ORIGINAL
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GTE FLORIDA INCORPORATED

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Investigation Into Pricing Of Unbundled Network Elements

BINDER 11
TABS 20 - 22

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SEE THE DIRECT TESTIMONY OF DAVID G. TUCEK

GTE TELEPHONE OPERATIONS - Florida
TRANSPORT MODULE

INTEROFFICE TRANSPORT MODULE SUPPORT DOCUMENTATION

Overview

The inputs to the ICM Interoffice Transport Module consist of material costs, labor costs, and preprocessed inputs. Material costs are the costs of the central office equipment necessary to provide Interoffice Transport between end offices. The interoffice facility material and labor costs are common with the costs used for the fiber in a DLC local loop. In addition, there are material and labor costs specific to Interoffice Transport. Labor costs are the costs to engineer and install the central office equipment. Preprocessed inputs include the ring configuration and interoffice transport demand.

The Material cost inputs for the module are included in the Material Costs Table. The support for the Unit inputs are found in Tab 10.

The Labor cost inputs for the module are included in the Placement Costs Table. The support for the Unit inputs are found in Tab 12.

Preprocessed inputs for the module are calculated in Microsoft Excel, a PC spreadsheet program. The input data used in the preprocessing is from the Switching Module. The final data used in the Host to Host and Host to Remote Tables is a product of both preprocessing and ICM processing.

Preprocessing Steps:

1. The Nodes file, "FLNODES," is used as a starting point. This is the same file used in the Switching Module. The host equipment types are separated from the Nodes file and used to begin the "FL Ring Selection" file.

2. The Excel VLOOKUP command is used to associate the End Office CLLI field to the Tandem Owner along with the Tandem Latitude and Tandem Longitude which is shown in "FLTandems".

3. The angle of the host to the tandem is calculated in Microsoft Excel. This angle is used to assign a host end office to a SONET ring. The "Final FLH2H" file is created in Excel for input into ICM.

4. The first column (CLLI codes) from the <> Nodes file is used as a starting point to create the interoffice transport demand file. The CLLI codes are associated with the Special Access Line and Switch Port demand information for DS-0, DS-1, DS-3, and switch ports demand in the "FL SALS" and "FL SWPorts" files through the use of the Excel VLOOKUP command.

5. Final processing is done in ICM. The "Final FLH2H" file, "FL IOTDEM" file, and "FLTandems" file from Excel are imported into ICM to generate the Host to Host, Host to Remote, and Tandems Tables.

6. The "Distances.txt" file in the default ICM directory documents how ICM preprocessed the Final FLH2H" file and "FLTandems" files to develop the ring distances used within ICM.

Integrated Cost Model - ICM Release 4.1

Host to Host

	ECLLI	HubCLLI	GCLLI	Ring	RemoteSW
1	ABDLFLXA96H	TAMPFLXX22H		2	
2	ALFAFLXA67H	TAMPFLXX22H		11	
3	ANMRFLXA77H	TAMPFLXX22H		9	
4	BARTFLXA53H	TAMPFLXX22H		12	
5	BAYUFLXA54H	TAMPFLXX22H		7	
6	BHPKFLXA28H	TAMPFLXX22H		6	
7	BRBAFLXA75H	TAMPFLXX22H		9	
8	BRNDFLXA68H	TAMPFLXX22H		12	
9	BRTNFLXX74H	TAMPFLXX22H		9	
10	CLWRFLXA44H	TAMPFLXX22H		6	
11	CNSDFLXA79H	TAMPFLXX22H		6	
12	CRWDFLXA96H	TAMPFLXX22H		4	
13	CYGRFLXA32H	TAMPFLXX22H		1	
14	DNDNFLXA73H	TAMPFLXX22H		6	
15	DUNDFLXA43H	TAMPFLXX22H		1	
16	ENWDFLXA47H	TAMPFLXX22H		11	
17	FHSDFLXA57H	TAMPFLXX22H		7	
18	FRSTFLXA63H	TAMPFLXX22H		12	
19	GNDYFLXA57H	TAMPFLXX22H		7	
20	HDSNFLXA86H	TAMPFLXX22H		4	
21	HGLDFLXA64H	TAMPFLXX22H		1	
22	HNCYFLXA42H	TAMPFLXX22H		2	
23	HYPKFLXADS0	TAMPFLXX22H		7	
24	INRKFLXX59H	TAMPFLXX22H		7	
25	KYSTFLXA92H	TAMPFLXX22H		5	
26	LGBKFLXA38H	TAMPFLXX22H		9	
27	LKALFLXA95H	TAMPFLXX22H		2	
28	LKLDFLXA68H	TAMPFLXX22H		2	
29	LKLDFLXE66H	TAMPFLXX22H		1	
30	LKLDFLXN85H	TAMPFLXX22H		2	
31	LKWLFLXA67H	TAMPFLXX22H		12	
32	LLMNFLXADS0	TAMPFLXX22H		8	
33	LNLKFLXA99H	TAMPFLXX22H		4	
34	LRGOFLXA58H	TAMPFLXX22H		6	
35	LUTZFLXA94H	TAMPFLXX22H		4	
36	MNLKFLXA85H	TAMPFLXX22H		4	
37	MYCYFLXA32H	TAMPFLXX22H		11	
38	NGBHFLXA39H	TAMPFLXX22H		7	
39	NPRCFLXA84H	TAMPFLXX22H		5	
40	NRPTFLXA42H	TAMPFLXX22H		11	
41	NRSDFLXA35H	TAMPFLXX22H		10	
42	OLDSFLXA85H	TAMPFLXX22H		5	
43	OSPRFLXA96H	TAMPFLXX22H		10	
44	PLMTFLXA72H	TAMPFLXX22H		9	
45	PLSLFLXA79H	TAMPFLXX22H		9	
46	PNCRFLXA73J	TAMPFLXX22H		12	
47	PNLSFLXA53H	TAMPFLXX22H		6	
48	PSDNFLXA34H	TAMPFLXX22H		8	
49	PTCYFLXA75H	TAMPFLXX22H		2	
50	RSKNFLXA64H	TAMPFLXX22H		11	
51	SEKYFLXA34H	TAMPFLXX22H		10	
52	SGBEFLXA36H	TAMPFLXX22H		8	
53	SKWYFLXADS0	TAMPFLXX22H		8	
54	SLSPFLXA93H	TAMPFLXX22H		4	

REDACTED

Integrated Cost Model - ICM Release 4.1

Host to Host

	SWPorts	DS0SAL	DS1SAL	DS3SAL
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
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51				
52				
53				
54				

REDACTED

Integrated Cost Model - ICM Release 4.1

Host to Host

	ECLLI	HubCLLI	GCLLI	Ring	RemoteSW
55	SMNLFLXA23H	TAMPFLXX22H		4	
56	SNSPFLXA37H	TAMPFLXX22H		5	
57	SPBGFLXA89H	TAMPFLXX22H		8	
58	SPBGFLXS86H	TAMPFLXX22H		8	
59	SPRGFLXA37H	TAMPFLXX22H		10	
60	SRSTFLXA95H	TAMPFLXX22H		10	
61	SSDSFLXA92H	TAMPFLXX22H		10	
62	STGRFLXA78H	TAMPFLXX22H		5	
63	SWTHFLXA88H	TAMPFLXX22H		5	
64	TAMPFLXEDS0	TAMPFLXX22H		2	
65	TAMPFLXX22H	TAMPFLXX22H		3	
66	THNTFLXADS0	TAMPFLXX22H		3	
67	TMTRFLXADS0	TAMPFLXX22H		3	
68	TRSPFLXA93H	TAMPFLXX22H		5	
69	UNVRFLXA97H	TAMPFLXX22H		3	
70	VENCFLXA48H	TAMPFLXX22H		10	
71	VENCFLXSDS0	TAMPFLXX22H		11	
72	WIMMFLXA63H	TAMPFLXX22H		11	
73	WLCHFLXA97H	TAMPFLXX22H		3	
74	WLCRFLXA83H	TAMPFLXX22H		8	
75	WNHNFLXC29H	TAMPFLXX22H		1	
76	WSSDFLXA87H	TAMPFLXX22H		6	
77	YBCTFLXA24H	TAMPFLXX22H		3	
78	ZPHYFLXA78H	TAMPFLXX22H		3	

REDACTED

Integrated Cost Model - ICM Release 4.1

Host to Host

	SWPorts	DS0SAL	DS1SAL	DS3SAL
55				
56				
57				
58				
59				
60				
61				
62				
63				
64				
65				
66				
67				
68				
69				
70				
71				
72				
73				
74				
75				
76				
77				
78				

REDACTED

Integrated Cost Model - ICM Release 4.1

Host to Remote

	HCLLI	RCLLI	SWPorts	DS0SAL	DS1SAL
1	ABDLFLXA96H	PKCYFLXARSA			
2	BARTFLXA53H	ALTRFLXARSA			
3	BARTFLXA53H	BRJTFLXARSA			
4	BARTFLXA53H	MLBYFLXARSA			
5	HNCYFLXA42H	HNCYFLXN424			
6	HNCYFLXA42H	POINFLXARSA			
7	LKWLFLXA67H	BBPKFLXARSA			
8	LKWLFLXA67H	INLKFLXARSA			
9	LKWLFLXA67H	LKWLFLXERSA			
10	PLMTFLXA72H	PRSHFLXARSA			
11	SRSTFLXA95H	SARKFLXARSA			
12	TAMPFLXX22H	BYSHFLXA84H			

REDACTED

Integrated Cost Model - ICM Release 4.1

Host to Remote

	DS3SAL
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

REDACTED

Integrated Cost Model - ICM Release 4.1

Tandems

	TCLLI	ColoCli	TndCompany	Lat	Long
1	TAMPFLXA01T	TAMPFLXX22H	G	27.9503	-82.4564

INTEROFFICETRANPORTMODULEALGORITHM DOCUMENTATIONFORICMVERSION4.1

Overview

This document contains the algorithms used in the ICM Interoffice Transport Module. Contained wherein are the details of the algorithms to size and to determine the investmentforthevariouspiecesofcentralofficeequipment(COE)necessarytoprovide interoffice transport. The individual pieces of equipment are described in their own subsection.ExampleCOEconfigurationscanbefoundinAppendixA.

ChannelBank

The following equations show how the channel bank (CB) component is sized and how theinvestmentsarecalculated.

The CB common equipment needed for the central office equipment is calculated with thefollowingequation:

CB Common Equipment = Ceil((DS-0 SALs + AlinkDS0s) / Maximum DS-0 Capacity of CB Common Equipment) [1]

Thisequationdividesthenumberof DS-0 SALs[2] and SS7 A link DS0s by the maximum DS-0capacityoftheCB.Then,theresultisroundeduptomakeawholeunit.

Now that the CB equipment has been sized, the investments are calculated with the followingequations:

Average CB Investment = (CB Common Equipment Material Cost * Number of CB Common Equipment) + (CB Common Equipment Engineering and Installation Cost*NumberofCBCommonEquipment)+(CBCardMaterialCost*(Number of DS-0 SALs + Number of SS7 A link DS-0)) + (CB Card Engineering and InstallationCost*(NumberofDS-0SALs+NumberofSS7AlinkDS-0))

VolumeSensitiveCBInvestment=(NumberofDS-0SALs+NumberofSS7AlinkDS-0) * (((CB Common Equipment Material Cost + CB Common Equipment Engineering and Installation Cost) / Maximum DS-0 Capacity of CB) + CB Card MaterialCost+CBCardEngineeringandInstallationCost)

Volume Insensitive CB Investment = Average CB Investment - Volume Sensitive CB Investment

[1] The *Ceil* function roundsup.Thisfunctionisnecessarybecausecommonequipmentcomesindiscreteunit sizes.

[2] SAListheacronymforSpecialAccessLine.

ChannelBank(Continued)

The average, volume sensitive, and volume insensitive units used to derive the per unit investment costare calculated with the following equations:

Average CB Units = Number of DS-0 SALs and SS7 A Link DS-0s passing through ChannelBank

Volume Sensitive CB Units = Number of CB Common Equipment * Maximum DS-0 CapacityofCBCommonEquipment

Volume Insensitive CB Units = Number of DS-0 SALs and SS7 A Link DS-0s passing throughChannelBank

DSX-1ManualCrossConnect

The following equations show how the DSX-1 component is sized and how the investments are calculated.

The number of DSX-1 jumpers needed for the central office equipment is calculated with the following equation:

DSX-1Jumpers=SwitchPorts+DS1SALs+Ceil((DS0SALs+ALinkDS0s)/24)

This equation adds the number of DS-1 switch ports to the number of DS-1 SALs to the number of DS-1 equivalents of DS-0 SALs and SS7 A link DS-0s.

From the number of DSX-1 jumpers, the DSX-1 common equipment is calculated with this equation:

DSX-1 Common Equipment = Ceil((Switch Ports + DS1SALs + Ceil((DS0SALs + ALinkDS0s)/24))/MaximumDS-1CapacityofDSX-1CommonEquipment)

This equation divides the number of DSX-1 jumpers by the maximum jumper capacity of a DSX-1 panel to determine the number of individual DSX-1 units. Then, the result is rounded up to make a whole unit.

Now that the DSX-1 equipment has been sized, the investments are calculated with the following equations:

Average DSX-1 Investment = (DSX-1 Common Equipment Material Cost * Number of DSX-1 Common Equipment) + (DSX-1 Common Equipment Engineering and Installation Cost * Number of DSX-1 Common Equipment) + (DSX-1 Jumper Material Cost * Number of DSX-1 Jumpers) + (DSX-1 Jumper Engineering and InstallationCost*NumberofDSX-1Jumpers)

DSX-1ManualCrossConnect(Continued)

Volume Sensitive DSX-1 Investment = (((Number of Switch Ports * 24) + (Number of DS-1SALs*24)+NumberofDS-0SALs+NumberofSS7ALinkDS-0s)/24)* (((DSX-1 Common Equipment Material Cost + DSX-1 Common Equipment EngineeringandInstallationCost)/MaximumDS-1CapacityofDSX-1Common Equipment) + (DSX-1 Jumper Material Cost + DSX-1 Jumper Engineering and InstallationCost))

Volume Insensitive DSX-1 Investment = Average DSX-1 Investment - Volume Sensitive DSX-1Investment

The average, volume sensitive, and volume insensitive units used to derive the per unit investmentcostarecalculatedwiththefollowingequations:

AverageDSX-1Units=NumberofDS-1spassingthroughDSX-1Panels

Volume Sensitive DSX-1 Units = Number of DSX-1 Common Equipment * Maximum DS-1CapacityofDSX-1CommonEquipment

VolumeInsensitiveDSX-1Units=NumberofDS-1spassingthroughDSX-1Panels

DCS1/0DigitalCrossConnectSystem

The following equations show how the DCS1/0 component is sized and how the investmentsarecalculated.

From the number of DCS1/1 ports modules needed for the central office equipment are calculatedwiththefollowingequation:

DCS1/1PortModules=Ceil((DS1SALs+Ceil((DS0SALs+ALinkDS0s)/24))/Maximum DS-1Capacityina1/1PortModule)

This equation calculates the number of port modules needed based on the number of DS-1 SALsplusthenumberofDS-1equivalentsofDS-0 SALsandSS7AlinkDS-0s. Then,theresultisdividedbythemaximumDS-1capacityoftheDCS1/0androundedup tomakeawholeunit.

IfthenumberofDS-1sgoingthroughtheDCS1/0islessthanthemaximumDS-1count, thentheDCS1/0CommonEquipmentisone.Otherwise,thenumberofDS-1sareusedto sizethenecessaryDCS1/0commonequipmentwiththefollowingequation:

DCS1/0 Common Equipment = Ceil((DS1SALs + Ceil((DS0SALs + ALinkDS0s) / 24)) / MaximumDS-1CapacityofDCS1/0CommonEquipment)

INTEROFFICETRANPORTMODULEALGORITHM DOCUMENTATIONFORICMVERSION4.1

DCS1/0DigitalCrossConnectSystem(Continued)

Nowthatallthe DCS1/0equipmenthasbeensized,theinvestmentsarecalculatedwith thefollowingequations:

AverageDCS1/0Investment=(DCS1/0CommonEquipmentMaterialCost*Numberof DCS1/0Common Equipment)+(DCS1/0Common EquipmentEngineering and Installation Cost * Number of DCS1/0 Common Equipment) + (DCS1/1 Port Module Cost * Number of DCS1/1 Port Modules) + (DCS1/1 Port Module EngineeringandInstallationCost*NumberofDCS1/1PortModules)

VolumeSensitiveDCS1/0Investment=(((NumberofDS-1SALs*24)+NumberofDS-0 SALs + Number of SS7 A Link DS-0s) / 24) * (((DCS1/0 Common Equipment MaterialCost+DCS1/0CommonEquipmentEngineeringandInstallationCost)/ Maximum DS-1 Capacity of DCS1/0 Common Equipment) + ((DCS1/1 Port Module Cost + DCS1/1 Port Module Engineering and Installation Cost) / MaximumDS-1CapacityofDCS1/1PortModules))

VolumeInsensitiveDCS1/0Investment=AverageDCS1/0Investment-VolumeSensitive DCS1/0Investment

The average, volume sensitive, and volume insensitive units used to derive the per unit investmentcostarecalculatedwiththefollowingequations:

AverageDCS1/0Units=NumberofDS-1spassingthroughDCS1/0Equipment

Volume Sensitive DCS1/0 Units = Number of DCS1/0 Common Equipment * Maximum DS-1CapacityofDCS1/0CommonEquipment

Volume Insensitive DCS1/0 Units = Number of DS-1s passing through DCS1/0 Equipment

MUX3/13/1Multiplexer

The following equations show how the MUX3/1 component is sized and how the investmentsarecalculated.

The MUX3/1 common equipment needed for the central office equipment is calculated withthefollowingequation:

MUX3/1 Common Equipment = Ceil((Switch Ports + DS1SALs + Ceil((DS0SALs + ALinkDS0s)/24))/MaximumDS-1CapacityofMUX3/1CommonEquipment)

ThisequationdividesthenumberofDS-1switchportsplusthenumberofDS-1

MUX3/13/1Multiplexer(Continued)

SALsplusthenumberofDS-1equivalentsofDS-0 SALsandSS7AlinkDS-0sbythe maximumDS-1capacityoftheMUX3/1.Then,theresultisroundeduptomakeawhole unit.

NowthattheMUX3/1equipmenthasbeensized,theinvestmentsarecalculatedwiththe followingequations:

Average MUX3/1 Investment = MUX3/1 Common Equipment Material Cost * Number of MUX3/1 Common Equipment + MUX3/1 Common Equipment Engineering and InstallationCost*NumberofMUX3/1CommonEquipment

Volume Sensitive MUX3/1 Investment = (((Number of Switch Ports * 24) + (Number of DS-1SALs*24)+NumberofDS-0SALs+NumberofSS7AlinkDS-0s)/24)* ((MUX3/1 Common Equipment Material Cost + MUX3/1 Common Equipment EngineeringandInstallationCost)/MaximumDS-1CapacityofMUX3/1)

Volume Insensitive MUX3/1 Investment = Average MUX3/1 Investment - Volume SensitiveMUX3/1Investment

The average, volume sensitive, and volume insensitive units used to derive the per unit investmentcostarecalculatedwiththefollowingequations:

AverageMUX3/1Units=NumberofDS-1spassingthroughMUX3/1Equipment

Volume Sensitive MUX3/1 Units = Number of MUX3/1 Common Equipment * Maximum CapacityofMUX3/1CommonEquipment

Volume Insensitive MUX3/1 Units = Number of DS-1s passing through MUX3/1 Equipment

DCS3/1DigitalCrossConnectSystem

The following equations show how the DCS3/1 component is sized and how the investmentsarecalculated.

The number of DCS3/1 port modules needed for the central office equipment are calculatedwiththefollowingequation:

DCS3/1PortModules= Ceil((SwitchPorts+DS1SALs+Ceil((DS0SALs+ALinkDS0s) / 24))/MaximumDS-1Capacityofa3/1PortModule)

This equation divides the number of DS-1 switch ports plus the number of DS-1 SALs plusthenumberofDS-1equivalentsofDS-0SALsandSS7AlinkDS-0sbythe maximumnumberof3/1portsinthemodule.Then,theresultisroundeduptomakea

DCS3/1DigitalCrossConnectSystem(Continued)

wholeunit.

FromthenumberofDCS3/1portsneededforthecentralofficeequipmentarecalculated withthefollowingequation:

DCS3/3 Ports Modules = Ceil(Ceil((Switch Ports + DS1SALs + Ceil((DS0SALs + ALinkDS0s)/24))/28)/MaximumDS-3Capacityofa3/3PortModule)

This equation determines the number of DS-3 equivalents of the number DS-1 switch portsplusthenumberofDS-1 SALsplusthenumberofDS-1equivalentsofDS-0 SALs andSS7AlinkDS-0s.Then,theresultisroundeduptomakeawholeunit.

IfthenumberofDCS3/1andDCS3/3portsislessthanthemaximumportcount,thenthe DCS3/1 Common Equipment is one. Otherwise, the number of DCS3/1 and DCS3/3 ports are used to size the necessary DCS3/1 common equipment with the following equations:

IftherearemoreDS-1sthanDS-3s,

DCS3/1CommonEquipment=Ceil(NumberofDS-1s/MaximumDCS3/1Ports intheCommonEquipment)

else,

DCS3/1CommonEquipment=Ceil(NumberofDS-3s/MaximumDCS3/3Ports intheCommonEquipment)

Nowthatallthe DCS3/1 equipmenthasbeensized,theinvestmentsarecalculatedwith thefollowingequations:

AverageDCS3/1Investment=(DCS3/1CommonEquipmentMaterialCost*Numberof DCS3/1 Common Equipment) + (DCS3/1 Common Equipment Engineering and Installation Cost * Number of DCS3/1 Common Equipment) + (DCS3/1 Port Module Cost * Number of DCS3/1 Port Modules) + (DCS3/1 Port Module EngineeringandInstallationCost*NumberofDCS3/1PortModules)+(DCS3/3 Port Module Cost * Number of DCS3/3 Port Modules) + (DCS3/3 Port Module EngineeringandInstallationCost*NumberofDCS3/3PortModules)

VolumeSensitiveDCS3/1Investment=(((NumberofDS-1 SALs*24)+NumberofDS-0 SALs + Number of SS7 A Link DS-0s) / 24) * (((DCS3/1 Common Equipment MaterialCost+DCS3/1CommonEquipmentEngineeringandInstallationCost)/ Number of DCS3/1 Common Equipment) + ((DCS3/1 Port Module Cost + DCS3/1PortModuleEngineeringandInstallationCost)/NumberofDCS3/1Port Modules)+((DCS3/3PortModuleCost+DCS3/3PortModuleEngineeringand InstallationCost)/(NumberofDCS3/3PortModules*28)))

DCS3/1DigitalCrossConnectSystem(Continued)

VolumeInsensitiveDCS3/1Investment=AverageDCS3/1Investment-VolumeSensitive DCS3/1Investment

The average, volume sensitive, and volume insensitive units used to derive the per unit investment cost are calculated with the following equations:

AverageDCS3/1Units=NumberofDS-1spassingthroughDCS3/1Equipment

Volume Sensitive DCS3/1 Units = Number of DCS3/1 Common Equipment * Maximum DS-1CapacityofDCS3/1Equipment

Volume Insensitive DCS3/1 Units = Number of DS-1s passing through DCS3/1 Equipment

DSX-3ManualCrossConnect

The following equations show how the DSX-3 component is sized and how the investments are calculated.

The number of DSX-3 modules needed for the DSX-3 common equipment is calculated with the following equation:

DSX-3Modules=DS3SALs+Ceil((SWPorts+DS1SALs+Ceil((DS0SALs+ALinkDS0s) /24))/28)

This equation adds the number of DS-1 switch ports to the number of DS-1 SALs to the number of DS-1 equivalents of DS-0 SALs and SS7 A link DS-0s. Now, the DS-1s are converted into DS-3s and rounded up. Finally, the number of DS-3 SALs is added to determine the number of modules necessary for the DSX-3.

From the number of DSX-3 modules, the DSX-3 common equipment is calculated with this equation:

DSX-3 Common Equipment = Ceil((DS3SAL + Ceil((S WPorts + DS1SALs + Ceil((DS0SALs + ALinkDS0s)/24))/28))/Maximum DS-3 Capacity of DSX-3 CommonEquipment)

This equation divides the number of DSX-3 modules by the maximum module capacity of a DSX-3 panel to determine the number of individual DSX-3 units. Then, the result is rounded up to make a whole unit.

Now that the DSX-3 equipment has been sized, the investments are calculated with the following equations:

DSX-3ManualCrossConnect(Continued)

Average DSX-3 Investment = (DSX-3 Common Equipment Material Cost * Number of DSX-3 Common Equipment) + (DSX-3 Common Equipment Engineering and Installation Cost * Number of DSX-3 Common Equipment) + (DSX-3 Module Material Cost * Number of DSX-3 Modules) + (DSX-3 Module Engineering and InstallationCost*NumberofDSX-3Modules)

Volume Sensitive DSX-3 Investment = (((Number of DS-3 SALs * 672) + (Number of Switch Ports * 24) + (Number of DS-1 SALs * 24) + Number of DS-0 SALs + Number of SS7 A Link DS-0s) / 672) * (((DSX-3 Common Equipment Material Cost+DSX-3CommonEquipmentEngineeringandInstallationCost)/Maximum DS-3CapacityofDSX-3CommonEquipment)+(DSX-3ModuleMaterialCost + DSX-3ModuleEngineeringandInstallationCost))

Volume Insensitive DSX-3 Investment = Average DSX-3 Investment - Volume Sensitive DSX-3Investment

The average, volume sensitive, and volume insensitive units used to derive the per unit investmentcostarecalculatedwiththefollowingequations:

AverageDSX-3Units=NumberofDS-3spassingthroughDSX-3Panels

Volume Sensitive DSX-3 Units = Number of DSX-3 Common Equipment * Maximum DS-3CapacityofDSX-3CommonEquipment

VolumeInsensitiveDSX-3Units=NumberofDS-3spassingthroughDSX-3Panels

SONETADM

The following equations show how the SONET Add/Drop Multiplexer (ADM) componentissizedandhowtheinvestmentsarecalculated.

ThesizeoftheADMneededforcentralofficeiscalculatedwiththefollowingequation:

SONET Equipment = Ceil((Switch Ports * Intraring Factor / 2 / 28) + (DS1SAL / 28) + ((DS0SALs+ALinkDS0s)/24/28)+DS3SAL)

Thisequationaddsthenumberof DS-3 equivalentsofDS-1 switchportsadjustedbythe Intraringfactor[3]tothenumberofDS-3equivalentsofDS-1 SALstothenumberofDS-3 equivalentsofDS-0 SALsandSS7Alinkstothenumberof DS-3 SALsofallofthehost switchesonanindividualSONETringtosizetheADM. AllofthetheADMsonaSONET ringmustbethesamesize,thereforeallofthehostswitchesontheringareconsidered. Foraremoteswitch,onlythedemandoftheremoteisusedtodeterminethesizeofthe

[3]TheIntraringfactoristhepercentageoftrafficterminatingonthesamering.

SONETADM(Continued)

SONETterminalequipment.IftheDS-3equivalentdemandonaringislessthan12DS-3s,thenanOC-12ADMisselected.Otherwise,anOC-48ADMisselected.Foradpoint to point connection, a demand of less than 3 DS-3s will select an OC-3 point to point terminal.

Once the size of the ADM is determined the equipment necessary to put traffic on and removetrafficfromthering.ThisequipmentconsistsofDS-3orDS-1interfacecards. Thenumberofinterfacecardsiscalculatedwithoneofthefollowingequations:

Number of DS-3 Card = Ceil(Number of DS-3s running through ADM / Maximum DS-3 CapacityofaDS-3InterfaceCard)

Number of DS-1 Card = Ceil(Number of DS-1s running through ADM / Maximum DS-1 CapacityofaDS-1InterfaceCard)

TheDS-3cardsareusedinallbutthesmallestofficeconfiguration.

Now that the ADM equipment has been sized, the investments are calculated with the followingequations:

AverageADMInvestment=(ADMCommonEquipmentMaterialCost*NumberofADM Common Equipment) + (ADM Common Equipment Engineering and Installation Cost * Number of ADM Common Equipment) + (ADM Interface Card Material Cost*NumberofADMInterfaceCards)+(ADMInterfaceCardEngineeringand InstallationCost*NumberofADMInterfaceCards)

VolumeSensitiveADMInvestment=(((NumberofDS-3SALs*672)+(NumberofSwitch Ports*24)+(NumberofDS-1SALs*24)+NumberofDS-0SALs+Numberof SS7 A Link DS-0s) / 672) * (((ADM Common Equipment Material Cost ADM Common Equipment Engineering and Installation Cost) / Maximum Capacity of ADM Common Equipment) + ((ADM Interface Card Material Cost + ADM Interface Card Engineering and Installation Cost) / Maximum Capacity of ADM InterfaceCards))

VolumeInsensitiveADMInvestment=AverageADMInvestment-VolumeSensitiveADM Investment

The average, volume sensitive, and volume insensitive units used to derive the per unit investmentcostarecalculatedwiththefollowingequations:

AverageADMUnits=NumberofDS-3spassingthroughADMEquipment

Volume Sensitive ADM Units = Number of ADM Common Equipment * Maximum DS-3 CapacityofADMCommonEquipment

VolumeInsensitiveADMUnits=NumberofDS-3spassingthroughADMEquipment

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FiberDistributionPanel

Thefollowingequationsshowhowthefiberdistributionpanel(FDP)componentissized andhowtheinvestmentsarecalculated.

The number of FDP modules needed for the central office equipment is calculated with oneofthefollowingequations:

FDPModule=((2*NumberofADMCommonEquipment) +NumberofRemoteSwitches), *forahostswitch*

FDPModule=1, *foraremoteswitch*

For a host switch, this equation adds the number of remote switches to two modules, which represent the fibers entering and exiting the office connecting to the ADM equipment.Foraremoteswitch,onlyonemoduleisneeded.

FromthenumberofFDPmodules,theFDPcommonequipmentiscalculatedwithoneof thefollowingequations:

FDPCommonEquipment=Ceil(((2*NumberofADMCommonEquipment) +NumberofRemoteSwitches)/MaximumCapacity ofFDPCommonEquipment), *forahostswitch*

FDPCommonEquipment=1, *foraremoteswitch*

Thisequationdividesthenumberof FDPmodulesbythemodulecapacityofaFDPunit todeterminethenumberofindividualFDPunits.Then,theresultisroundeduptomake awholeunit.

Now that the FDP equipment has been sized, the investments are calculated with the followingequations:

Average FDP Investment = (FDP Common Equipment Material Cost * Number of FDP Common Equipment) + (FDP Common Equipment Engineering and Installation Cost * Number of FDP Common Equipment) + (FDP Module Material Cost * Number of FDP Modules) + (FDP Modules Engineering and Installation Cost * NumberofFDPModules)

VolumeSensitiveFDPInvestment=(((NumberofDS-3SALs*672)+(NumberofSwitch Ports*24)+(NumberofDS-1SALs*24)+NumberofDS-0SALs+Numberof SS7 A Link DS-0s) / 672) * (((FDP Common Equipment Material Cost + FDP Common Equipment Engineering and Installation Cost) + (FDP Module Material Cost + FDP Modules Engineering and Installation Cost)) / Maximum Capacity of FDPModules)

VolumeInsensitiveFDPInvestment=AverageFDPInvestment-VolumeSensitiveFDP Investment

FiberDistributionPanel(Continued)

The average, volume sensitive, and volume insensitive units used to derive the per unit investment cost are calculated with the following equations:

AverageFDPUnits=NumberofDS-3spassingthroughADMEquipment

Volume Sensitive FDP Units = Number of ADM Common Equipment * Maximum DS-3 CapacityofADMCommonEquipment

VolumeInsensitiveFDPUnits=NumberofDS-3spassingthroughADMEquipment

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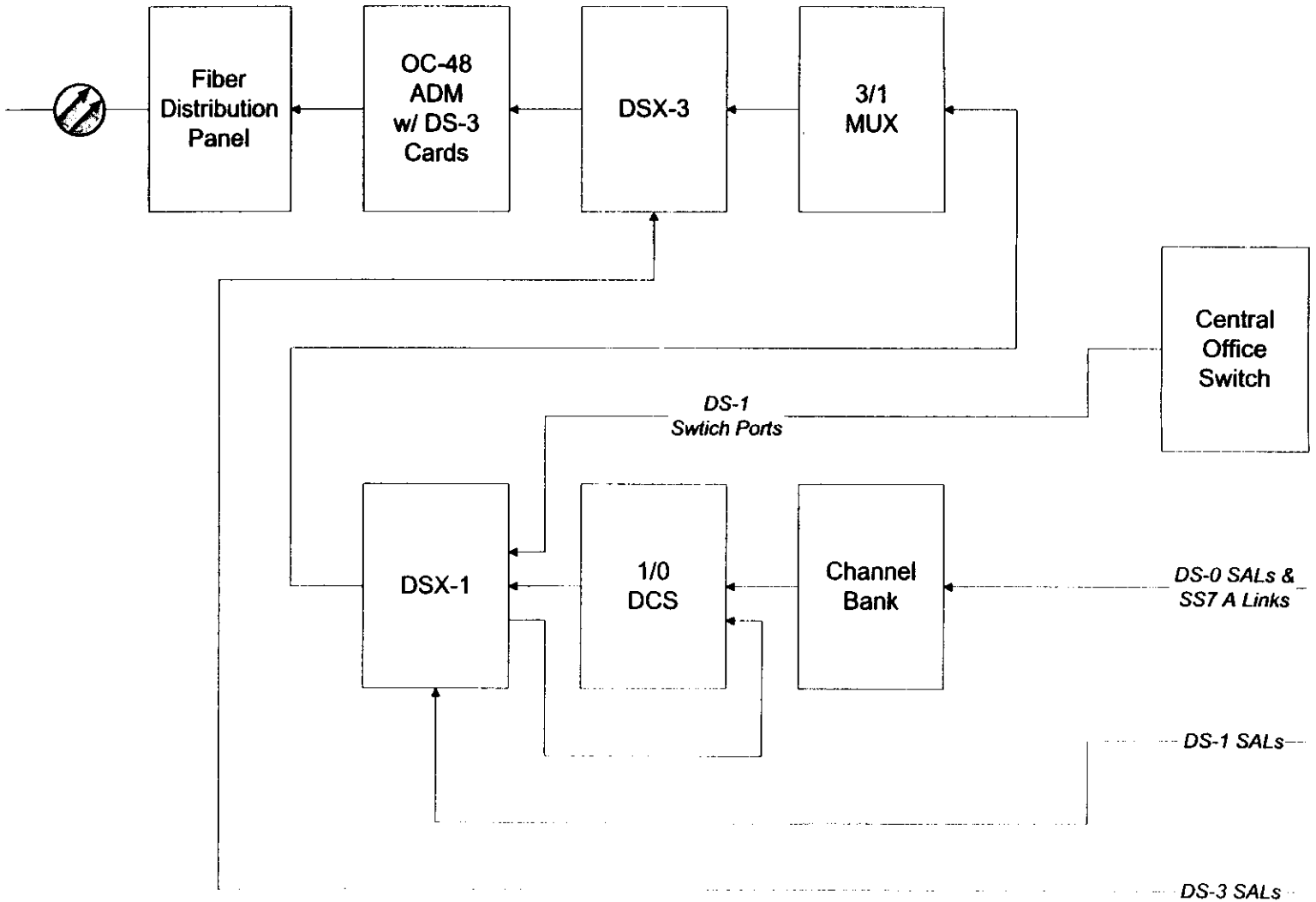
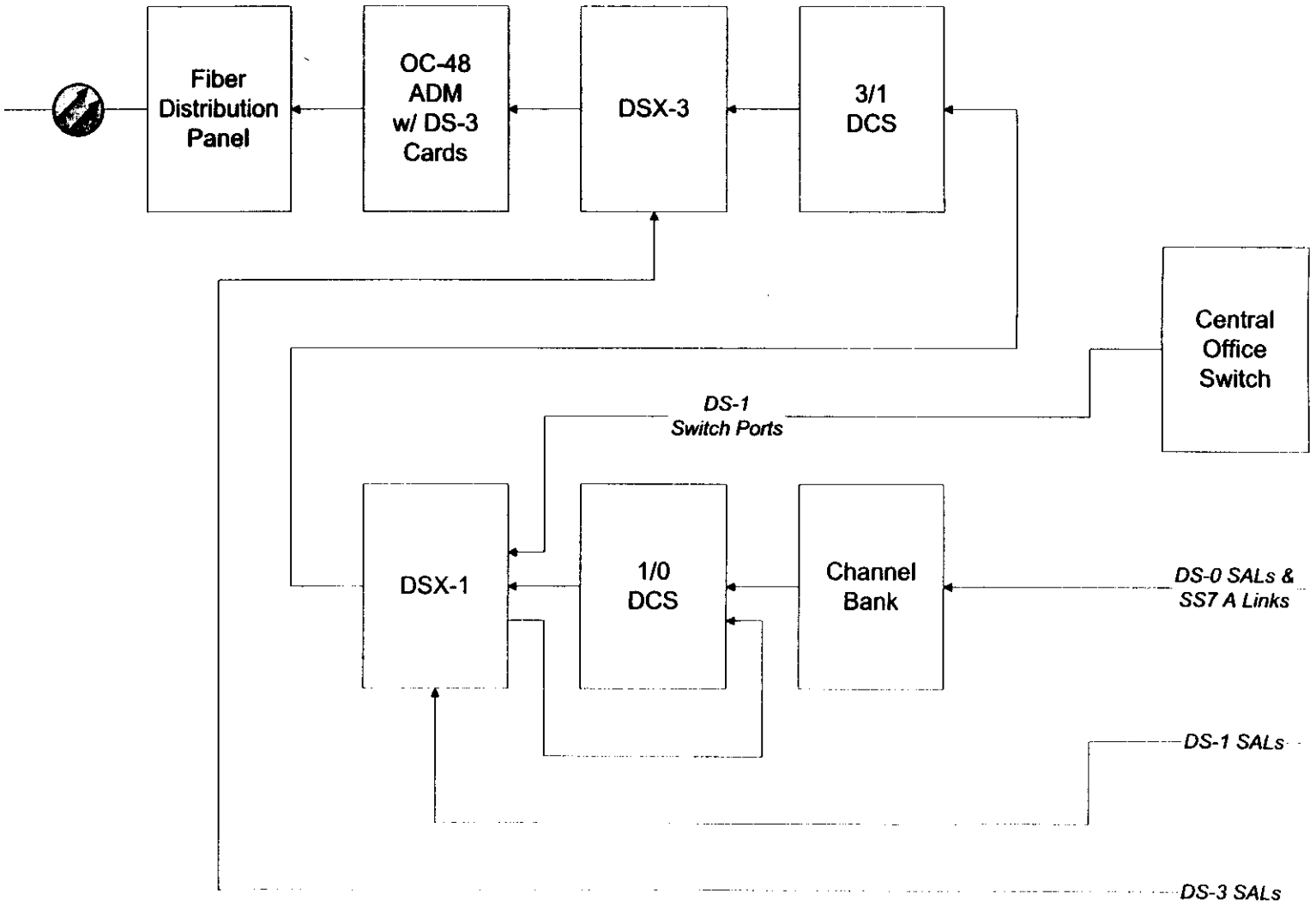
AppendixA:SampleCentralOfficeEquipmentConfigurations

Seeattacheddiagrams.

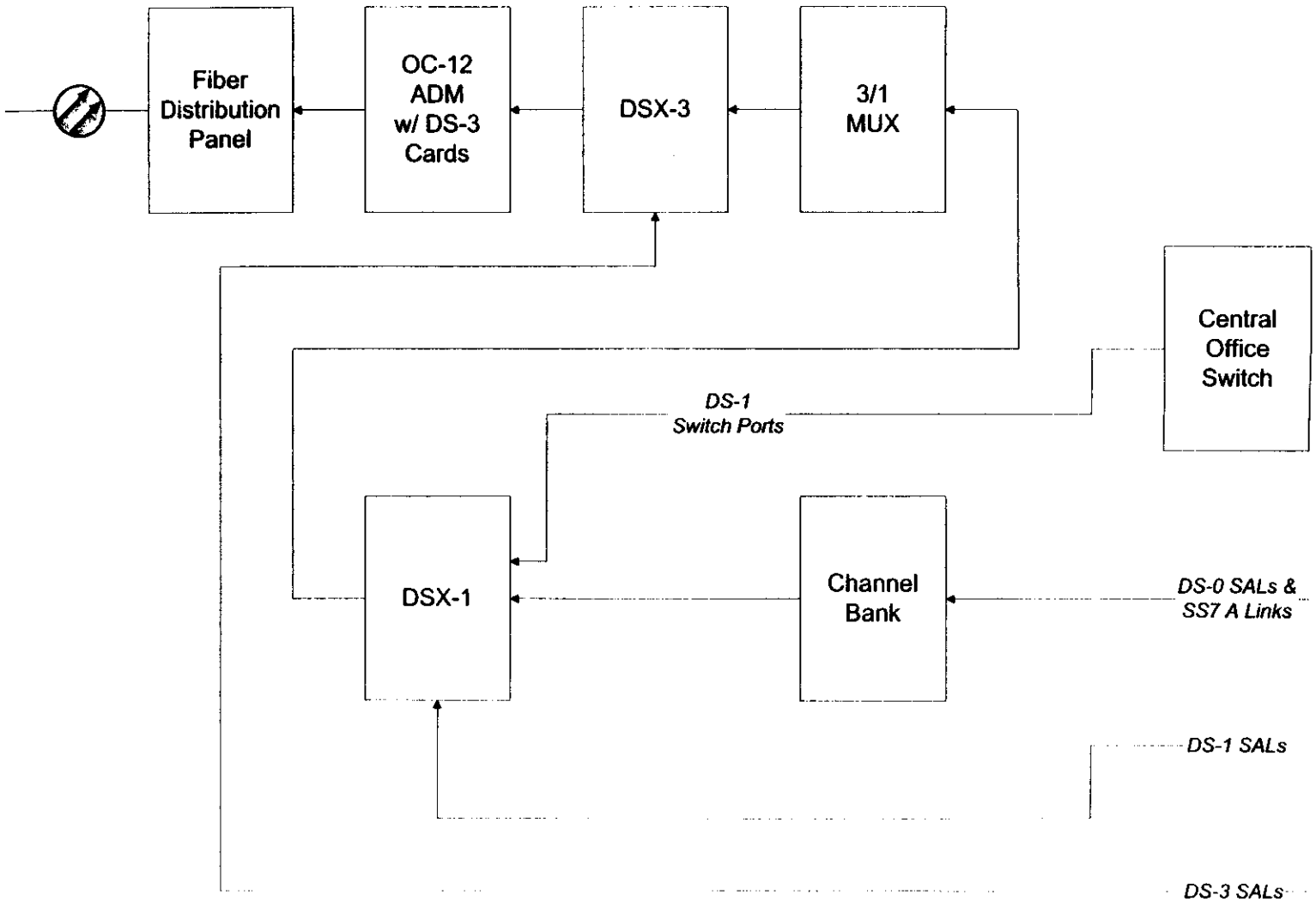
Central Office Equipment for OC-48 Ring for Class 5 End Office



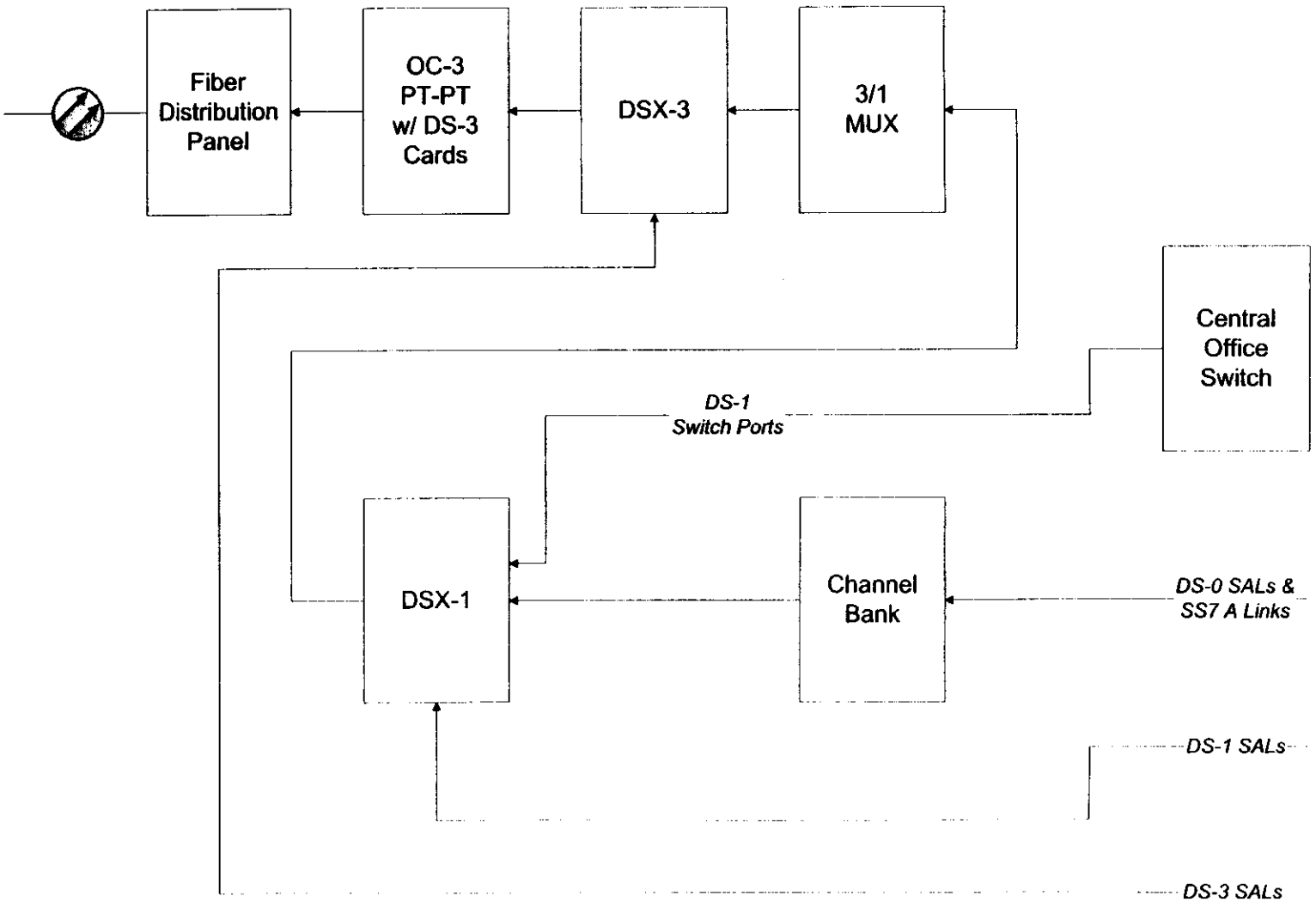
Central Office Equipment for OC-48 Ring for Class 4/5 or 4 End Office



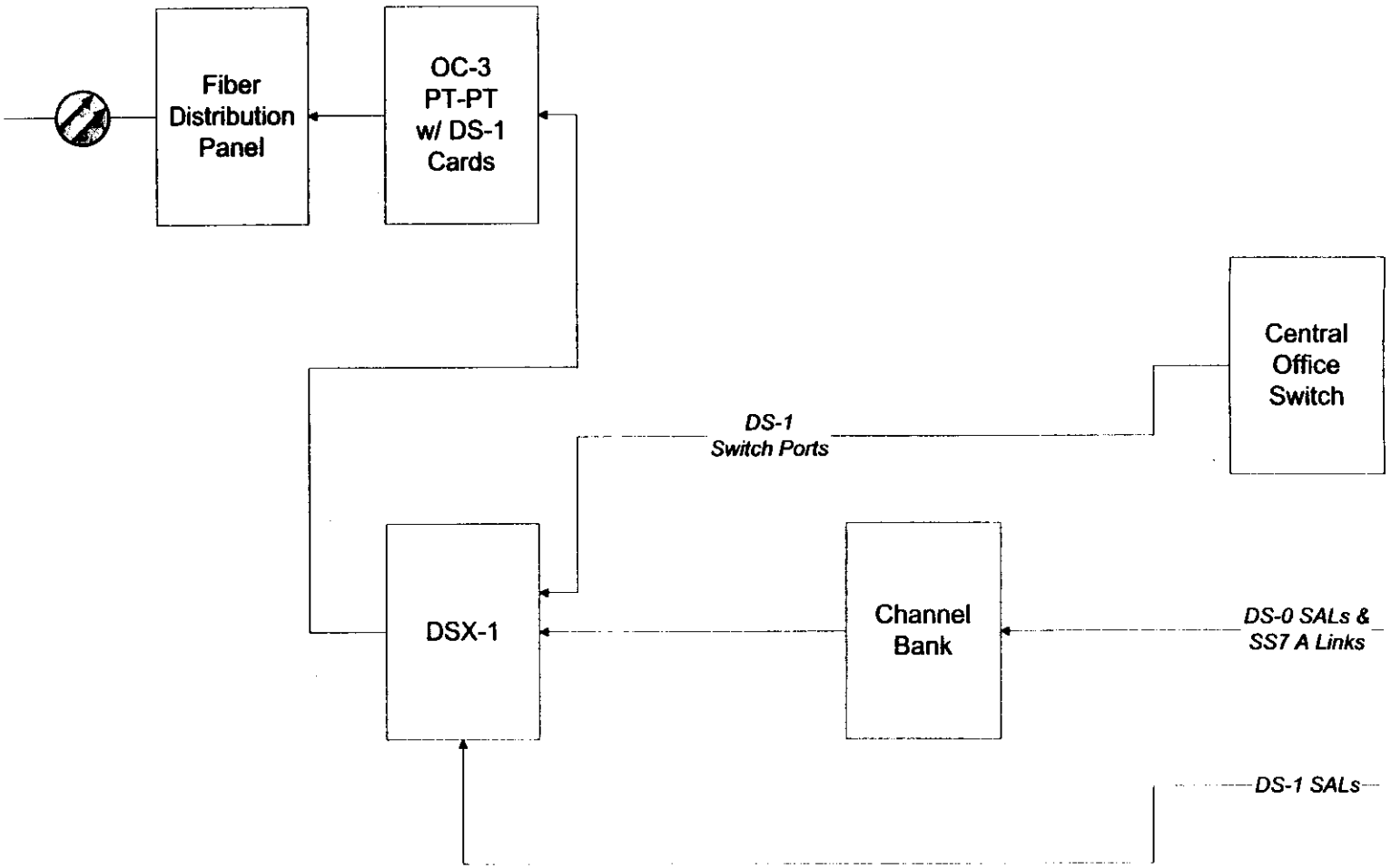
Central Office Equipment for OC-12 Ring



Central Office Equipment for OC-3 Pt-Pt Configuration One



Central Office Equipment for OC-3 Pt-Pt Configuration Two



SS7 Network Components Overview

The Signaling System 7 (SS7) network is a stand-alone network used for the transmission and distribution of signals that tell the switched telephone network how to operate. It is connected to the switched telephone network at each end office and tandem and acts primarily to set up and disconnect calls and to control the network for efficient utilization of facilities. The SS7 network is also used to query databases such as for 800/888 and credit card calls.

The SS7 network is made up of network components working to provide SS7 signaling. These components are made up of data links and switching systems. In ICM, investment for the following types of SS7 equipment are identified:

- **Service Switching Points (SSPs)** are the SS7 network elements contained within end offices and tandem offices. SSPs provide the points of connection between the switches and the SS7 network links.
- **Service Control Points (SCPs)** are remote databases that provide translation and routing information for advanced network services. SCPs are collocated with regional Signal Transfer Points (STPs).
- **Signal Transfer Points (STPs)** are the SS7 components that send call setup and disconnect information between offices and route data queries between offices and SCPs.
- **"A," "C," and "D" Links** are DS-0 level transport circuits used to carry data between the different points (SSPs, SCPs, and STPs) in the SS7 network. Depending on SS7 network traffic volume, links can be common or specific to SS7-related services.
    - Each SSP has at least one pair of A links, one to each local STP of a mated pair.
    - Each pair of local STPs has a set of four D links to a pair of regional STPs.
    - A regional STP is connected by at least eight A links to each SCP of a mated pair.
    - Each mated pair of STPs is connected by between two and eight C Links.
- **STP Ports** for connection of "A," "C," and "D" Links. These ports can be basic, common, or specific for each SS7-related service.

Figure 1 illustrates a generic SS7 network viewed as a collection of interconnected SSPs, STPs and SCPs.

Model Processing

The SS7 module is constructed as a forward-looking model of GTE's national Signaling System No. 7 network. Model development begins with a study of the SS7 network, including the engineering of SSPs, STPs, SCPs and all links that connect these nodes.

Pre-processing

Based on network requirements and engineering planning guidelines, the number and type of each component used in the SS7 network is determined external to the model. The state-specific forward-looking local telephone network and the forward-looking national SS7 network are the bases for identifying the required investments and characteristics.

All applicable link lease expenses are calculated during pre-processing and entered into the appropriate tables.

Hardware and software investments for each SS7 component are developed through detailed modeling of the engineering for each switch technology type (DMS-100, 5ESS, etc.) and each STP type (Nortel DMS STP or a DSC version). These investments are stored in the SS7 Investment table according to the appropriate unit cost driver, e.g. port, link, query, etc.

Network characteristics, such as engineered capacities, link utilizations, and octets per service, are stored in the SS7 Network Parameters Table.

Figures 2 and 3 illustrate the model processing flow.

Data Inputs

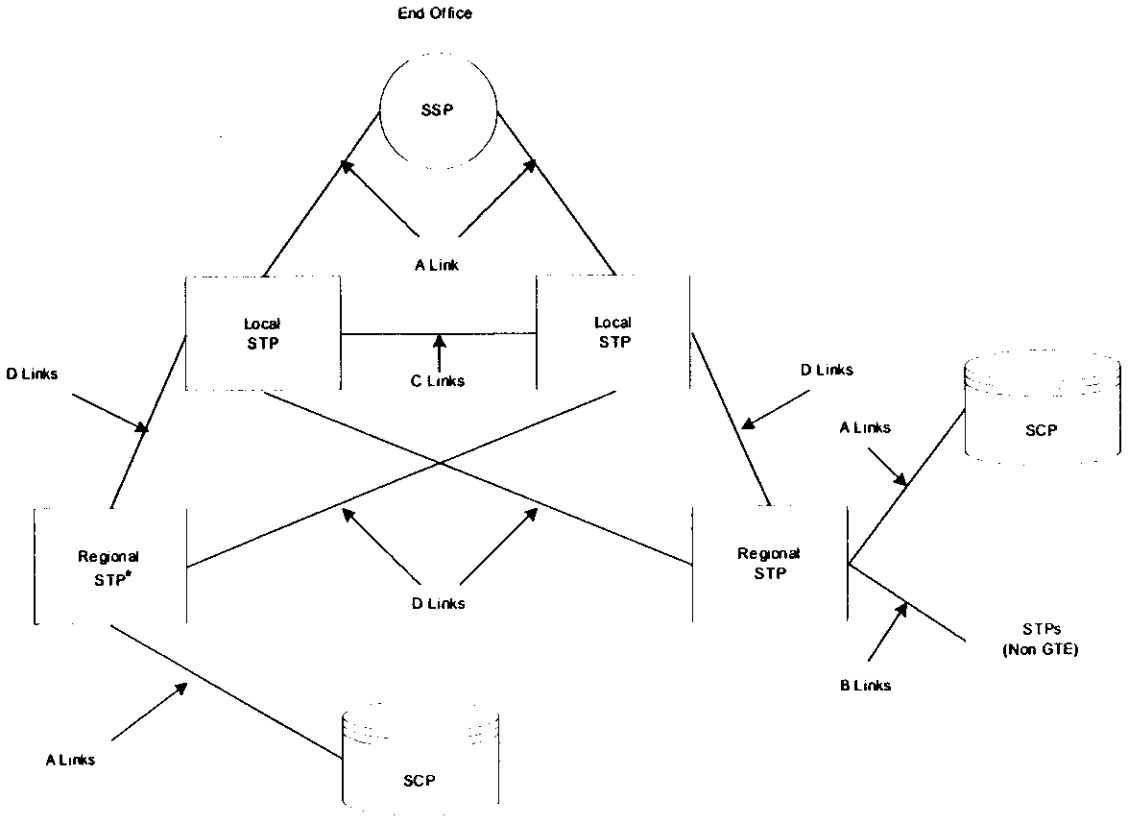
The data inputs for SS7 consist of six tables that contain all investment, expense, usage, engineering, and geographical data necessary to model the network.

- SS7 Investment (xxSS7inv.db) This table includes all investments for SSP, STP, and SCP equipment and software utilized.
- Service Switching Point SSP (xxSSP.db) and Signal Transfer Point STP (xxSTP.db) lease expenses are entered in the SSP and STP tables for all SS7 links not owned by GTE.
- STP Location (xxSTPLoc.db) Geographical information on regional STPs and the SCPs are stored in this table.
- Network Parameters (xxSS7Par.db) Usage and engineering parameters, such as octets per call and octets per link, are stored in this table.
- Loading factor (xxLoad.db) The model also includes a loading factor table containing state-specific hardware and software minor material loadings and labor rates for all states in the SS7 network of the state being studied.

Documentation for these tables is found in each of the sections.

GENERAL SS7 NETWORK

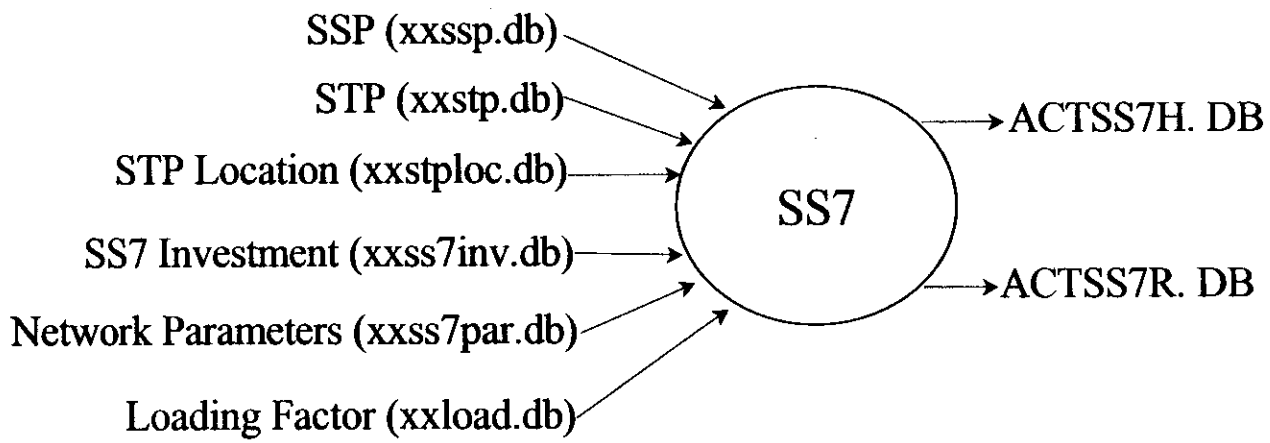
Figure 1. Signaling System 7 Network Components



MODEL PROCESSING FLOW

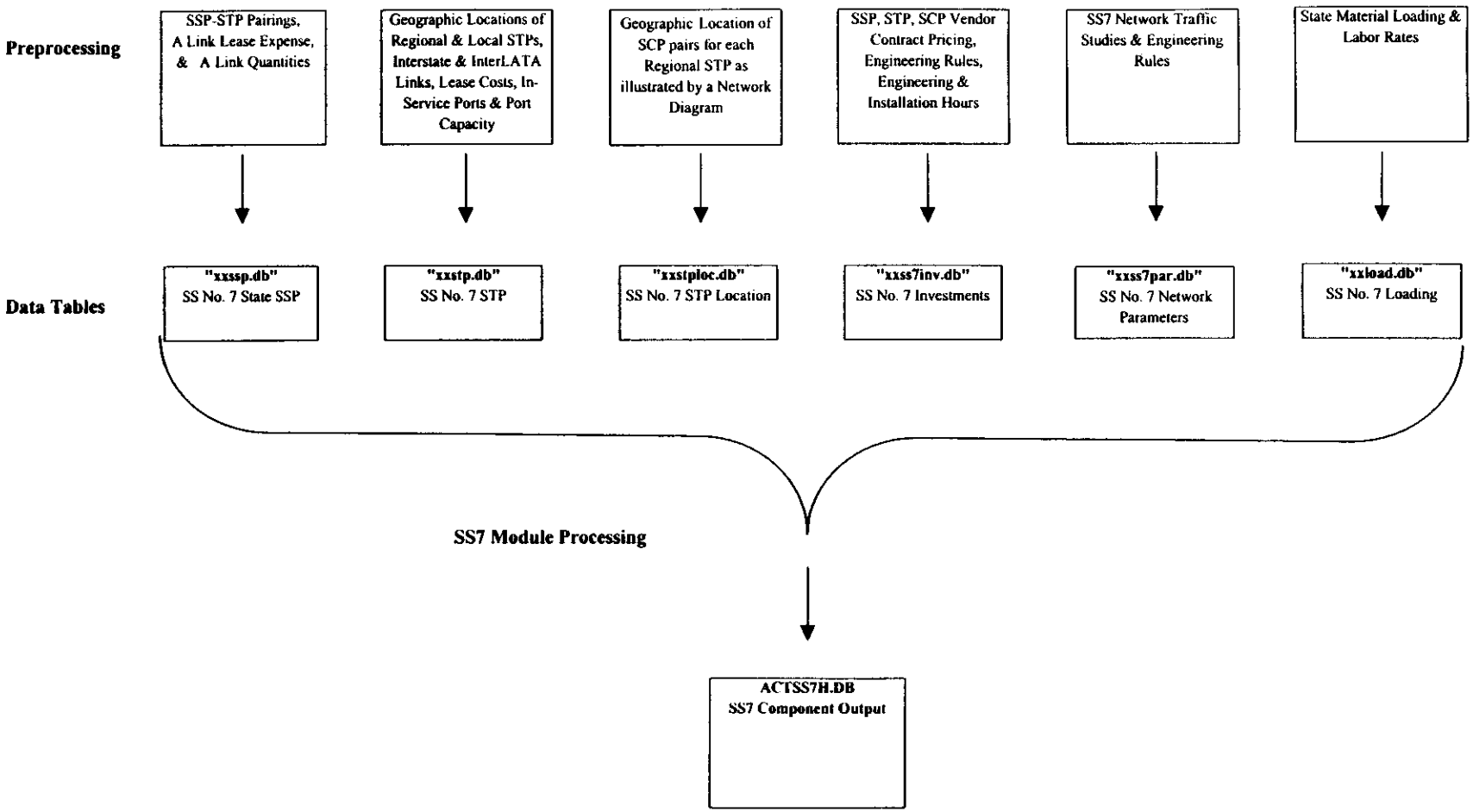
Figure 2. Process Flow Diagram

The SS7 bubble-chart provides a graphic view of the database files that are input to and output of the SS7 Module.



SS7 MODEL DEVELOPMENT & PROCESSING

Figure 3



ICM SS7 MODULE
ICM TABLE "Signaling System No. 7 State SSP"

Service Switching Point (SSP) [FLSSP.DB]
ICM TABLE "Signaling System No. 7 State SSP"

The ICM ***Signaling System No. 7 State SSP*** table provides the lease costs for A Links from the Service Switching Points (SSPs) in the state to the local STPs supporting the SSPs. The table also contains the CLLI Codes for the SSPs along with the CLLI codes of STPs.

As part of a forward looking model, each host/standalone office is assumed to be SSP-equipped having at least one A link to each local STP of a mated pair. Thus, the model includes ports for at least two A links. Based on traffic requirements, some offices may have ports for more than two A links. The actual number of A links is obtained from the GTE Trunk Traffic Engineering(TTE) and is stored in this table.

Table Column Headings	Description
SSP_CLLI	The CLLI code for each host end office in the state
LOCAL_STP1	Local STP 1 CLLI Code
LOCAL_STP2	Local STP 2 CLLI Code
ALinks	Number of A Link Ports
A1 Expense	Lease Expense to Local STP 1
A2 Expense	Lease Expense to Local STP 2

For details, see SS7 Module Model Methodology handbook.

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Signaling System No.7 State SSP

	SSP_CLLI	Local_STP1	Local_STP2	ALink	A1_Expens
1	ABDLFLXA96H	TAMPFLXA00W	CLWRFLXA00W		
2	ALFAFLXA67H	TAMPFLXA00W	CLWRFLXA00W		
3	ANMRFLXA77H	TAMPFLXA00W	CLWRFLXA00W		
4	BARTFLXA53H	TAMPFLXA00W	CLWRFLXA00W		
5	BAYUFLXA54H	TAMPFLXA00W	CLWRFLXA00W		
6	BHPKFLXA28H	TAMPFLXA00W	CLWRFLXA00W		
7	BRBAFLXA75H	TAMPFLXA00W	CLWRFLXA00W		
8	BRNDFLXA68H	TAMPFLXA00W	CLWRFLXA00W		
9	BRTNFLXX74H	TAMPFLXA00W	CLWRFLXA00W		
10	CLWRFLXA44H	TAMPFLXA00W	CLWRFLXA00W		
11	CNSDFLXA79H	TAMPFLXA00W	CLWRFLXA00W		
12	CRWDFLXA96H	TAMPFLXA00W	CLWRFLXA00W		
13	CYGRFLXA32H	TAMPFLXA00W	CLWRFLXA00W		
14	DNDNFLXA73H	TAMPFLXA00W	CLWRFLXA00W		
15	DUNDFLXA43H	TAMPFLXA00W	CLWRFLXA00W		
16	ENWDFLXA47H	TAMPFLXA00W	CLWRFLXA00W		
17	FHSDFLXA57H	TAMPFLXA00W	CLWRFLXA00W		
18	FRSTFLXA63H	TAMPFLXA00W	CLWRFLXA00W		
19	GNDYFLXA57H	TAMPFLXA00W	CLWRFLXA00W		
20	HDSNFLXA86H	TAMPFLXA00W	CLWRFLXA00W		
21	HGLDFLXA64H	TAMPFLXA00W	CLWRFLXA00W		
22	HNCYFLXA42H	TAMPFLXA00W	CLWRFLXA00W		
23	HYPKFLXADS0	TAMPFLXA00W	CLWRFLXA00W		
24	INRKFLXX59H	TAMPFLXA00W	CLWRFLXA00W		
25	KYSTFLXA92H	TAMPFLXA00W	CLWRFLXA00W		
26	LGBKFLXA38H	TAMPFLXA00W	CLWRFLXA00W		
27	LKALFLXA95H	TAMPFLXA00W	CLWRFLXA00W		
28	LKLDFLXA68H	TAMPFLXA00W	CLWRFLXA00W		
29	LKLDFLXE66H	TAMPFLXA00W	CLWRFLXA00W		
30	LKLDFLXN85H	TAMPFLXA00W	CLWRFLXA00W		
31	LKWLFLXA67H	TAMPFLXA00W	CLWRFLXA00W		
32	LLMNFLXADS0	TAMPFLXA00W	CLWRFLXA00W		
33	LNLKFLXA99H	TAMPFLXA00W	CLWRFLXA00W		
34	LRGOFLXA58H	TAMPFLXA00W	CLWRFLXA00W		
35	LUTZFLXA94H	TAMPFLXA00W	CLWRFLXA00W		
36	MNLKFLXA85H	TAMPFLXA00W	CLWRFLXA00W		
37	MYCYFLXA32H	TAMPFLXA00W	CLWRFLXA00W		
38	NGBHFLXA39H	TAMPFLXA00W	CLWRFLXA00W		
39	NPRCFLXA84H	TAMPFLXA00W	CLWRFLXA00W		
40	NRPTFLXA42H	TAMPFLXA00W	CLWRFLXA00W		
41	NRSDFLXA35H	TAMPFLXA00W	CLWRFLXA00W		
42	OLDSFLXA85H	TAMPFLXA00W	CLWRFLXA00W		
43	OSPRFLXA96H	TAMPFLXA00W	CLWRFLXA00W		
44	PLMTFLXA72H	TAMPFLXA00W	CLWRFLXA00W		
45	PLSLFLXA79H	TAMPFLXA00W	CLWRFLXA00W		
46	PNCRFLXA73J	TAMPFLXA00W	CLWRFLXA00W		
47	PNLSFLXA53H	TAMPFLXA00W	CLWRFLXA00W		
48	PSDNFLXA34H	TAMPFLXA00W	CLWRFLXA00W		
49	PTCYFLXA75H	TAMPFLXA00W	CLWRFLXA00W		
50	RSKNFLXA64H	TAMPFLXA00W	CLWRFLXA00W		
51	SEKYFLXA34H	TAMPFLXA00W	CLWRFLXA00W		
52	SGBEFLXA36H	TAMPFLXA00W	CLWRFLXA00W		
53	SKWYFLXADS0	TAMPFLXA00W	CLWRFLXA00W		
54	SLSPFLXA93H	TAMPFLXA00W	CLWRFLXA00W		

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Signaling System No.7 State SSP

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Signaling System No.7 State SSP

	SSP_CLLI	Local_STP1	Local_STP2	ALink	A1_Expens
55	SMNLFLXA23H	TAMPFLXA00W	CLWRFLXA00W		
56	SNSPFLXA37H	TAMPFLXA00W	CLWRFLXA00W		
57	SPBGFLXA89H	TAMPFLXA00W	CLWRFLXA00W		
58	SPBGFLXS86H	TAMPFLXA00W	CLWRFLXA00W		
59	SPRGFLXA37H	TAMPFLXA00W	CLWRFLXA00W		
60	SRSTFLXA95H	TAMPFLXA00W	CLWRFLXA00W		
61	SSDSFLXA92H	TAMPFLXA00W	CLWRFLXA00W		
62	STGRFLXA78H	TAMPFLXA00W	CLWRFLXA00W		
63	SWTHFLXA88H	TAMPFLXA00W	CLWRFLXA00W		
64	TAMPFLXA01T	TAMPFLXA00W	CLWRFLXA00W		
65	TAMPFLXEDS0	TAMPFLXA00W	CLWRFLXA00W		
66	TAMPFLXX22H	TAMPFLXA00W	CLWRFLXA00W		
67	THNTFLXADS0	TAMPFLXA00W	CLWRFLXA00W		
68	TMTRFLXADS0	TAMPFLXA00W	CLWRFLXA00W		
69	TRSPFLXA93H	TAMPFLXA00W	CLWRFLXA00W		
70	UNVRFLXA97H	TAMPFLXA00W	CLWRFLXA00W		
71	VENCFLXA48H	TAMPFLXA00W	CLWRFLXA00W		
72	VENCFLXSDS0	TAMPFLXA00W	CLWRFLXA00W		
73	WIMMFLXA63H	TAMPFLXA00W	CLWRFLXA00W		
74	WLCHFLXA97H	TAMPFLXA00W	CLWRFLXA00W		
75	WLCRFLXA83H	TAMPFLXA00W	CLWRFLXA00W		
76	WNHNFLXC29H	TAMPFLXA00W	CLWRFLXA00W		
77	WSSDFLXA87H	TAMPFLXA00W	CLWRFLXA00W		
78	YBCTFLXA24H	TAMPFLXA00W	CLWRFLXA00W		
79	ZPHYFLXA78H	TAMPFLXA00W	CLWRFLXA00W		

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Signaling System No.7 State SSP

	A2_Expens
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REDACTED

TABLE "Signaling System No. 7 State SSP"

SSP CLLI	Local STP1	Local STP2	ALink	A1 Expe	A2 Exper	Reference Page		
ABDLFLXA96H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
ALFAFLXA67H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
ANMRFLXA77H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
BARTFLXA53H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
BAYUFLXA54H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
BHPKFLXA28H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
BRBAFLXA75H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
BRNDFLXA68H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
BRTNFLXX74H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
CLWRFLXA44H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
CNSDFLXA79H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
CRWDFLXA96H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
CYGRFLXA32H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
DNDNFLXA73H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
DUNDFLXA43H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
ENWDFLXA47H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
FHSDFLXA57H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
FRSTFLXA63H	TAMPFLXA00W	CLWRFLXA00W					1	1-6
GNDYFLXA57H	TAMPFLXA00W	CLWRFLXA00W					1	1-6
HDSNFLXA86H	TAMPFLXA00W	CLWRFLXA00W					1	1-6
HGLDFLXA64H	TAMPFLXA00W	CLWRFLXA00W		REDACTED			1	1-6
HNCYFLXA42H	TAMPFLXA00W	CLWRFLXA00W					1	1-6
HYPKFLXADS0	TAMPFLXA00W	CLWRFLXA00W					1	1-6
INRKFLXX59H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
KYSTFLXA92H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
LGBKFLXA38H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
LKALFLXA95H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
LKLDFLXA68H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
LKLDFLXE66H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
LKLDFLXN85H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
LKWLFLXA67H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
LLMNFLXADS0	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
LNLKFLXA99H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
LRGOFLXA58H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
LUTZFLXA94H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
MNLKFLXA85H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
MYCYFLXA32H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
NGBHFLXA39H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
NPRCFLXA84H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
NRPTFLXA42H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
NRSDFLXA35H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
OLDSFLXA85H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
OSPRFLXA96H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
PLMTFLXA72H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
PLSLFLXA79H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
PNCRFLXA73J	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
PNLSFLXA53H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
PSDNFLXA34H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6

TABLE "Signaling System No. 7 State SSP"

SSP CLLI	Local STP1	Local STP2	ALink	A1 Expen:	A2 Expen	Reference Page		
PTCYFLXA75H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
RSKNFLXA64H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
SEKYFLXA34H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
SGBEFLXA36H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
SKWYFLXADS0	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
SLSPFLXA93H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
SMNLFLXA23H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
SNSPFLXA37H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
SPBGFLXA89H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
SPBGFLXS86H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
SPRGFLXA37H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
SRSTFLXA95H	TAMPFLXA00W	CLWRFLXA00W						1-6
SSDSFLXA92H	TAMPFLXA00W	CLWRFLXA00W						1-6
STGRFLXA78H	TAMPFLXA00W	CLWRFLXA00W						1-6
SWTHFLXA88H	TAMPFLXA00W	CLWRFLXA00W		REDACTED				1-6
TAMPFLXA01T	TAMPFLXA00W	CLWRFLXA00W						1-6
TAMPFLXEDS0	TAMPFLXA00W	CLWRFLXA00W						1-6
TAMPFLXX22H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
THNTFLXADS0	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
TMTRFLXADS0	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
TRSPFLXA93H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
UNVRFLXA97H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
VENCFLXA48H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
VENCFLXSDS0	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
WIMMFLXA63H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
WLCHFLXA97H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
WLCRFLXA83H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
WNHNFLXC29H	TAMPFLXA00W	CLWRFLXA00W				22	1	1-6
WSSDFLXA87H	TAMPFLXA00W	CLWRFLXA00W				2	1	1-6
YBCTFLXA24H	TAMPFLXA00W	CLWRFLXA00W				2	1	1-6
ZPHYFLXA78H	TAMPFLXA00W	CLWRFLXA00W				2	1	1-6

SS7 Preprocessing-SSP Table

General

"A", "C" and "D" signal links are DS-0 circuits used to carry data between the Service Switching Points (SSP), Service Control Points (SCP) and Signal Transfer Points (STP) in SS7 network.

Each SSP has at least one pair of "A" links; one to each local STP of a mated pair. Each pair of local STPs has minimum set of four "D" links to a pair of regional STPs and a regional STP is connected by at least eight A-links to each SCP of a mated pair.

In cases where inter-exchange facilities are required to derive signal links and GTE facilities are not available, facilities from other inter-exchange carriers will be leased. An estimated lease cost is calculated and an adjustment factor is determined.

Calculation

The monthly DDS lease costs estimate is calculated per the following equation:

Estimated Lease Cost = [Cost per circuit + Mileage Cost] X 0.527

Where, the cost per circuit and mileage cost per circuit is determined per the table below.

Distance	Cost/Ckt.	Cost/Ckt. Mile
1-50 miles		
51-100 miles		
101-500 miles		
501+ miles		

The adjustment factor, 0.527 was determined based upon the average cost of actual leases and is used to adjust the calculated lease estimate to forward looking circuit lease cost.

The cost per circuit is the cost per pair of signal links. To determine the mileage cost multiply the cost per circuit mile by the number of miles between the SS7 components (i.e. SSP, STP and SCP).

Source

This lease cost estimate is in accordance with the GTE Planning Guidelines for CCS7 Technology Deployment.

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Vendor Confidential

SS7 "A" Link Forward Looking Cost for Florida

	SWITCH NAME A LINK SIDE NO. 1	SW CLLI CODE	STP NAME	SW V	SW H	STP V	STP H	LEASE DISTANCE	DS0 LEASE COST PER MON
1	ALAFIA	ALFAFLXA67H	CLEARWATER	8183	1122	8202	1203	26.3	$
2	ANNA MARIA	ANMRFLXA77H	CLEARWATER	8282	1142	8202	1203	31.8	$
3	AUBURNDALE	ABDLFLXA96H	CLEARWATER	8085	1047	8202	1203	61.7	$
4	BARTON MAIN	BARTFLXA53H	CLEARWATER	8121	1038	8202	1203	58.1	$
5	BAYOU	BAYUFLXA54H	CLEARWATER	8220	1180	8202	1203	9.2	$
6	BEACH PARK	BHPKFLXA28H	CLEARWATER	8180	1157	8202	1203	16.1	$
7	BRADENTON BAY	BRBAFLXA75H	CLEARWATER	8282	1114	8202	1203	37.8	$
8	BRADENTON MAIN	BRTNFLXX74H	CLEARWATER	8269	1117	8202	1203	34.5	$
9	BRANDON	BRNDFLXA68H	CLEARWATER	8157	1116	8202	1203	31.0	$
10	CARROLLWOOD	CRWDFLXA96H	CLEARWATER	8151	1169	8202	1203	19.4	$
11	CLEARWATER M GTD5	CLWRFLXA44H	CLEARWATER	8202	1203	8202	1203	0.0	$
12	COUNTRYSIDE	CNSDFLXA79H	CLEARWATER	8191	1196	8202	1203	4.1	$
13	CYPRESS GARDENS	CYGRFLXA32H	CLEARWATER	8086	1022	8202	1203	68.0	$
14	DUNDEE	DUNDFLXA43H	CLEARWATER	8076	1015	8202	1203	71.6	$
15	DUNEDIN	DNDNFLXA73H	CLEARWATER	8191	1210	8202	1203	4.1	$
16	ENGLEWOOD	ENWDFLXA47H	CLEARWATER	8349	1023	8202	1203	73.5	$
17	FEATHER SOUND	FHSDFLXA57H	CLEARWATER	8205	1178	8202	1203	8.0	$
18	FROSTPROOF	FRSTFLXA63H	CLEARWATER	8119	970	8202	1203	78.2	$
19	GANDY	GNDYFLXA57H	CLEARWATER	8209	1169	8202	1203	11.0	$
20	HAINES CITY	HNCYFLXA42H	CLEARWATER	8061	1025	8202	1203	71.8	$
21	HIGHLANDS	HGLDFLXA64H	CLEARWATER	8116	1065	8202	1203	51.4	$
22	HUDSON MAIN	HDSNFLXA86H	CLEARWATER	8118	1231	8202	1203	28.0	$
23	HYDE PARK	HYPKFLXADS0	CLEARWATER	8175	1148	8202	1203	19.4	$
24	INDIAN ROCKS	INRKFLXX59H	CLEARWATER	8223	1203	8202	1203	6.6	$
25	KEYSTONE	KYSTFLXA92H	CLEARWATER	8154	1185	8202	1203	16.2	$
26	LAKE ALFRED	LKALFLXA95H	CLEARWATER	8075	1040	8202	1203	65.3	$
27	LAKE WALES MAIN	LKWLFLXA67H	CLEARWATER	8096	996	8202	1203	73.5	$
28	LAKELAND EAST	LKLDFLXE66H	CLEARWATER	8099	1062	8202	1203	55.2	$
29	LAKELAND MAIN	LKLDFLXA68H	CLEARWATER	8106	1073	8202	1203	51.1	$
30	LAKELAND NORTH	LKLDFLXN85H	CLEARWATER	8093	1085	8202	1203	50.8	$
31	LAND O'LAKES	LNLKFLXA99H	CLEARWATER	8116	1183	8202	1203	27.9	$
32	LARGO	LRGOFLXA58H	CLEARWATER	8213	1201	8202	1203	3.5	$

REDACTED

22 1 1

SS7 "A" Link Forward Looking Cost for Florida

	SWITCH NAME A LINK SIDE NO. 1	SW CLLI CODE	STP NAME	SW V	SW H	STP V	STP H	LEASE DISTANCE	DS0 LEASE COST PER MONTH
33	LEALMAN	LLMNFLXADS0	CLEARWATER	8217	1167	8202	1203	12.3	$
34	LONGBOAT	LGBKFLXA38H	CLEARWATER	8297	1117	8202	1203	40.5	$
35	LUTZ	LUTZFLXA94H	CLEARWATER	8134	1169	8202	1203	24.0	$
36	MOON LAKE	MNLKFLXA85H	CLEARWATER	8114	1213	8202	1203	28.0	$
37	MYAKKA CITY	MYCYFLXA32H	CLEARWATER	8256	1032	8202	1203	56.7	$
38	NEW PORT RICHEY	NPRCFLXA84H	CLEARWATER	8135	1225	8202	1203	22.3	$
39	NORTH GULF BEACH	NGBHFLXA39H	CLEARWATER	8226	1191	8202	1203	8.5	$
40	NORTH PORT	NRPTFLXA42H	CLEARWATER	8322	1013	8202	1203	71.1	$
41	NORTHSIDE	NRSDFLXA35H	CLEARWATER	8290	1100	8202	1203	42.8	$
42	OLDSMAR	OLDSFLXA85H	CLEARWATER	8175	1186	8202	1203	10.1	$
43	OSPREY	OSPRFLXA96H	CLEARWATER	8317	1069	8202	1203	55.8	$
44	PALMA SOLA	PLSLFLXA79H	CLEARWATER	8271	1131	8202	1203	31.5	$
45	PALMETTO	PLMTFLXA72H	CLEARWATER	8256	1121	8202	1203	31.0	$
46	PASSADENA	PSDNFLXA34H	CLEARWATER	8230	1169	8202	1203	13.9	$
47	PINECREST	PNCRFLXA73J	CLEARWATER	8152	1085	8202	1203	40.5	$
48	PINELLAS GTD	PNLSFLXA53H	CLEARWATER	8206	1190	8202	1203	4.3	$
49	PLANT CITY	PTCYFLXA75H	CLEARWATER	8128	1098	8202	1203	40.6	$
50	RUSKIN	RSKNFLXA64H	CLEARWATER	8214	1118	8202	1203	27.1	$
51	SARASOTA M GTD5	SRSTFLXA95H	CLEARWATER	8296	1094	8202	1203	45.5	$
52	SARASOTA SPRINGS	SPRGFLXA37H	CLEARWATER	8290	1078	8202	1203	48.3	$
53	SEMINOLE	SMNLFLXA23H	CLEARWATER	8164	1152	8202	1203	20.1	$
54	SEVEN SPRINGS	SNSPFLXA37H	CLEARWATER	8144	1207	8202	1203	18.4	$
55	SIESTA KEY	SEKYFLXA34H	CLEARWATER	8310	1088	8202	1203	49.9	$
56	SKYWAY	SKWYFLXADS0	CLEARWATER	8230	1165	8202	1203	14.9	$
57	SOUTH GULF BEACH	SGBEFLXA36H	CLEARWATER	8241	1174	8202	1203	15.4	$
58	SOUTHSIDE	SSDSFLXA92H	CLEARWATER	8306	1084	8202	1203	50.0	$
59	ST GEORGE	STGRFLXA78H	CLEARWATER	8178	1208	8202	1203	7.8	$
60	ST PETERSBURG M	SPBGFLXA89H	CLEARWATER	8225	1159	8202	1203	15.7	$
61	ST PETERSBURG SOUTH	SPBGFLXS86H	CLEARWATER	8238	1159	8202	1203	18.0	$
62	SULPHUR SPRING	SLSPFLXA93H	CLEARWATER	8159	1156	8202	1203	20.1	$
63	SWEETWATER GTD5	SWTHFLXA88H	CLEARWATER	8174	1170	8202	1203	13.7	$
64	TAMPA M GTD5	TAMPFLXX22H	CLEARWATER	8172	1147	8202	1203	20.1	$

REDACTED

22 1 2

SS7 "A" Link Forward Looking Cost for Florida

SWITCH NAME A LINK SIDE NO. 1	SW CLLI CODE	STP NAME	SW V	SW H	STP V	STP H	LEASE DISTANCE	DS0 LEASE COST PER MONTH
65 TAMPA EAST	TAMPFLXEDS0	CLEARWATER	8160	1135	8202	1203	25.3	$
66 TAMPA TANDEM DMS	TAMPFLXA01T	CLEARWATER	8174	1147	8202	1203	19.8	$
67 TARPON SPRINGS	TRSPFLXA93H	CLEARWATER	8164	1216	8202	1203	12.7	$
68 TEMPLE TERRACE	TMTRFLXADS0	CLEARWATER	8150	1145	8202	1203	24.6	$
69 THONOTOSASSA	THNTFLXADS0	CLEARWATER	8136	1132	8202	1203	30.7	$
70 UNIVERSITY	UNVRFLXA97H	CLEARWATER	8150	1153	8202	1203	22.8	$
71 VENICE MAIN	VENCFLXA48H	CLEARWATER	8332	1053	8202	1203	62.8	$
72 VENICE SOUTH	VENCFLXSDS0	CLEARWATER	8337	1041	8202	1203	66.7	$
73 WALLCRAFT	WLCRFLXA83H	CLEARWATER	8185	1148	8202	1203	18.2	$
74 WESLEY CHAPEL	WLCHFLXA97H	CLEARWATER	8110	1159	8202	1203	32.2	$
75 WESTSIDE GTD5	WSSDFLXA87H	CLEARWATER	8175	1156	8202	1203	17.1	$
76 WIMAUMA	WIMMFLXA63H	CLEARWATER	8205	1101	8202	1203	32.3	$
77 WINTER HAVEN MAIN	WNHNFLXC29H	CLEARWATER	8087	1033	8202	1203	64.9	$
78 YBOR CITY	YBCTFLXA24H	CLEARWATER	8169	1145	8202	1203	21.1	$
79 ZEPHYRHILLS	ZPHYFLXA78H	CLEARWATER	8093	1131	8202	1203	41.3	$

REDACTED

22 1 3

SS7 "A" Link Forward Looking Cost for Florida

	SWITCH NAME A LINK SIDE NO. 2	SW CLLI CODE	TP NAM	SW V	SW H	STP V	STP H	LEAS DIST	DS0 LEASE COST PER MONTH
1	ALAFIA	ALFAFLXA67H	TAMPA	8183	1122	8172	1147	8.6	$
2	ANNA MARIA	ANMRFLXA77H	TAMPA	8282	1142	8172	1147	34.8	$
3	AUBURNDALE	ABDLFLXA96H	TAMPA	8085	1047	8172	1147	41.9	$
4	BARTON MAIN	BARTFLXA53H	TAMPA	8121	1038	8172	1147	38.1	$
5	BAYOU	BAYUFLXA54H	TAMPA	8220	1180	8172	1147	18.4	$
6	BEACH PARK	BHPKFLXA28H	TAMPA	8180	1157	8172	1147	4.0	$
7	BRADENTON BAY	BRBAFLXA75H	TAMPA	8282	1114	8172	1147	36.3	$
8	BRADENTON MAIN	BRTNFLXX74H	TAMPA	8269	1117	8172	1147	32.1	$
9	BRANDON	BRNDFLXA68H	TAMPA	8157	1116	8172	1147	10.9	$
10	CARROLLWOOD	CRWDFLXA96H	TAMPA	8151	1169	8172	1147	9.6	$
11	CLEARWATER M GTD5	CLWRFLXA44H	TAMPA	8202	1203	8172	1147	20.1	$
12	COUNTRYSIDE	CNSDFLXA79H	TAMPA	8191	1196	8172	1147	16.6	$
13	CYPRESS GARDENS	CYGRFLXA32H	TAMPA	8086	1022	8172	1147	48.0	$
14	DUNDEE	DUNDFLXA43H	TAMPA	8076	1015	8172	1147	51.6	$
15	DUNEDIN	DNDNFLXA73H	TAMPA	8191	1210	8172	1147	20.8	$
16	ENGLEWOOD	ENWDFLXA47H	TAMPA	8349	1023	8172	1147	68.3	$
17	FEATHER SOUND	FHSDFLXA57H	TAMPA	8205	1178	8172	1147	14.3	$
18	FROSTPROOF	FRSTFLXA63H	TAMPA	8119	970	8172	1147	58.4	$
19	GANDY	GNDYFLXA57H	TAMPA	8209	1169	8172	1147	13.6	$
20	HAINES CITY	HNCYFLXA42H	TAMPA	8061	1025	8172	1147	52.2	$
21	HIGHLANDS	HGLDFLXA64H	TAMPA	8116	1065	8172	1147	31.4	$
22	HUDSON MAIN	HDSNFLXA86H	TAMPA	8118	1231	8172	1147	31.6	$
23	HYDE PARK	HYPKFLXADS0	TAMPA	8175	1148	8172	1147	1.0	$
24	INDIAN ROCKS	INRKFLXX59H	TAMPA	8223	1203	8172	1147	24.0	$
25	KEYSTONE	KYSTFLXA92H	TAMPA	8154	1185	8172	1147	13.3	$
26	LAKE ALFRED	LKALFLXA95H	TAMPA	8075	1040	8172	1147	45.7	$
27	LAKE WALES MAIN	LKWLFLXA67H	TAMPA	8096	996	8172	1147	53.5	$
28	LAKELAND EAST	LKLDFLXE66H	TAMPA	8099	1062	8172	1147	35.4	$
29	LAKELAND MAIN	LKLDFLXA68H	TAMPA	8106	1073	8172	1147	31.4	$
30	LAKELAND NORTH	LKLDFLXN85H	TAMPA	8093	1085	8172	1147	31.8	$
31	LAND O'LAKES	LNLKFLXA99H	TAMPA	8116	1183	8172	1147	21.1	$

REDACTED

22 1 4

SS7 "A" Link Forward Looking Cost for Florida

SWITCH NAME A LINK SIDE NO. 2	SW CLLI CODE	TP NAM	SW V	SW H	STP V	STP H	LEAS DIST	DS0 LEASE COST PER MONTH
32 LARGO	LRGOFLXA58H	TAMPA	8213	1201	8172	1147	21.4	$
33 LEALMAN	LLMNFLXADS0	TAMPA	8217	1167	8172	1147	15.6	$
34 LONGBOAT	LGBKFLXA38H	TAMPA	8297	1117	8172	1147	40.7	$
35 LUTZ	LUTZFLXA94H	TAMPA	8134	1169	8172	1147	13.9	$
36 MOON LAKE	MNLKFLXA85H	TAMPA	8114	1213	8172	1147	27.8	$
37 MYAKKA CITY	MYCYFLXA32H	TAMPA	8256	1032	8172	1147	45.0	$
38 NEW PORT RICHEY	NPRCFLXA84H	TAMPA	8135	1225	8172	1147	27.3	$
39 NORTH GULF BEACH	NGBHFLXA39H	TAMPA	8226	1191	8172	1147	22.0	$
40 NORTH PORT	NRPTFLXA42H	TAMPA	8322	1013	8172	1147	63.6	$
41 NORTHSIDE	NRSDFLXA35H	TAMPA	8290	1100	8172	1147	40.2	$
42 OLDSMAR	OLDSFLXA85H	TAMPA	8175	1186	8172	1147	12.4	$
43 OSPREY	OSPRFLXA96H	TAMPA	8317	1069	8172	1147	52.1	$
44 PALMA SOLA	PLSLFLXA79H	TAMPA	8271	1131	8172	1147	31.7	$
45 PALMETTO	PLMTFLXA72H	TAMPA	8256	1121	8172	1147	27.8	$
46 PASSADENA	PSDNFLXA34H	TAMPA	8230	1169	8172	1147	19.6	$
47 PINECREST	PNCRFLXA73J	TAMPA	8152	1085	8172	1147	20.6	$
48 PINELLAS GTD	PNLSFLXA53H	TAMPA	8206	1190	8172	1147	17.3	$
49 PLANT CITY	PTCYFLXA75H	TAMPA	8128	1098	8172	1147	20.8	$
50 RUSKIN	RSKNFLXA64H	TAMPA	8214	1118	8172	1147	16.1	$
51 SARASOTA M GTD5	SRSTFLXA95H	TAMPA	8296	1094	8172	1147	42.6	$
52 SARASOTA SPRINGS	SPRGFLXA37H	TAMPA	8290	1078	8172	1147	43.2	$
53 SEMINOLE	SMNLFLXA23H	TAMPA	8164	1152	8172	1147	3.0	$
54 SEVEN SPRINGS	SNSPFLXA37H	TAMPA	8144	1207	8172	1147	20.9	$
55 SIESTA KEY	SEKYFLXA34H	TAMPA	8310	1088	8172	1147	47.5	$
56 SKYWAY	SKWYFLXADS0	TAMPA	8230	1165	8172	1147	19.2	$
57 SOUTH GULF BEACH	SGBEFLXA36H	TAMPA	8241	1174	8172	1147	23.4	$
58 SOUTHSIDE	SSDSFLXA92H	TAMPA	8306	1084	8172	1147	46.8	$
59 ST GEORGE	STGRFLXA78H	TAMPA	8178	1208	8172	1147	19.4	$
60 ST PETERSBURG M	SPBGFLXA89H	TAMPA	8225	1159	8172	1147	17.2	$
61 ST PETERSBURG SOUTH	SPBGFLXS86H	TAMPA	8238	1159	8172	1147	21.2	$
62 SULPHUR SPRING	SLSPFLXA93H	TAMPA	8159	1156	8172	1147	5.0	$

REDACTED

SS7 "A" Link Forward Looking Cost for Florida

	SWITCH NAME A LINK SIDE NO. 2	SW CLLI CODE	TP NAM	SW V	SW H	STP V	STP H	LEAS DIST	DS0 LEASE COST PER MONTH
63	SWEETWATER GTD5	SWTHFLXA88H	TAMPA	8174	1170	8172	1147	7.3	$
64	TAMPA M GTD5	TAMPFLXX22H	TAMPA	8172	1147	8172	1147	0.0	$
65	TAMPA EAST	TAMPFLXEDS0	TAMPA	8160	1135	8172	1147	5.4	$
66	TAMPA TANDEM DMS	TAMPFLXA01T	TAMPA	8174	1147	8202	1203	19.8	$
67	TARPON SPRINGS	TRSPFLXA93H	TAMPA	8164	1216	8172	1147	22.0	$
68	TEMPLE TERRACE	TMTRFLXADS0	TAMPA	8150	1145	8172	1147	7.0	$
69	THONOTOSASSA	THNTFLXADS0	TAMPA	8136	1132	8172	1147	12.3	$
70	UNIVERSITY	UNVRFLXA97H	TAMPA	8150	1153	8172	1147	7.2	$
71	VENICE MAIN	VENCFLXA48H	TAMPA	8332	1053	8172	1147	58.7	$
72	VENICE SOUTH	VENCFLXSDS0	TAMPA	8337	1041	8172	1147	62.0	$
73	WALLCRAFT	WLCRFLXA83H	TAMPA	8185	1148	8172	1147	4.1	$
74	WESLEY CHAPEL	WLCHFLXA97H	TAMPA	8110	1159	8172	1147	20.0	$
75	WESTSIDE GTD5	WSSDFLXA87H	TAMPA	8175	1156	8172	1147	3.0	$
76	WIMAUMA	WIMMFLXA63H	TAMPA	8205	1101	8172	1147	17.9	$
77	WINTER HAVEN MAIN	WNHNFLXC29H	TAMPA	8087	1033	8172	1147	45.0	$
78	YBOR CITY	YBCTFLXA24H	TAMPA	8169	1145	8172	1147	1.1	$
79	ZEPHYRHILLS	ZPHYFLXA78H	TAMPA	8093	1131	8172	1147	25.5	$

REDACTED

ICM SS7 MODULE
TABLE "Signaling System No. 7 STP"

Signal Transfer Points (STP) [FLSTP.DB]
TABLE "Signaling System No. 7 STP"

The ICM ***Signaling System No. 7 STP Network STP*** table provides general data about STPs, such as geographic coordinates, port quantities, and expenses for links to other STPS.

In the GTE SS7 network, each mated pair of STPs is connected by C Links ranging between two and eight C Links. The port capacity is determined by the type of STP equipment being modeled, hence, it is vendor specific. The number of STP ports in service represents the total in the GTE SS7 national network .

Table Column Headings	Description
SSP_CLLI	STP CLLI code
Wcenter_CLLI	CLLI Code of Wire Center where STP is located
STATE	Two-Character state abbreviation
STP_TYPE	Abbreviation of STP Vendor/Version Modeled
STP_LATITUDE	STP Latitude in degrees
STP_LONGITUDE	STP Longitude in degrees
Ports_InSvc	Number of STP Ports in Service
PortCap	STP Port Capacity
REGIONAL_STP1	Local STP 1 CLLI Code
REGIONAL_STP2	Local STP 2 CLLI Code
Clinks	Number of C Links
Clink_Distance	C Link Distance of Mate STP
Clink_Expense	Lease Expense per Link to Mate STP
Dlink_Expense	Lease Expense per Link to Regional STP
DB800Link_Exp	Lease Expense per Link to DB800 Regional STPs
LIDBLink_Exp	Lease Expense per Link to LIDB Regional STPs
LNPLink_Exp	Lease Expense per Link to LNP Regional STPs
AINLink_Exp	Lease Expense per Link to AIN Regional STPs

For details, see SS7 Module Model Methodology handbook.

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Signaling System No.7 STP

	STP_CLLI	WCenter_CLLI	State	STP_Type	STP_Latitude	STP_Longitude
1	CLWRFLXA00W	CLWRFLXA44H	FL		27.7936	-81.9822
2	FTWYINXA02W	FTWYINXADS1	IN		41.0797	-85.1361
3	GRRTINXA01W	GRRTINXADS0	IN		41.3494	-85.135
4	LNBHCAXP01W	LNBHCAXSDS0	CA		33.8313	-118.133
5	MNSSVAXA19W	MNSSVAXADS0	VA		38.7517	-77.4778
6	OCQNVAXA19W	OCQNVAXADS0	VA		38.6694	-77.2592
7	SNMNCAXP01W	SNMNCAXGDS0	CA		34.0203	-118.491
8	TAMPFLXA00W	TAMPFLXA01T	FL		27.7428	-82.7514

REDACTED

Integrated Cost Model - ICM Release 4.1

Signaling System No.7 STP

	Ports_InSvc	PortCap	Regional_STP1	Regional_STP2	Clinks
1			MNSSVAXA19W	OCQNVAXA19W	
2			FTWYINXA02W	GRRTINXA01W	
3			FTWYINXA02W	GRRTINXA01W	
4			SNMNCAXP01W	LNBHCAXP01W	
5			MNSSVAXA19W	OCQNVAXA19W	
6			MNSSVAXA19W	OCQNVAXA19W	
7			SNMNCAXP01W	LNBHCAXP01W	
8			MNSSVAXA19W	OCQNVAXA19W	

REDACTED

Integrated Cost Model - ICM Release 4.1

Signaling System No.7 STP

	Clink_Distance	Clink_Expen
1	20.09	
2	19.3	
3	19.3	
4	24.5	
5	13.5	
6	13.5	
7	24.5	
8	20.09	

Dlink_Expense	DB800Link_Exp	LIDBLink_Exp
1		

REDACTED

22 2 A 05

Integrated Cost Model - ICM Release 4.1

Signaling System No.7 STP

	LNPLink_Exp	AINLink_Exp
1		
2		
3		
4		
5		
6		
7		
8		

REDACTED

TABLE "Signaling System No. 7 STP"

STP_CLLI	WCenterCLLI	State	STP Type	STP Latitude	STP Longitude	Ports InSvc	PortCap	Regional_STP1	Regional_STP2	CLinks	Clink Distance	Clink Expense	Dlink Expense	DB800Link Expense	LIDBLink Expense
CLWRFLXA00W	CLWRFLXA44H	FL		27.7936	-81.9822			MNSSVAXA19W	OCQNVAXA19W		20.09				
FTWYINXA02W	FTWYINXADS1	IN		41.0797	-85.1361			FTWYINXA02W	GRRTINXA01W		19.3				
GRRTINXA01W	GRRTINXADS0	IN		41.3494	-85.135			FTWYINXA02W	GRRTINXA01W		19.3				
LNBHCAXP01W	LNBHCAXSDS0	CA		33.8313	-118.133			SNMNCAXP01W	LNBHCAXP01W		24.5				
MNSSVAXA19W	MNSSVAXADS0	VA		38.7517	-77.4778			MNSSVAXA19W	OCQNVAXA19W		13.5				
OCQNVAXA19W	OCQNVAXADS0	VA		38.6694	-77.2592			MNSSVAXA19W	OCQNVAXA19W		13.5				
SNMNCAXP01W	SNMNCAXGDS0	CA		34.0203	-118.491			SNMNCAXP01W	LNBHCAXP01W		24.5				
TAMPFLXA00W	TAMPFLXA01T	FL		27.7428	-82.7514			MNSSVAXA19W	OCQNVAXA19W		20.09				

Reference page 22 2 1

REDACTED

C Link Distance

The length of the C Link, in miles, is computed as an airline distance.

The airline distance between the two points is defined as follows:

Distance(Lat1, Long1, Lat2, Long2) = (Radius / FeetPerMile)
* ARCCOS [(SIN(Lat1 * RadPerDeg) * SIN(Lat2 * RadPerDeg))
+((COS(Lat1 * RadPerDeg) * COS(Lat2 * RadPerDeg)) * (COS(Long2 - Long1) * RadPerDeg))]

where

Lat1, Long1 are the coordinates of the of one STP
Lat2, Long2 are the coordinates of the mated STP
FeetPerMile = 5280,
Radius = 20,891,197 (Radius of Earth in feet), and
RadPerDeg = PI/180. (Factor to convert Degrees to Radians; PI = 3.141592654)

CDistance = ALMRatio * Distance(Lat1, Long1, Lat2, Long2)

where

ALMRatio is the route mile to airline mile ratio and is equal to 1.3

D Link Expense

The D Link lease costs estimate is calculated per the following equation:

Estimated Lease Cost = [Cost per circuit + Mileage Cost] X 0.527
Where, the cost per circuit and mileage cost per circuit is determined per the table below.

Distance	Cost/Ckt.	Cost/Ckt. Mile
1-50 miles		
51-100 miles		
101-500 miles		
501+ miles		

The adjustment factor, 0.527 was determined based upon the average cost of actual leases and is used to adjust the calculated lease estimate to forward looking circuit lease cost.

The cost per circuit is the cost per pair of signal links. To determine the mileage cost multiply the cost per circuit mile by the number of miles between the SS7 components.

REDACTED

GTE Telephone Operations
State: Florida
SS7 D Links - Lease Calculation

FACILITY LEASE FROM FLORIDA LOCAL STP TO THE VIRGINIA REGIONAL STP

		STP V	STP H	STP V	STP H	MILES	MONTHLY LEASE
CLEARWATER,FL	MANASSAS,VA	8202	1203	5698	1627	803.1	
CLEARWATER,FL	OCCOQUAN,VA	8202	1203	5686	1586	804.8	
TAMPA,FL	OCCOQUAN,VA	8172	1147	5686	1586	798.3	
TAMPA,FL	MANASSAS,VA	8172	1147	5698	1627	796.9	
						AVERAGE	

LEASE FROM VIRGINIA REGIONAL STP TO CALIFORNIA REGIONAL STP FOR 800 DATA BASE SERVICES

		STP V	STP H	STP V	STP H	MILES	MONTHLY LEASE
OCCOQUAN,VA	LONG BEACH,CA	5686	1586	9257	7849	2279.9	
OCCOQUAN,VA	SANTA MONICA,CA	5686	1586	9226	7920	2294.6	
MANASSAS,VA	LONG BEACH,CA	5698	1627	9257	7849	2266.7	
MANASSAS,VA	SANTA MONICA,CA	5698	1627	9226	7920	2281.4	
						AVERAGE	

LEASE FROM VIRGINIA REGIONAL STP TO INDIANA REGIONAL STP FOR LIDB DATA BASE SERVICES

		STP V	STP H	STP V	STP H	MILES	MONTHLY LEASE
OCCOQUAN,VA	FT WAYNE, IN	5686	1586	5942	2982	448.8	
OCCOQUAN,VA	GARRETT, IN	5686	1586	5890	3014	456.2	
MANASSAS,VA	FTWAYNE, IN	5698	1627	5942	2982	435.4	
MANASSAS,VA	GARRETT, IN	5698	1627	5890	3014	442.8	
						AVERAGE	

AVERAGE LEASE EXPENSE FOR PRIMARY AND SECONDARY ROUTES: **$**

REDACTED

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22 2 1

leases2-fl, Tab LIDB and 800
January 2000

ICM SS7 MODULE
TABLE "Signaling System No. 7 STP Location"

STP Location [FLSTPLoc.DB]
TABLE "Signaling System No. 7 STP Location"

The ICM ***Signaling System No. 7 STP Location*** table identifies the CLLI codes of the Regional STPs where each pair of SCPs is located. In a forward looking environment, there are primary and secondary SCPs, each collocated with the STPs.

Table Column Headings	**Description**
Reg_STP1	Regional STP CLLI code
DB800_PriSCP1	CLLI Code of STP colocated with first primary DB800 SCP
DB800_PriSCP2	CLLI Code of STP colocated with second primary DB800 SCP
DB800_SecSCP1	CLLI Code of STP colocated with first secondary DB800 SCP
DB800_SecSCP2	CLLI Code of STP colocated with second secondary DB800 SCP
LIBD_PriSCP1	CLLI Code of STP colocated with first primary LIDB SCP
LIDB_PriSCP2	CLLI Code of STP colocated with second primary LIDB SCP
LIDB_SecSCP1	CLLI Code of STP colocated with first secondary LIDB SCP
LIDB_SecSCP2	CLLI Code of STP colocated with second secondary LIDB SCP
LNP_PriSCP1	CLLI Code of STP colocated with first primary LNP SCP
LNP_PriSCP2	CLLI Code of STP colocated with second primary LNP SCP
LNP_SecSCP1	CLLI Code of STP colocated with first secondary LNP SCP
LNP_SecSCP2	CLLI Code of STP colocated with second secondary LNP SCP
AIN_PriSCP1	CLLI Code of STP colocated with first primary AIN SCP
AIN_PriSCP2	CLLI Code of STP colocated with second primary AIN SCP
AIN_SecSCP1	CLLI Code of STP colocated with first secondary AIN SCP
AIN_SecSCP2	CLLI Code of STP colocated with second secondary AIN SCP

For further details, see SS7 Model Methodology handbook provided.

Integrated Cost Model - ICM Release 4.1

Signaling System No.7 STP Location

	Reg_STP1	DB800_PriSCP1	DB800_PriSCP2	DB800_SecSCP1	DB800_SecSCP2
1	FTWYINXA02W	FTWYINXA02W	GRRTINXA01W	SNMNCAXP01W	LNBHCAXP01W
2	SNMNCAXP01W	FTWYINXA02W	GRRTINXA01W	SNMNCAXP01W	LNBHCAXP01W

Integrated Cost Model - ICM Release 4.1

Signaling System No.7 STP Location

	LIDB_PriSCP1	LIDB_PriSCP2	LIDB_SecSCP1	LIDB_SecSCP2	LNP_PriSCP1
1	FTWYINXA02W	GRRTINXA01W	SNMNCAXP01W	LNBHCAXP01W	0
2	FTWYINXA02W	GRRTINXA01W	SNMNCAXP01W	LNBHCAXP01W	0

Integrated Cost Model - ICM Release 4.1

Signaling System No.7 STP Location

	LNP_PriSCP2	LNP_SecSCP1	LNP_SecSCP2	AIN_PriSCP1	AIN_PriSCP2
1	0	0	0	0	0
2	0	0	0	0	0

22 3 05

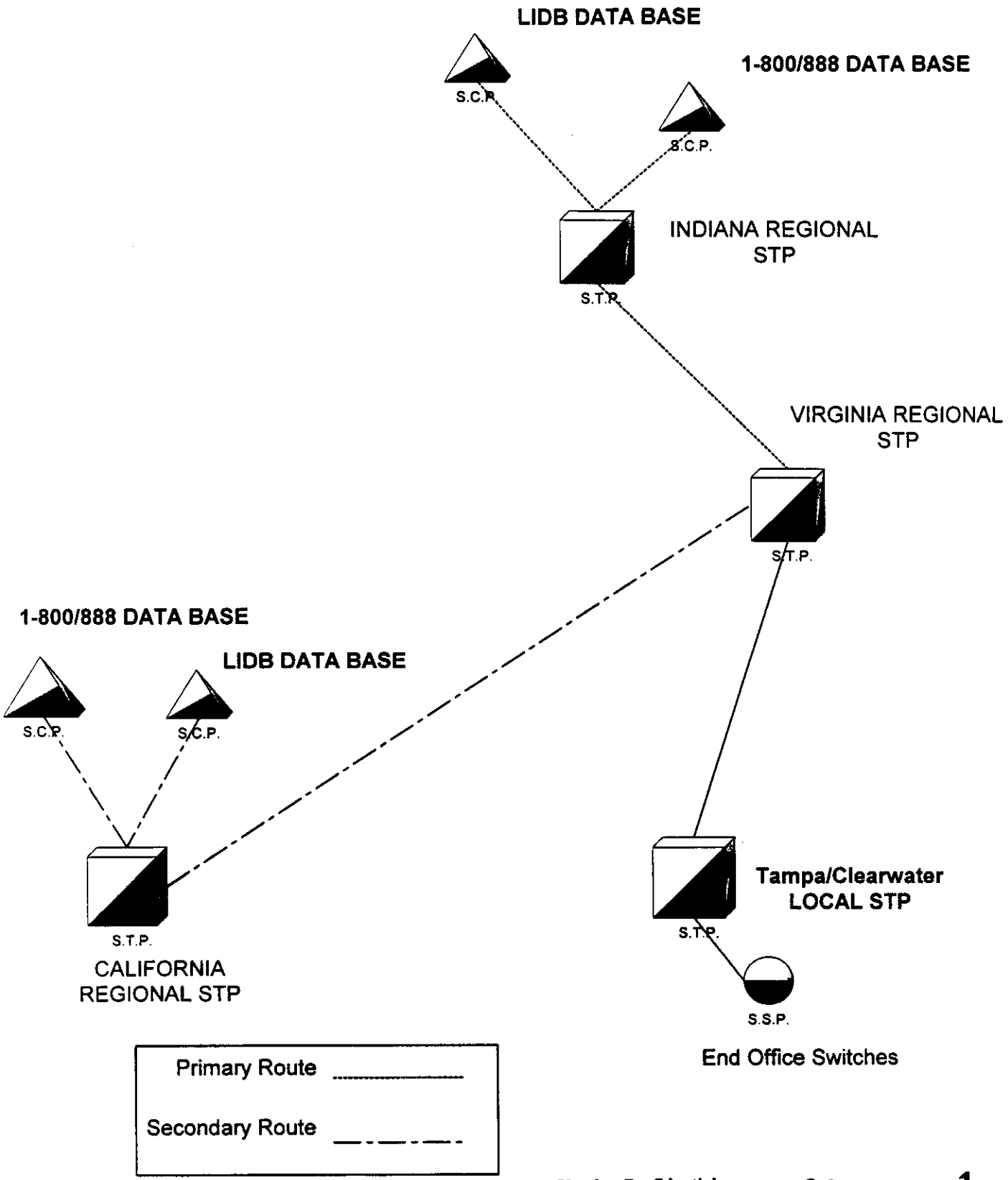
Integrated Cost Model - ICM Release 4.1

Signaling System No.7 STP Location

	AIN_SecSCP1	AIN_SecSCP2
1	0	0
2	0	0

22 3 06

FLORIDA'S SS7 NETWORK



ICM SS7 MODULE
TABLE "Signaling System No. 7 Investment"

SS7 Investment [FLSS7Inv.DB]
TABLE "Signaling System No. 7 Investment"

The ICM ***Signaling System No. 7 Investment*** table includes all SSP, STP, and SCP equipment and software utilized. The table stores hardware and software investment values, along with quantities of hours for engineering, installation and installation testing. In the model, these values are combined with the Switch EF&I factors, minor material factors, and labor rates from the SS7 Loading Factors Table to determine total investment values for each table item which is, then, used for main processing.

Engineering data is gathered from switch, STP, and SCP vendors and from GTE network planners. The Bellcore switching model SCIS and GTE's COSTMOD produce SSP hardware investments, while GTE-vendor contracts include software investments. Contracts and engineering documents enable GTE to model various versions of STPs and SCPs.

Table Column Headings	**Description**
Node_Type	Type of SS7 Network Node (e.g. SSP/STP/SCP)
Item	Investment Table Item Code (e.g. "SSPPort_HW")
Technology	Type of SSP or STP (e.g. DMS-100, DSC-A32)
Account	Part 32 Account Code
Hardware	Hardware Investment Value
Software	Software Investment Value
Eng_Hrs	Engineering Hours
Inst_Hrs	Installation Hours
Test_Hrs	Installation Testing Hours

For detail information on the investment components and the descriptions of SS7 Investment Table items, please refer to the SS7 Module Model Methodology handbook.

Integrated Cost Model - ICM Release 4.1

Signaling System No.7 Investments

	Node_Type	Item	Technology	Account	Hardware
1	SCP	SCPInv		221200	
2	SCP	SCP_SPEC_CKT		223200	
3	SSP	SSP800_SW		221200	
4	SSP	SSP800_SW		221200	
5	SSP	SSP800_SW		221200	
6	SSP	SSP800_SW		221200	
7	SSP	SSPAIN_SW		221200	
8	SSP	SSPAIN_SW		221200	
9	SSP	SSPAIN_SW		221200	
10	SSP	SSPAIN_SW		221200	
11	SSP	SSPAPort		221200	
12	SSP	SSPAPort		221200	
13	SSP	SSPAPort		221200	
14	SSP	SSPAPort		221200	
15	SSP	SSPIPort		221200	
16	SSP	SSPIPort		221200	
17	SSP	SSPIPort		221200	
18	SSP	SSPIPort		221200	
19	SSP	SSPLIDB_SW		221200	
20	SSP	SSPLIDB_SW		221200	
21	SSP	SSPLIDB_SW		221200	
22	SSP	SSPLIDB_SW		221200	
23	SSP	SSPLNP_SW		221200	
24	SSP	SSPLNP_SW		221200	
25	SSP	SSPLNP_SW		221200	
26	SSP	SSPLNP_SW		221200	
27	SSP	SSP_SPEC_CKT		223200	
28	SSP	SSP_SPEC_CKT		223200	
29	SSP	SSP_SPEC_CKT		223200	
30	SSP	SSP_SPEC_CKT		223200	
31	STP	STPCommon		221200	
32	STP	STPCommon		221200	
33	STP	STPCommon		221200	
34	STP	STPPort		221200	
35	STP	STPPort		221200	
36	STP	STPPort		221200	
37	STP	STP_GTTSW		221200	
38	STP	STP_GTTSW		221200	
39	STP	STP_GTTSW		221200	
40	STP	STP_LNPSW		221200	
41	STP	STP_LNPSW		221200	
42	STP	STP_LNPSW		221200	
43	STP	STP_SPEC_CKT		223200	
44	STP	STP_SPEC_CKT		223200	
45	STP	STP_SPEC_CKT		223200	

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Integrated Cost Model - ICM Release 4.1

Signaling System No.7 Investments

	Software	Eng_Hrs	Inst_Hrs	Test_Hrs
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				

REDACTED

TABLE "Signaling System No. 7 Investment"

Node Type	Item	Technology	Account	Hardware	Software	Eng Hours	Inst Hours	Mtce Hours	Supporting Worksheets/Documents	Reference Page		
SCP	SCPInv									22	4	1
SCP	SCP_SPEC_CKT											
SSP	SSP800_SW									22	4	45
SSP	SSP800_SW									22	4	36
SSP	SSP800_SW									22	4	40
SSP	SSP800_SW									22	4	55
SSP	SSPAIN_SW											
SSP	SSPAIN_SW											
SSP	SSPAIN_SW											
SSP	SSPAIN_SW											
SSP	SSPAPort											
SSP	SSPAPort											
SSP	SSPAPort											
SSP	SSPAPort											
SSP	SSPIPort									22	4	45
SSP	SSPIPort									22	4	36
SSP	SSPIPort									22	4	40
SSP	SSPIPort									22	4	55
SSP	SSPLIDB_SW											
SSP	SSPLIDB_SW											
SSP	SSPLIDB_SW											
SSP	SSPLIDB_SW											
SSP	SSPLNP_SW											
SSP	SSPLNP_SW											
SSP	SSPLNP_SW											
SSP	SSPLNP_SW											
SSP	SSP_SPEC_CKT											
SSP	SSP_SPEC_CKT											
SSP	SSP_SPEC_CKT											
SSP	SSP_SPEC_CKT											
STP	STPCommon									22	4	73
STP	STPCommon									22	4	62
STP	STPCommon									22	4	65
STP	STPPort									22	4	73
STP	STPPort									22	4	62
STP	STPPort									22	4	65
STP	STP_GTTSW									22	4	73
STP	STP_GTTSW									22	4	62
STP	STP_GTTSW									22	4	65
STP	STP_LNPSW											
STP	STP_LNPSW											
STP	STP_LNPSW											
STP	STP_SPEC_CKT											
STP	STP_SPEC_CKT											
STP	STP_SPEC_CKT											

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SCP Investment Development

Investment Table Variable: SCPInv

		Hardware	Software	Reference Page	Source
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

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IBM

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Amendment No. 6 to January 1, 1994 Supplement
between GTE COMMUNICATION SYSTEMS CORPORATION
(hereafter referred to as "CUSTOMER") and BELL COMMUNICATIONS
RESEARCH, INC. (hereafter referred to as "BELLCORE")
for BELLCORE'S ISCP™ SOFTWARE

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

IBM STATEMENT OF WORK TO PROVIDE HARDWARE CUSTOMIZATION SUPPORT AND INSTALLATION SERVICES

FOR THE GTE COMMUNICATIONS SYSTEM CORPORATIOI

LNP PROJECT

February 20, 1997

IBM

IBM Telecommunications and Media Industry
International Business Machines Corporation
Piscataway, NJ

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22 4 10

Contents

1.0 Statement of Work

REDACTED

1.2 Key Assumptions

REDACTED

REDACTED

1.3 IBM Responsibilities

REDACTED

REDACTED

REDACTED

22 4 17

REDACTED

REDACTED

REDACTED

1.5 Deliverable Materials

REDACTED

1.8 Charges

REDACTED

REDACTED

Appendix A. Guidelines for Deliverable Materials

REDACTED

Appendix B. Project Change Control Procedure

REDACTED

IBM Telecommunications and Media Industry
PROJECT CHANGE REQUEST

PCR No.

REDACTED

Appendix C. IBM Equipment To Be Installed

REDACTED

REDACTED

Appendix D. Non-IBM Hardware Products

REDACTED

22 4 29

REDACTED

Appendix E. Non-IBM Software

REDACTED

Appendix F. IBM Letter of Completion

REDACTED

REDACTED

REDACTED

SUMMARY PAGE
GTEAMS REPORT
Support for AC & DC Power, Routers & Misc Equipment

[redacted]			[redacted]			Page 3			Page 4			Page 5		
Quantity	Base Pr	Ext Price	Quantity	Base Pr	Ext Price	Quantity	Base Pr	Ext Price	Quantity	Base Pr	Ext Price	Quantity	Base Pr	Ext Price
1														
1														
8														
2														
2														
3														
1														
16														
12														
8														

[redacted]	
Quantity	Ba:
1	
1	
1500	
20	
100	
1500	
1000	
32	
50	

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22 4 35

DMS-10 SS7-Related Software

SS7 Base Software Summary (Initial Ports Only)

Investment Table Variable: SSPIPORT

	Description	Investment	Reference Page	Source
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

REDACTED

REDACTED

OMS-10 Software - Part 1

REDACTED

REDACTED

SS7 Base Software Summary (Initial Ports Only)

REDACTED

REDACTED

EMS-100 Software - Part 1

REDACTED

REDACTED

CMS-100 Software - Part 1

REDACTED

CMS-100 Software - Part 1

REDACTED

GTE Telephone Operations
SUMMARY PAGE
Lucent Technologies - SS7 and 800 Services Right to Use Fees

REDACTED

Lucent Technologies
Bell Labs Innovations

REDACTED

REDACTED

(w)

AMENDMENT NUMBER 1
TO
5ESS - 2000 SWITCH SOFTWARE RELEASE
AGREEMENT NUMBER C941203P0009
BETWEEN
GTE COMMUNICATION SYSTEMS CORPORATION
AND
AT&T CORP.

REDACTED

ATTACHMENT 1

REDACTED

ATTACHMENT 2

Additional Software Release Features

REDACTED

REDACTED

REDACTED

22 C. 52

PURCHASE ORDER REQUISITION

FORM 90004561 (2-83)
REF. 981-100-005

SEE REVERSE FOR DISTRIBUTION & INSTRUCTIONS

REQUISITION NUMBER

[redacted]

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NAME (Please print)	NAME (Signature)	TITLE	TELEPHONE NUMBER	DATE

PURCHASE ORDER REQUISITION
FORM 80004581 (2-83)
REF. 981-109-005

SEE REVERSE FOR DISTRIBUTION & INSTRUCTIONS

REQUISITION NUMBER

[redacted]

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22 4 54

NAME (Please print)	NAME (Signature)	TITLE	( )	

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SS7 GET STARTED, INITIAL APPLICATION, 4 SS7 LINKS.
INCLUDES GDC MODEMS AND SHELF, SS7 DSX PANEL, AND SPARES.
PRICING PACKAGE #200
4/12/99

REDACTED

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REDACTED

REDACTED

ICM SS7 MODULE
ICM TABLE "Signaling System No. 7 Network Parameters"

Network Parameters [FLSS7Par.DB]
ICM TABLE "Signaling System No. 7 Network Parameters"

The ICM ***Signaling System No. 7 Network Parameters*** table provides SS7 network engineering and utilization data required for cost calculations.

Table Column Headings	**Description**
Code	Network Parameter Code
Description	Description of Network Parameter
Value	Network Parameter Value

Integrated Cost Model - ICM Release 4.1

Signaling System No.7 Network Parameters

	Code	Description	Value
1	AINOctets	Octets per AIN Query	
2	AINUtil	AIN SCP Average Utilizati	
3	ALMRATIO	Route Mile to Airline Mil	
4	ALinkUtil	A Link Average BH Percent	
5	CallOctets	Octets per Call	
6	DB800Octets	Octets per DB800 Query	
7	DB800Util	800/888 SCP Average Utili	
8	DLinkUtil	D Link Average BH Percent	
9	GTTMsgCap	TCAP BH Message Capacity	
10	ISUPOctets	Octets per ISUP Message	
11	LIDBOctets	Octets per LIDB Query	
12	LIDBUtil	LIDB SCP Average Utilizat	
13	LNPOctets	Octets per LNP Query	
14	LNPUtil	LNP SCP Average Utilizati	
15	OctetCap	Octet Capacity per Link	
16	SCPALinks	STP-SCP A Links	
17	STPFill	STP Port Fill Factor	
18	STPMtceGrowth	STP Maintenance/Growth Ad	
19	TCAPOctets	Octets per TCAP Message	
20	TestPorts	STP Test Ports	

REDACTED

TABLE "Signaling System No. 7 Network Parameters"

Code	Description	Value	Ref Page
AINOctets	Octets per AIN Query		
AINUtil	AIN SCP Average Utilization	Estimated link utilization as percent of *OctetCap*, based on traffic measurements of SS7 network	
ALinkUtil	A Link Average BH Percent Usage	Estimated link utilization as percent of *OctetCap*, based on traffic measurements of SS7 network	
ALMRatio	Route to Airline Mileage Ratio	Route to Airline Mileage Ratio value used in ICM Transport Module	
CallOctets	Octets per Call	Issue 2 of Trunk Forecasting SS7 Signaling Link Support Guide, from GTE Network Dimensioning	22 5 34
DB800Octets	Octets per DB800 Query	Worksheet *SS7 Traffic Measurements - Support for ICM Network Parameters*	22 5 1
DB800Util	800/888 SCP Average Utilization	Estimated link utilization as percent of *OctetCap*, based on traffic measurements of SS7 network	
DLinkUtil	D Link Average BH Percent Usage	Estimated link utilization as percent of *OctetCap*, based on traffic measurements of SS7 network	
GTTMsgCap	TCAP BH Message Capacity per Port	Based on avg of 5 ISUP messages per call, GTTMsgCap = OctetCap / ((5 * ISUPOctets) + TCAPOctets)	
ISUPOctets	Octets per ISUP Message	Nortel SS7 Document, *Capacity Engineering Manual*, pg. 13-47	22 5 3
LIDBOctets	Octets per LIDB Query	Worksheet *SS7 Traffic Measurements - Support for ICM Network Parameters*	22 5 1
LIDBUtil	LIDB SCP Average Utilization	Estimated link utilization as percent of *OctetCap*, based on traffic measurements of SS7 network	
LNPOctets	Octets per LNP Query	Worksheet *SS7 Traffic Measurements - Support for ICM Network Parameters*	22 5 2
LNPUtil	LNP SCP Average Utilization	Estimated link utilization as percent of *OctetCap*, based on traffic measurements of SS7 network	
OctetCap	Octet Capacity per Link	Issue 2 of Trunk Forecasting SS7 Signaling Link Support Guide, from GTE Network Dimensioning	22 5 30
SCPALinks	STP-SCP A Links	Average value for number links between a regional STP and SCP	
STPFill	STP Port Fill Factor	Using value of 90%	
STPMtceGrowth	STP Maintenance/Growth Adjustment	Engineering Estimate - 8% of port capacity for growth, 10% for maintenance	
TCAPOctets	Octets per TCAP Message	Nortel SS7 Document, *Capacity Engineering Manual*	22 5 3
TestPorts	STP Test Ports	Engineering Standard 4 test ports per STP	

REDACTED

22 5 1

REDACTED

22 5 2

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

22 5 12

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

22 5 20

REDACTED

REDACTED

22 5 22

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

22 5 27

REDACTED

REDACTED

REDACTED

REDACTED

22 5 31

REDACTED

22 5 32

REDACTED

22 5 33

REDACTED

REDACTED

REDACTED

REDACTED

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REDACTED

FIGURE A.1

GENERIC SS7 NETWORK

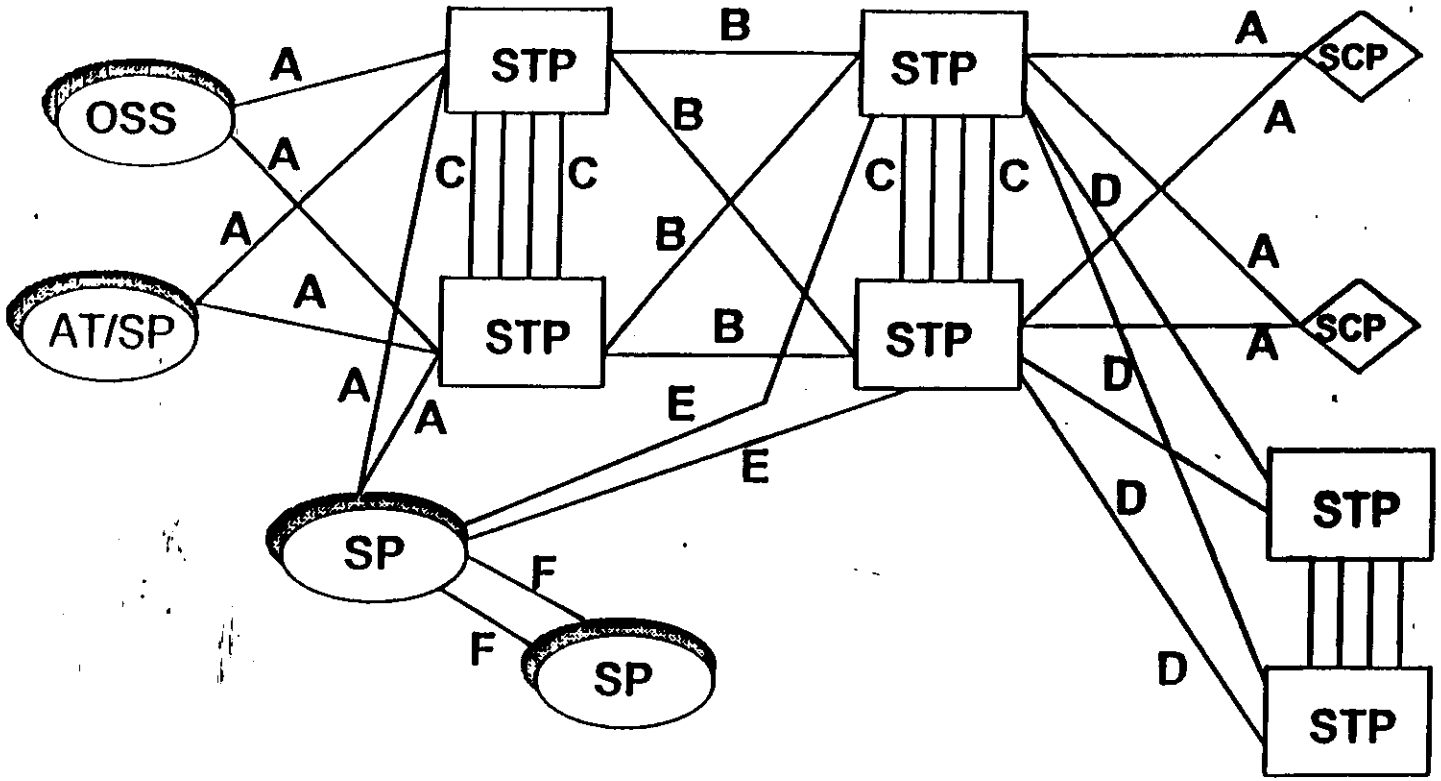


FIGURE A.2

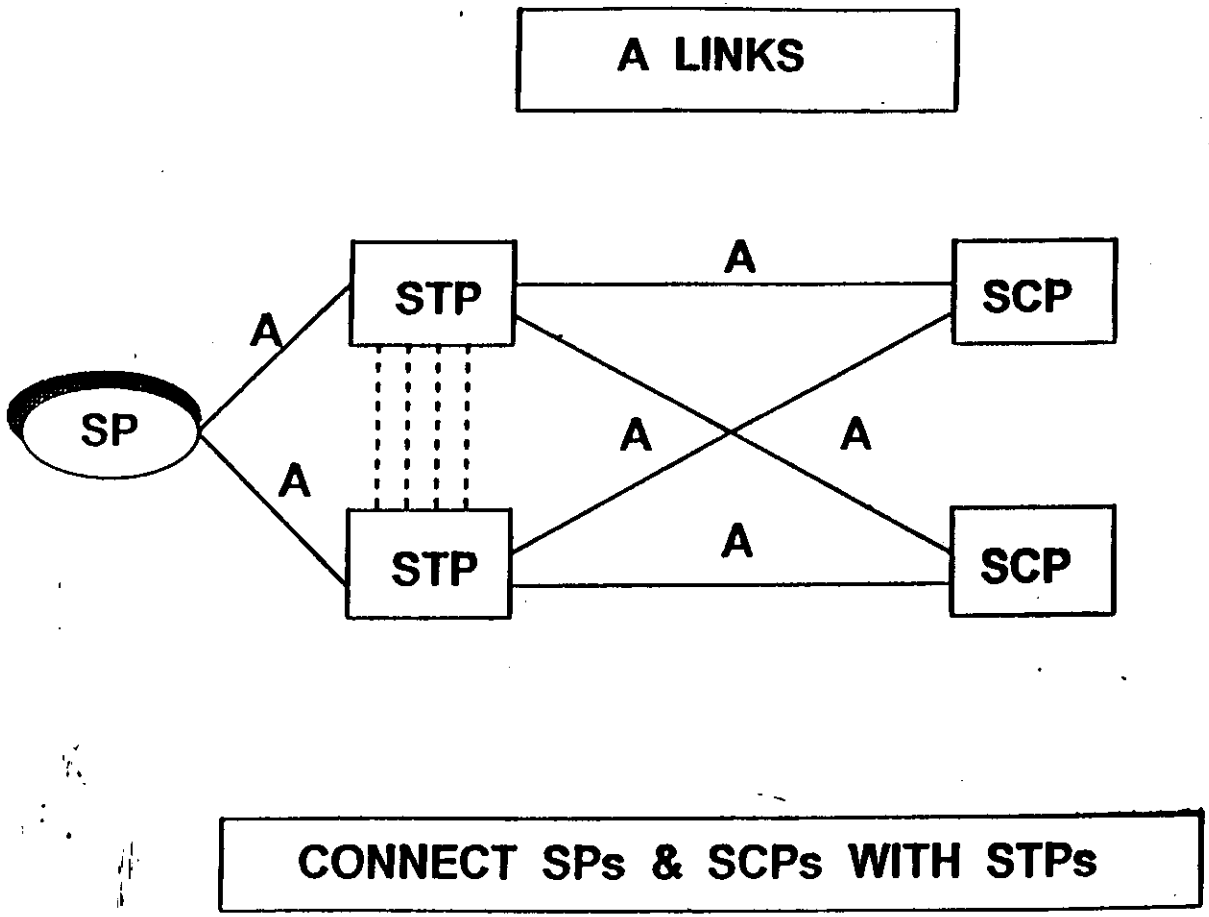


FIGURE A.3

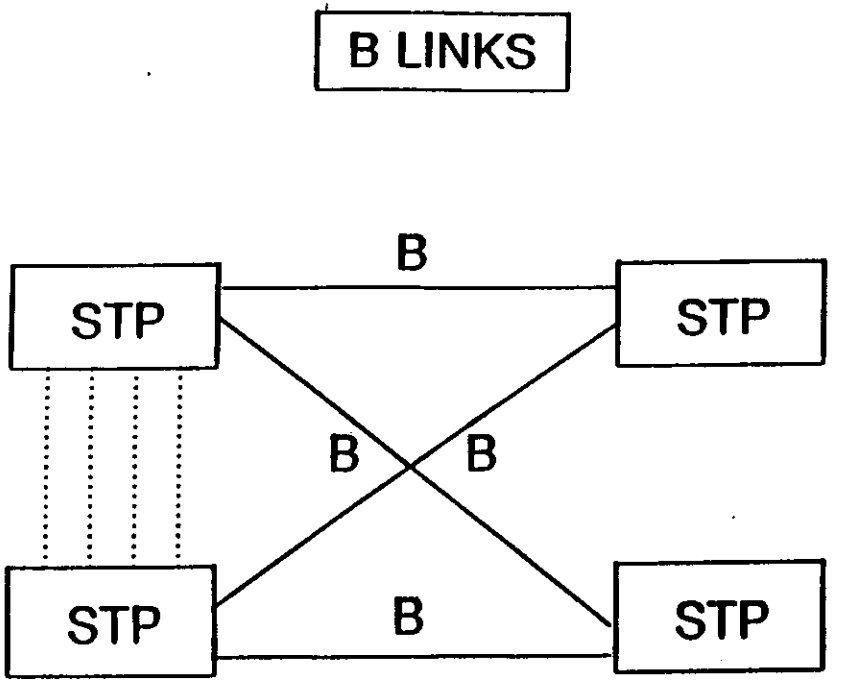


FIGURE A.4

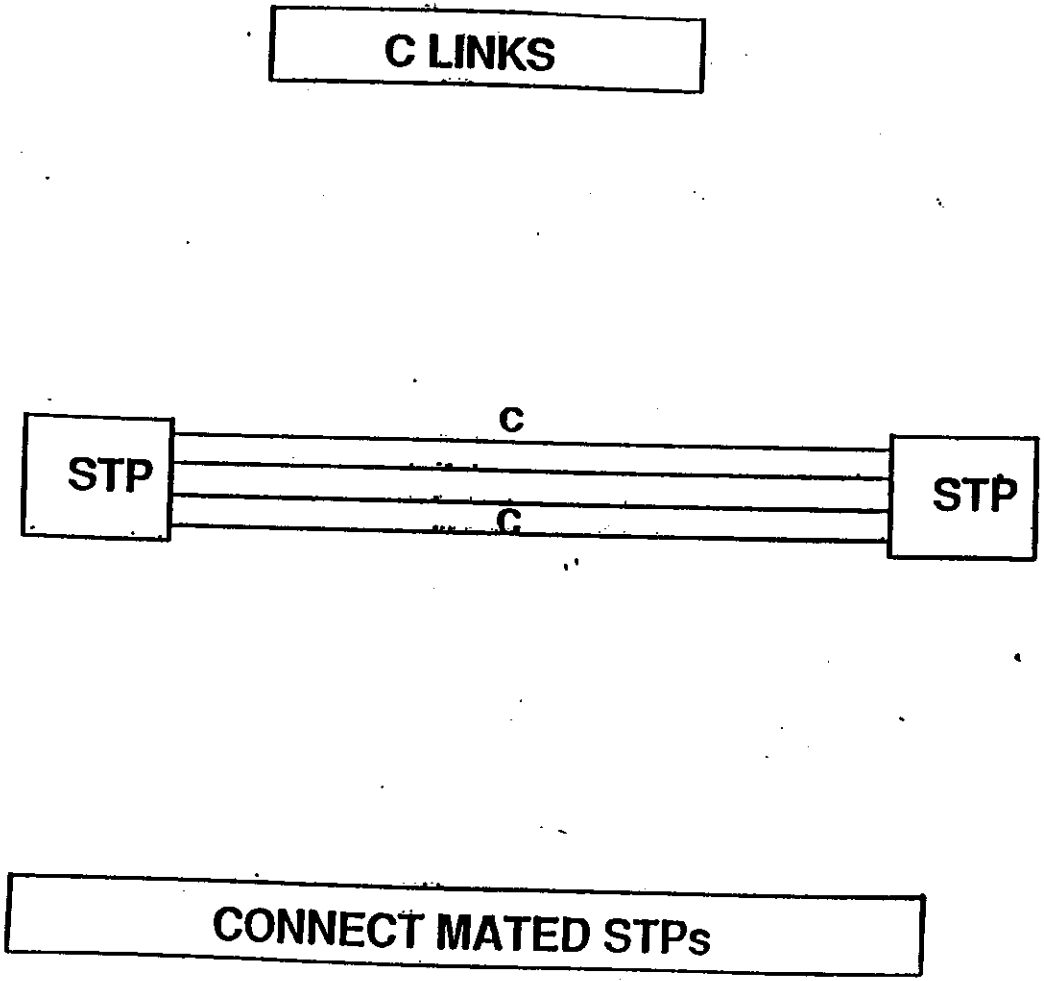
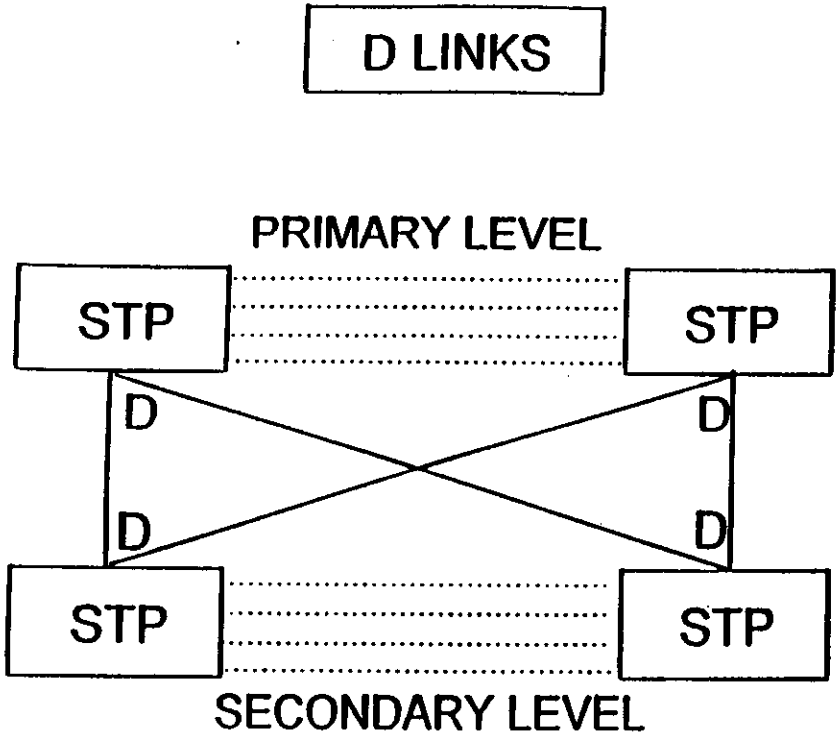


FIGURE A.5



CONNECT STPs OF DIFFERENT HIERARCHICAL LEVEL

FIGURE A.6

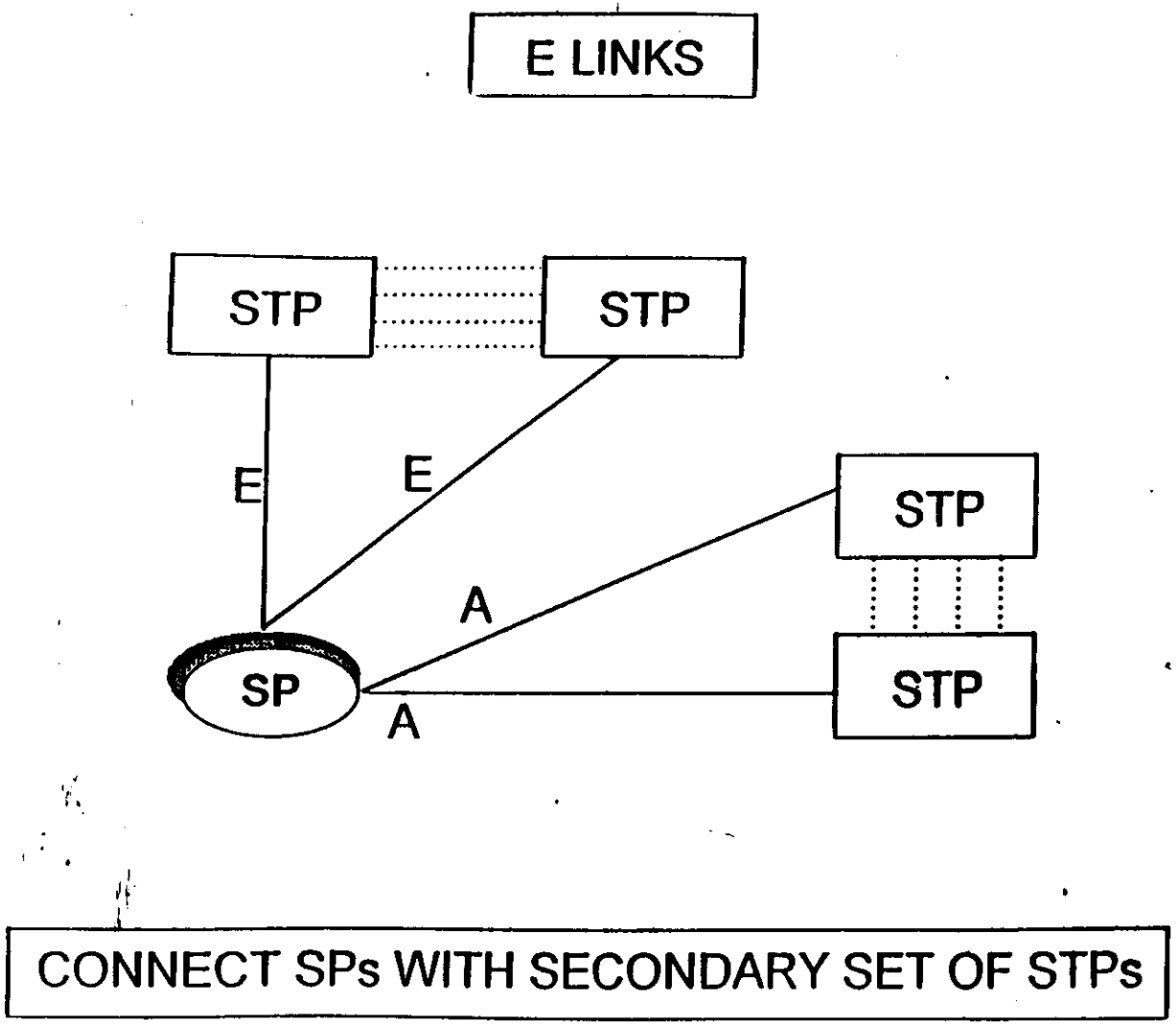
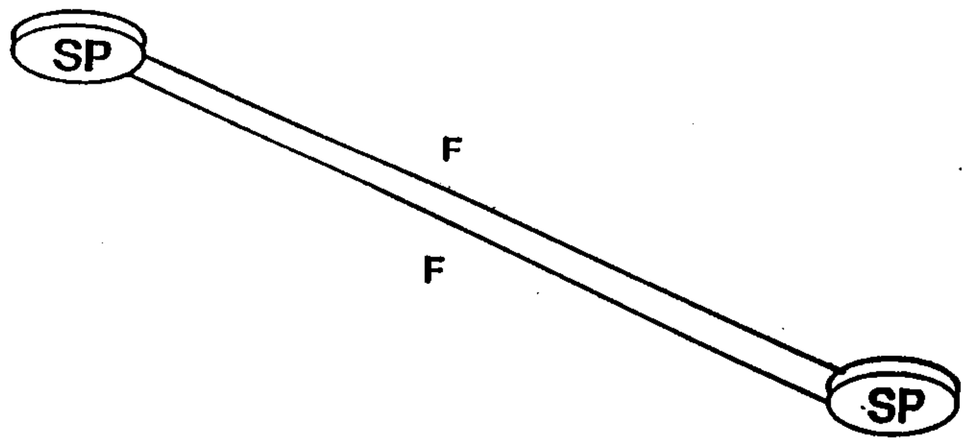


FIGURE A.7

F LINKS



CONNECT SPs DIRECTLY

REDACTED

TABLE B.1

REDACTED

TABLE B.2

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

REDACTED

22 5 73

REDACTED

REDACTED

FIGURE C.1
FOREIGN NETWORK INTERCONNECTIVITY
TRUNK CALL SET UP

REDACTED

FIGURE C.3
FOREIGN NETWORK INTERCONNECTIVITY
TRUNK CALL SET UP

REDACTED

FIGURE C.5

HOME NETWORK TRUNK CALL SET UP

REDACTED

FIGURE C.7
FOREIGN NETWORK INTERCONNECTIVITY
DB800 AND TRUNK CALL SET UP

REDACTED

FIGURE C.9

FOREIGN NETWORK INTERCONNECTIVITY
DB800 AND TRUNK CALL SET UP

REDACTED

FIGURE C.11
HOME NETWORK
DB800 AND TRUNK CALL SET UP

REDACTED

<u>FIGURE C.13</u>
HOME NETWORK
DB800 AND TRUNK CALL SET UP

REDACTED

GTE SS7 NETWORK

REDACTED

HIERARCHY: F-007 All 857 ALL
STUDY PERIOD: 03/11/96-03/17/96

REDACTED

TDCS Reports for SS7 Links:

REDACTED

SS7 Link Monitoring Thresholds:

REDACTED

SS7 Forecasting Responsibilities:

REDACTED

SS7 Forecasting Principles/Procedures:

REDACTED

SS7 Forecasting Principles/Procedures:

REDACTED

SS7 Forecasting Principles/Procedures:

REDACTED

Parts of the SS7 Protocol:

REDACTED

GTE SS7 NETWORK

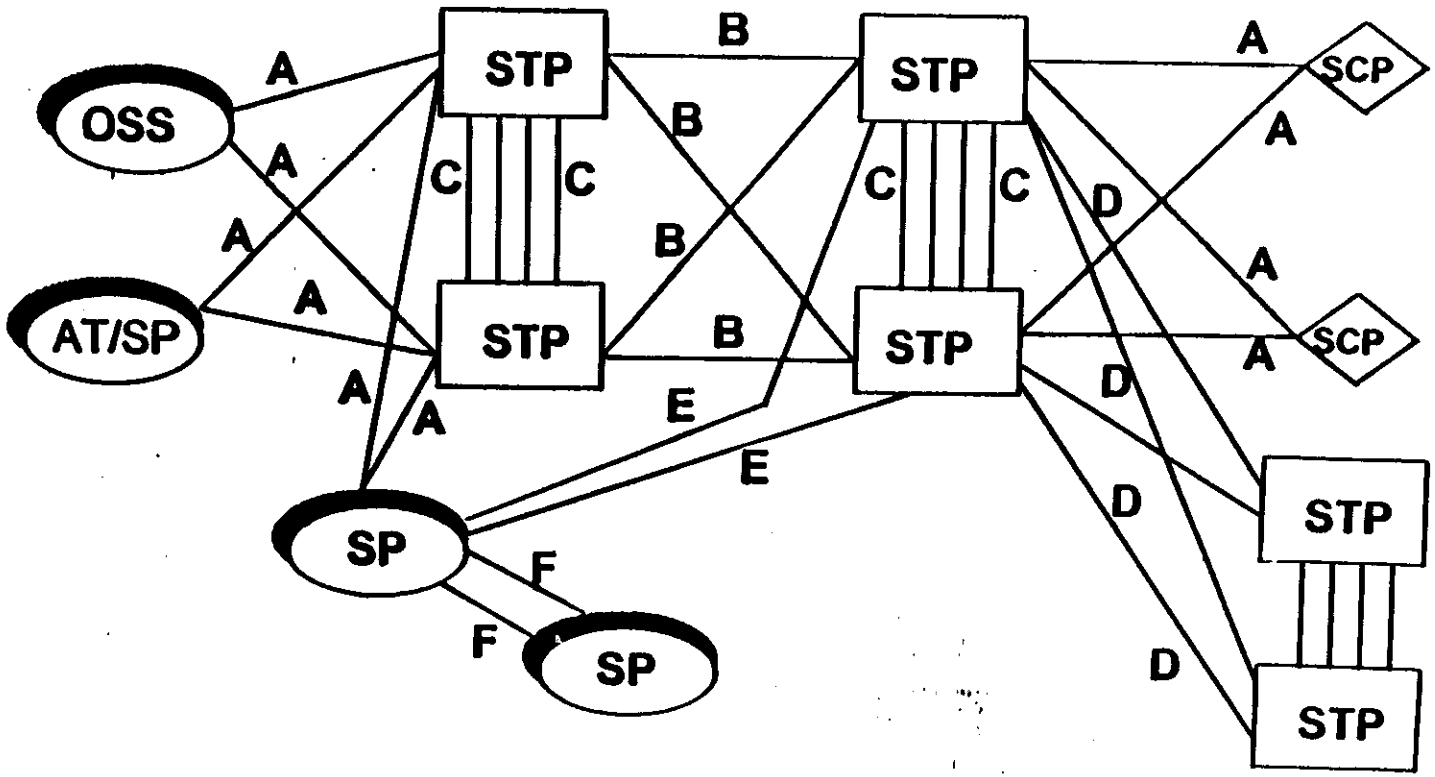
REDACTED

Vendor Confidential

22 5 92

FIGURE A.1

GENERIC SS7 NETWORK



SS7 Network Elements:

REDACTED

ICM SS7 MODULE

ICM TABLE "Signaling System No. 7 Loading Factors"

Network Parameters [FLLoad.DB]
ICM TABLE "Signaling System No. 7 Loading Factors"

The ICM ***Signaling System No. 7 STP Loading Factors*** table contains supply, minor material loading factors and labor rates that are used to compute the total loaded investment for the SS7 equipment investments.

Table Column Headings	**Description**
State	Two-Character state abbreviation
Hw_Factor	Hardware Minor Material/Supply Loading Factor
Sw_Factor	Software Minor Material/Supply Loading Factor
Eng_Rate	Engineering Labor Rate per Hour
Inst_Rate	Installation Labor Rate per Hour
Test_Rate	Maintenance/Testing Labor Rate per Hour

Integrated Cost Model - ICM Release 4.1

Signaling System No.7 Loading Factors

	State	HW_Factor	SW_Factor	Eng_Rate	Inst_Rate
1	CA				
2	FL				
3	IN				
4	VA				

REDACTED

22 6A 03

Integrated Cost Model - ICM Release 4.1

Signaling System No.7 Loading Factors

	Test_Rate
1	
2	
3	
4	

REDACTED

22 6A 04

FACT-FINDER 1998

05/22/98

THREE YEAR AVERAGE MATERIAL LOADING FACTORS

		Fact Finder 98 (using Y/ E 97 data)			Fact Finder 97 (using Y/ E 96 data)			Fact Finder 96 (using Y/ E 95 data)			Fact-Finder 98 (3 yr. avg. minormat)		
state	ind	supply	minormat	matload	supply	minormat	matload	supply	minormat	matload	supply	3 yr. avg. minormat	matload
CA1G	CKT												
CA1G	COE												
CA1G	FIBC												
CA1G	METC												
CA1G	POLE												
CA1G	WIRE												
CA1G	CKT												
CA1G	COE												
CA1G	FIBC												
CA1G	METC												
CA1G	POLE												
CA1G	WIRE												

REDACTED

22 6 1

FACT-FINDER 1998

05/12/98

THREE YEAR AVERAGE MATERIAL LOADING FACTORS (FLORIDA)

		Fact Finder 98 (using Y/ E 97 data)			Fact Finder 97 (using Y/ E 96 data)			Fact Finder 96 (using Y/ E 95 data)			Fact-Finder 98 (3 yr. avg. minormat)		
state	ind	supply	minormat	matload	supply	minormat	matload	supply	minormat	matload	supply	3 yr. avg. minormat	matload
FL1G	CKT												
FL1G	COE												
FL1G	FIBC												
FL1G	METC												
FL1G	POLE												
FL1G	WIRE												

REDACTED

FL1G	CKT												
FL1G	COE												
FL1G	FIBC												
FL1G	METC												
FL1G	POLE												
FL1G	WIRE												

22 9 2

FACT-FINDER 1998

THREE YEAR AVERAGE MATERIAL LOADING FACTORS

05/05/98

		Fact Finder 98 (using Y/ E 97 data)			Fact Finder 97 (using Y/ E 96 data)			Fact Finder 96 (using Y/ E 95 data)			Fact-Finder 98 (3 yr. avg. minormat) 3 yr. avg.		
state	ind	supply	minormat	matload	supply	minormat	matload	supply	minormat	matload	supply	minormat	matload
IN1T	CKT												
IN1T	COE												
IN1T	FIBC												
IN1T	METC												
IN1T	POLE												
IN1T	WIRE												
IN1T	CKT												
IN1T	COE												
IN1T	FIBC												
IN1T	METC												
IN1T	POLE												
IN1T	WIRE												

REDACTED

22 6 3

For VA1C and VA1G

FACT-FINDER 1998

THREE YEAR AVERAGE MATERIAL LOADING FACTORS

05/05/98

		Fact Finder 98 (using Y/ E 97 data)			Fact Finder 97 (using Y/ E 96 data)			Fact Finder 96 (using Y/ E 95 data)			Fact-Finder 98 (3 yr. avg. minormat) 3 yr. avg.		
state	ind	supply	minormat	matload	supply	minormat	matload	supply	minormat	matload	supply	minormat	matload
Virginia	CKT												
Virginia	COE												
Virginia	FIBC												
Virginia	METC												
Virginia	POLE												
Virginia	WIRE												
Virginia	CKT												
Virginia	COE												
Virginia	FIBC												
Virginia	METC												
Virginia	POLE												
Virginia	WIRE												

22 6 4

REDACTED

AREA: CALIFORNIA, CONTEL, GTEL
STATE: CALIF
OP GROUP: 9WC, 9WP, 9W3

GTE TELEPHONE OPERATIONS
LABOR AND OVERHEAD RATES
YTD CALCULATED RATES THRU DEC-1997

04/03/00
02:38 PM

LABOR GROUP	DIRECT BASIC	DIRECT SUPPORT	DIRECT SUPERV	OVERTIME PREMIUM	PAID ABSENT	INDIRECT SUP/SUPV	INDIRECT SUP/SUPV	INDIRECT SUP/SUPV	DIRECT DEPT	INDIRECT DEPT	INDIRECT DEPT	INDIRECT DEPT	BENEFITS	TOOLS	MOTOR VEHICLE	NON-TBL DISPATCH	FULLY LOADED RATE
011 - EQUIP ENG / L & B																	T
101 - EQUIP INSTALL																	
211 - SWITCHING SVC																	

T= GTE COMPOSITE LABOR RATE

REDACTED

22
6
5

AREA: SOUTH
STATE: FLORIDA/GTECC
OP GROU 9SF/9S1

GTE TELEPHONE OPERATIONS
LABOR AND OVERHEAD RATES
YTD CALCULATED RATES THRU DEC-1997

5/11/98
11:00 AM

LABOR GROUP	(a) DIRECT BASIC	(b) DIRECT SUPPORT	(c) DIRECT SUPERV	(d) OVERTIME PREMIUM	(e) PAID ABSENT	(f) INDIRECT SUP/SUPV	(g) INDIRECT SUP/SUPV	(h) INDIRECT SUP/SUPV	(i) DIRECT DEPT	(j) INDIRECT DEPT	(k) INDIRECT DEPT	(l) INDIRECT DEPT	(m) BENEFITS	(n) TOOLS	(o) MOTOR VEHICLE	(p) NON-TBL DISPATCH	(q)=sum(a) through (p) LOADED RATE
011 - EQUIP ENG / L & B																	
021 - OUTSIDE PLANT ENG																	
101 - EQUIP INSTALL																	
111 - CONSTR PLACER																	
121 - CONSTR SPLICER																	
201 - I&R/MAINT SPLICER																	
211 - SWITCHING SVC																	

T = GTE COMPOSITE LABOR RATE

REDACTED

22 9 6

AREA NORTH
STATE INDIANA
JURISD AAIN, AAI6, AAI8
OP GROUP 9NI, 9NF, 9NZ

GTE TELEPHONE OPERATIONS
LABOR AND OVERHEAD RATES
YTD CALCULATED RATES THRU DEC-1997

05/13/98
10.57 AM

LABOR GROUP	DIRECT BASIC	DIRECT SUPPORT	DIRECT SUPERV	OVERTIME PREMIUM	PAID ABSENT	INDIRECT SUP/SUPV	INDIRECT SUP/SUPV	INDIRECT SUP/SUPV	DIRECT DEPT	INDIRECT DEPT	INDIRECT DEPT	INDIRECT DEPT	BENEFITS	TOOLS	MOTOR VEHICLE	NON-TBL DISPATCH	FULLY LOADED RATE
011 - EQUIP ENG / L & B																	
101 - EQUIP INSTALL																	
211 - SWITCHING SVC																	

INCREMENTAL RATE = FULLY LOADED RATE - (INDIRECT SUPERVISION) - (INDIRECT DEPARTMENTAL)
T= GTE COMPOSITE LABOR RATE

7 9 22

AREA: SOUTH
STATE: VIRGINIA
JURISD: AAVA, AAV2
OP GROUP: 9SE, 9SB

GTE TELEPHONE OPERATIONS
LABOR AND OVERHEAD RATES
YTD CALCULATED RATES THRU DEC-1997

05/13/98
10:31 AM

LABOR GROUP		DIRECT BASIC	DIRECT SUPPORT	DIRECT SUPERV	OVERTIME PREMIUM	PAID ABSENT	INDIRECT SUP/SUPV	INDIRECT SUP/SUPV	INDIRECT SUP/SUPV	DIRECT DEPT	INDIRECT DEPT	INDIRECT DEPT	INDIRECT DEPT	BENEFITS	TOOLS	MOTOR VEHICLE	NON-TBL DISPATCH	LOADED RATE
011 - EQUIP ENG / L & B																		
101 - EQUIP INSTALL																		
211 - SWITCHING SVC																		

INCREMENTAL RATE = FULLY LOADED RATE - (INDIRECT SUPERVISION) - (INDIRECT DEPARTMENTAL)
T= GTE COMPOSITE LABOR RATE

REDACTED

22 9 8