SBC-002-316-042
DSX-3 Frame Forecast M&P

Abstract

Presented in this document are the methods and procedures to implement a DSX-3 Cross-Connect Frames in SBC-13STATE Central Offices.

Audience: The primary audience for this document is **SBC-13STATE** personnel in the following disciplines: Transport Equipment Engineer (TEE), Facility Equipment Engineer (FEE), Digital Transport Engineer (DTE), Maintenance Engineer, Space Planner, Frame Planner, Long Range Technical Planners, Fundamental Network Planning and **SBC-13STATE** Authorized Vendors.
Effective Date: May 21, 2002
Date Issued: Issue 7, August 29, 2002
Expires On: N/A
Related Documents: See Reference Section of this document.
Canceled/Superceded Doc: Issue 1 of this document
Issuing Dept: SBC Services, Network Planning & Engineering (Common Systems)
Business Unit: Network

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1. Reasons for Reissue

Issue 2, Section: Updated to reflect **SBC-13STATE** applicability.

Issue 2, Section 4: IOR deployments are required to provide a primary and protect functionality for each DS3.

Issue 2, Section 6, Paragraph E: Cross-Connect cords modified for 734C type cable from the previous maximum of 45 feet to the new maximum of 88 feet.

Issue 3, Section 6, Updated to reflect changes in spacing between DSX-3 bays.

Issue 2, Section 7, Paragraph B & C: Added chart and illustration drawing for typical cabling deployments.

Issue 2, Section 7: Updated to reflect the latest maximum allowable distances for cabling and cross-connects.

Issue 2, Section 7: LCJ/LCC connectors will be limited to existing panels only. All new panels will use BNC connectors.

Issue 4, Section 7: PAN Reference Change and Use of Cross-Aisle Troughs and Extenders encouraged.

Issue 6, Section 7: Update on Allowable BNC and SMZ Coaxial Connectors.

Issue 7, Section 7: Update on Allowable SMZ Coaxial Connectors.

Issue 5, Section 8: Revised references to Forecasting Forms and Forecasting Organizations.

Issue 2, Section 10: Reference Section updated in its entirety.

Issue 2, Section 11: Copyright Section updated in its entirety.

Issue 1, All: This document originally was a section within SBC-002-316-003, Frame Forecast M&P. This document is now covering DSX-3 Frame installations only.

2. Introduction

The primary audience for this document is SBC Local Exchange Carrier personnel in the following disciplines: Maintenance Engineer, Transport Equipment Engineer (TEE), Facility Equipment Engineer (FEE), Digital Transport Engineer(DTE), Space Planner, Frame Planner, Long Range Technical Planners, Fundamental Network Planning and NSS organizations. This document is to be used internally and have a limited distribution subject to the header/footer information. This M&P may be found on the internal Web Site: http://home.sbc.com/commonsystems/ or http://apex.sbc.com

This document has been updated to reflect Network Planning & Engineering (Common Systems Standards) for the following Incumbent Local Exchange Carriers, henceforth referred to as **SBC-13STATE**:

SBC-Southern New England Telephone (Connecticut)
SBC-Pacific Bell (California)
SBC-Nevada Bell (Nevada)
SBC-Southwestern Bell Telephone (Missouri, Texas, Arkansas, Oklahoma, Kansas)
SBC-Ameritech (Illinois, Wisconsin, Indiana, Ohio, Michigan)

The DSX-3 Cross-Connect Frame is considered as an indigenous part of the Central Office that will support the interconnection needs for customers, carriers, other telecommunications providers, switches, transport equipment and cable facilities in the serving Wire Center area. When forecasting the ultimate floor space requirements for the frame footprint, considerations are made based upon the initial 20-year projection of use by the above listed elements. The frame is deployed in a logical layout algorithm to maximize the overall life of the frame and to permit the greatest utilization of frame equipment and block assignments with the least amount of jumper congestion and blockage. Per the Fundamental Network Planning Memorandum dated May 29, 2001, **SBC-13STATE**'s strategic direction is to move toward direct connection (with no intervening DSX appearance) between a W-DCS and other Network Elements (NEs) wherever possible for DS3/STS-1 services.

Subsequent growth requirements of the DSX-3 Cross-Connect Frame will be based upon Wire Center forecasting, technology additions and growth, and the need for increases in facility placement in direct support of the community growth that the Wire Center supports. Incremental growths of the DSX-3 Frames will be addressed in this document. It must be specified that the building structure is planned to support this initial 20-year life-of-frame deployment with associated cable entrance facilities provided throughout the length of the frame in a direct route through the Wire Center. Shorter timelines could result in increased costs due to the need to redistribute equipment and facilities on the frame on smaller frame hardware increments.

It is understood that State Utility Commissions may require a reduced interval in the forecast planning from the standard projection timelines. When this occurs, the floorspace layout should reflect the maximum permissible sizing available. The Space Planner, working with the Detail Engineering Service Provider (DESP), where applicable, shall take into account the best solution based upon space availability, most efficient design and least cost application for the frame placement and design.

The DSX-3 Cross-Connect Frame supports the technology and application based upon their metallic standard requirements. It is imperative that the DSX-3 Cross-Connect Frame must be

forecasted with the appropriate space and strategic location allocated within the Wire Center. Every effort must be made to avoid blocking the logical growth layout of a DSX-3 Frame or the inappropriate placement of the frame within the WC, causing the potential need for expensive additional regeneration equipment.

3. DSX-3 Cross-Connect Frame Overview and Definition

A DSX-3 Cross-Connect Frame architecture serves as the primary interface between a DS3-generating Network Element (NE) and a Digital Cross-Connect System (DCS). The DSX-3 Cross-Connect Frame provides a centralized point for the organization and administration of the DS3 Coax Facility and provides for rearrangeable connections between any two terminations or appearances. A DSX-3 Cross-Connect Frame serves as a manual method of cross connecting DS3 and STS-1 services, in addition to Digital Cross-Connect Systems.

DSX-3 systems are suitable for use in; both large and small offices, digital loop carriers, controlled environmental vaults (CEVs), and customer premises. The systems are modular in design and serve as centralized termination, test access, cross-connect points and distribution frames for network elements.

The recommended services and applications that should terminate on a DSX-3 are as follows:

1. “Nail-Up” services such are T3 spans dedicated to a Switch.
2. Collocation and other low penalty requesters of excess capacity.
3. Asynchronous equipment, stand alone applications, Manufacture Discontinued Add Drop Multiplexer (ADM) equipment.
4. Electrical interconnection of step-down rings.

By contrast, the DCS is an electronic and/or optical cross-connect method system for the same services. The recommended services and applications, which should terminate on a DCS are as follows:

- Potential Rearrangement Customers
- Transport Traffic
- STS-1/DS3-DS1-OC Multiplexing Functionality
- Regeneration of the Signal
- Network Reconfiguration Services

The Wideband DCS and Broadband DCS can be utilized as a software configurable replacement for the manual DSX. Refer to the Infrastructure Deployment Guidelines (IDG), Transport Section, for DCS guidelines for the various network elements being cabled to the DSX and DCS. Direct cabling between a Network Element to the DCS without the use of DSX panels is strongly encouraged

4. Intraoffice Repeaters (IOR) for the DSX-3

IOR deployment within **SBC-13STATE** should be minimized at all times and should only be considered as a last option alternative. The overall distance between one Network Element through the DSX field (DSX-DSX) and on to another Network Element represents the key

distance limitations before IORs should be considered. The placement of multiple DSX lineups or cross-connect lengths within the DSX field longer than what is specified in this document do not necessitate an IOR deployment. Consideration must be given to Optical Deployment through Intraoffice Rings through various Network Element nodes in lieu of IORs. Each DSX system is designed for a specific bit rate and signal level of DS3---44.736Mb/s and STS1---51.84 Mb/s equipment is interconnected at a DSX-3 panel. The following fundamental functions are performed at a DSX-3 frame:

a) Termination - provides a manual interface point for digital equipment at a particular signal bit rate. The exception is that DS3 and STS1 both terminate at the DSX-3 and use a different bit rate.
b) Cross-connecting – electrically connects the various digital equipment to form Digital Systems.
c) Testing – permits a technician to access the circuit so that the DS can be monitored or measured.
d) Patching – permits the rapid restoration of services allowing the technician to temporarily substitute for defective facilities or central office equipment.
e) Rolling – allows for the orderly transfer of a digital signal without interruption. This requires the use of a Bridging Office Repeater Test Set.

Some of the operational and maintenance functions performed at the DSX-3 bay are:

. Testing and Fault Isolation
. Interoffice Service Restoration
. Office Layout
. Digital Switch Cut-over
. Office Record Keeping

5. DSX-3 C.O. Topology

This DSX-3 Frame Forecast M&P shall be in concert with the W-DCS IDG, Transport Tab 4. The DSX layout provides for the manual interconnection of two DS3 circuits at a cross-connect field. The Primary DSX lineup will cable directly to Network Elements without having the need to route through another DSX panel located at the NE. DSX-3 layouts are arranged to support the building infrastructure in a logical arrangement. When the equipment placement is located on another floor or a non-contiguous equipment area, a multi-coax cable will result in a tie cable arrangement to the remote area and will result in termination onto a **satellite DSX-3** in its own bay. From this satellite location, individual coax pairs may be pulled through common use switchboard cable racking to the Network Element. It must be emphasized that individual coax pairs should not traverse firewall partitions and floors due to the resulting inefficient and inordinate arrangement and costs. The placement of DSX panels at or near Network Elements for the sole purpose of supporting that NE is not supported or recommended; DSX-3 placements should be placed to support the building, floor and neighborhood of the NE in question.

DSX-3 panels used as an indigenous part of the Network Element product located within the NE equipment may be provided as a part of the NE and solely cost supported by that product, not baseline funding. This type of application will always use rear-rear standard **SBC-13STATE** approved panels regardless of the DSX3 topology in the Central Office.

6. DSX-3 Cross-Connect Frame

6.A. Overview

Planning of the DSX-3 lineup will dictate careful consideration of the Central office layout. It is important to place the DSX-3 lineups (if multiple) in a parallel arrangement in a contiguous arrangement with appropriate troughs for adequate jumper placements. The length of the lineup may be up to 88 feet with the correct provisions for trough and routing layouts and may have up to 4 parallel lineups.

A DSX-3 system consists of any number of individual DSX terminations to which network elements are cross-connected to other network elements. Each DSX termination consists of five jacks, two equipment (network element) terminals and two cross-connect terminals. A digital circuit requires two DSX terminations. The network element is connected to the equipment IN and OUT terminals. The circuit is completed by connecting the IN and OUT, with DSX-3 cross-connect cords at the cross-connect terminals.

6.B. Interbay Patch Panels or Bridging Panels:

Interbay patch panels or Bridging Panels are required to allow patching across aisles.

The use of Cross Aisle Bridging or the placement of one Interbay patch panel for every five bays, will be used to increase the sizing of interbay ports at these locations to compensate for higher density arrangements. Multiple lineups use a combination of in-line and cross-aisle line connections to separate panels. The growth pattern for a five-bay module varies depending on a single, double, or triple lineup complex.

The DSX-3 is ideally provisioned based upon a 5-year forecast with skeleton bays (without panels). The skeleton bay, or field assembled bay, should have all the required horizontal, vertical troughs and cable racking provisioned in advance of the panel request.

For any existing four bay interbay panel configuration, continue to use those same bays for additional interbay panels from new lineups and extensions of existing bays using the five bay format. When the next new interbay is identified, place it five bays away from the last four bay interbay panel on the end cap. Continue on the existing lineups using the five interbay format. Connect these to the existing four bay interbay panels interspersed throughout the frame. Each Central Office must be evaluated as to the appropriate placement on imbedded lineups.

6.C. Cross-Aisle Tie Pair Panels and Bridging Panels:

Cross-aisle tie cable panels are used in DSX-3 lineups to provide the ability to cross-connect two DS-3 or STS-1 circuits terminated on different DSX-3 or STS-1 lineups. The cross-aisle circuits consist of 2 DSX-3 or STS-1 cross-connect jumpers terminated at each end on the rear of a cross-aisle tie cable panel. These tie cable panels shall be strategically placed in the same interbay panel bays in both DSX-3 or STS-1 lineups to avoid tie cable congestion and long cross-connect coax jumpers.

Bridging repeaters provide the ability to place one set of jumpers from one panel to another without the use of Cross-Aisle Panels. The Bridges span the aisle to provide an interlocking arrangement for streamlined jumper placement.

6.D. DSX-3 Cross-Connect Rules:

Some basic considerations for cabling equipment to DSX-3s are:

a) All hardwired cables between the connecting equipment and the DSX-3 should be 75-ohm coaxial cable with a single tinned copper shielded braid. The approved **SBC-13STATE** cables are the 734C (thick cable) and the 735C(thinner cable).

b) The Maximum hardwired 735C cable length between two active Network Elements is 500 feet. The Maximum hardwired 734C cable length between two active Network Elements is 900 feet. Note: An exception to this may be found, below, in section 7.0, Planning Guidelines, under scenario 2.). In addition, the new maximum 734C-type cross-connect cord distance is **88 feet** between two DSX-3 panels. Note: The previous maximum cross-connect cord distance between two DSX-3 panels, using 735C-type cord material was 45 feet.

c) For the hardwired coaxial cable, Kings Electronics BNC connectors are the **SBC –13STATE** standard for DS3/STS1 crimp connections in SBC-Southwestern Bell, SBC-Southern New England Telephone, SBC-Pacific Bell and SBC-Nevada Bell. Trompeter Electronics BNC connectors are the **SBC-13STATE** standard for DS3/STS1 crimp connections in SBC-Ameritech. A set of unique crimping tools will be required for use with each connector-manufactured product. **NOTE: The unique crimping tools used with the Kings connectors ARE NOT interchangeable with the unique crimping tools used with the Trompeter connectors.**

d) The cross-connects cords will have both ends pre-crimped by the manufacturer and will be provided in two foot increments. The rear-rear DSX-3 cross-connect cords will use Kings BNC connectors and the front DSX-3 cross-connect cords will use 440-type connectors.

Horizontal cable troughs shall be provided in each DSX-3 bay for the running of coaxial cross-connect jumpers between DSX-3 bays. The cable will be run on the horizontal trough closest to where the terminating panel is located; this means that both the top and bottom troughs must be installed and utilized in a 7-foot high bay.

Provide 5 inches of space between adjacent bays when deploying front DSX-3 cross-connect panels and 7 1/2 inches of space between adjacent bays when deploying rear-rear DSX-3 cross-connect panels in order to allow for all 735C hardwired coaxial cables or a mixture of 735C/734C hardwired coaxial cables. In some rare instances where 734C coaxial cables are 100% prevalent in high density, RZX-3, environments, allow for 10 inch spacing between bays containing such panels. Preprovision 7 1/2 inch type vertical rings for each bay between the troughs.

In large offices, DS3 equipment shall be terminated on different DSX-3 bays to provide an even spread of equipment. All DS3s originating from a single Network Element source unit shall appear on the same DSX-3 bay and panel. The cross-connect jumpers will be kept shorter with this action.

The maximum number of bays in a DSX-3 lineup should not exceed 12, but the most critical issue is the maximum cross-connect length. In the 7-foot and 9-foot environments, there will be two horizontal troughs, one on the bottom and one at the top of the bay. In the case of the embedded 11foot 6 inch environment, there will be three troughs, one on the bottom, one at 7' and one at the top of the bays. The DSX-3 lineup may be interconnected up to three parallel adjacent lineups consisting of 12 bays each. The use of cross-connect panels from one lineup to another may be used, but the preferred method is to place physical Bridge Panels for this application. The Bridge Panel provides for the use of one set of coax cross-connects between one DSX-3 panel and another mitigating additional potential trouble points.

Aisle spacing will conform to existing standards.

Bridging Office Repeaters (BOR) which are capable of operating both DS3 and STS1 signals needs to be installed at each Medium (or larger) Central Office. Portable switchable BOR's shall

be available for use at small Central Offices and remote locations. These units are required for the rolling of DS3/STS1 services from one Network Element to another within the same office or in interoffice applications. All SBC regions, with the exception of Southern California use portable BORs.

In order to maintain complete flexibility, planning of the office size is of primary importance and determines the ultimate size and layout of the DSX-3.

a) Minimize the amount of multiple coax connections.

b) Use both the bottom and top horizontal troughs for jumpers that must traverse over two panels in distance.

c) Each Central Office must maintain the consistent standard at which point the coax are reversed to connect two DS-3/STS-1's for back-to-back carrier interconnections.

d) Larger troughs must be purchased and installed when the jumper depth reaches the within 2-inches of the top of the trough panel at any point in the lineup. Recommend the placement of 8-inch troughs at the start of any new lineup.

e) Work all disconnects and remove all coax, cross-aisle panels and erase the circuit identification on the faceplate of the panels.

f) Provide slack on the horizontal trough of each panel not to exceed 4 inches nor be less than 2 inches.

It is recommended to either install a skeleton bay to pre-equip the required horizontal troughs and appropriately sized vertical rings or to place a complete set of troughs and vertical rings when each new bay is installed in a lineup. Additional bays in a DSX-3 lineup may result in possible cable congestion in the overhead racks.

DSX-3 panels may be placed in areas containing 7-foot, 9-foot or 11-foot 6 inch bays. Due to the distance limitations for cross-connects, it is advisable to use all available space.

All DSX-3 patch panels shall be physically and electrically compatible in the same DSX-3 lineup. Horizontal cable troughs shall be added in every DSX-3 bay for the placement of the cross-connects.

7. Planning Guidelines

7.A. Overview

Going forward on a transition basis, the standard **SBC-13STATE** DSX-3 Cross-Connect System is the rear-rear cross-connect panel topology. All new lineups in a Central Office will use this type architecture.

The standard jack used on all panels going forward is the 440-type jack. Older types such as the 358-type jacks may be used to buildout the existing lineups. The LCJ/LCC are limited to existing panels; all new panels will use the 440-type jack.

Hardwired Cabling between two active Network Elements will not exceed 500 feet when using 735C cable, and 900 feet when using 734C cable (except for scenario 2.), listed below: (Keep in mind that the maximum allowable hardwired cable length from active Network Element to a DSX-3 panel will **always** be 227.5 feet when deploying 735C cable, and the maximum allowable hardwired cable length from active Network Element to a DSX-3 panel will **always** be 427.5 feet when deploying 734C cable.)

1.) If two DSX-3 panels are used between the two active Network Elements, a maximum length of 45 feet for the 735C type cross-connect cord may be used; however, the total distance between the two active Network Elements will still be either 500 feet or 900 feet as mentioned, above.

2.) If however, instead of the 735C type cross-connect cord, a new, larger diameter, 734C type cross-connect cord is used, a maximum length of 88 feet for the 734C type cord may be established between the two DSX-3 panels. Now, however, the total distance between the two active Network Elements will be increased to a maximum of 543 feet when using 735C hardwired cable and to a maximum of 943 feet when using 734C hardwired cable.

3.) Use Kings (all of **SBC-13STATE** except for SBC-Ameritech) or Trompeter (SBC-Ameritech only) BNC connectors in the respective geographic areas for crimping the appropriate BNC connectors to the hardwired coaxial cabling. Note: The standard coaxial connector port on network elements within SBC accommodates the straight or right angle BNC. However, in a very limited number of cases, a network element may be manufactured with a port that accommodates a straight or a right angle SMZ(posilock) connector. Because of concerns over the integrity of "QT" terminations, the straight "QT" Type SMZ(posilock) connector is not approved for use in SBC.

The use of 24 port rear-rear modular DSX-3 Panels are the standard product in accordance with Product Approval Notice (PAN) 20021028, SBC-*Product Approval Notice for DSX Products* dated April 2002. The use of front cross-connect units may be used to finish out lineups. **The use of LCJ/LCC Panels are no longer allowed, even for adding to partially filled bays, and are to be replaced by the BNC Connectorized 32 port RZX high-density product.** The use of 358 jack/panels is allowed to complete existing line ups only. The use of the new RZX high-density 32 port(rear-rear only) panel is limited to high density and constricted areas. See PAN #20021028 SBC-*Product Approval Notice for DSX Products*, April 2002.

Horizontal Wireways (Troughs) and Vertical Rings between the troughs shall be provided on all DSX-3 bays. On 7-foot and 9-foot high bays, the horizontal troughs will be at the top and bottom of the bay. In areas where the 11'6" bay is in use, three(3) troughs will be used; top, bottom and at the 7-foot level.

- When any trough comes within 2-inches of the top of any trough, the entire trough lineup should be upgraded to the 8-inch size.
- Initial DSX-3 deployments will be in 5-bay increments with a forecasted space identified for the lineup to grow to potentially 12 bays.
- Grow existing DSX-3 lineups in 5-bay increments.
- Begin a second lineup when the initial lineup grows beyond 10 bays.
- Begin a third lineup when the previous lineups reach 11 bays in length.

Determine the amount of bays from the Forecast and submit the information using the forms and processes covered in the Wire Center Planning Method & Procedures to the Space Planner.

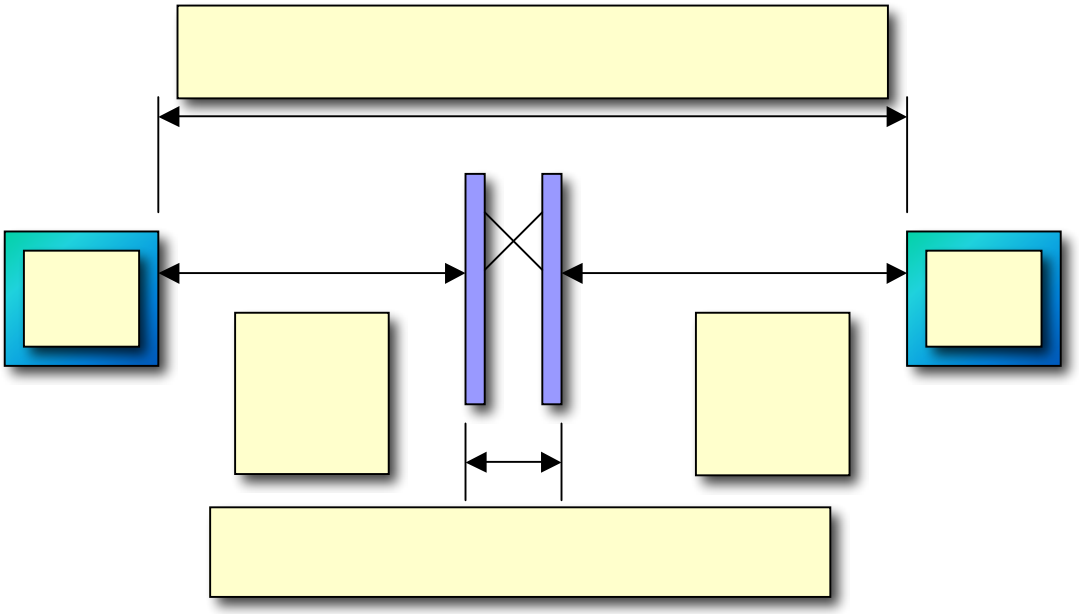
7.B. DS-3 Distances Table

Type of Connection /Cable Used	Distance Limit (Network Element {NE}) -DSX1/DSX3)	Distance Limit Cross-Connect at DSX1/DSX3	Maximum Overall Distance Limit (NE-NE)*
DS3 734C coax	427.5 feet	45 feet (standard cord)	900 feet
DS3 734C coax	427.5 feet	88 feet (extended reach cord)	943 feet
DS3 735C coax	227.5 feet	45 feet (standard cord)	500 feet
DS3 735C coax	227.5 feet	88 feet (extended reach cord)	543 feet

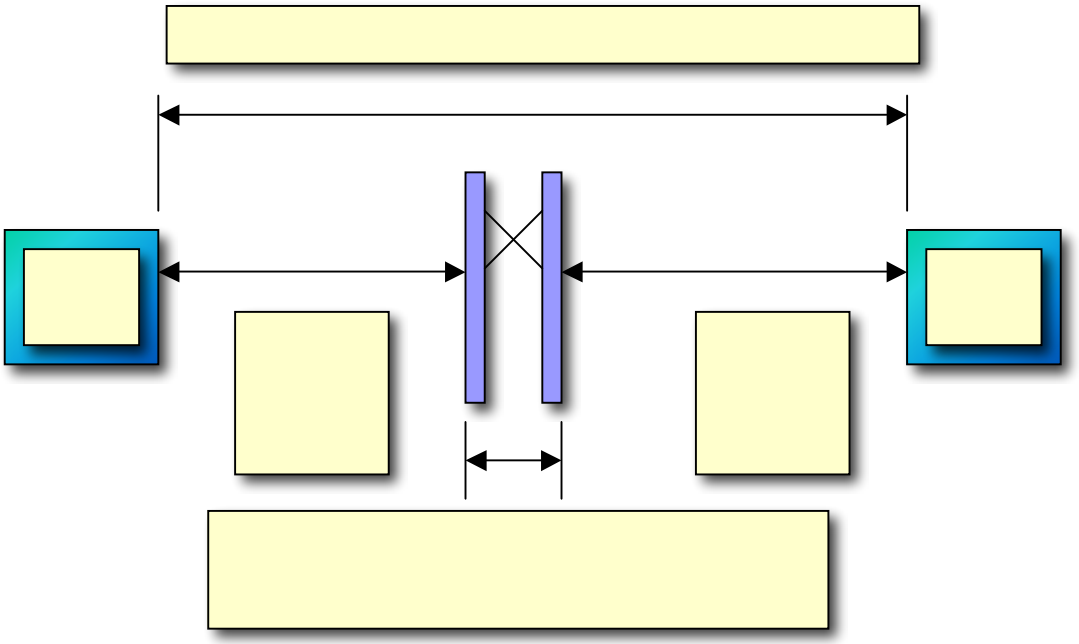
* Notice that if a DS3 signal has portions of both types of cabling, the finer gauge coax value will need to be used.

7.C. DS-3 Distances Illustration

DS3 using 734C-type coax



DS3 using 735C-type coax



8. Frame Placement Strategy

The Transport Equipment Engineer will request a forecast of demand for DSX-3 frames. In addition to the Forecasting Organization documentation, input can be received based upon strategic Business Initiatives, Customer demands and sales, Marketing Organizations, Collocation demands and from Internal work forces such as:

Local Field Operations/Network Operations
Outside Plant Engineers
Maintenance Engineers
Installation/Maintenance Organizations
Trunking and Inter Office Equipment Engineers
Transport Equipment Engineers (TEE)
Architecture Planning Engineers

The NP&E Forecasting Organization will determine the growth requirements, service needs and expected growth expectations through the following detailed forecast analysis:

Wire Center Area Forecast Form(refer also to Wire Center Planning M&P)

The minimum and required forecast intervals to be used are covered in the Wire Center Planning Methods & Procedures, SBC-002-316-101, as follows:

1. Mandatory Forecasting is to be performed every 6 months/12 months and is to project out a forecast for a minimum of three(3) years of usage.

2. It is recommended to perform a 5-year frame forecast.

3. A 10-year forecast needs to be performed for building exhaust situations.

Based upon the data received, the appropriate engineer/planner will evaluate the amount of service load and equipment necessary to meet service needs. These groups will translate the demand of equipment into the amount of bays or frame lineup lengths necessary to meet those objectives and forecasts. Two typical examples:

A.) The Wire Center forecasts the placement of ten Tellabs Titan 5500 Network Element (NE) systems within the next five years. The TEE determines that the Primary DSX-3 Cross-Connect Frame has sufficient bays for the NE and OSP terminations, but the NE Relay Racks will be placed on another floor. Evaluate the route of egress from the NE to the primary DSX-3 Frame. Keep in mind that the maximum 734C and 735C coaxial hardwired cable distance runs from NE to DSX-3 are 427.5 feet and 227.5 feet, respectively.

B.) The Transport Equipment Engineer (TEE) has received a forecast for a new lineup of DSX-3 Rear-Rear Cross-Connect bays which are to be placed in parallel with several existing/working lineups of DSX-3 bays. The initial installation will involve placing all the DSX-3 Frame Hardware Bays, Overhead Wiring Troughs, Bridges and Cross-Aisle Panels (only if needed). The actual DSX-3 Rear-Rear Cross-Connect Panels will be installed into the DSX-3 equipment bays on an ongoing, as needed, basis in order to grow the lineup over time. To minimize costs associated with Cross-Aisle Panels, Bridges will be used wherever possible.

When incremental growth forecasts are the only option due to regulatory limitations, great care should be exercised to keep the frame from prematurely exhausting. The Forecast intervals need to be compressed to compensate for frames with less capacity than normal that could be exhausted due to small surges in growth. Ample diligence is required in the planning, use and mechanization of DSX-3 Cross-Connect Frames in order to preclude premature exhaustion. Some typical items of concern are listed below:

1.) Less than optimal placement of DSX-3 panels that will cause long cross-connect jumpers or convoluted cable routing. This may prematurely trigger the need for a new frame at a substantially increased cost over the ability to expand the existing frame structure.

2.) Cross-Connect Jumper blockage can develop between old and new adjoining frame areas unless great attention to detail is exercised in cable management by performing cable rearrangements and disconnect orders on a regular basis within one week of the date of the Service Order.

3.) Once the type of frame and amount of vertical/bays are determined, the Frame Planner/Transport Equipment Engineer will fill out and submit the Wire Center Equipment/Power Forecast to the Space Planner.

It is absolutely critical that the Transport Equipment Engineer (TEE) maintain documented records pertaining to both initial and growth DSX-3 decisions. The documentation needs to include the reasons for the placement/growth, the date/time group and the backup documentation from the forecast organization (or Fundamental Planners). This information will support the reasons as evidenced in Regulatory Inquiries. Insure that the documentation will stand on its own merits and is written in a non-technical format.

9. References

For further information or electronic copies of this document and related information, visit the internal **SBC-13STATE** Web site: **http://home.sbc.com/commonsystems/** or **http://apex.sbc.com**

Infrastructure Deployment Guidelines (IDG), Transport, Tab 13, *DSX-1/3*, Issued Jul 2001
Building Blocks, 8A-8LX AIT *DSX-3 (to be merged into the 350-355 series)*
Building Blocks, 350-355 SWBT/PB/NB *DSX-3*
PBSD-ED-1115, SBC-Detail Engineer Center *Equipment Drawings (DSX3)*
PBSD-ID-1115, SBC-Detail Engineer Center *Interconnect Drawings (DSX3)*
PBSD-ED-1080, SBC – Detail Engineer Center *Equipment Drawings – DS3-IOR*
PBSD-ID-1080, SBC – Detail Engineer Center *Interconnect Drawings – DS3-IOR*
PBSD-ED-1150, SBC – Detail Engineer Center *Equipment Drawings BOR-SWBT version*
PBSD-ID-1150, SBC – Detail Engineer Center *Interconnect Drawings BOR-SWBT version*
PAN 19985030, SBC-*Product Approval Notice for DSX Products* July 1998
PAN 19985043, SBC-*Product Approval Notice for Fiber Protection Systems (Raceways and Fiber Duct Work)* August 1998
BSP 800-003-150MP, SBC-*Cable and Wire Installation for Cable Racks,* 2000
SBC-002-316-002, SBC – *Collocation Provisioning Guidelines M&P*, 2001
SBC-002-316-017, SBC – *Product Specification BNC Plug Connectors*, 2001
SBC-002-316-019, SBC- *Product Specification Indoor Coaxial Cables*, 2001
SBC-002-316-042, SBC - *Frame Forecast M&P for DSX-3*, 2001
SBC Planning Memorandum*, Fundamental Network Planning Policy on Direct Connect for DS3/STS-1 Services*, dated May 2001

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