ATT-TELCO-IS-002-316-001

Unbundled Network Elements Equipment Installation for the C.O.

Presented in this document are the methods and procedures to implement UNE Methods 1-2-3 in the SBC Central Office environment.

To:	SBC ILEC Space Planners, Frame Planners, Transport Equipment Engineers (TEE), Long Range Technical Planners. The secondary audience within the SBC Local Exchange Carriers is the Network Operations/Local Field Operations (LFO), Corporate Real Estate (CRE), Network Sales Support (NSS) and the Collocation Services organizations.
Effective Date:	February 14, 2006
Issue Date:	Issue 5, 02/15/06
Expires On:	N/A
Related Documents:	N/A
Canceled Documents:	UNE Deployment in the Central Office, Issue 1, Nov 98 and Issue 1 of this document.
Issuing Department:	SBC Network Staff or Network Engineering
Business Unit:	Network

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1. INTRODUCTION

This is the Method and Procedure has been developed to support the upgraded Access to Unbundled Network Element Provisioning for the SBC ILEC Central Office. This section is a recapitulation of the definition and standards of Unbundled Network Elements as specified in other documentation. It has been restated here for points of reference.

1.1. General Overview - Access To UNE's

Unbundled Network Elements (UNE's) are network elements that SBC must offer to comply with the FCC August 8, 1996 Order in CC Docket No. 96-98 implementation of the Local Competition Provisions in the Telecommunications Act of 1996 (Order) interpreting the Telecommunications Act of 1996 (96 Act).

The order specifically requires Local Exchange Carriers to provide network elements on an unbundled basis to any telecommunications carrier. The 8th Circuit Court's Opinion, issued in 1997, reaffirmed SBC's position that the CLEC customer must perform the physical work associated with combining SBC UNE's to establish a telecommunication service. Section 2 of this Marketing Product Description will address the three methods SBC makes available to CLEC customers to gain access to SBC UNE's for the purpose of combining those UNE's with other SBC UNE's to create a telecommunications service. SBC UNE's may be combined by the CLEC customer with other SBC UNE's. Physical collocation and virtual collocation are provisioned for the purpose of CLEC customer's interconnecting with SBC's network. Access to UNE's is provided to allow the CLEC customer the following methods to combine multiple SBC-provided UNE's. This product description covers Access to UNE's. Subject to availability of space and equipment, CLEC may use the methods listed below to access and combine loops, switch ports, and dedicated transport within a requested **SBC-13STATE** Central Office.

Method 1

SBC-13STATE will extend **SBC-13STATE** UNEs requiring cross connection to the CLEC's Physical Collocation Point of Termination (POT) when the CLEC is Physically Collocated, in a caged, cageless or shared cage arrangement, within the same Central Office where the UNEs which are to be combined are located.

Method 2

SBC-13STATE will extend **SBC-13STATE** UNEs that require cross connection to the CLEC's UNE frame located in the common room space within the Central Office where the UNEs which are to be combined are located.

Method 3

SBC-13STATE will extend **SBC-13STATE** UNEs to the CLEC's UNE frame that is located outside the **SBC-13STATE** Central Office where the UNEs are to be combined in a closure such as a cabinet provided by **SBC-13STATE** on **SBC-13STATE** property.

Important
The 5 Methods of UNEs were revamped to the 3 Methods of Access to UNEs in late 1999 but still must be upgraded to reflect the following: Method 1 will have cageless collocation added, Method 2 will only be offered in the Central Office Collocation Area or a new area will be created which will become a second Collocation Area at the same site, and Method 3 will be offered in a SBC owned area that has existing space for the placement of a cross-connect field. This document will proceed with these assumptions in place.

2. REASON FOR REISSUE

Issue 5, Feb 15, 2006 Update document references.

Issue 4, Feb 15, 2006-reissued to correct pdf (adobe acrobat) output.

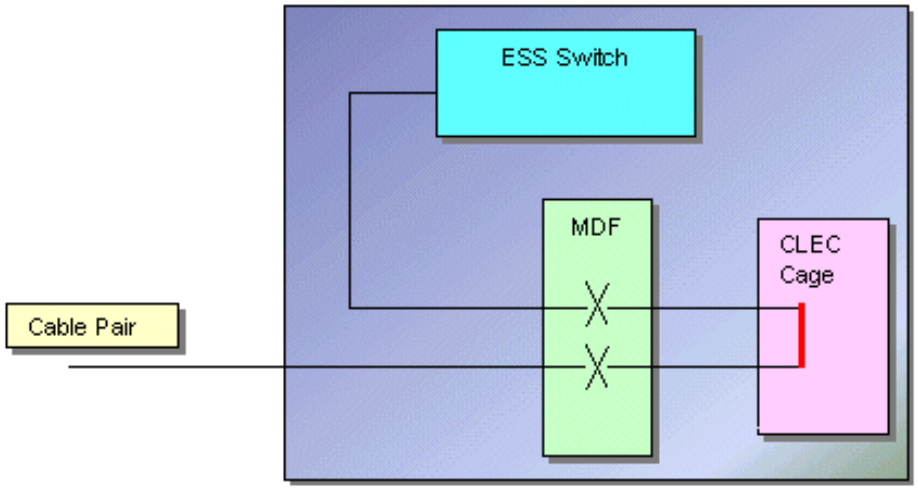
Issue 2: Section 9, Contact List Updated

This document replaces the UNE Deployment in the Central Office, Issue 1, November 1998 in its entirety. This prior document was discontinued. Future revisions will be annotated here.

3. HOW THE UNE METHODS ARE DEPLOYED WITHIN THE C. O.

UNE Method 1

UNE Method 1 can be characterized as the standard Collocation installations where the CLEC has physically placed their equipment into the ILEC Central Office in a Caged, Cageless or Shared Cage arrangement. **This Method is not available for Virtual Collocation.** The CLEC has required the extension of cabling through an (optional)Point of Termination (POT) to the ILEC Frame, DSX or FDF. These Carrier Facility Assignment (CFA) terminations located on the ILEC family of frames is used as the termination cross-connect point and test access point for the CLECs services. In UNE Method 1, the CLEC may request two ILEC provided Unbundled Network Elements and connect them within their CLEC physical space. Below illustrates an example of a POTS line connecting the Switch with the Cable Pair:

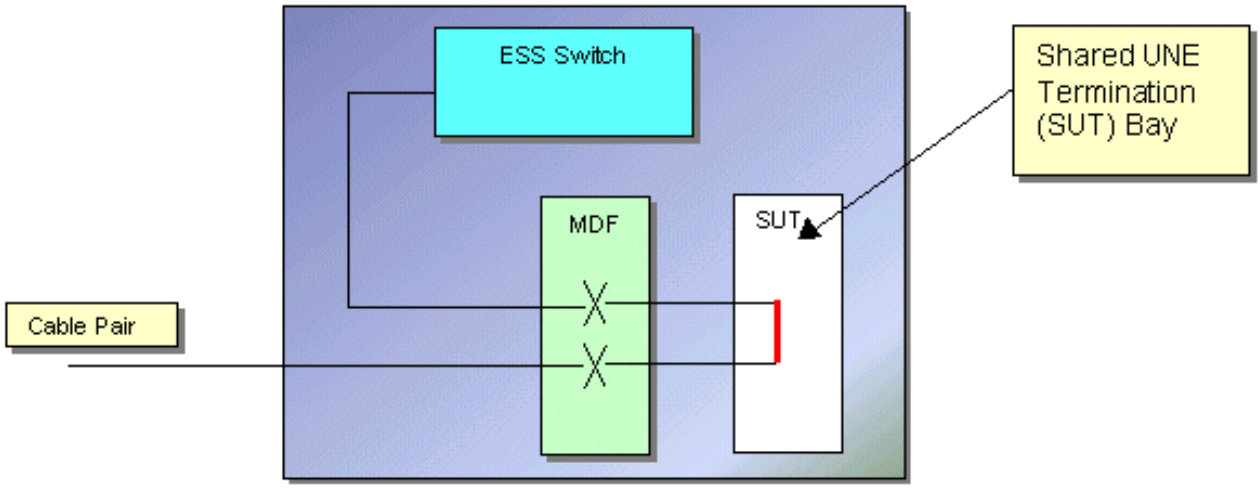


POTS Switch Port and Cable Pair connected using UNE Method 1 within the CLEC Physical Collocation Area. The CLEC connection is annotated in **RED**.

UNE Method 2

UNE Method 2 requires that the ILEC install a new set of interconnection points within the Central Office for this purpose. The CLEC will not be required to have equipment or physical collocation within that Central Office location. This M&P will be used to obtain a reasonable and consistent estimate of the number of SUT frames that can be allocated within a Collocation Common Area. Depending on the actual amount UNE interconnection equipment frames used by each CLEC, the number of frames supported by each common collocation area may be slightly more or less than planned. Frames for each type of service application will only be installed at such time that the first Collocation request is provided.

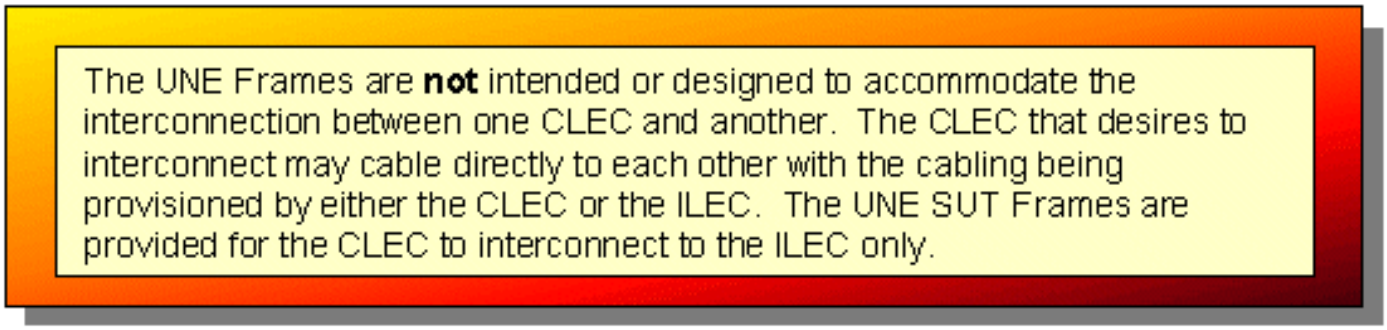
The floor plan layout for UNE Method 2 will be placed in a logical and reserved floor space manner to provide for an ultimate frame growth of 7 relay racks per SUT bay/frame. The frames will be placed side by side with the DS0/VF POTS Frame being placed up against the Eligible Structure (cage wall). Each Bay/Frame will have the minimum frame lineup placed per service type with the initial request and will be grown incrementally as the service needs dictate. All SUT Frames will utilize 3'0"front aisles and 2'6" rear aisles. See each Frame Type Section for further details.



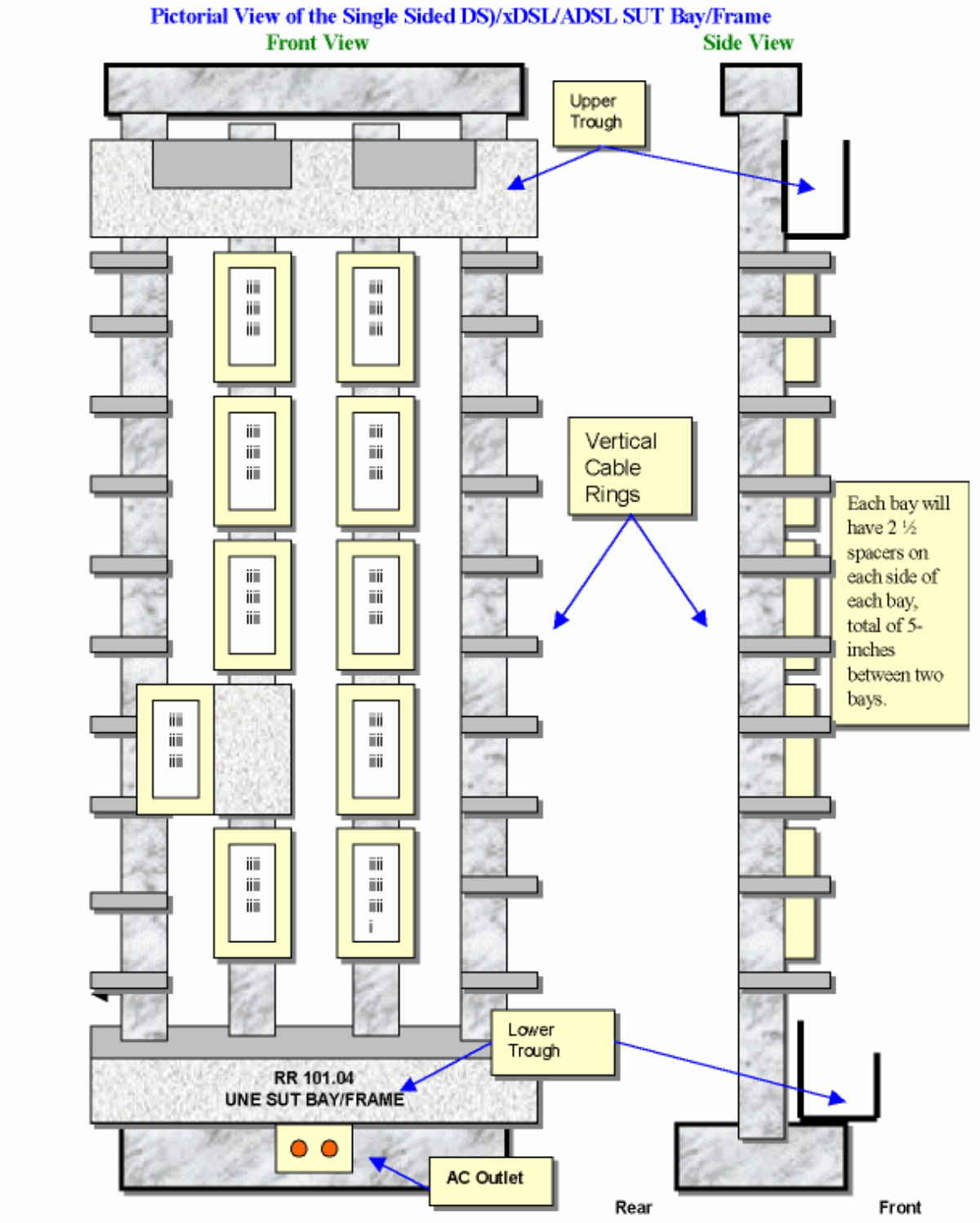
POTS Switch Port and Cable Pair connected using UNE Method 2 to a Shared UNE Termination Bay within the Collocation Area. The CLEC connection is annotated in **RED**.

With the first Collocation Request, the ILEC has 110 days to install, cable and equip the following Shared UNE Termination(SUT):

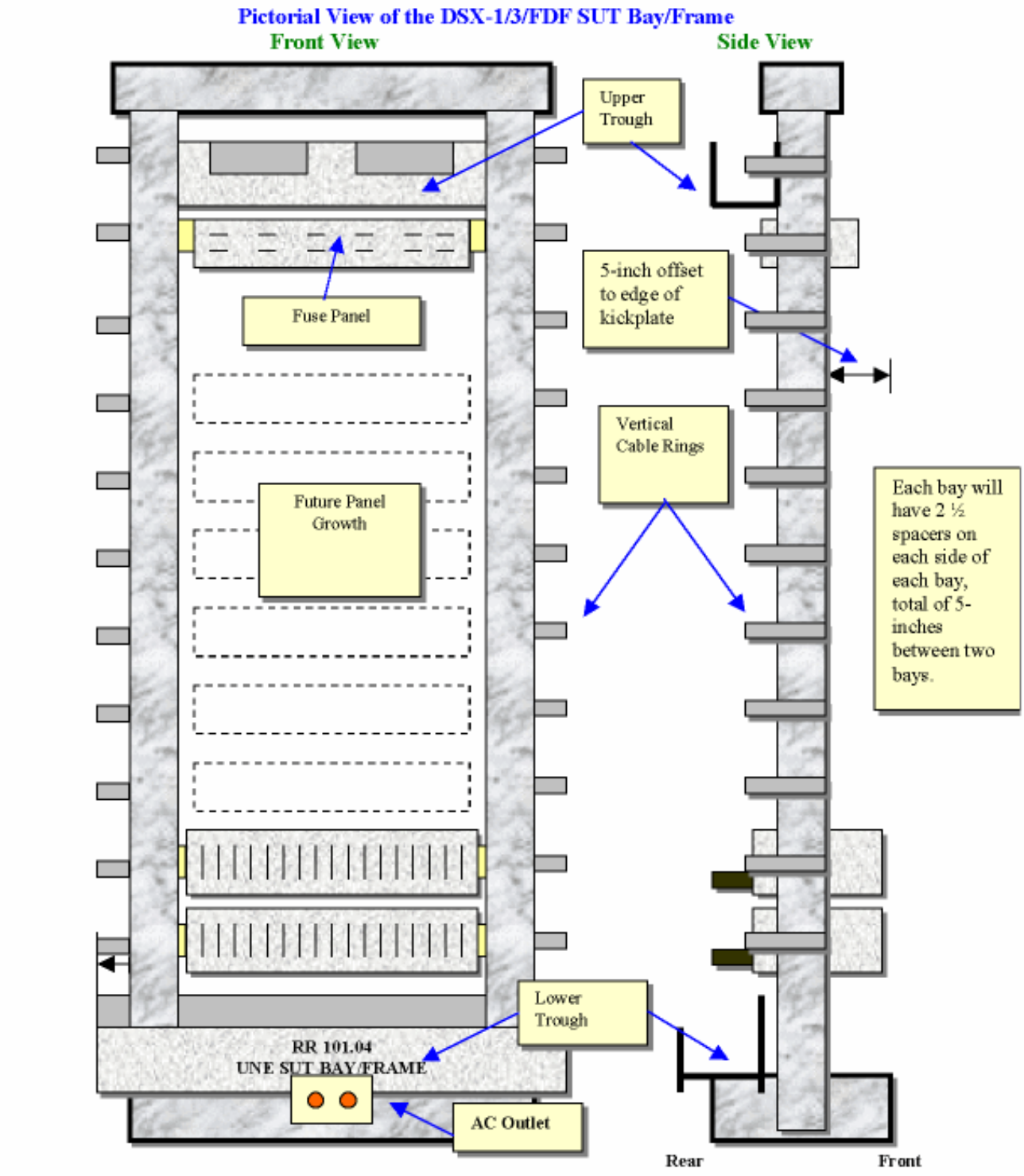
- Single Sided Bay Frame for DS0/xDSL/ADSL services that is cabled back to the ILEC Intermediate Distribution Frame (IDF).
- DSX-1 Bay
- DSX-3 Bay
- Fiber Distribution Bay



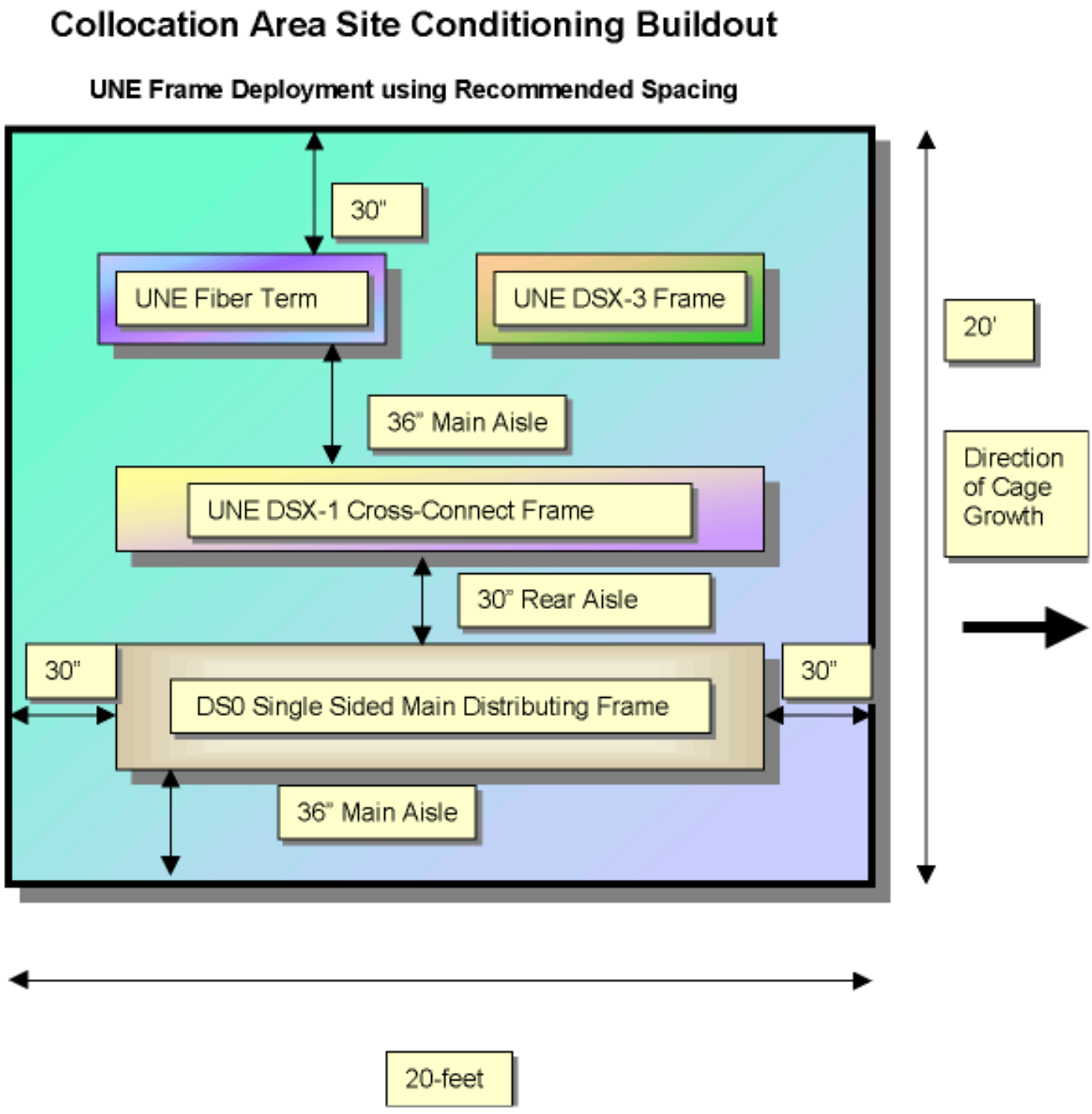
The ILEC will make only panel and block assignments on the frames for the placement of blocks on the frames. The only facility assignments on a pair by pair or coax connector basis will be the ILEC UNE's terminated on the UNE Frame from the ILEC network.



This illustration shows how a DS0 Collocation Bay/Frame is arranged. The equipment will fit within a standard bay footprint and may be placed in an existing Cageless Collocation Lineup.

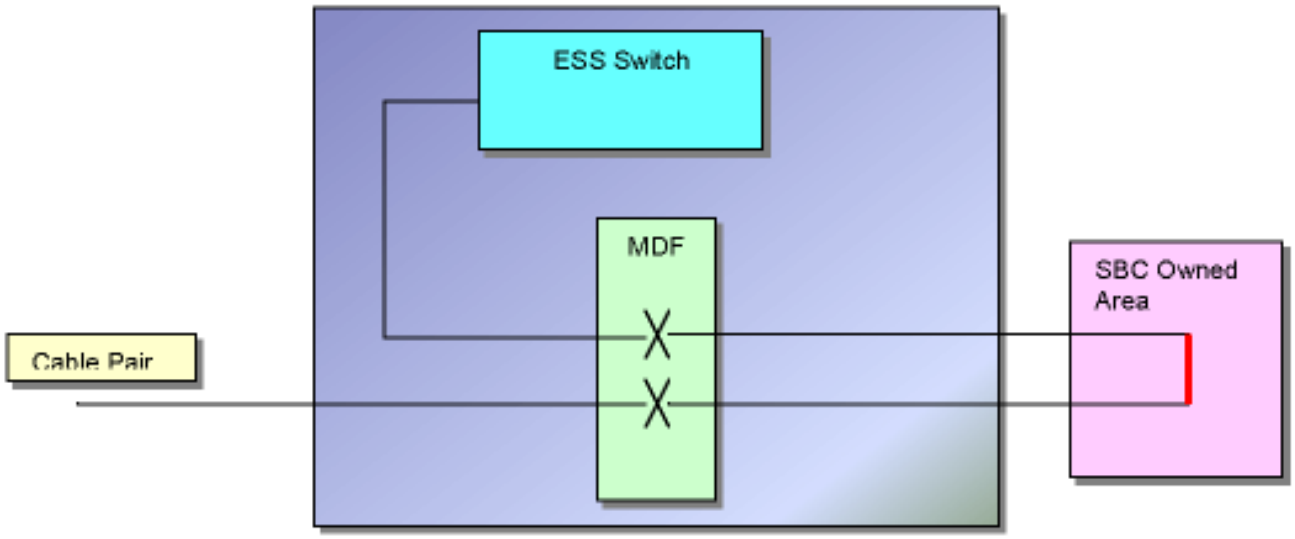


This illustration shows the typical layout of a standard DSX-1/3 or FDF Frame layout. Reference the standard SBC Drawings for the bay, troughs, rings and panels for deployment. The bay/frame will fit within an existing Cageless Collocation Lineup in a standard bay configuration.



UNE Method 3

UNE Method 3 is used by the Collocator to connect two UNEs at a point outside of the SBC Central Office on SBC owned property. This arrangement is used when there is not a capability for the ILEC to provision a SUT cross-connect bay/frame within the Central Office. This option is anticipated to be used at such time the Central Office is blocked or restricted from offering the UNE Method 2 potentially when space for a bay/frame is not available.



POTS Switch Port and Cable Pair connected using UNE Method 3 within SBC Owned Area outside of the Central Office. The CLEC connection is annotated in **RED**.

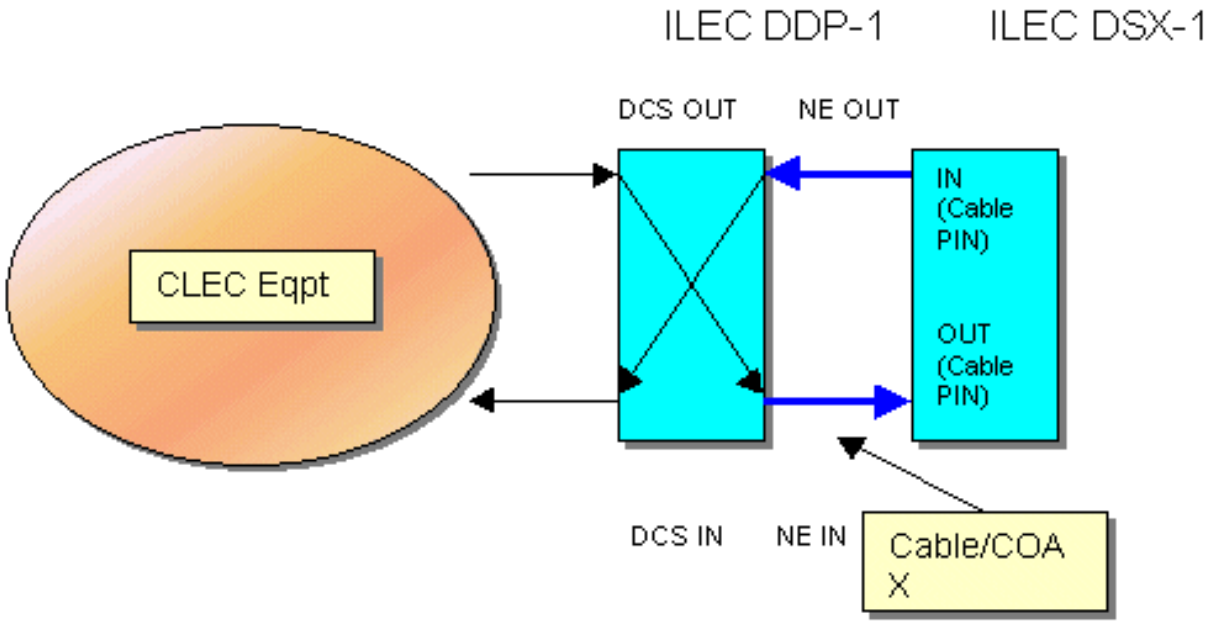
4. METHODS OF INTERCONNECTION

The CLEC will perform all cross-connects on this frame (the ILEC may perform this function as a vendor for, and paid by the CLEC but not as an extension of the regulated circuit). The CLEC will be required to use the proper cross-connect materials(twisted pair, coax, fiber jumpers) for the service at hand and use the proper tools.

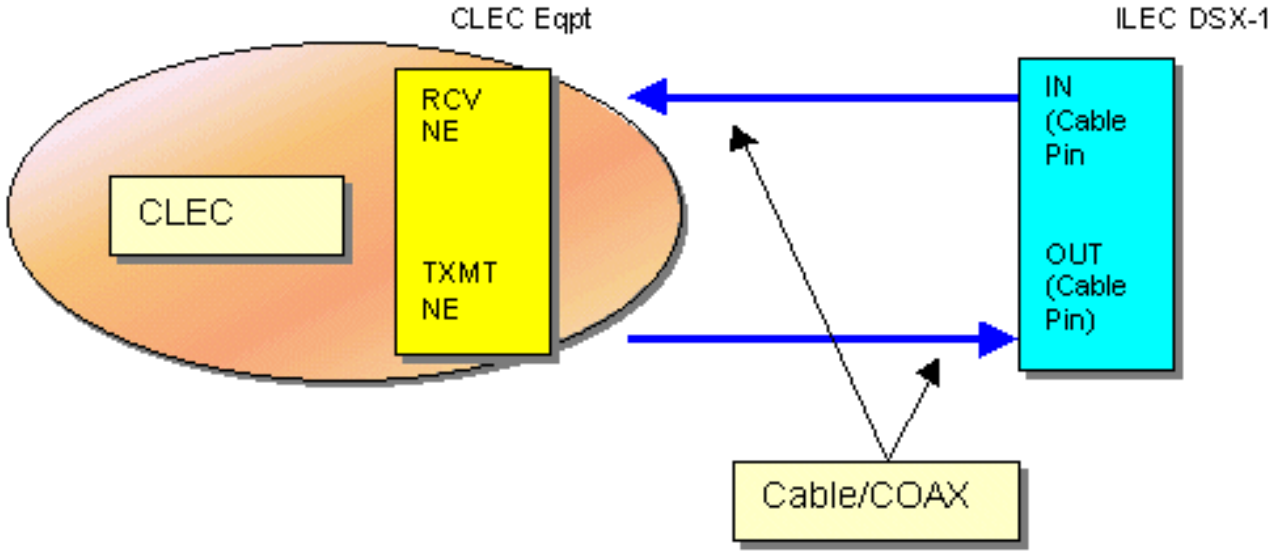
CAUTION MUST BE EXERCISED when two transport signals are connected to each other. The CLEC will be the only group aware of the integration of two carrier signals and must perform a transmit-receive turnover at the SUT Bay/Frame to permit the proper function of what has become known as "back to back carrier". The turnover is not required with only one carrier interconnection.

Bold is hardwired
Blue represents ILEC provided cable and panels

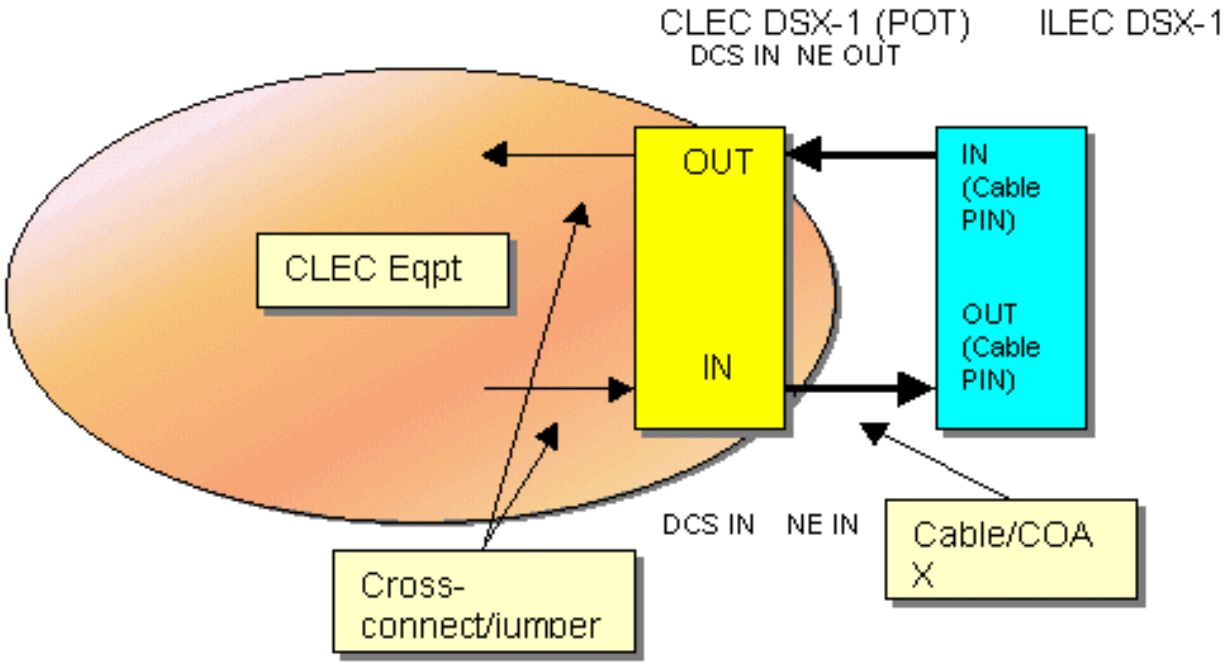
A. ILEC Handoff to CLEC with ILEC Provided POT



B. ILEC Handoff to CLEC using CLEC direct connect to ILEC, no POT.

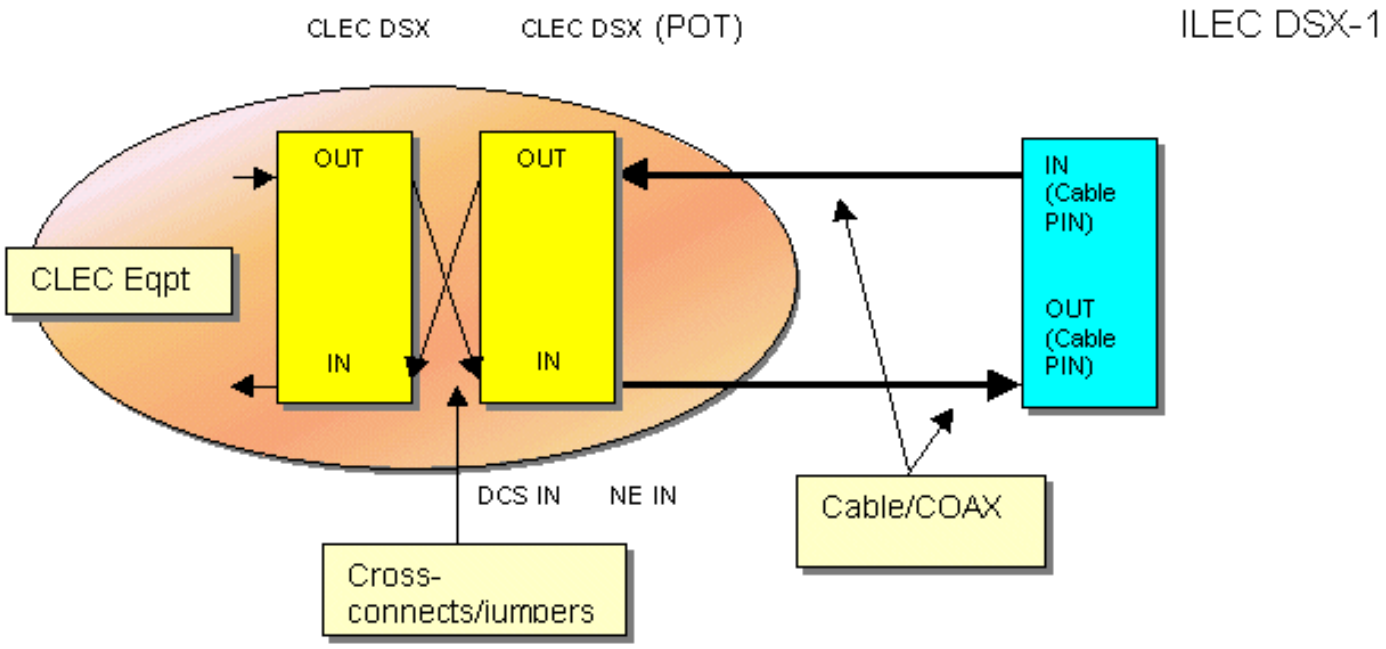


C. ILEC Handoff to CLEC with CLEC Provided POT using one DSX



The CLEC needs to terminate their TMXT on the Cable PIN IN jack to the ILEC cable (to the ILEC OUT jack) and the Cable PIN OUT jack to the ILEC cable (to the ILEC IN jack). If the CLEC terminates in error to the cross-connect pins on their panel, they will have to change their cabling to match the ILEC or they will have to connect the services in a cross-connect manner(double cross) to compensate for the error. (The CLEC may be using a DDP with an internal reverse cross.)

D. ILEC Handoff to CLEC with CLEC POT using Two DSX panels



5. OPERATIONAL SUPPORT SYSTEMS

5.1. Connecting Facility Assignment

The goal on assignments is to follow the ATIS/OPF-ASR-005 Connecting Facility Assignment (**CFA**) effective September 25, 1999 on a going forward basis. It is intended for DS1, DS3 and Optical Carrier Facilities will be handled in this manner. DSO and xDSL/ADSL services are also intended to move toward this solution. Excerpts from the OBF as follows:

The CFA identifies the provider carrier systems and channel to be used from a Wideband Analog or a High Capacity Facility. The Facility Identification consists of the following elements:

1. The Facility Designation which uniquely identifies a particular facility type between two terminal locations (variable length, 1-5 characters).

2. The Facility Type which is usually identified through the use of a code set found in Telcordia Practice BR 795-450-100(variable length, 1-6 characters).

3. The Channel/Pair number of the Wideband or Hi-Cap Facility that is being used to provide the service shown on the ASR. The Channel/Pair number may be accompanied by a modifier code to further define the facility characteristics (variable, 1-5 characters).

4. The "A" location, which is the location of the facility termination that has the lower alpha/numeric CLLI code(8 or 11 characters).

5. The "Z" location, which is the location of the facility termination that has the higher alpha/numeric CLLI code(8 or 11 characters).

6. Virgules (/) are used as delimiters to separate the different elements of the CFA.

NOTE:

1. The range of assignments should be provided on the DLR during the provisioning of the Wideband or High Capacity Facility. The customer specifies the particular carrier system and channel or channels to be utilized.

2. All element entries of the Connecting Facility Assignment are left justified with no trailing spaces.

3. For those companies that do not combine unbundled network elements, the CFA may not be populated when ordering dedicated interoffice transport.

   EXAMPLE:

```
101/T1/3/SNANTXCACHA2/SNANTXCACG0      Method 1
101/T1/3/SNANTXCAHA2/SNANTXCAHA4       Method 2
101/T1/3/SNANTXCAHA2/SNANTX08H92       Method 3
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5.2. TIRKS

Trunks Integrated Record Keeping System (TIRKS) is the standard OSS for DS1, DS3 and Optical UNEs. The CFA will be used for the method of administration. Each Bay/Frame will be given a unique CFA for all terminations and CLEC assignments. Tie pair methodologies are still to be worked out.

5.3. SWITCH

Each of the SBC Local Exchange Carriers uses a different method for the processing of DSO/ADSL/xDSL UNEs. Generically, except for Line Sharing, Pacific Bell/Nevada Bell and SNET use SWITCH for these services while SWBT and Ameritech use TIRKS for this purpose. The use of CFA on a going forward basis is the recommended strategy, but the details remain unsolved. Discussion revolves around the development of a Universal CFA that could be used in either SWITCH or TIRKS, but without significant software program upgrades; the process would be a manual affair in the interim.

6. CENTRAL OFFICE PLANNING

UNE Method 1 and 3 will utilize existing equipment, bays and frames. In these arrangements, follow standard operating procedures and Frame Forecast Methods and Procedures and Space Planning Practices and M&Ps.

UNE Method 2 requires discussion. Frame Planners, Space Planners and Transport Equipment Engineers (TEE) need to consider the placement of the Shared UNI Termination (SUT) bay/frames using the following rules:

1. Place the bay/frames in close proximity to one another.

2. Place the SUT bay/frames in the existing Collocation Area where security measures are already provisioned.

3. Build out the overhead superstructure ironwork for a Building Bay area (approximately 400 square feet at the time of the first UNE Method 2 request for that Central Office.

4. The recommended deployment for UNE Method 2 would require that all four bay/frame types be installed at the same time with the first request. This would permit the TEE only having to provision the office once for UNEs with one Telephone Equipment Order. Changes to the CLEC requirements may dictate a rapid installation of another one of the four frames if only one is originally provisioned.

5. Place only one type of service per SUT bay/frame. DO NOT MIX DSX-1, DSX-3, FDF or single Sided Bay

mounted conventional frame services in the same bay.

6. Cabling between adjacent frames of the same product type will be placed through bay troughs designed for that purpose, not overhead racking.

7. Ensure that the appropriate infrastructure Fiber Raceway & Switchboard racking has been installed from the SUT Collocation Area back to the ILEC standard bay/frames such as the Main IDF, DSX or FDF frames.

8. Ensure that appropriate power, lighting, grounding has been provided to the area.

9. Place the SUT Collocation Area in such a place as to minimize the distance from the Main DSX-3 to the SUT DSX-3(the shortest distance service required). Every effort should be made to insure that DS3 and DS1 services will be installed in a similar manner that the ILEC would for their own services at a customers premises using the correct transmission characteristics for that service. Distance separations must be carefully analyzed to insure consistent applications for services. The location of this UNE Frame area is recommended to be within 50 linear feet of the Central Office ILEC DSX3 and be located adjacent to the ILEC Security Partition so that it may become an adjoining portion of that partition. In addition, the maximum distance for any SUT frame location discussed here must not exceed 100 feet from the primary DSX1 if DS1 services are provisioned via twisted pair and/or cable terminations. Refer to the *Collocation Provisioning Guidelines (CPG)* for further information.

10. The UNE Frame area must be reserved and forecasted as "Used Space" in the Collocation Area at such time that the Site Conditioning is performed in the Collocation Area.

11. All cable placed by either a CLEC or an ILEC must conform to the rules covered in the Technical Publication for Installation, TP 76300MP, Section 2, Cabling or AM-TR-11, Ameritech Installation Guide.

12. One of the concerns when engineering the cabling between the Interconnector equipment and ILEC's digital cross connect frame is cable distance and signal degradation. The following table provides the maximum cabling distance limitations for DS1 and DS3 circuits (without regeneration devices) using the ideal cable facilities for the Collocation SUT Area Bay/Frame and the equipment terminated in the ILEC area:

Type of Connection / Cable Used	Distance Limit (NE-DSX1/DSX3)	Distance Limit Cross-Connect at DSX1/DSX3	Maximum Overall Distance Limit (NE-NE)*
DS1 22 gauge wire	655 feet	120 feet	1,310 feet
DS1 24 gauge wire	450 feet	120 feet	900 feet
DS1 26 gauge	450 feet	120 feet	900 feet
DS3 734C coax	450 feet	45 feet	900 feet
DS3 735C coax	250 feet	45 feet	500 feet

13. The Relay Racks (Bays) used for the SUTs will use a 2 "-inch spacer for permanent cabling space on the vertical sides of each bay.

14. Initial Deployments should be made in the following manner:

    Single Sided Bay/Frame - One Bay with 10 vertical 89-type blocks.

    DSX-1 - One Bay with two 84-port DSX-1 rear-rear panels.

    DSX-3 - One Bay with two 24-port DSX-3 rear-rear panels.

    FDF - One FDF bay with two 72-port FOT panels.

15. Panel Ordering Information:

- DSX-1 to be used in all SBC Local Exchange Carriers is the DSX-1 84 port (1-84) RX, SSI: 300026838, ADC part code: D1M-1F0001.

- DSX-3 to be used in all SBC Local Exchange Carriers is the DSX-3 24-port (1-24) RX,-Empty Chassis, SSI: 00396390, ADC part code: DSX4H-W3C.

- DSX-3 Module (requires 24 per chassis) to be used in all SBC Local Exchange Carriers is the RX-Module, Mid-BNC/440, 6-port (MO, XO, OUT, IN, XI, MI), SSI: 300027182, ADC part code: DSX-4H-MBRC-BA.

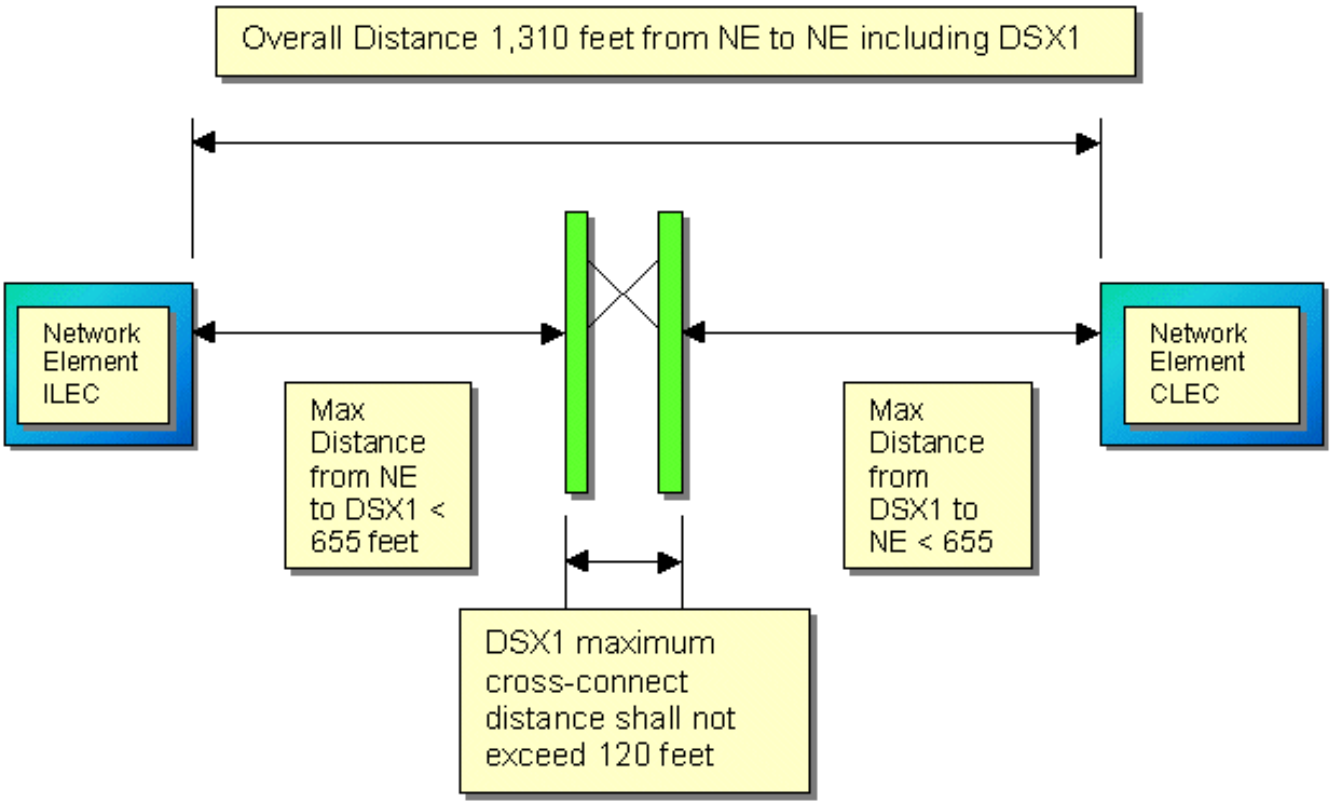
- The FOT (FDF) to be used in all SBC Local Exchange Carriers is the FOT 72-port FX, SC-UPC Connector, SSI:300059666, ADC part code: SBFCMCM-670000-A.

16. DSX-1, DSX-3 and FDF standard relay rack configurations shall be used in accordance with existing SBC drawings.

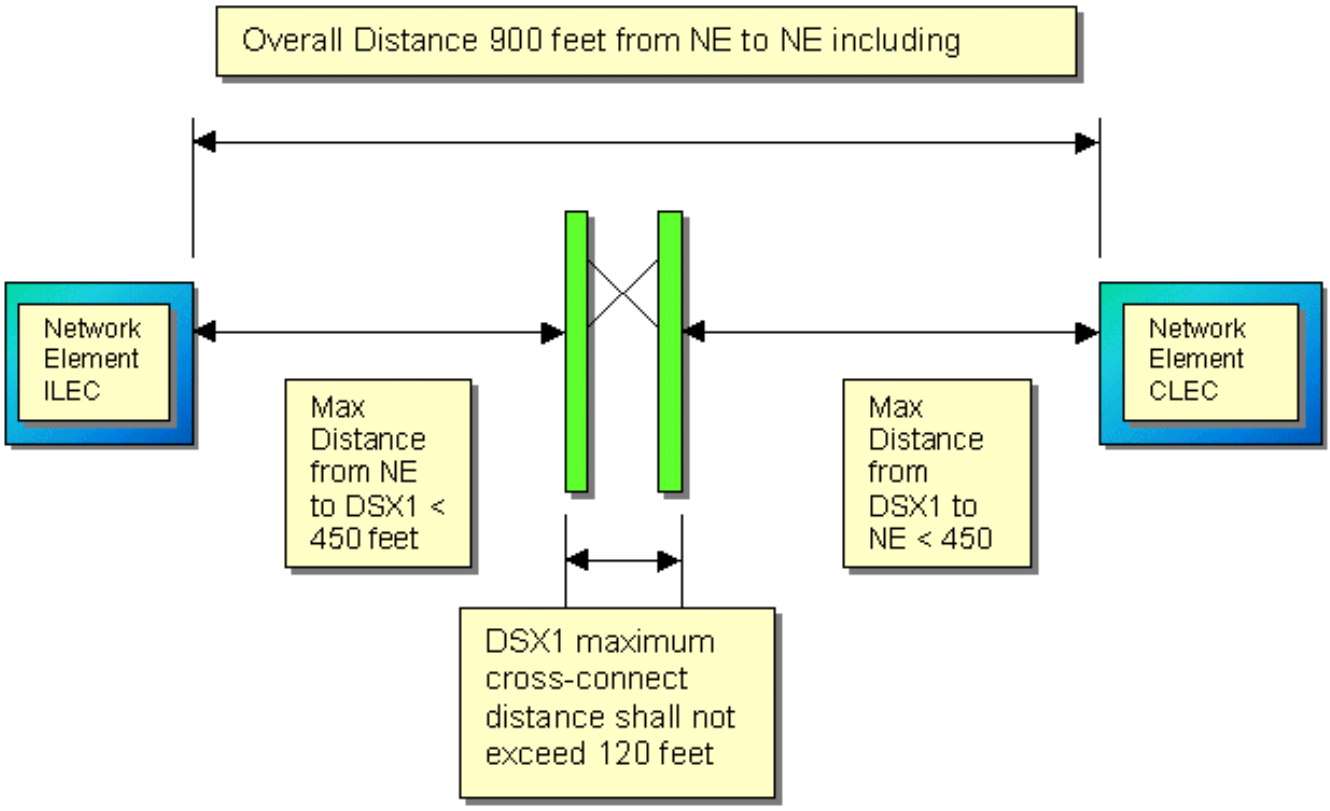
17. Leave one bay space adjacent to each new bay/frame deployed for within 5-year growth. The lineup may have all four types of frames in the same line.

18. The overall distance from one Network Element to another Network Element (such as a DCS) is shown in the drawing below:

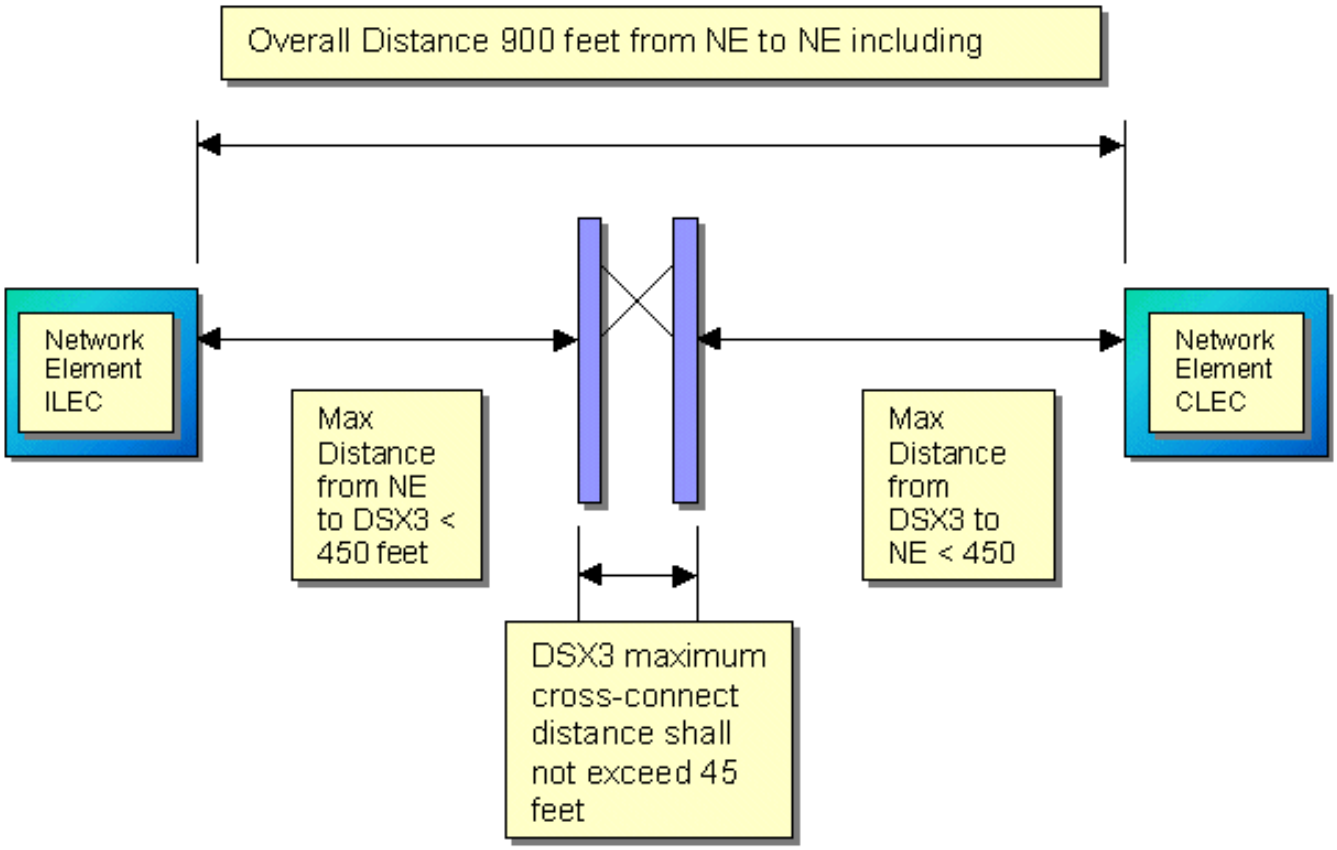
DS1/T1 using 22 gauge twisted pair cable

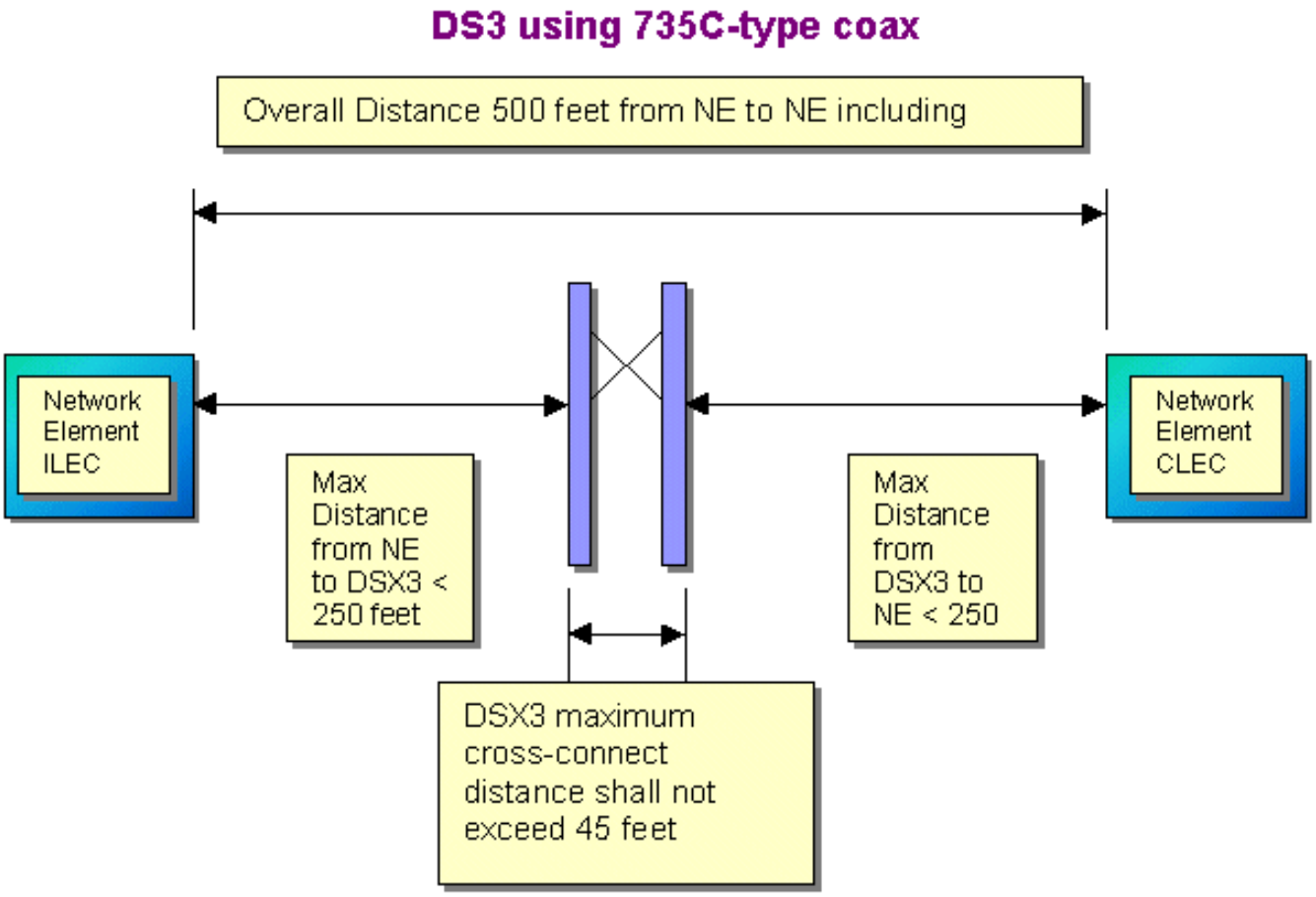


DS1/T1 using 24/26 gauge twisted pair cable



DS3 using 734C-type coax





19. In cases where this distance limit cannot be met to the CLEC from ILEC equipment, intraoffice repeaters or terminations on Digital Cross-Connect Systems (DCS) may be needed to regenerate the signal to meet service parameters for the circuit.

20. The Transmit facility coming toward you is cabled to your "Out" Jack of your DSX panel.

21. The Cabling and Cross-Connects are place on an OUT to IN, IN to OUT basis when the panel is wired straight inside in a standard DSX configuration.

22. If Interconnect Panels are used for Termination Panels they shall be treated as two DSX panels back-to-back. These have an internal cross inside and can result in a violation of the cross-connect rule by requiring a connection OUT-OUT and IN-IN.

23. Labeling on panels may be misleading. Use the OUT and IN principle.

24. The ILEC must not compensate for the lack of cross-connect (OUT-IN and vice versa) on the ILEC frame.

25. Equipment areas will be planned so that equipment staging and uncrating can be accomplished within the common collocation equipment area for as long as possible. To accomplish this, equipment growth shall be planned so that bay/frame and equipment lineups (installation) occur towards the equipment area's access point or doorway.

26. Place 50-amp fuse panels with each DSX-1 and DSX-3 bay/frame.

27. 1 -inch spacing between shelves if 1 x 23 bay for PB/NB/ SWBT; 2-inch spacing between shelves if 2 x 23 bay for AIT/ SNET/SWBT.

28. The standard nomenclature of the DS0/xDSL/ADSL bay/frame is called the "Single Sided Generic Distributing Frame"or "**SSGDF**". This product may be ordered from Lucent/Avaya, Marconi or Corning and may reference this name. The materials will fit within a standard network bay from Custom Cabinets, Newton Instruments or Hendry Communications. The Ordering entity will be required to order connecting blocks primarily manufactured by either Corning part number 139-N0100R012B, Terminal Block, 100 Pair, 8x25 SWW, non-Conn, Beige, PID 300137205 for AIT, SWBT, PB, NB and PID 9508267 for SNET or the Lucent/Avaya 89F1F100.

7. FUNDING

Per agreement from Enterprise Technology Support and Finance on August 4, 2000, UNE Method 2 Interconnection, Collocation will serve as the source of funds for establishing the new frames/bays. At this time we will address requests on an as needed(as opposed to proactive) basis. Thus, we should only proceed with the valid orders provided to SBC Communications Inc by CLECs. The following CEC codes are to be used:

- L SWT UNEFR COLCN (Switching)
- L TRN UNEFR COLCN (Transport)

By using these codes we will be able to track collocation expenditures unique to UNE Method 2 Interconnection. The actual CEC code definitions are:

- L is the SUM Code = Legal
- SWT is the MAR Code = Switching
- TRN is the MAR Code = Transport

UNEFR is the MOD Code = Capital Expenditures necessary to establish frames (Conventional, DS1, DS3, Fiber) associated with Unbundled Network Element (UNE) Method 2 Interconnection

- COLCN is the Project Code = Collocation
- Todd Minister has set up the codes in CPTS.

8. REFERENCES

Document	Description
SBC-002-316-002	Collocation Provisioning Guidelines
SBC-002-316-004	Tie Pair Management on MDF/IDF Frames
SBC-002-316-006	Line Sharing Deployment M&P
SBC-002-316-007	Special Interconnection Arrangement (SIA-BFR)
SBC-002-316-008	CLEC Cable Placement
SBC_002-316-009	ADSL for the Central Office M&P
SBC-002-316-003	Frame Forecast M&P
SBC-002-316-010	CLEC Line sharing (CLEC Version)
SBC-002-316-012	Single-Mode Fiberoptic Splitters
SBC-002-316-012	Line Splitting
SBC-002-316-015	Decommissioning of CLEC Equipment/Wiring M&P

For further information or electronic copies of this document and related information, visit either of the internal SBC Local Exchange Carrier Web sites:

http://home.sbc.com/commonsystems/ or http://apex.sbc.com

http://home.sbc.com/commonsystems/ or http://apex.sbc.com

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