30/95
NCP 7.3, NPSI 3.8

(4) Availability 6/30/97
IP over X.25, 3746 FC # 5030

X.25

X.25

IP

IP
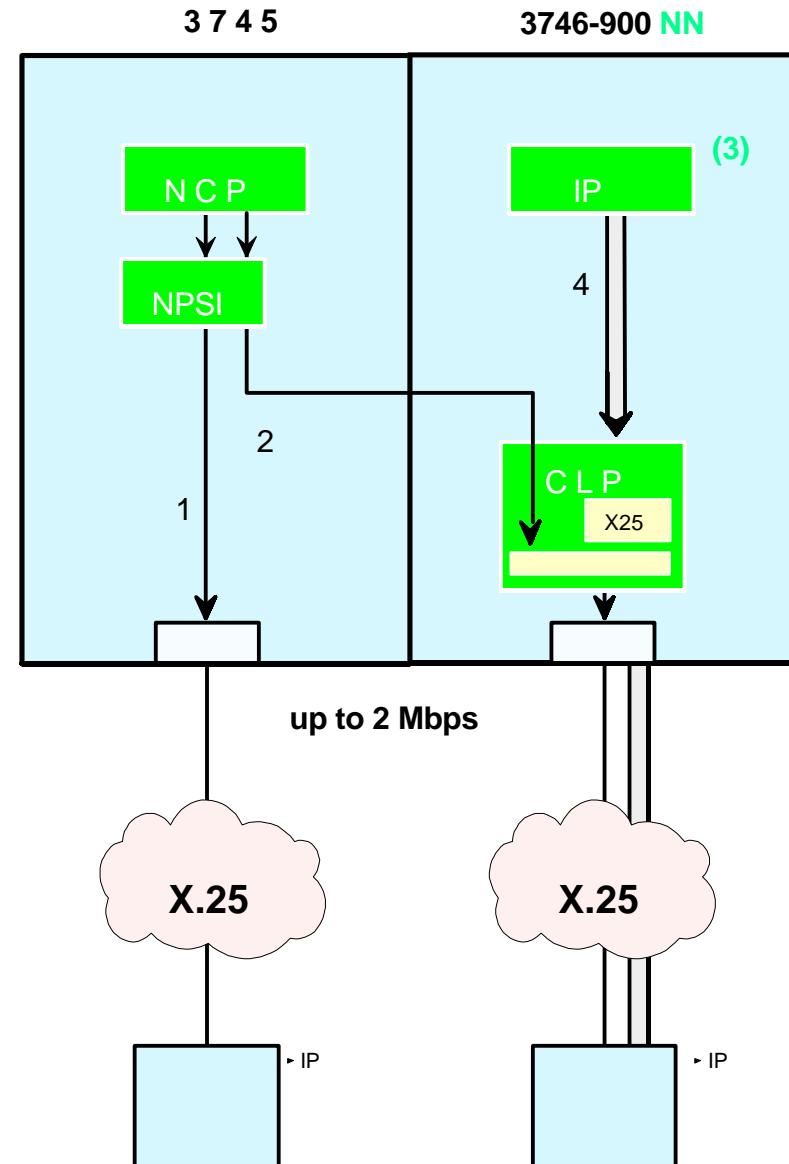
(3) IP Control Point

IBM 3746-950 - IP over X.25

Availability 6/30/97

3746-950

(3)

IP

4

C L P

X25

up to 2 Mbps

X.25

IP

(3) IP Control Point

(4) Availability 6/30/97
IP over X.25, 3746 FC # 5030
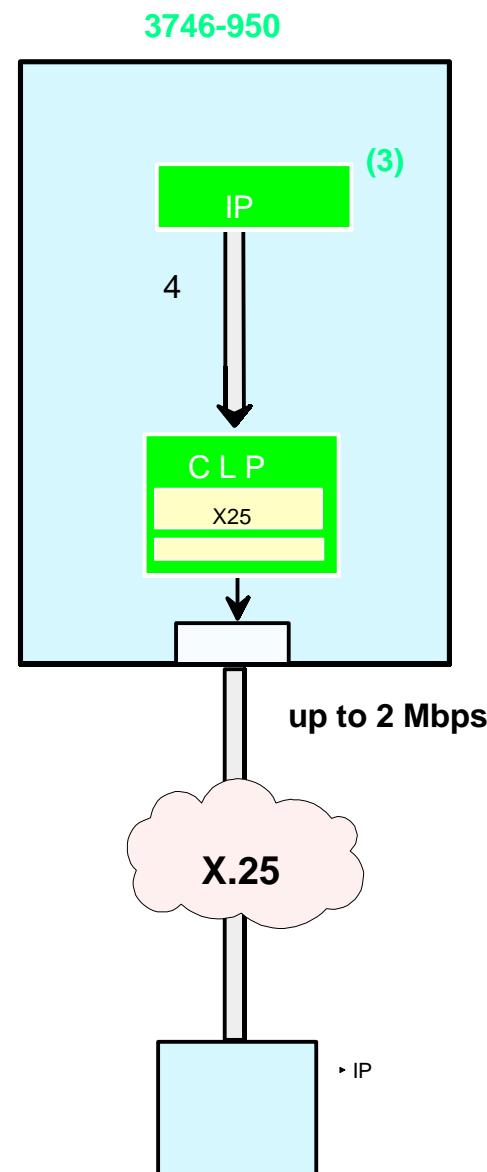
IBM 3746 - IP over X25 Architecture

IBM

Availability 6/30/97

Lvl 3

3746 **IP** Control Point

IP to PLP Interface

F C # 5 0 3 0

Lvl 2

3746 PLP (X.25 Layer 3)

3746 LAP B (X.25 Layer 2)

3746 LIC11/LIC12

Lvl 1 Leased V24, V35, X21 (Up to 2 Mbps)
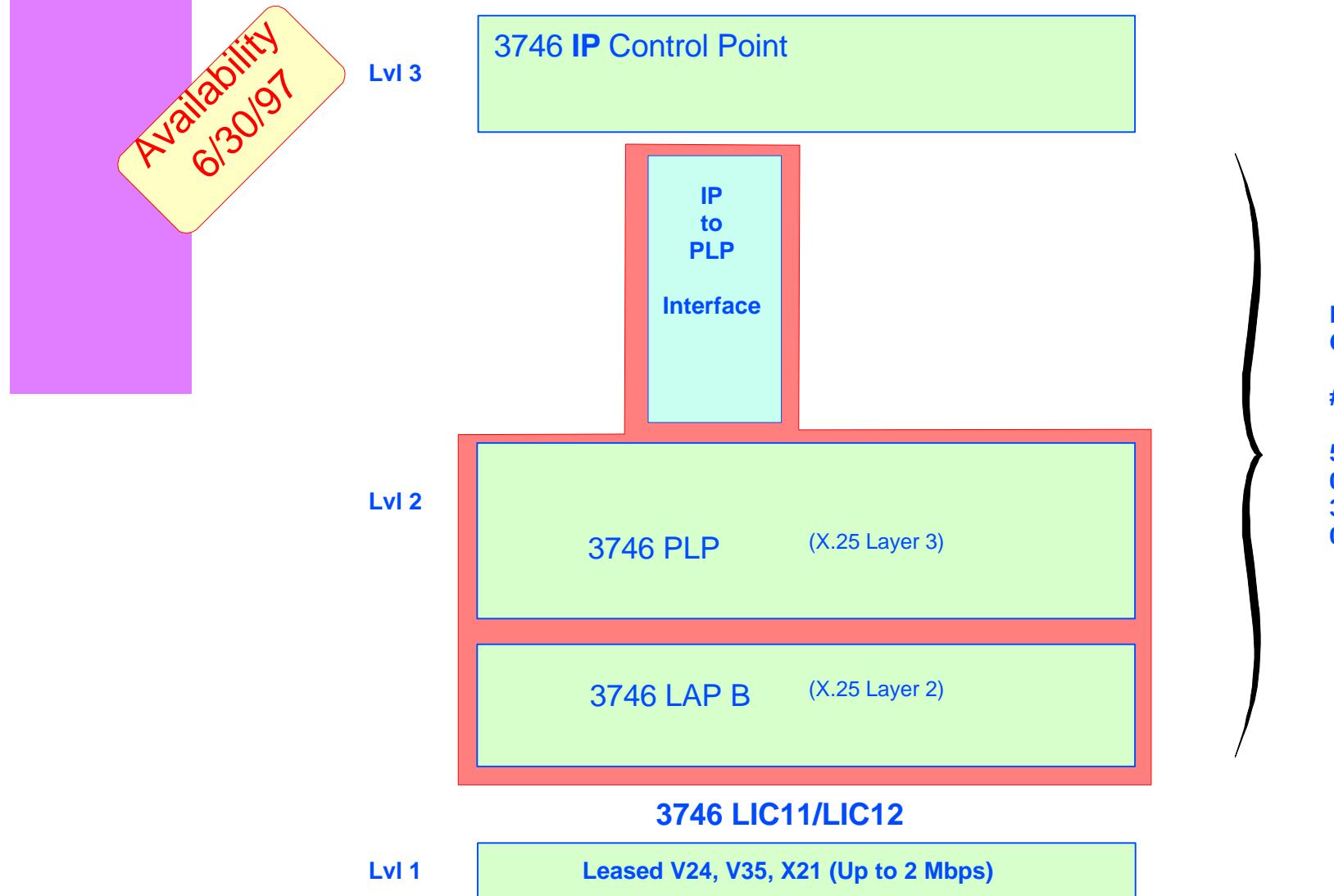
IBM 3746 - APPN/HPR + IP over X25 Architecture

Availability 6/30/97

Lvl 3

| 3746 **IP** Control Point | 3746 **APPN/HPR** Control Point |

IP to PLP Interface

Q L L C

(LLC3)

F C # 5 0 3 0

Lvl 2

3746 PLP (X.25 Layer 3)

3746 LAP B (X.25 Layer 2)

3746 LIC11/LIC12

Lvl 1

Leased V24, V35, X21 (Up to 2 Mbps)
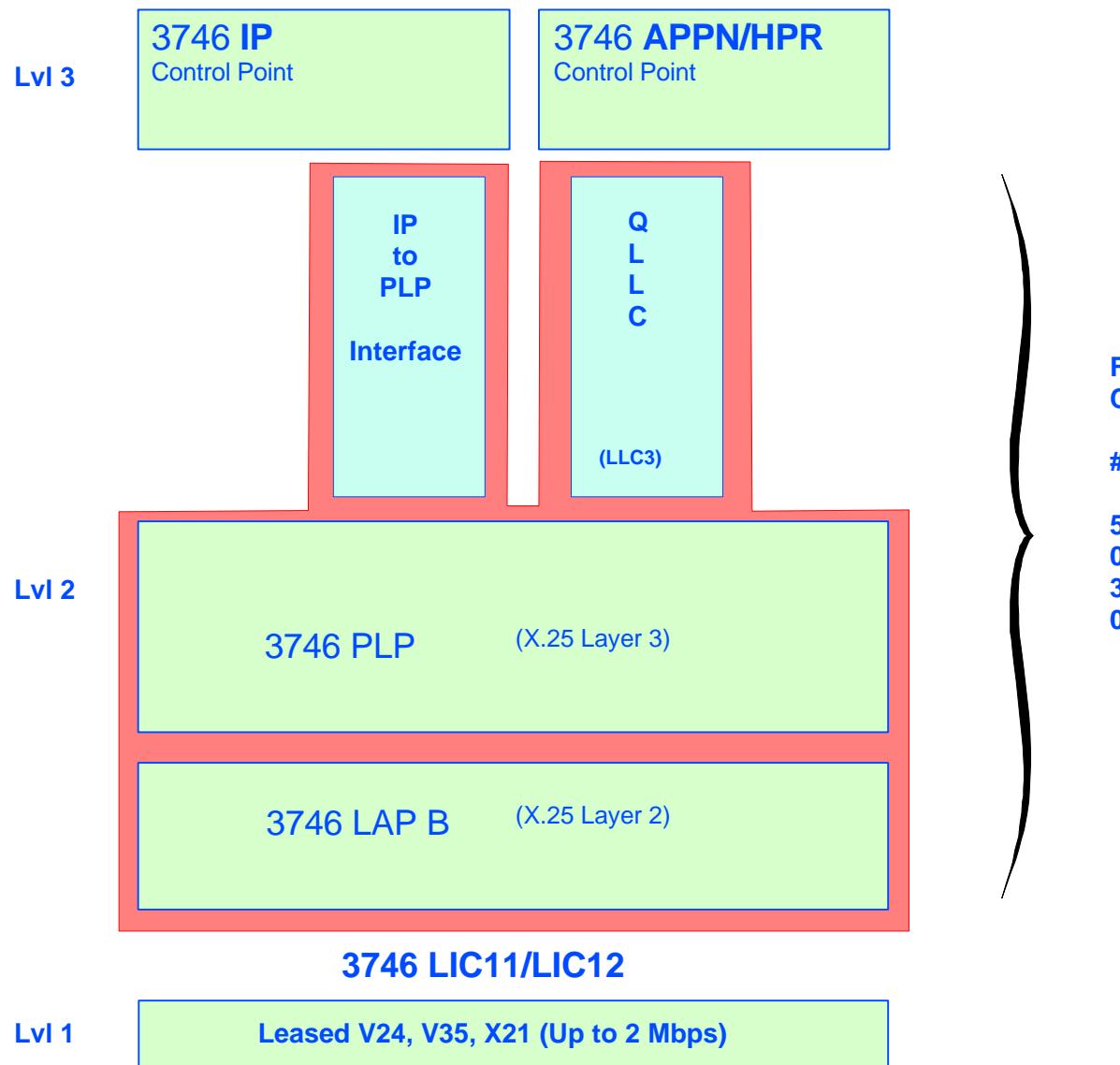
IBM 3746 - APPN/HPR and IP over X.25
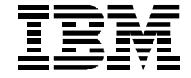
Availability 6/30/97

3 7 4 5

3746-900 NN

(3)

C P

DLUR

(4)

IP

N C P

NPSI

C L P

X25

3

4

2

1

up to 2 Mbps

X.25

X.25

‣ IP
‣ APPN
‣ T1, T2.0

‣ IP
‣ APPN
‣ T1, T2.0

(1) Available
basic NCP + NPSI support

(2) Available since 6/30/95
NCP 7.3, NPSI 3.8

(3) & (4) Availability 6/30/97
SNA/DLUR, APPN/HPR over X.25
IP over X.25
3746 FC # 5030
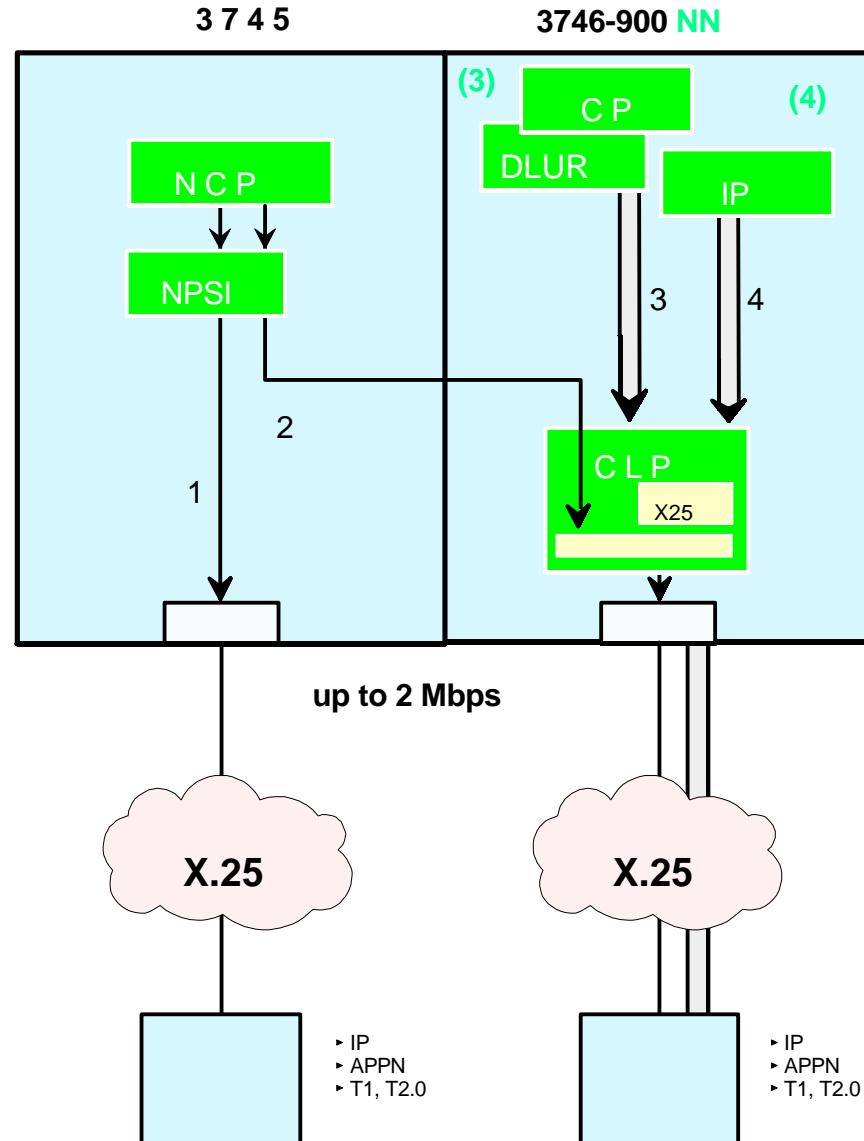
(3) APPN/HPR Control Point
(4) IP Control Point

IBM 3746-950 - APPN/HPR and IP over X.25
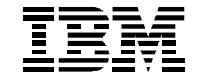
Availability 6/30/97

3746-950

(3)
C P
DLUR
(4)
IP

3   4

C L P
X25

up to 2 Mbps

X.25

‣ IP
‣ APPN
‣ T1, T2.0

(3) & (4) Availability 6/30/97
SNA/DLUR, APPN/HPR over X.25
IP over X.25
3746 FC # 5030
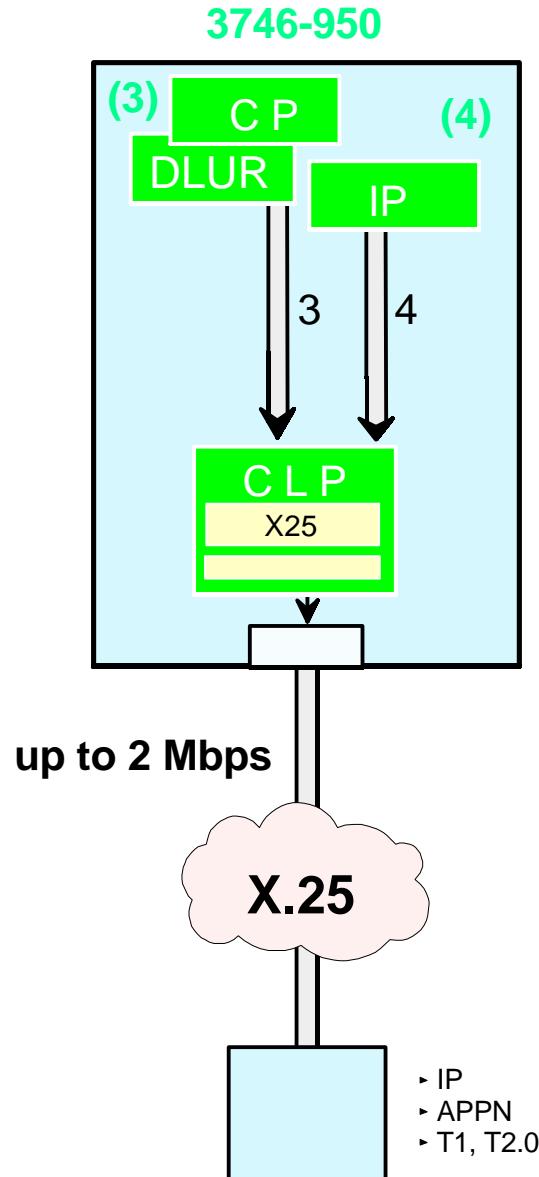
(3) APPN/HPR Control Point
(4) IP Control Point

IBM 3745/3746-900NN X25 NPSI Architecture

3745-xxA

3746-900NN

N P S I

Lvl 3

NCP (SNA, APPN (CNN))

| non SNA traffic | SNA traffic |

NCP V7R4

3746 **APPN/HPR** Control Point

3746 **IP** Control Point

LUSIM

PCNE

DATE (LLC4)

PAD (LLC5)

GATE (LLC4)

FC   FTPI

(LLC0)

Q L L C

(LLC3)

P S H

(LLC2)

Q L L C

(LLC3)

IP to PLP

F C # 5 0 3 0

Lvl 2

| non SNA traffic | SNA traffic |

PLP   (X.25 Layer 3)

PLP   (X.25 Layer 3)

LAP B   (X.25 Layer 2)

LAP B   (X.25 Layer 2)

NCP V7R3 + NPSI V3R8

Lvl 1

LSS HSS

Leased V24 V35, X21 (Up to 2 Mbps)

Leased V24 V35, X21 (Up to 2 Mbps)

LIC11 LIC12

IBM 3746 - X.25 Sharing

IBM

S/390

3 7 4 5

3746-900 NN, IP

VTAM

NCP

NPSI

CBC

APPN/HPR C P

IP

DLUR

3746 NNP

C L P

CNN

VC # 5
SNA
(NPSI)

X.25
Physical
Link #2

#5

#6

VC # 6
Non_SNA
(NPSI)

VC # 3

4

VC # 2

5

VC # 1

X.25
Physical
Link #1

VC # 2
SNA/DLUR

VC # 1
SNA (QLLC)
(NCP)

VC # 4
HPR

VC # 4
APPN

VC # 3
IP