M E M O R A N D U M

November 1, 1996

TO:
____ DIVISION OF APPEALS
____ DIVISION OF AUDITING AND FINANCIAL ANALYSIS
XX DIVISION OF COMMUNICATIONS
____ DIVISION OF ELECTRIC AND GAS
____ DIVISION OF RESEARCH
____ DIVISION OF WATER AND WASTEWATER
____ DIVISION OF LEGAL SERVICES

FROM: DIVISION OF RECORDS AND REPORTING (SANDERS)

RE: CONFIDENTIALITY OF CERTAIN INFORMATION

DOCUMENT NO: 11724-96

DESCRIPTION: Info. Tabs 294,298,307,314,317,320,324,327,329 331,333,342,437 of Volumes XIII,XIV,XV,XVI (x-ref DNS 07452-96, 07453-96, 07454-96 and 07455-96).

SOURCE: AT&T Communications of the Southern States, Inc.

DOCKET NO.: 960833/846/916-TP

The above material was received with a request for confidentiality (attached). Please prepare a recommendation for the attorney assigned to the case by completing the section below and forwarding a copy of this memorandum, together with a brief memorandum supporting your recommendation, to the attorney. Copies of your recommendation should also be provided to the Division of Records and Reporting and to the Division of Appeals.

Please read each of the following and check if applicable.

___ The document(s) is (are), in fact, what the utility asserts it (them) to be.

___ The utility has provided enough details to perform a reasoned analysis of its request.

___ The material has been received incident to an inquiry.

PART IV PRICING[1]:

34. **General Principles**

All services currently provided hereunder (including resold Local Services), Network Elements and Combinations and all new and additional services or Network Elements to be provided hereunder, shall be priced in accordance with all applicable provisions of the Act and the rules and orders of the Federal Communications Commission and any state public utility commission having jurisdiction over this Agreement.

34.1 **Most Favored Customer**

35. Pursuant to Section 5 of this Agreement, BellSouth will treat AT&T as a Most Favored Customer.

36. **Price Schedules**

36.1 **Local Service Resale**

The rates that AT&T shall pay to BellSouth for Local Services resale shall be BellSouth's Retail Rates less the Total Applicable Discount. If BellSouth reduces its Retail Rates after AT&T executes this Agreement, the Total Applicable Discount shall be applied to the reduced Retail Rates.

36.1.1 **Total Applicable Discount**

The Total Applicable Discount is the sum of three separate discounts: (i) the Region-wide Base Line discount; (ii) the Operational Parity Discount; and (iii) the Volume Discount.

36.1.1.1 **Region-Wide Base Line**

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[1] THIS PART IV CONTAINS AT&T PROPRIETARY AND COMMERCIALLY SENSITIVE INFORMATION WHICH MAY BE DISCLOSED BY BELLSOUTH ONLY TO EMPLOYEES OR REPRESENTATIVES OF BELLSOUTH WITH A "NEED TO KNOW" PURSUANT TO THE BELLSOUTH/AT&T CONFIDENTIALITY AGREEMENT ENTERED INTO FOR PURPOSES OF NEGOTIATIONS UNDER THE TELECOMMUNICATIONS ACT OF 1996. DISCLOSURE TO ANY OTHER PARTY WITHOUT THE WRITTEN PERMISSION OF AT&T IS PROHIBITED.

200011

The Region-Wide Base Line discount equals twenty-five (25) percent and applies to any and all Telecommunication Services available for Resale as described in Part II of this agreement.

36.1.1.2 Operational Parity Discount

36.1.1.3 BellSouth shall provide the electronic interfaces required under this Agreement to enable AT&T to achieve operational parity with BellSouth by December 31, 1996. If the respective electronic interfaces are not fully operational by the dates specified in this Agreement then each of the specified elements of the Operational Parity discount shall become effective immediately at such specified dates and shall apply to all Telecommunication Services until the respective electronic interfaces are fully operational for ninety (90) consecutive days. BellSouth and AT&T shall agree on performance metrics that BellSouth must meet to be considered "fully operational."

Interface Elements	Operational Parity Discount
Pre-Service Ordering Interfaces	3%
Service Order Processing & Provisioning Interfaces	3%
Directory Listing and Line Information Database	3%
Service Trouble Reporting Interfaces	3%
Daily Local Usage Data	3%

36.1.1.3.1 **Non-Recurring Charges for OUTPLOC**

BellSouth will charge eight (8) dollars for each "switch as requested" until electronic interfaces are fully operational, at which time BellSouth will charge the same rate as it charges for PIC changes.

36.1.1.4 **Volume Discount**

AT&T agrees to purchase from BellSouth the number of lines (basic residence lines plus business lines) specified below between the 200012

effective dates specified below and December 31, 1999. If AT&T meets its volume commitment levels before the specified effective dates, the discount rate corresponding to higher volume commitment level shall apply immediately to all Telecommunication Services.

Effective Date	Lines (Millions)	Volume Discount
4/1/97	.070	2.5%
7/1/97	.185	5.0%
10/1/97	.300	7.5%
1/1/98	.416	10.0%
4/1/98	.600	12.5%
7/1/98	.800	15.0%
10/1/98	1.000	17.5%
1/1/99	1.200	20.0%

BellSouth will not be required to make available for resale all of its Contract Service Arrangements, Special Arrangements, and Promotion after the applicable Volume Discount equals or exceeds fifteen (15) percent.

36.1.2 **Physical Arrangements**

BellSouth will make interconnection arrangements available at all tandem switching and end office switching locations.

At the discretion of AT&T, local interconnection may be accomplished via one-way local trunks, or two way local trunks, or AT&T may choose to deliver both Local Traffic and toll traffic over the same trunk group(s). With respect to the latter scenario, AT&T will have to provide an Percent Local Usage (PLU) to facilitate billing if it desires application of the local interconnection rate.

36.1.3 Compensation for the exchange of Local Traffic shall be accomplished initially on a "bill and keep" basis. After twelve months of performance under this Agreement, either BellSouth or AT&T may demand that compensation due both parties for the exchange of Local Traffic be set at an amount equal to the TSLRIC incurred by BellSouth to provide interconnection service on a per-minute-of-use basis. For the first twelve months of TSLRIC compensation, each party's payments will be limited to one hundred five (105) percent of the calculated reciprocal payment on a monthly billing basis. In no event shall TSLRIC exceed $0.001 per-minute-of-use during the term of this Agreement.

36.1.4 AT&T shall pay BellSouth the TSLRIC associated with the tandem switching function where local calls originated by an AT&T customer traverses a BellSouth tandem switch to be completed to another ALEC. In no event shall

the TSLRIC exceed $0.0003 per-minute-of-use during the term of the Agreement.

36.1.5 Compensation for the termination of toll traffic and the origination of 800 traffic between the interconnecting parties shall equal the applicable interexchange access charges.

36.1.6 Standard meet point billing arrangements shall apply when the completion of a toll call involves both BellSouth and AT&T facilities.

36.1.7 In the event a toll call is completed through an interim service provider's number portability arrangement (e.g., remote call forwarding, flexible DID, etc.) to a Customer of the new Carrier of Record, the new Carrier of Record is entitled to applicable end office terminating switched access charges (e.g., local switching, line termination, carrier common line, residential interconnection charge, etc.) The company forwarding the call will be considered to be adequately compensated through the charges it receives for porting the number.

36.2 **Unbundled Network Elements/Ancillary Function**

The charges that AT&T shall pay to BellSouth for Unbundled Network elements are set forth in Table 1.

36.3 **Directory Listing**

BellSouth will not charge AT&T or its customers for (i) basic white page listings for residential customers; (ii) basic yellow page and business white page listings (as available to BellSouth customers) for business customers; or (iii) distribution of white and yellow page directories. BellSouth shall offer for resale enhanced directory listings at Retail Rates, less the Total applicable Discount, and pursuant to the terms and conditions offered to BellSouth customers.

36.3.1 AT&T is responsible for providing BellSouth with accurate directory information in an established format and in a timely manner.

200014

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Network Interface Device	Twisted Pair	For 2 or 4-wire termination	None	All States $2.00
	Smart- Jack	T1 Line	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data	
	Fiber		BellSouth agrees to provide at direct economic cost upon receipt of a bona fide request from AT&T	
	Coax		BellSouth agrees to provide at direct economic cost upon receipt of a bona fide request from AT&T	
Distribution Media (Loop Distribution)	Various capabilities, incl. twisted pair, DS1, DS3, Optical SONET OCn, Analog Radio Freq., Broadband		AT&T and BellSouth agree to work together to expeditiously resolve issues regarding the provision of this unbundled element, and to reach a resolution satisfactory to both parties.	
Loop Concentrator/ Multiplexer	Virtual remote terminal @ DS0 and DS1 levels. DLC system offering		Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
Loop Feeder	Various options, including twisted pair, DS1, Fiber OCn		Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
Loop Combination	2W	POTS, Centrex, ISDN, PBX, PL, FX Digital Data, etc.	AI - $13.30 Fla- $11.10 Ga- $11.35 Ky- $12.90 La- $12.30 Ms- $13.10 N.C.- $11.30 S.C.- $11.35 Tn- $13.45 No SLC billing by BellSouth to AT&T or its customers	Proposed price(s) will be provided following receipt of suitable BellSouth price proposal that recognizes various unbundled element ordering options.

This proposal is contingent upon reaching agreement with respect to Local Services Resale (LSR) and Interconnection.

200015

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Loop Combination Cont'd	4W	POTS, Centrex, ISDN, PBX, PL, FX Digital Data, etc	AI - $22 60 Fla- $18 90 Ga- $19 30 Ky- $21 90 La- $20 90 Ms- $22 30 N C - $19 20 S C - $19 30 Tn- $22.85 No SLC billing by BellSouth to AT&T or its customers	Proposed price(s) will be provided following receipt of suitable BellSouth price proposal that recognizes various unbundled element ordering options
	DS1	Terminated on DSX-1	All states $23 50 per month	See comment under 4W NRC.
	DS3	Fiber Optic cable	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
	Optical SONET OCn		Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
	SONET ring, terminated in CO		Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
	SONET ring between customers		Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
	IOC Mileage	LEC office to ALEC office	Dedicated local transport charges apply.	
	Channelization	Converts up to 96 VG loops to DS1 level for connection with ALEC POI. Concentrated or non-concentrated @ option of customer	$325 monthly per system plus $.95 per circuit.	$245 for first system and $65.00 for each additional system, plus $3.75 per circuit.

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
	Distance sensitive loop rates		*To the extent BellSouth offers rates to retail* customers reflecting distance sensitive loop charges it shall provide loops to AT&T at *equivalent charges*. This provision applies to both implicit and explicit deaveraged pricing.	

200017

TABLE *

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Loop Combination and Sub-Loop Elements			Proposed loop prices are composite state averages. BellSouth will perform cost studies to determine geographic cost differences and implement prices that reflect those differences	
	Loop cost variance by geographic area	Wire center, census group, etc.		
Local Switching	Features	Route operator and directory assistance traffic to customer's preferred carrier	None	None
		Route local, intraLATA, interLATA, international traffic to customer's preferred carrier	None	None
		Translations to direct AIN queries to AT&T SS7 network, to receive responses, and to continue call handling in accordance with responses	None	None
	Line Interface	Residence Service. Standard tip & rng. Includes loop start, ground start, on-hook	Monthly: AI - $1.80 Fla- $1.70 Ga- $1.70 Ky- $2.05 La- $1.70 Ms- $1.80 N.C.- $2.20 S.C.- $1.80 Tn- $1.85	Proposed price(s) will be provided following receipt of suitable BellSouth price proposal that recognizes various unbundled element ordering options.
		Business Service. Standard tip & rng. Includes loopstart, groundstart, on-hook	Monthly: AI - $1.80 Fla- $1.70 Ga- $1.70 Ky- $2.05 La- $1.70 Ms- $1.80 N.C - $2.20 S.C.- $1.80 Tn- $1.85	Proposed price(s) will be provided following receipt of suitable BellSouth price proposal that recognizes various unbundled element ordering options.
		Coin. Includes public, semi-pub, COCOT, and options	Monthly: AI - $1.80 Fla- $1.70 Ga- $1.70 Ky- $2.05 La- $1.70 Ms- $1.80 N.C.- $2.20 S.C.- $1.80 Tn- $1.85	Proposed price(s) will be provided following receipt of suitable BellSouth price proposal that recognizes various unbundled element ordering options.

200018

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Local Switching, Cont'd	Line Interface Cont'd	2W ISDN	All States $7 00 per month	Proposed price(s) will be provided following receipt of suitable BellSouth price proposal that recognizes various unbundled element ordering options
		DS1 ISDN	All States $130 00 per month per line interface	See Note for 2W ISDN
		TR 08- Dig Loop Cxr	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
		TR 303- Dig Loop Cxr	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
		2-Wire/ 4-Wire analog interface to PBX	Monthly: Al - $1 80 Fla- $1.70 Ga- $1.70 Ky- $2.05 La- $1.70 Ms- $1.80 N.C.- $2.20 S.C.- $1.80 Tn- $1.85	Proposed price(s) will be provided following receipt of suitable BellSouth price proposal that recognizes various unbundled element ordering options.
		DS1 interface to PBX or CPE	All States: $95 00 per month	See Note for 2W ISDN
		Switched Fractional DS1 with capabilities to configure Nx64 channels, n <25	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
		Direct in Dial	All States: $7.00 per month per equipped line	None

200019

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Local Switching, Cont'd	Rotary		All States $0.10 per month per equipped line	None
	End office switching functions, including intraoffice, interoffice, toll, access, and local	Originating and Terminating switching	All States: Originating, first minute $0.0013 Originating, add'l minute $0.0006 Terminating, per minute $0.0000	None
	BellSouth proposed universal local call termination option. Includes local switching, common transport, signaling, and far end local switching to terminate local calls.	Originating and Terminating switching plus local trpt. Includes intraoffice. Also includes calling to expanded local and toll substitute plan areas.	All States: Originating, first minute $0.0020 Originating, add'l minute $0.0010 Terminating, per minute: $0.0000 Includes access traffic and calling to and from all points in expanded and toll substitute areas	None
	Features	Residential Features	None	All States: $1.25 per feature activated after initial service installation.
		CLASS features	None	All States: $1.25 per feature activated after initial service installation.

200020

TABLE 1

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Local Switching (Cont'd)	Features (Cont'd)	Business/ Centrex Features	None	All States $1.25 per feature activated after initial service installation
		AIN Features	None	All States $1.25 per feature activated after initial service installation.
	Trunk Terminations	CAMA ANI	None	None
		FGB	None	None
		FGD/ IEC Operator	None	None
		DS 3	None	None
		64 kbps clear channel	None	None
		Switched digital- 56 & 64 kb/s	None	None
	Loop/ Switch cross-connect	Connection of unbundled switch and colocated loop elements.	Included in individual element rates.	
	Switch/ Trunk Cross-connect	Connection of unbundled switch and colocated transport elements.	Included in individual element rates.	

200021

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Local Operator Services	0+ Calling Card	0+ calling card	$0 37 per call	None
		automated calling card	$0 070 per call	None
	Station	0- calling card	$0 48 per call	None
		0- bill to third	$0 53 per call	None
		0- collect	$0 39 per call	None
		0- no attempt	$0 22 per call	None
		0+ bill to third	$0 34 per call	None
		Automated bill to third	$0.070 per call	None
		0+ collect	$0 32 per call	None
		automated collect	$0.070 per call	None
		sent paid	$0.35 per call	None
	Person	0- calling card	$1.05 per call	None
		0- bill to third	$1.22 per call	None
		0- collect	$0.67 per call	None
		0+ calling card	$0.86 per call	None
		0+ bill to third	$0.98 per call	None
		0+ collect	$0.49 per call	None
	Dialing instructions		Per call rate based on $0.60 expense per work minute	None
	Route 0- to live operator		None	None
	Time & Charges		Per call rate based on $0.60 expense per work minute	None

200022

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Local Operator Services (Cont'd)	Busy Line Verification		Proposed price(s) will be provided following receipt and review of BellSouth cost data	
	Emergency Interrupt		Proposed price(s) will be provided following receipt and review of BellSouth cost data	
	Emergency Call Trace		Proposed price(s) will be provided following receipt and review of BellSouth cost data.	
	Operator Transport		No additional charge under combined switch/transport proposal. Charge from ALEC switch @ proposed rates, less credit of $0.002 per call.	
Local Directory Assistance	Directory assistance		$0.225 per call	None
	Directory Transport		No additional charge under combined switch/transport proposal. Charge from ALEC switch @ proposed rates, less credit of $0.002 per call.	
	DA Interconnection		None	
	DA Database Service		AT&T will respond to BellSouth proposal on or before July 3, 1996.	
	Direct Access to DA		AT&T will respond to BellSouth proposal on or before July 3, 1996.	
	DA Call Completion		AT&T will respond to BellSouth proposal on or befo	
	Call Completion Termination Charge		AT&T will respond to BellSouth proposal on or before July 3, 1996.	
	Intercept		Proposed price(s) will be provided following receipt and review of BellSouth cost data	
Common Transport		An interoffice transmission path between LEC network elements. Includes multiplexing, grooming, cross-office wiring to DSX or LGX. Includes DS1,DS3, various SONET level term options, two way or one way option	$0.000008 per mi., per local minute $0.000324 fac. term., per local minute	None

200023

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Dedicated Transport	Voice Grade	An interoffice transmission path between AT&T designated locations	2-Wire Loc Chan $4 10 per mo 4-Wire Local Chan $22 00 per mo IO Channel $0 0425 per mile $21 00 per fac term Loc Chan not applicable when terminated in BellSouth office	2-W Loc Chan $260 00 first $75 00 Add'l 4-W Loc Chan $264 00 First $75 00 Add'l IOC $75 00 First $30 00 Add'l
	DS0	An interoffice transmission path between AT&T designated locations.	2-Wire Loc Chan: $4 10 per mo 4-Wire Local Chan: $22.00 per mo. IO Channel: $0.0425 per mile $2.25 per fac term Loc Chan not applicable when terminated in BellSouth office	2-W Loc Chan $260 00 first $75 00 Add'l 4-W Loc Chan $264 00 First $75.00 Add'l IOC: $75.00 First $30 00 Add'l
	DS1	An interoffice transmission path between AT&T designated locations.	Local Channel: $73.00 per mo. IO Channel: $1.00 per mile $45.00 per fac term. Loc Chan not applicable when terminated in BellSouth office	Local Chan: $700.00 first $300.00 Add'l IOC: $285 00 Each
	DS3	An interoffice transmission path between AT&T designated locations.	Local Channel: $1200.00 per mo. IO Channel: $14 50 per mile $400.00 per fac term. Loc Chan not applicable when terminated in BellSouth office	Local Channel: $272.00 IOC: $95.00 Each
	STS-1		Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	

200024

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
	Capacity on shared circuit	*Includes multiplexing and grooming* functionality and redundant equip and facilities to support protection and restoration	*Proposed price(s) will be provided following receipt* and review of BellSouth price proposal and/ or receipt of BellSouth cost data	
Dedicated Transport, Cont'd.	System dedicated to AT&T	Includes transmission equipment, facilities, and redundant equip and facilities to support protection and restoration	See SONET Rings	
		SONET line switched rings, OC48	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data	
		SONET path switched rings, OC 3, OC 12	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
Digital Cross Connect System (DCS)		Auto x-connect, grooming, pt to multi-pt, auto test, broadcast capabilities. Include x-conn to DSX or LGX. AT&T has real time access, real time configuration capabilities		
	DCS1/0	Per System	$135.00 per month	$200.00 first $165.00 Add'l
	DCS3/1	28 DS1 Channel System	$270.50 per month	$188.00 first $135.00 Add'l
		Per DS1	$3.10 per month	$105.00 first $85.00 add'l
	DCS3/3		Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
	STS-1 X-conn		Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or *receipt of BellSouth cost data.*	
Tandem Switching			$.0002 per minute	None
Unbundled Element Features	Various	Features, functions, capabilities not specifically listed in this proposal	BellSouth will provide upon request at direct economic cost.	

200025

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Data Switching	Circuit Switched Data Switching	Data switching functionality required to switch between industry standard ISDN interfaces	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data	
	ISDN Packet Switching	Data switching functionality required to switch between industry standard ISDN interfaces.	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
	Frame Relay	Switching functionality required to connect facilities from the Frame Relay User to Network Interface (UNI) to either another UNI or a communications path at the Network to Network Interface (NNI)	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
	ATM	Switching functionality required to connect facilities from the ATM User to Network Interface (UNI) to either another UNI or a communications path at the Network to Network Interface (NNI)	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
STPs	ISUP Msg.		All States: $0.000006 per msg.	None
	TCAP Msg.		All States: $0.000018 per msg.	None
	Usage Surrogate	Where measurement not available	All States: $71.00 per month per 56kbps facility	None
Signaling Link Transport	A or D link facility	56kbps	All States: $4.35 per month	All States: $325.00- first $0.00- Add'l
	Signaling facility termination	56kbps	All States: $105.00 per month	None
	Signaling facility termination	DS1	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	

200026

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE 1

Item	Type	Explanation	AT&T Price Proposal Recurring	AT&T Price Proposal NRC
SCPs/ Data Bases			AT&T will respond to BellSouth proposal on or before July 3, 1996	
	Line Info Database (LIDB)	Storage Agreement		
		Use of ALEC LIDB data	AT&T will respond to BellSouth proposal on or before July 3, 1996	
		Validation	AT&T will respond to BellSouth proposal on or before July 3, 1996.	
	Toll Free Number Portability Database		AT&T will respond to BellSouth proposal on or before July 3, 1996.	
	ALI/DMS Database	Contains information regarding routing of calls to public safety answering points	AT&T may access 911 Tandem using local transport facilities contained in this proposal.	
	SCE/SMS/ AIN Access	Ability to create service applications in the BST SCE and deploy those applications to the BST SCP	Proposed price(s) will be provided following receipt of BellSouth cost data.	
		Ability to create service applications in the AT&T SCE and deploy those applications via the AT&T SCP to BST SSPs	Proposed price(s) will be provided following receipt of BellSouth cost data.	

200027

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE *

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Interim Number Portability	SPNP- Remote		Proposed price(s) will be provided following receipt of BellSouth cost data	
	SPNP-Directory Number-Route Index		Proposed price(s) will be provided following receipt of BellSouth cost data.	
	SPNP-LERG Reassignment		Proposed price(s) will be provided following receipt of BellSouth cost data.	
Directory Listings			See interconnection proposal. In addition, charges for additional and optional listings shall be subject to reductions for sales commissions paid AT&T	
CMDS- Hosting			AT&T will respond to BellSouth proposal on or before July 3, 1996.	
Non-Sent Paid Report System		Mechanized report system providing companies within BellSouth region info regarding Non-Sent Paid message and revenue distribution	AT&T will respond to BellSouth proposal on or before July 3, 1996.	
Poles, Ducts, Conduits and Rights of Way			Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	
Virtual Collocation			Proposed price(s) will be provided following receipt and review of BellSouth cost data.	
Physical Collocation			Proposed price(s) will be provided following receipt and review of BellSouth cost data.	
Lease of unused transmission media		Interoffice transmission media which has no lightwave or electronic transmission equipment terminated to operationalize its transmission capabilities.	Proposed price(s) will be provided following receipt and review of BellSouth price proposal and/ or receipt of BellSouth cost data.	

AT&T PRICE PROPOSAL TO BELLSOUTH
UNBUNDLED NETWORK ELEMENTS

TABLE

Item	Type	Explanation	AT&T Price Proposal	
			Recurring	NRC
Local Calling Area Boundary Guide			*BellSouth proposal to provide at no charge accepted*	
Recorded Usage Data Charge			Proposed price(s) will be provided following receipt and review of BellSouth cost data.	Not Applicable

October 13, 1995

P. Nelson

Pam:

During our meeting last Friday, I took the action item of researching BCS' s bill interface requirements. I have attached the Billing section of two BCS documents that cover this area:

1.) The Local Service Marketing Service Description produced 5/6/95 and

2.) The Nationwide ETE Marketing Services Description produced 8/7/95.

I believe they address the BCS view of bill interface requirements.

Donna

Donna Hassebrock

cc: Michelle Augier
Bob Cavallo
Mario Martinez

END - TO - END

NATIONWIDE

MARKETING SERVICES DESCRIPTION

DRAFT

ETE MSD TEAM:
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August 7, 1995
Version 2.0

TABLE OF CONTENTS

Regulated and non-regulated credits need to be tracked separately. Inquiry centers are also to report on types of problems referred by customers and AEs.

Availability:
The Account Inquiry function should be available to customers between the hours of **8:00 AM and 7:00 PM local time Monday - Friday.**

DMOQs:

DMOQ	MASS	SMALL	MIDDLE	GLOBAL
Call Receipt: Queue Time	<20 Seconds	<20 Seconds	<20 Seconds	<20 Seconds
Customer Status frequency	4 hrs	4 hrs	4 hrs	4 hrs
Inquiry Resolution	95% on first call	95% on first call	95% on first call	95% on first call
Adjustment Cycle Time	95% on first bill	95% on first bill	95% on first bill	95% on first bill

Reports should be created to track the performance of the DMOQs. Details will be worked out at a later date.

9.0 BILLING

In addition to Customer Care, another differentiator will be billing. We will provide customer a single bill that incorporates local, intraLATA, and interLATA calling; as well as multiple location billing. This integrated, end-to-end bill will be incorporated as part of the customer's current AT&T LD calling plan (e.g. CustomNet, Uniplan, etc.) Customers will receive call detail for their tolls calls and call summary for each of their local service call types (i.e. Directory Assistance, Operator services, etc.). Information will be summarized by number of calls/messages, length of calls (as appropriate) and related total. Local call/feature billing detail will be available if requested by a customer.

In a resale environment, the reseller will record the customers local usage and forward it unrated electronically to AT&T. The local usage information will be rated and combined with the AT&T long distance bill. A single remittance page will be generated which shows the total amount owed. AT&T will reformat the information as necessary and combine the local and long distance bill information into a single bill with a single remittance page.

9.1 Features/Options To Support (January '96):

Billing needs to support all of the local elements of the end-to-end offer as defined in Appendix B, in addition to any geographic deviations as described in the individual geographical specific MSD addendums. The biller is required to be prepared to allow for the following types of charges:

- Non-Recurring
- Monthly Recurring
- Usage Sensitive
- Promotional Discounts and/or waiver of charges

Multiple-Location Billing Features

- Multi-location Billing (MLB)
  MLB provides a customer's "remote" locations with their own individual bill remittance document, call detail, and billing detail. The "headquarters" location will have the option of receiving copies of each of their locations' call or billing detail. Usage from all locations are aggregated with the aggregated usage discount being applied to each location's bill remittance.

- Summary Billing or Consolidated Billing
  This billing option provided a single remittance bill for all locations. This single remittance is typically provided to the "headquarters" location. The headquarters' location also receives billing detail for all locations and should be given the option of receiving individual location call detail. Additionally, each location should be given the option of receiving their individual billing and call detail (but not individual bill remittance).

Discounts

The following type of discounts must be supported:

- Profit-by-Association (Description in Section 6.2: Affinity Programs)
- Flat Discount on Local-
  Customers will receive the same discount on their local usage (a flat discount) regardless of their local usage or LD usage volumes.
- Aggregated Local and LD-
  Customers local and LD usage will be combined and the total will receive a discount based on the combined volume.
- Discount Local based on LD Discount Rate (not calculated with local)-
  Customers will receive a discount that is linked to their LD calling volume not related to their local calling volume.
- Tiered Discount
  Customers receive a discount on their local usage depending on the volume of the local usage only. Discounts are based on volume and go back to $1. (Ex. $0-$25 = 5% discount, $25.01 - $50 = 7% discount on all usage-- all applicable usage up to $50 receives the full 7% discount.)

- Tapered Discount
  Customers receive a discount on their local usage depending on the volume of the local usage only. Discounts are based on volume and apply to each step of the volume separately. (Ex. $0-$25 = 5% discount, $25.01 - $50 = 7% discount this portion of the usage, i.e. the first $25 receives 5% and the applicable portion of the next $25 receives 7%.)

Monthly Charges / Mid-Cycle Service Changes:

Monthly Charges: For local service, we will be billing customers in **advance** for their calling plan and feature charges. Thus, the first customer bill will contain prorated service and feature charges in "arrears" plus the next months service and feature charges.

Service Changes: Customers who choose to change calling plans in the middle of their billing cycle should receive a bill with prorated charges covering each period.

Bill Periods:
Local and Long Distance charges will be integrated into one bill for remittance. Timely mailing of the bill is critical in order to make the transition to a single vendor seamless. The number of billing periods should correspond to the number available with the long distance portion of the service today. Local recurring charges should not be billed in arrears.

9.2 Local Call Detail: (January '96)

Customers will always receive "call detail" for their tolls calls and "call summary" for each of their local service call types (i.e. Directory Assistance, Operator services, etc.). Information will be summarized by number of calls/messages, length of calls (as appropriate) and related total. Whether or not a customer will automatically receive non-toll and other call type "call detail" will be specified per strata. For customers who automatically receive the detail, they will have the option of suppressing it, for a charge. Customers who automatically do not receive the detail, will have the option of ordering it, for a charge. The billing should be flexible to make the call detail

- orderable or not orderable
- chargeable or not chargeable
- to waive the charges

If the customer orders a call detail and is has a calling plan that rates the calls made i.e. minute based or message based, for its usage then specific detail is provided for all call types including the chargeable calls (DA, Mass Announcements etc.). If the customer orders a call detail and has a flat rate calling plan for its usage, then only the chargeable calls (DA, Mass Announcements etc.) should be provided on the call detail. If the customer requests the call detail for flat rate usage, the Unrated call detail should be ordered.

9.3 Unrated Call Detail: (January '96)

The functionality to provide unrated call detail should be included. The Unrated Call Detail provides the call detail for those calls that are included in a flat rate or "free" message unit calling plan. This type of messages ordinarily have 0 rate and will not be part of the call detail. The unrated call detail will give calling number, called number, duration, time-of-day, and day-of-week. The charge this will be on 1) per message basis or 2) per bill basis or 3) a combination of the 1 and 2.

9.4 Bill Media (January '96):

Customers will be given the option to receive all elements of their local/LD consolidated bill (and local call detail, if applicable) in the same variety of formats currently offered under their underlying service (e.g. Paper, PC disk, Mag Tape, CD ROM, etc.). Additionally, we will need to extend our existing "in language billing" capabilities to the local elements.

Reconciliation of Wholesale Bill vs. Customer Bills (Resale Scenario):

In a resale environment, the reseller will be billing AT&T for each customer account we manage. In order to ensure that we are not being mischarged for services, an audit process needs to exist between the billing records we send to customers and the billing records they send us. The frequency should be on a daily basis. In addition, daily, weekly and monthly tapes should be checked upon receipt.

DMOQs:

The billing process should meet the following DMOQ's:

DMOQ	MASS	SMALL	MIDDLE	GLOBAL
Accuracy	100%	100%	100%	100%
Timeliness	100%	100%	100%	100%
Ease of Use	100%	100%	100%	100%
Completeness	100%	100%	100%	100%
% Customer Satisfaction Favorable	100%	100%	100%	100%

Monthly Charges / Mid-Cycle Service Changes:

Monthly Charges: For local service, we will be billing customers in advance for their calling plan and feature charges. Thus, the first customer bill will contain prorated service and feature charges in "arrears" plus the next months service and feature charges. These two charges should be shown as separate items on the bill.

Service Changes: Customers who choose to change calling plans in the middle of their billing cycle should receive a bill with prorated charges covering each period.

Tracking Requirements: All vertical and consolidator billers are to provide reports for bill verification. Verification is to be performed before bill data is passed from one biller to the next. It will be necessary to provide a detailed report of inaccurate billing, probable cause, number of customers affected and revenue impacted. Additionally, it is required to provide a bill mail-out report to include vertical biller and consolidator, completion times, as well as bill center mail dates.

9.5 Bill Format

TO BE PROVIDED

9.6 Bill Periods and Payments (January '96):

Local and Long Distance charges should be combined into one bill for remittance. The Bill Date for the new combined bill should be coordinated between the local and long distance orders with edits to ensure this requirement is met. Timely mailing of the bill is critical in order to make the transition to a single vendor seamless. The number of billing periods should correspond to the number available with the long distance portion of the service today.

9.7 Bill Payment (January '96):

In many areas, PUCs' rules and regulations will provide guidelines on bill payments. In general, a customer's payment to AT&T shall first be applied to their local service charges, next to the Long Distance portion of their bill, lastly to any "pay per use" services (976) as regulated by the FCC and state. Any partial payments must first be used to cover the local service charges. Any deviations to this plan will be outlined in the geographical specific MSD addendums.

9.8 Deposits: (All Phases)

With the introduction of local service, we are faced with the possibility that we will be taking on some risk with customers who may not have a credit history or may not have a clean credit history. In order to protect ourselves to some degree, we will be using a deposit policy to collect deposits in certain cases. This policy is dependent on legal and regulatory requirements and may therefore, differ by geographic area. Specific policies will be outlined in the geographical specific MSD addendums.

In general, any customer applying for service, whose financial viability is not established to our satisfaction may be required to pay in advance of the service connection and installation charges and least one month's service charge.

A sample matrix of the generic approach we may use is as follows:

CUSTOMER SCENARIO	DEPOSIT REQUIRED
Existing AT&T LD customer not in treatment adding local option	NO
Existing AT&T LD Customer in treatment adding local option	YES
Winback End-To-End customer with no credit problems (existing business)	NO
Winback End-To-End customer with no credit problems (new business)	YES
Winback End-To-End customer with credit problems (existing business)	YES
Winback End-To-End customer with credit problems (new business)	YES
Existing End-To-End customer placed into treatment requesting additional service	YES

Specifically, AT&T reserves the right to refuse an application for service made by a present or former customer who is indebted to the company for service previously furnished, until the indebtedness is satisfied (LD debt paid off).

A process needs to be set up to accommodate a deposit collection and redemption policy. This process should include the ability to identify the customer's current treatment level, collection of the deposit, the formal confirmation of receipt of deposit (certificate of deposit) and terms and conditions (regulations, rights, interest, etc.). Simple interest on the deposit will be based on a formula provided by the state PUC/PSC.

79.9 Collections and Service Terminations: (January '96)

As with other related areas, our policy with regards to LD and Local service terminations is heavily dependent on legal and regulatory requirements and may therefore, differ by geographic area, as well as by call type (local vs. LD). Specific policies will be outlined in the geographical specific MSD addendums. In general, our policies are as follows:

Uncollectables:

At this time, we do not have adequate information to determine the uncollectable percentage specific to local. As an estimate, we will continue to use the current LD service uncollectable rate for the combined local/LD service.

Service Termination:
AT&T local service may be disconnected only for nonpayment of AT&T local service charges, or as specified in local regulations with regard to LifeLine services. Thus, if a customer with this service is in treatment for charges associated with Long Distance, the collections activities associated with those charges cannot be used to impact the local service. There are several other valid reasons for termination of service including, Fraud, Improper Use, and/or Illegal Use of Service.

There will be a restoral charge applied when service is reconnected.

Cancellation for Cause:
For the causes listed below and without incurring any liability, we reserve the right to either temporarily discontinue the furnishing of a service or facility to a customer or terminate the contract.

When we take the initiative to terminate, the regulation's covering termination charges apply as in the case of termination of service at the customer's request.

In the event of discontinuation or termination of business service at a separate location we may transfer the unpaid balance to any other business service account of that customer.

Cancellation After Written Notice:
Five days after furnishing a written notice, we reserve the right to discontinue or terminate service for any of the following conditions:

- in the event of nonpayment of any sum due
- failure to make suitable deposits as required
- improper use of party line service by a customer
- if the character of use of a service is not in accordance with the class of service contracted for, and the customer refuses to contract for the proper class of service
- abuse or fraudulent use of service
- cancellation upon written request by public officials, i.e. judge of a court of record, a federal, state or local law enforcement agency, etc.

After furnishing a verbal notice (a confirming notice will be mailed), we reserve the right to discontinue or terminate service for any of the following conditions:

- use of profane or indecent language over the facilities
- abandonment of the station or facilities
- use of the service or facilities by the customer, or the manner of such use that tends to affect injuriously the efficiency of our general plant or services
- use of a service or facility in a manner which substantially impairs the service of a particular customer

- in the event a customer transmits a previously recorded message over the exchange or toll facility without properly identifying himself or the sponsor.

Cancellation Of Service Provided By Another Company:
We are permitted to discontinue or terminate basic local exchange service of a customer for non-payment of undisputed charges of another provider if that provider's charges are billed by us, and the charges are either regulated by the Commission or the FCC.

Tracking Requirements:
The CSR needs to indicate all treatment levels. The collection reports will be required to report local data such as local usage, revenues in collections, etc.

9.10 Bill Production

Local bill feeds will be validated by the billing control office before AT&T processes it for bill pull. Back-out and re-run procedures need to be defined.

9.11 Bill Rate Inquiry

The biller needs to provide access to local call rating tables for inquiry and bill verification.

10.0 DISTRIBUTION STRATEGY

10.1 Channel Design: (January '96)

Channel design for switched and nodal service customers needs to be developed. This design needs to include premises and non-premises selling. The philosophy in developing our channel will be to build upon the strong relationships we have with our existing accounts by positioning local as an extension of the customer relationship. This extension will result with AT&T enjoying a seamless relationship providing a full set of customer telecommunications needs. We anticipate utilizing alternate channels to sell to Small of Large/Medium/Small/Mass with direct mail supplementing face-to-face/OTM contacts.

There are several dimensions in our channel design that need to be considered. One is customer size. As we add a customer's local traffic to their existing AT&T usage, we may experience significant movement "up strata" (mass to small; small to mid, etc.) This customer migration needs to be considered and planned for so that channel handling is as transparent as possible to customers.

Another factor to consider is "first service" vs. "after market" sales. By its nature, local service is heavily loaded with after sale or "add on" account activity. These activities are things such as adding additional DID lines, changing hunt groups and general "churn" (connects/disconnects). While relatively small in terms of revenue produced, they are thought to be high in terms of

Local Service Marketing Service Description

DRAFT 2

TABLE OF CONTENTS

PLEASE NOTE: ALL CHANGES ARE UNDERLINED AND HAVE A LINE IN THE MARGIN

11. Billing

The LEC will record the customers local usage and forward it electronically to AT&T. The local usage information will be combined with the AT&T long distance bill and a single remittance page will be generated which shows the total amount owed.

AT&T will combine the local and long distance bill information into a single bill with a single remittance page. Multiple location expenses can be listed on one bill.

11.1 Features/Options To Support

Initially Billing needs to support the following list of features/options, with the flexibility to charge and bundle elements in price packages:

FEATURE/OPTION	Non-Recurring Charge	Monthly Recurring Charge	Usage Charges
Line Types:			
Basic Business Lines	X	X	Calling Plan
PBX Trunk Lines	X	X	Calling Plan
Direct Inward Dialing lines/trunks	X	X	-
Direct Outward Dialing lines/trunks (DOD	X	X	Calling Plan
DS1 Nodal DS3 Nodal	X	X (Mileage based, Channel termination, interoffice Channel charge)	X
~~DS1 Nodal~~	~~X~~	~~X (Mileage based, Channel termination, interoffice Channel charge)~~	~~X~~
DID numbers (per 100)		X	
FCC Line Charges		X	
Switched Digital Services	X	X	X
Tie Lines	X	X (Mileage based, Channel termination, interoffice Channel charge)	
FX Service	X	X (Mileage based, Channel termination, interoffice Channel charge)	X
Off Premises Extensions	X	X (Mileage based, Channel termination, interoffice Channel charge)	

Voice Private Lines	X	X	
Data Private Lines	X	X	
Calling Plans:			
Flat Rate Calling Plan		X	
Minute Based Calling Plan		X	X
Tapered Flat Rate		X	
Combination Flat with Message Rating		X	X
Initial Message Unit with Additional Minute charges		X	X

FEATURE/OPTION	Non-Recurring Charge	Monthly Recurring Charge	Usage Charges
Discounts:			
Flat discount on local			
Aggregated Local and LD Discount			
Discount Local Based on LD Discount Rate (not calculated with local)			
Bundled Feature Package Discount			
Discount By Specific NXX			
Features:			
Touch Tone		X	
Hunting	X	X	
Call Forwarding	X	X	
Call Forwarding Busy	X	X	
Call Forwarding No Answer	X	X	
Call Forwarding Remote	X	X	
Call Forwarding Combo	X	X	
Call Forwarding Selective	X	X	
Call Waiting	X	X	
Three Way Calling	X	X	
Speed Calling (8 or 30)	X	X	
Blocking	X	X	
Remote Call Forwarding	X	X	
Remote Call Activation of Call Forwarding	X	X	
Last Number Redial	X	X	
Missed Call Dialing	X	X	
Busy Number Redial	X	X	
Call Hold	X	X	

Call Transfer	X	X	
Call Tracing	X	X	
Priority Call Ringing	X	X	
Customized/Distinctive Ringing	X	X	
Automatic Route Selection	X	X	
Automatic Identified Outward Dialing	X	X	
Network Call Distribution	X	X	
ISDN (With associated features)	X	X	X
CENTREX (With associated features)	X	X	
Voice Mail	X	X	
Alarm Circuits	X	X	X
800 Service	X	X	X
Local Teleconferencing	X	X	X
Local Calling Card	X	X	X
Miscellaneous:			
Change Charge (Plan Change)	X		
Maintenance Charges	Based on Minutes		
Inside Wiring	X		
Non-Published Listing	X	X	
Vanity Number		X	
White Page Listing	Comes with line		
Yellow Page Listing		X	

Bold Items are currently defined for July 1995 development (Except for Uniplan Calling Plans)

11.2 Rating

The billing system(s) will most likely receive unrated records from the LEC wholesaler. It will be necessary for AT&T to apply, based on the calling plan, the appropriate rate elements to the usage records prior to processing bills. As described in section 6, there are four types of rating structures identified to date.

1. Flat Rate (no rating required)
2. Tapered Flat Rate (Based on number of minutes)
3. Basic per minute rates (peak, off-peak).
4. Message Rating (per message rates - peak, off-peak)
5. Message Unit rating (Unit= X minutes: peak, off-peak).
6. Combinations of the above

Refer to section 7 for specific examples of the implementation of these rate structures.

As we prepare for market entry in a specific area, we will develop a more detailed pricing plan description that will be used in that locality. If more basic rating elements are uncovered as we look at different markets, we will append those to the list above.

11.3 Monthly Charges / Mid-Cycle Service Changes

Monthly Charges: For local service, we will be billing customers in advance for their calling plan and feature charges. Thus, the first customer bill will contain prorated service and feature charges in "arrears" plus the next months service and feature charges.

Service Changes: Customers who choose to change calling plans in the middle of their billing cycle should receive a bill with prorated charges covering each period.

11.4 Bill Periods

Local and Long Distance charges should be combined into one bill for remittance. The Bill Date for the new combined bill should be coordinated between the local and long distance records. Timely mailing of the bill is critical in order to make the transition to a single vendor seamless. The number of billing periods should correspond to the number available with the long distance portion of the service today.

11.5 Call Detail

Because calls detail can be quite large on a message rated bill, we will provide the customer with the option of not receiving the call detail. They will continue to receive the local call summary and associated charges.

11.6 Bill Media

Customers should be given the option to receive the local service call detail on non-paper media available today (PC disk, Mag Tape, CD ROM, etc.).

11.7 Audit of Wholesale Bill vs. Customer Bills

The wholesale LEC will be billing AT&T for each customer account we manage. In order to ensure that we are not being mischarged for services, an audit process needs to exist between the billing records we send to customers and the billing records the LEC sends us. The frequency should be on a quarterly basis.

11.8 DMOQs

The billing process should meet the following DMOQ's:

DMOQ	MASS	SMALL	MIDDLE	GLOBAL
Accuracy				
Timeliness				
Ease of Use				
Completeness				
% Customer Satisfaction -				

Favorable				

DMOO's for LEC performance must also be developed and will contribute to AT&T local service DMOO's.

12. Journalization

Local service will be tracked separately from other jurisdictional traffic from a financial perspective. The following rules apply to the local revenues gained from this service:

1) Local revenue will be journalized separately under each service so that we can differentiate between local revenue and other revenue

2) Local revenue under each service will be split into three areas:
   a) Revenue associated with NRC and MRC line charges, Calling Plan charges and usage charges.

   b) Revenue associated with "Regulated" features (NRC, MRC, Usage)

   c) Revenue associated with "Unregulated" features (NRC, MRC, Usage)

This policy may change in the future and is dependent on P/L responsibility decisions made in the future.

13. Bill Payment

A customer's payment to AT&T shall first be applied to their local service charges, with the remainder of the payment going to the Long Distance portion of their bill. Any partial payments must first be used to cover the local service charges.

A policy for installment payments will be developed prior to market entry.

14. Deposits

With the introduction of local service, we are faced with the possibility that we will be taking on some risk with customers who may not have a credit history or may not have a clean credit history. In order to protect ourselves to some degree, we will be using a deposit policy to collect deposits in certain cases. This policy may change from state to state, depending on the legal and regulatory requirements.

In general, any customer applying for service, whose financial responsibility is not established to our satisfaction may be required to pay in advance of the service connection and installation charges and least one month's service charge.

A sample matrix of the generic approach we may use is as follows:

CUSTOMER SCENARIO	DEPOSIT

	REQUIRED
Existing AT&T LD customer not in treatment adding local option	NO
Existing AT&T LD Customer in treatment adding local option	*YES
Winback End-To-End customer with no credit problems (existing business)	NO
Winback End-To-End customer with no credit problems (new business)	YES
Winback End-To-End customer with credit problems (existing business)	*YES
Winback End-To-End customer with credit problems (new business)	*YES
Existing End-To-End customer placed into treatment requesting additional service	YES

*** We will be trying to avoid these customers if possible during the sales process, however, it is difficult to guarantee the absence of these scenarios.**
Specifically, AT&T reserves the right to refuse an application for service made by a present or former customer who is indebted to the company for service previously furnished, until the indebtedness is satisfied (LD debt paid off).

A process needs to be set up to accommodate a deposit collection and redemption policy. This process should include the collection of the deposit, the formal confirmation of receipt of deposit (certificate of deposit) and terms and conditions (regulations, rights, interest, etc.). Simple interest on the deposit will be based on a formula provided by each state PUC/PSC.

15. Collections

15.1 Uncollectables

At this time, we do not have adequate information to determine the uncollectable percentage specific to local. As an estimate, we will continue to use the current LD service uncollectable rate for the combined local/LD service. As soon as we are able to provide more accurate estimates, we will inform the team.

15.2 Service Termination

AT&T local service may be disconnected only for nonpayment of AT&T local service charges, or as specified in local regulations with regard to LifeLine services. Thus, if a customer with this service is in treatment for charges associated with Long Distance, the collections activities associated with those charges cannot be used to impact the local service.

There are several other valid reasons for termination of service including, Fraud, Improper Use, and/or Illegal Use of Service.

Each state has different regulations regarding the number of days of nonpayment prior to being able to terminate service. The collections group will be given the state regulations and LEC tariffs for specific rules that apply to each state.

There will be a restoral charge applied when service is reconnected.

16. Cancellation for Cause

For the causes listed below and without incurring any liability, we reserve the right to either temporarily discontinue the furnishing of a service or facility to a customer or terminate the contract.

When we take the initiative to terminate, the regulation's covering termination charges apply as in the case of termination of service at the customer's request.

In the event of discontinuation or termination of business service at a separate location we may transfer the unpaid balance to any other business service account of that customer.

16.1 Cancellation After Written Notice

After furnishing a written notice, we reserve the right to discontinue or terminate service for any of the following conditions:

- in the event of nonpayment of any sum due
- failure to make suitable deposits as required
- improper use of party line service by a customer
- if the character of use of a service is not in accordance with the class of service contracted for, and the customer refuses to contract for the proper class of service
- abuse or fraudulent use of service
- cancellation upon written request by public officials, i.e. judge of a court of record, a federal, state or local law enforcement agency, etc.

After furnishing a verbal notice (a confirming notice will be mailed), we reserve the right to discontinue or terminate service for any of the following conditions:

- use of profane or indecent language over the facilities
- abandonment of the station or facilities
- use of the service or facilities by the customer, or the manner of such use that tends to affect injuriously the efficiency of our general plant or services
- use of a service or facility in a manner which substantially impairs the service of a particular customer
- in the event a customer transmits a previously recorded message over the exchange or toll facility without properly identifying himself or the sponsor.

16.2 Cancellation Of Service Provided By Another Company

We are permitted to discontinue or terminate basic local exchange service of a customer for non-payment of undisputed charges of another provider if that provider's charges are billed by us, and the charges are either regulated by the Commission or the FCC.

Local Directory Assistance Technical Plan

For a 411 Call with Mixed Local & Long Distance Queries

Draft 1

March 8, 1996

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1. INTRODUCTION (LCM)

Many changes are taking place in the telecommunications industry due to the impending restructuring and opening up of the local telecommunications markets. AT&T is planning to enter several local markets in 1996 through LEC Service Resale and resale of LECs local loop facilities connected to AT&T local infrastructure. In support of AT&T's local market plans, Issue 1.0 of the Local Directory Assistance (DA) Technical Plan (Approved Copy, 2/8/96) addresses a specific set of assumptions and desirable features for market entry. This document proposes an alternative service architecture to meet the needs of the recent view of offering 411 service which would honor a fixed number of intraLATA(toll and local) and interLATA (long distance) listing requests for ONE local DA (e.g., 411 or 555-1212) call.

In the remainder of this document, the term "Issue 1.0 document" refer to the Local Directory Assistance Technical Plan Issue 1.0[1] document. The terms "local DA call" and "411 call" are used interchangeably to mean a DA call dialed with 411 or 555-1212.

This document is NOT intended as a replacement of the Issue 1.0 document, but as a supplement planning document for the variation in the set of assumptions and required capabilities to provide additional planning information to the Issue 1.0 document. The reason for this arrangement is due to the continually changing climate in the local service market arena which necessitate considerations of various capabilities for market entry.

1.1 Overview

This document assumes the same basic service architecture as described in the Issue 1.0 document. The changes are in the areas where modifications to the original plan are necessary to satisfy new assumptions of honoring both local and long distance listing requests to a single local DA call, as per Product Management request. For the list of service assumptions, please refer to the section on "Service Assumptions" (Section 2.3.1).

This document assumes the offering of local Directory Assistance (DA) service using AT&T's long distance National DA platform (NDAP). This service would enable customers to experience the AT&T brand for local DA service. AT&T local service residential and business customers dial a locally-supported directory assistance number to obtain a pre-determined maximum number of local-area and long distance telephone listings with optional call completion offer.

The proposed plan assumes the same access architecture as described in the Issue 1.0 document for the Local End Office to route local DA calls to the NDAP platform (a vendor platform with external vendor DA agents and listing database) which is currently servicing AT&T's long distance DA calls. The regional 5ESS® / OSPS is used for call completion. The plan considers both the LEC Service Resale and Loop Resale arrangements with the leased loop terminated at the LEC MDF and hand-off to the AT&T local end office.

1.2 Purpose

The purpose of this document is to provide Local Service planners and Product Management with a service architecture proposal to implement the AT&T branded local DA service with the new service assumptions stated in the "Service Assumptions" section. It also provides input for engineering, development, provisioning, operations, testing, and Methods and Procedures (M&Ps).

This plan:

1. assesses the feasibility of using the service architecture documented in the Issue 1.0 document to support the capability of local DA calls that can support a mix of local-area and long-distance listing requests.

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[1] Mui, L.C. (Coordinator), Local Directory Assistance Technical Plan, Issue 1.0, Approved Copy, 2/8/96.

2. identifies any development efforts that are required to support the new set of service assumptions.

1.3 Terminology (ALL)

The following terms are used throughout the document.

Local Service - Consists of switch-based features and other services (for example, local Operator Services) which have been traditionally offered by the LEC to residential and business customers. AT&T will offer these features and services to the AT&T residential and business customers via a local tariff filing, as it enters the local market.

Local End Office - refers to the switch where customer lines terminate. In this document, references are made to the LEC End Office in the LEC Service Resale environment and AT&T Local End Office in the Loop Resale environment.[2]

LEC Service Resale - Local Service is provided using LEC network services.

Loop Resale - In this type of architecture, AT&T leases the loop facilities to the end customers home, but purchases and manages its own local end office switch. To the customer, AT&T can now be the sole provider of local, intraLATA toll, and long distance service. The strictest definition of the term "loop resale" includes only local and intraLATA toll traffic served by an AT&T purchased and managed local end office switch with leased loop facilities to the customer's homes or businesses.[3]

IntraLATA call - A call placed (originating and terminating) within a single LATA. IntraLATA calls fall into two categories: local (non-toll) and toll calls. The local calls are referred to as intraLATA local calls and are those that are placed to (NPA) NXXs in the AT&T customer's local calling area. These calls normally do not incur charges based on the distance of the call or the duration of the call. The toll calls are referred to as intraLATA toll calls and are those calls that are placed to (NPA) NXX's located, with few exceptions, within the AT&T customer's LATA. These calls incur charges allowed by state tariffs, for both distance and duration.

In the remainder of this document, the terms "intraLATA call", "intraLATA toll call", and "intraLATA local call" are used. The term "intraLATA calls" refers to both the "intraLATA local calls" and "intraLATA toll calls".

AT&T Directory Assistance For Any Distance℠ service - AT&T Directory Assistance service accessed by dialing 900-555-1212 anywhere in the country.

In this document, 900-555-1212 calls refer to calls handled by the AT&T Directory Assistance For Any Distance℠ service (also known as Project Zebra).

Local Directory Assistance - Service provided when customer dials a locally-supported directory assistance number (e.g., 411, 555-1212) to obtain up to a pre-determined maximum number of interLATA, intraLATA toll and / or intraLATA local telephone listings.

Directory Assistance Call Completion (DACC) - Optional offer to dial one of the listings retrieved as a result of a Directory Assistance call.

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[2] The Local End Office is sometimes referred to as the "Local Switch Office (LSO)" in other documents that address Local Service.

[3] T. E. Adams, et. al., Loop Resale Technical Plan, Draft 3.0, December 22, 1996.

Mixed local / long distance listing requests - the capability for customer to call 411 to request up to a pre-determined maximum number of interLATA, intraLATA toll and / or intraLATA local telephone listings.

1.4 Scope

This document covers the technical planning information for providing local directory assistance (DA) service offering a *mix* of local and long distance listing requests for local residential and business customers who choose AT&T as their local service provider.

- This plan addresses local DA service which are available to AT&T local customers who dial "411 or 555-1212 (depending on the geographic region) to reach local DA service.
- The internal 900 number used in the architecture should not be published, and customer should not be dialing the internal 900 number.
- It is assumed that customers currently dialing to reach the AT&T DA service via the dial-strings "NPA-555-1212" or "900-555-1212" are not impacted by this plan.
- This plan considers both the LEC Service Resale and Loop Resale with the leased loop terminated at the LEC MDF and hand-off to the AT&T local end office.
- BCS access options considered currently for Loop Resale, which affect the access arrangement from the Customer Premise Equipment to the end office switch, will be compatible with the 411 calls at the end office in the LEC Service Resale and Loop Resale arrangements.[4] Therefore, the limitation to the basic Loop Resale arrangement, as stated in the Issue 1.0 document, is no longer applicable. Instead, the term "Loop Resale" includes the various access arrangements defined in the Loop Resale Technical Plan, Draft 3.0.

1.5 Guide to the Document

This document contains the following sections:

1. INTRODUCTION section provides a brief description of the planning effort, the purpose, the scope, and the structure of the document.
2. SERVICE DESCRIPTION section provides a definition of the local DA service, the mixed local and long distance listings request option, service assumptions, call volume assumptions, target market, as well as any restrictions and limitations of the proposed service.
3. HIGH-LEVEL ARCHITECTURE DESCRIPTION section provides an overview of the selected architecture.
4. TECHNICAL DESCRIPTION section provides the technical description of the access architecture and call flows.
5. AMA RECORDING / BILLING section provides a description of the recording and billing impacts.
6. NATIONAL DIRECTORY ASSISTANCE PLATFORM section describes the needed enhancements and Methods & Procedures changes.
7. FEATURE INTERACTIONS section describes interactions with other features.
8. PERFORMANCE section describes any performance impacts.
9. OPERATIONS section describes the service operations strategy.

[4] Data provided by M. S. Huq, S. Ganesan, P. Zahray.

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10. TIME / COSTS ASSESSMENTS section provides an assessment summary of efforts needed to routing local Operator Service traffic to the AT&T 5ESS® OSPS platform for handling.

11. BCS IMPACTS section provides an assessment of BCS-specific impacts.

12. ISSUES section provides a list of issues that have been identified. Most of the issues are expected to be resolved. A few others may remain as suggestions for future implementation.

13. REFERENCES section lists documents referenced.

14. GLOSSARY section lists acronyms and abbreviations.

2. SERVICE DESCRIPTION (LCM)

2.1 Service Definition

This is an AT&T branded local Directory Assistance (DA) service that would allow AT&T local service customers to dial a locally-supported directory assistance number (e.g., 411, 555-1212[5]) and obtain up to two local-area telephone listings with optional Directory Assistance Call Completion (DACC) to one of the listings. The local directory assistance calls are routed by the Local End Office over the AT&T Switched Network (ASN) to the National Directory Assistance (NDA) platform (a vendor platform with external vendor DA agents, and listing database) which is currently servicing long-distance DA calls.

DA agents must be able to identify a local DA call. Customers making local DA calls will also be able to request long distance information.[6] Local customers will be permitted some number of "free" DA calls each billing cycle (the number of these "free" DA calls will likely vary by area within the broad framework or guidelines provided by the PUC (Public Utility Commission). Customers who exceed the number of "free" DA calls for the billing period will be charged a flat rate for the subsequent calls. Furthermore, the call completed via the DACC capability must be appropriately billed for call completion.

The ability to price local DA Call Completion at a rate different from the LD Call Completion charge is required.

The local DA service offering is being considered for the LEC Service Resale and Loop Resale environment. The development effort required, as summarized in the "TIME / COSTS ASSESSMENTS" section, is expected to result in a significantly longer lead time for both the LEC Service Resale and Loop Resale.

Direct Measures of Quality for this service should be consistent with those utilized in the Long Distance (LD) segment of end-to-end service.

The local DA service planning to implement capabilities to re-use the LD DA platform for local DA is a shared objective for local and LD businesses and cost reduction.

This Plan builds upon the Local Directory Assistance Technical Plan, Issue 1.0, but addresses the option to mix local and long distance listing requests, as specified in the following section 2.2.

2.2 Mixed Local / Long Distance Listing Request Options

The following description is provided by Product Management for the option to mix local and long distance listing requests:

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[5] Either 411 or 555-1212 is the dial-up access number to satisfy LEC parity for the local geographic area..

[6] Pending Product Management decision based on regulatory and economic evaluations.

1. Local DA Product Management would like to offer unrestricted directory assistance to customers as long as a PUC or a legislative body does not preclude this.
This means that a customer dialing "411" (or 555-1212 in some geographic regions) may request a mix of intraLATA and interLATA directory listings in one 411 call. For each 411 call, customer may request two interLATA listings, two intraLATA listings, or one interLATA / one intraLATA listings.

   Call handling and call completion assumptions and criteria, as summarized in the local DA Technical Plan, are not changed. That is, up to two listings may be requested for each 411 call, and call completion is an option for the second of the two requested listings.

2. The current LEC environment permits two listings per customer call. The Excell platform can accommodate as many as 8 listings per customer call (for Directory Assistance at any Distance or 900-555-1212 service). Local DA will offer to customers as many listings per calls as the platform permits. However, customers will have to pay for the additional listings. Customers will be billed for every two listings given during a single call. Additionally, the flexibility should be built into the billing system so that we could change the quantity of listings given per call.

3. On the customer's bill, a call placed to 411 will be considered "local directory assistance". Calls placed to NPA-555-1212 or 900-555-1212 will continue to appear on the bill as it does today.

2.3 Assumptions (LCM)

2.3.1 Service Assumptions

Service assumptions listed below will consist of two parts: Section 2.3.1.1 lists assumptions from Issue 1.0 that remain unchanged, and Section 2.3.1.2 lists the assumptions added to support the mixed local and long distance listings requests capability.

2.3.1.1 Issue 1.0 Assumptions

1. AT&T's local DA service will match that of the incumbent LEC traditional "411" service in terms of:
   - customer dialing format (e.g., 411, 555-1212 etc.)
   - pricing criteria dictated by regulators (e.g., the number of free calls).
   - availability of call completion service.
2. AT&T will provide local DA service for both LEC service resale and loop resale local service architectures.
3. The DA call and the optional call completion are billed to the calling number.
4. Call Completion charge for the "411" service may be different from LD Call Completion charge.
5. Customers dialing NPA-555-1212 will receive long distance DA service.
6. Customers dialing 900-555-1212 will receive the *Directory Assistance For Any Distance*℠ service.
7. The 900-NXX-XXXX number for local DA is an internal number, and not advertised. However customers dialing this number will get the local DA service.
8. Each local DA call is recorded.
9. The option of using more than one terminating 4ESS™ switch is considered in this Plan to provide multiple egress for local DA traffic to eliminate having the switch as a single point of failure. The use of multiple terminating 4ESS™ switch can be relaxed for market entry if it would result in significant simplification.
10. The option for local pricing to be different from long distance should be available. At this time the pricing of local DA is not yet determined. Local DA pricing may be equal to or different from long distance DA pricing, or equal to the LEC pricing.[7]

[7] As per H. Rubnitz, 12/4/95.

11. Also refer to "Restrictions and Limitations" section below.

2.3.1.2 New Assumptions for Mixed Local / LD Listing Requests

The following assumptions were made for the planning of the capability to mix local and long distance listings in one 411 call.

1. For each 411 call, customer can request up to two listings for a single charge (as is already stated in the Local DA TP, Issue 1.0).
2. Development on the vendor NDA platform and the 5ESS® OSPS are required to set indicator for the type and number of local and / or long distance listing requests in the DA AMA record for all 411 DA call. This is additional development to the setting of an indicator in the Call Completion AMA record to identify Local DA Call Completion (as is already stated in the Issue 1.0 document).
   Customers making local DA calls will be able to request long distance information in addition to local information..
3. When customer requests a mix of local and long distance listings, the total number of listing requests must not exceed the allowable number of requests for each 411 call.
4. Possibility can exist that *PUC in* one geographic region may (a) not allow the servicing of both local and long distance listing requests for a 411 call, (b) allow the servicing of both local and long distance listing requests, and do not require separate pricing structure for local or long distance calls, or (c) allow the servicing of local and long distance listing requests, but require separate pricing structure for each category.
5. Customer's subscription to extended calling area coverage has no impact on 411 coverage. The only impact would be the billing of the completed call which is handled by the downstream rating and billing systems.
6. To handle the case of up to 8 listing requests, a total of four 411 DA charges are recorded. Call completion will be offered on the last requested listing provided it is a dialable number.

2.3.2 Restrictions and Limitations

This document does not add any limitation to those listed in the Local DA Technical Plan Issue 1.0 document.

2.4 DA Call Volumes Assumptions (LCM)

The following call volume assumptions are as listed in the Local DA Technical Plan Issue 1.0 document.

1. Call completion take-rate of 30% is assumed.
2. Local residential and business DA Traffic volume data used in the planning are based on forecasted local DA call volumes from Product Management.
3. Local (residential and business) and long distance DA busy hours coincide.

3. HIGH-LEVEL ARCHITECTURE[8]

This section summarizes the important aspects of the high-level architecture to provide background information for this document. For more detailed description of the Local DA Service, please refer to the Local DA Technical Plan Issue 1.0.

If local Directory Assistance is provided by AT&T, local DA calls from AT&T customers are routed to the AT&T Switched Network (ASN) by the LEC End Office in the LEC Service Resale environment, or by the AT&T Local End Office in the Loop Resale environment

These calls will be routed via the ASN to the National Directory Assistance Platform (NDAP) currently located in the Phoenix Work Center, Phoenix, Arizona, and / or other NDAP platform sites to be established. All local DA calls will, in addition, be offered the option of Directory Assistance Call Completion (DACC).

The customer-dialed digits (e.g., 411 or 555-1212) are translated into a unique 900-number (900-NXX-XXXX) reserved for local DA use. The originating 4ESS™ switch will translate the 900-number to a network routing number (e.g. 719-030-XXXX). For clarity, 900-NXX-XXXX and 719-030-XXXX are used throughout this document. The actual routing number[9] to be assigned to local DA service will share the same first six digits (e.g. 719-030) with the routing number of "719-030-1212" used by the *AT&T Directory Assistance For Any Distance*℠ service. It is planned that the 7th digit in the network routing number for local DA will be a digit not equal to "1".

Local DA calls are routed to the NDAP via the Regional 5ESS® OSPS. To accomplish this routing, the Local End Office will translate the customer-dialed digits into a 900-NXX-XXXX and will route the call to the originating 4ESS™ switch. The originating 4ESS™ switch will translate the 900 number to a network routing number format (e.g., 719-030-XXXX) using the HI-CAP Originating Table (HOT). The originating 4ESS™ will route the call using RTNR to the terminating 4ESS™ serving the Regional 5ESS® OSPS. The terminating 4ESS™ will route the call to the Regional 5ESS® OSPS LS over a dedicated FG-D SA trunk.

This architecture supports more than one requests per call. Initially local DA will offer up to two requests. If the customer desires information for two listings, the customer must so inform the NDAP agent at the beginning of the call. When two listings are requested, the agent will request City and Name information and provide the first listing verbally, then prompt for the second listing.

Using M&P, the platform can actually support up to eight listings with the last listing being prompted for optional call completion.

3.1 Routing / Egress Architecture for Local DA Service (GD)

The routing / egress architecture is based on the current NDA Platform supporting *AT&T Directory Assistance For Any Distance*℠ (900-555-1212) service. The architecture will provide "multiple routes" or "egress" and will eliminate the terminating 4ESS™ as a single point of failure.

[8] The information in Section 3 to Section 3.3 are extracted from the Local Directory Assistance Technical Plan Issue 1.0 (Approved Copy, 2/8/96).

[9] As per conversation with G. Kansianic and D. McChristian 1/96.

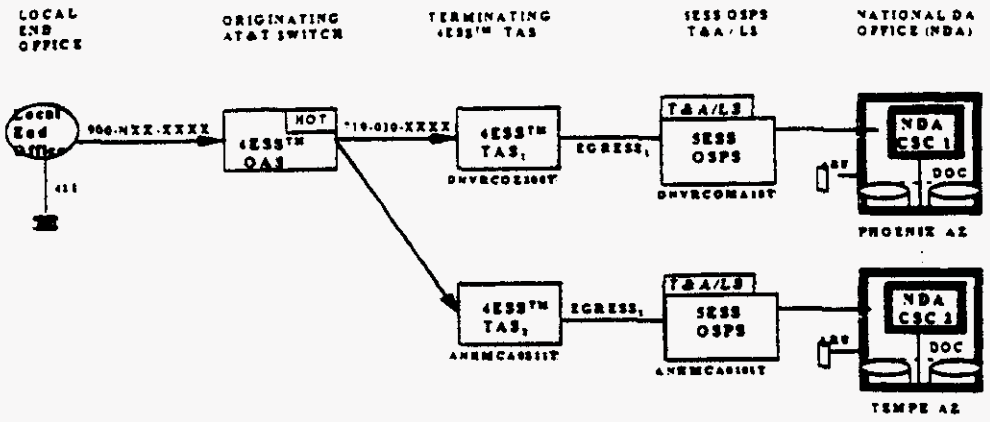

Figure 2: High level access/egress architecture for Local DA Service

3.2 FGD Trunk Group to Regional 5ESS (LCM)

The local DA 900-number (900-NXX-XXXX) is translated into a unique routing number of 719-030-XXXX sharing the same first six digits with the network routing number of 719-030-1212 assigned to the *Directory Assistance For Any Distance*℠ (900-555-1212) service but the 7th digit will be a digit other than "1". The local DA traffic may be carried by the existing dedicated FGD SA trunk group used by the *Directory Assistance For Any Distance*℠ platform. Analysis indicated that there is no need to have a separate dedicated FGD SA trunk group[10] for local DA traffic.

3.3 Using 5ESS® OSPS for DACC (TAD)

After the customer dials the appropriate valid local DA number (e.g., 411, 555-1212, etc.), the Local End Office will convert the call to a 1+900-NXX-XXXX format and will route the call to the originating 4ESS™ switch. The originating 4ESS™ then translates the 900 number to a number 719-030-XXXX using the HiCAP Originating Table (HOT). (The new number will be associated with a new trunk group or groups between the terminating 4ESS™ and the Regional 5ESS® OSPS LS.) The originating 4ESS™ will route the call using Real Time Network Routing (RTNR) to the terminating 4ESS™. Based on the number, the terminating 4ESS™ switch will route the call over the FGD SA trunk group to the Regional 5ESS® OSPS LS.

[10] As per conversation with D. McChristian 1/96.

3.4 Call Servicing Center

Local Directory Assistance calls received at the Regional 5ESS® OSPS will be routed to the Call Servicing Center (CSC) based on the digit analysis of the received called number. The CSC consists of a serving team of agent attendants occupying vendor supplied terminals that are served by a 5ESS® OSPS Remote Integrated Service Unit (RISLU) via a Position Switching Module (PSM), and a Listing Services Database (LSDB). A LSDB is a vendor supplied data base for directory assistance information. The 5ESS® OSPS PSMs are connected to an LSDB through the Call Processing Data Links (CPDLs). The CPDL is used by the OSPS to notify the vendor's equipment of a new call and is used by the vendor's equipment to request the 5ESS® Switch to transfer a call to an external Audio Response Unit (ARU). All together the components make up what is called the National Directory Assistance Platform (NDAP).

4. TECHNICAL DESCRIPTION

4.1 Description of the Mixed local / LD Listings Request Option (LCM)

This plan considers the various arrangements for offering the capability to allow customers to request any combination of local (e.g., intraLATA toll and intraLATA local) and long distance (e.g., interLATA) listings up to a pre-determined maximum of requests per 411 call. Since there is no available PUC ruling which dictates if such an offer is permissible or related rating requirements, this plan considers three options referred to as Options (1), (2), and (3) in the remainder of this document.

Option 1 - PUC allows only IntraLATA toll/local listing requests for 411 calls

(listing 1 = intraLATA, listing 2 = intraLATA)
or
(listing 1 = intraLATA)

There are no AMA impacts here. It is assumed that a single AMA record means 1 or 2 DA requests were made.

Impacts:
Excell Platform: (a) needs to decide if listing requested is interLATA or intraLATA toll/local.
(b) do not allow interLATA requests.
(c) set indicator to "N" on screen for agent M&P to disallow interLATA request.
CPDL message: no additional requirement (same as stated in Issue 1.0 document).
5E/OSPS: no additional requirement (same as stated in Issue 1.0 document).
agent M&P: will disallow LD requests when indicator is set to "N" on screen to disallow interLATA request.
billing: no additional requirement (same as stated in Issue 1.0 document).

Option 2 - PUC allows both InterLATA and IntraLATA toll/local listing requests for 411 calls and does not require separate rating for InterLATA and intraLATA DA listings.

(listing 1=interLATA, listing 2=intraLATA toll/local)
or
(listing 1=interLATA, listing 2=interLATA)
or
(listing 1=intraLATA toll/local, listing 2=intraLATA toll/local)
or
(listing 1=intraLATA toll/local, listing 2=interLATA)
or
(listing 1=intraLATA)
or
(listing 1=interLATA)

Again, no AMA impacts here. The same charges apply to each AMA record as in Option 1.

Impacts:
Excell Platform: do not need to decide if listing requested is intraLATA toll/local.
CPDL message: no additional requirement (same as stated in Issue 1.0 document).
5E/OSPS: no additional requirement (same as stated in Issue 1.0 document).

agent M&P: will allow both LD and intraLATA toll/local requests.
billing: no additional requirement (same as stated in Issue 1.0 document).

Option 3 - PUC allows both InterLATA and IntraLATA toll/local listing requests for 411 calls and requires separate rating for InterLATA and IntraLATA DA listings.

(listing 1=interLATA, listing 2=intraLATA toll/local)
or
(listing 1=interLATA, listing 2=interLATA)
or
(listing 1=intraLATA toll/local, listing 2=intraLATA toll/local)
or
(listing 1=intraLATA toll/local, listing 2=interLATA)
or
(listing 1=intraLATA)
or
(listing 1=interLATA)

In this case, there are AMA recording impacts.

Impacts:
Excell Platform: (a) needs to decide if listing requested is interLATA or intraLATA toll/local.
(b) pass indicator back to 5E/OSPS to indicate if interLATA or intraLATA listing.
(c) retrieve listing (and call completion if selected for the last requested listing).
CPDL message: additional requirement to be defined.
5E/OSPS: additional requirement to be defined.
agent M&P: will allow both LD and intraLATA toll/local requests.
billing: identify interLATA and intraLATA calls and apply separate charge.

For each of the three options, the handling of up to 8 calls assumes that it is equivalent to four 411 DA charges. Call completion will be offered on the last requested listing if it is a dialable number.

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4.2 Call Flows (TAD)

The following is the call flows for Local DA Using 5ESS®/OSPS for DACC. The term "Local End Office" refers to either the LEC End Office as in the LEC Service Resale environment, or the AT&T Local End Office as in the Loop Resale environment. Details on the routing of the local DA call to the ASN are described in the preceding section on "Access Architecture" and are not repeated here.

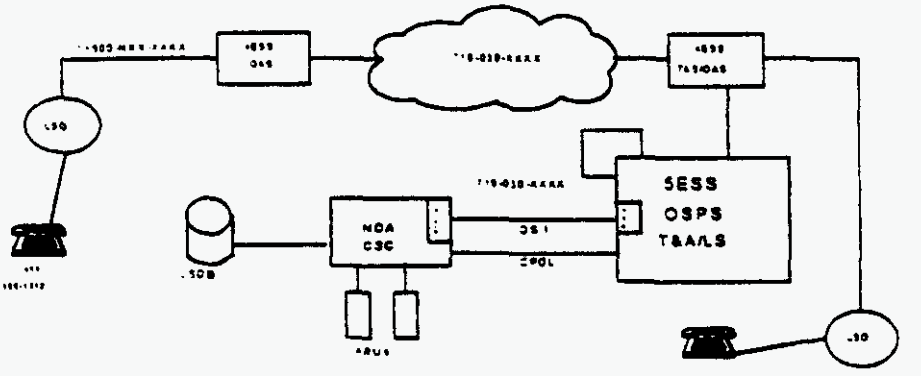

Figure 3: Local DA Using NDA Platform and 5ESS® OSPS for DACC

1. Customer goes off hook.
2. Local End Office looks up customer record.
3. Local End Office transmits dial tone.
4. Local End Office does Originating Line Screening.
5. Customer Dials one of the locally supported access codes, i.e., 411, 1+411, or 555-1212.
6. Local End Office converts local DA call to 1+900-NXX-XXXX and routes the call to the ASN.
7. Local End Office generates an AMA Access call record at this time.
8. The call is routed to a 4ESS™ Originating Access Switch (OAS).
9. 4ESS™ OAS translates the 900 number to a 719-030-XXXX number using the HI-CAP Originating Table (HOT). The new routing number will be associated with the existing trunk group (used by the *Directory Assistance For Any Distance*℠ service) between the 4ESS™ Terminating Access Switch (TAS) and the Regional 5ESS® OSPS LS.
10. 4ESS™ OAS routes call using Real Time Network Routing (RTNR) to the 4ESS™ TAS.
11. 4ESS™ OAS generates an AMA 900 call record.

12. 4ESS™ TAS receives call, routes it over the existing FG-D SA trunk group to the Regional 5ESS® OSPS LS. The 4ESS™ to 5ESS® trunk group (from step 9) utilizes MF Feature Group D for Special Applications (FGD SA) signaling.[11] & [12]

13. The Regional 5ESS® OSPS has both Listing Services (LS) and Toll and Assistance (T&A) capabilities. The T&A application will not be accessed because local billing will not be available.

14. Based on the digit analysis, of the received called number, i.e., 719-030-XXXX the 5ESS® OSPS will apply listing services to the call.

15. The Regional 5ESS® OSPS LS places the call in a DA serving team queue awaiting the next available LS attendant. **NOTE:** The DA serving team is remotely located from the host 5ESS Switch. A Remote Integrated Services Line Unit (RISLU), located in the NDAP, is digitally connected over DS1 links to the host Position Switching Module (PSM) in the Regional 5ESS®.

16. The 5ESS® OSPS LS provides OLS and will evoke the use of an AILS query if the NPA NXX of the ANI is foreign to the Regional OSPS.

17. The attendant when attached, sees a screen depicting the results of the OLS screening in step 16. In addition, information will be displayed informing the attendant that the call is a local DA call. The NPA-NXX should be available to the attendant. This should allow for a faster local listing retrieval.

18. The attendant prompts the caller for city/locality and requested listing if a local DA call or state, city, and requested listing if other than local. As with the NDA offering, one (1) to eight (8) listings may be requested. In all cases, the regulatory requirements of the state from which the call originated will be followed. Information concerning the originating states regulations and pricing will be displayed to the attendant from data retrieved from the Local Exchange Routing Guide (LERG) or equivalent information source.

19. If more than one listing is requested, the attendant must insure that all but the last listing be given verbally. The last listing is be provided by an Automatic Response Unit (ARU).

20. The attendant launches a query for the requested number to the Listing Services Data Base (LSDB).

21. The attendant will take the following actions in response to LSDB queries.

    (a) If the listing is not blocked, but no listing is found for a valid request (e.g., an unlisted number), the attendant will inform the customer and the 411 call is billable just like other requests with the listing found. The agent presses the RECRD TICKT key generating an AMA record for the attendant, then releases from the call or asks for another listing.

    (b) If listing is blocked due to state regulatory requirements, the attendant so informs the customer then releases from the call or asks for another listing.

    (c) If a valid listing is found, and the customer has requested multiple listings, the attendant will quote the listing verbally. After the second, fourth, and sixth listings if requested, the attendant will press the RECRD TICKT key which will generate an AMA record for the DA call. On the final listing, the attendant will release the call to the ARU. The release to the ARU triggers the generation of an AMA record for the DA query in the Regional 5ESS®.

    (d) If an ARU is not available, the attendant will press RECRD TICKT and then release from the position.

22. If automated listing, the LSDB sends a Transfer Request Message to the 5ESS® OSPS LS.

23. The 5ESS® OSPS LS selects an ARU port and sends an ARU Port Select / Call Completion ARU Port Select Message to the LSDB.

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[11] Dunn, T. A. et al., "FG-D Incoming Signaling for Special Applications, Releases 1&2, Technical Plan," June 15, 1994.

[12] J. J. Rielinger, OSPS FSD 01-38, " FG-D Incoming Signaling for Special Applications, Release 2," Issue 1 January 1994.

24. The ARU plays the retrieved listing number to the caller, prompts for call completion, waits 3 seconds and repeats the listing number.

25. If the caller does not accept call completion, i.e., caller enters DTMF "2" or does nothing, the ARU times out and goes on-hook and the call is terminated.

26. If the caller accepts call completion, i.e., caller enters DTMF "1" the ARU will forward this response to the LSDB in the form of a data message.

27. The LSDB sends a **Call Complete Request Message** to the 5ESS® OSPS. The 5ESS® OSPS now switches from the LS application to T&A application.

28. The 5ESS® OSPS LS and the LSDB each release their trunk to the ARU.

29. The 5ESS® OSPS T&A proceeds to complete call as per current capabilities.

    (a) OLS is done using AILS query if necessary.

    (b) T&A routes call to ASN via appropriate 4ESS OAS.

    (c) If answer supervision is returned, 5ESS OSPS generates an AMA billing record for the call completion leg of the call.

    (d) When a calling or called party disconnect is received, the 5ESS® OSPS closes the AMA billing record which includes the call completion module. NOTE: The AMA billing record needs to be uniquely identified so that the call completion charge may be different from LD rates, if necessary.

30. Call flow terminates.

(NOTE: The attendant will depress RECD MSG key after each verbally given (up to seven) listing, and the transfer to ARU key for the final listing requested whether it be 2, 3, 4, 5, 6, 7 or 8.

For Local Number Portability (LNP) impacts on call completion, please refer to the Issue 1.0 document.

5. AMA RECORDING / BILLING (ECB)

The terminating 5ESS/OSPS will generate all billable AMA recording. One or more AMA records for DA requests and, possibly one AMA record for the Call Completion portion will be generated.

5.1 Recording Impacts

5.1.1 AMA Recording Option 1

For this option, it is assumed that only Local DA listings are permitted for all jurisdictions or areas regulated by some PUC. With this option, there will be no additional AMA recording development needed at the 5ESS/OSPS. The DA AMA record will look very similar to the 1+900-555-1212 DA AMA record but with the Terminating NPA and Terminating Number fields set to the appropriate routing number for '411' calls ('719-030-XXXX' format).

Each DA AMA record will represent 1 or 2 requests for DA listings. The billing system will bill the caller for each DA AMA record processed. The bill will show each '411' call.

5.1.2 AMA Recording Option 2

This option permits both Local DA and LD DA listing requests but bills the requests equally. There should be no AMA recording or billing differences between this option and option 1 noted above. The only difference is the permission to give both Local DA and LD DA listings by the Volt Delta Resources.

Each DA AMA record will represent 1 or 2 requests for Local and/or LD DA listings. The DA AMA record will look very similar to the 1+900-555-1212 DA AMA record but with the Terminating NPA and Terminating Number fields set to the appropriate routing number for '411' calls ('719-030-XXXX' format). The billing system will bill the caller for each DA AMA record processed. The bill will not be able to distinguish between Local DA and LD DA requests.

Each DA AMA record will represent 1 or 2 requests for DA listings. The billing system will bill the caller for each DA AMA record processed. The bill will show each '411' call.

5.1.3 AMA Recording Option 3

Option 3 permits the same requests as Option 2 above but the billing system will rate the 2 types of DA requests differently. This option requires development of the CPDL messaging between Volt Delta Resources and the 5ESS/OSPS, the 5ESS/OSPS AMA handling, RICS and the remaining billing system.

The 5ESS/OSPS will receive CPDL messages from the Volt Delta Resources and generate 1 AMA record for each type of DA request made.

Since there could be 2 types of DA requests possible (local DA and LD DA) per call, there could be 2 DA AMA records for a single '411' DA call. Each of these DA AMA records would have appended an AMA module that contains the type of request (either local or LD) and the count of requests made for each type. If a caller made 1 or more requests only for local DA, only 1 DA AMA record would be created. If a caller made 1 or more requests only for LD DA, only 1 DA AMA record would be created. For a mixture of local and LD DA requests, there will be 2 DA AMA records created.

The 5ESS/OSPS will receive CPDL messages containing the types of requests (Local or LD) made and the count of each type of request made. Each DA AMA created by the 5ESS/OSPS will contain an AMA Module (module code to be determined) that will identify which type of DA request (either local or DA) was made. The DA AMA module will also contain the count of requests made.

5.1.4 Recording Option to be Developed

Since the above 3 options are to be determined by local PUC decisions, Option 3 will have to be developed to handle all Local DA AMA recording. If the PUC decides that Option 1 will be permitted in a particular state, Option 3 AMA recording will generate one DA AMA record with an AMA Module containing the type of request (Local DA) and the number of requests made. Similarly, if the PUC decides that Option 2 will be permitted in a particular state, Option 3 AMA recording will generate 1 or 2 AMA records with the appropriate AMA Modules appended to indicate the types of requests (Local DA or LD DA) and the respective counts of such requests.

The following are major AMA record values to identify a Sent Paid DA AMA record. This AMA record will be generated by the 5ESS/OSPS for each type of DA request made by the caller. If the caller requests both Local DA and LD DA information, 2 such AMA records will be generated with the appropriate AMA Module (described below) appended.

AMA Table Description	Value
Structure Code	1200

Call Code	033
Answer Indicator	0 = Answered
Elapsed Time	0
Terminating NPA/Number	719-033-XXXX, where XXXX is unique to '411' DA calls

The following is the layout of the suggested AMA Module that will be appended to the above AMA record to identify the type of DA requests (either Local or LD) and the number of requests made for each type of DA request.

AMA Table Description	AMA Number	Table Value
Module Number	88	??
Type of Request	??	'XXX' = Local DA, 'YYY' = LD DA
Number of Requests	??	001 thru 999

The values '018' and '019' for 'XXX' and 'YYY', respectively, are currently being used for the CPDL messaging. These values are subject to change and they have to be agreed to by Bellcore.

5.2 Billing Impacts

5.2.1 Recorded Information Collection System (RICS) Impacts

For Option 3 AMA recording, RICS will see AMA records very similar to the "Directory Assistance at Any Distance" project (1+900-555-1212) but with the Terminating NPA and Terminating Number unique to '411' Local DA. Also, RICS will have to process the AMA Module appended to the AMA record. If a caller requests 1 or more number of Local DA requests, the AMA Module will contain the Type of Request value set to 'XXX' with the Number of Requests set to the count of these requests. If the same caller requests 1 or more number of LD DA requests, the AMA Module will contain the Type of Request value set to 'YYY' with the Number of Requests set to the count of these requests.

5.2.2 Message Processing System (MPS) Impacts

5.2.2.1 MPS Rating of Options 1 and 2 EMI Records

MPS will be receiving EMI records from RICS as it does today. Since there will be no field in the EMI record to denote Local DA or LD DA requests, MPS will assume each EMI record is a single '411' DA request and rate the EMI record as such. MPS will assume 1 EMI record per '411' call.

5.2.2.2 MPS Rating of Option 3 EMI Records

MPS will be receiving the EMI records from RICS and rate them. The EMI record will contain an indicator identifying the type of request and a count of he number of such requests. One or 2 EMI records can be expected for a single '411' call. MPS will rate the Local DA requests differently from the LD DA calls. Note that if Option 3 AMA Recording is used for either Option 1 or Option 2, MPS will still be able to handle rating of the EMI records.

5.2.3 Local Billing System Impacts

For Options 1 and 2, the billing system will put each call on a separate line with some label indicating these lines are for '411' calls.

For Option 3, the billing system will put each call on 1 or 2 lines depending on whether the '411' call resulted in either only Local DA requests, only LD DA requests or a combination of types of requests. Each line on the bill will indicate the type of request made, the number of requests made and the cost for the requests.

5.3 5ESS/OSPS handling of the CPDL Module 856[13]

- The software initially sets the value for AMA Table 283 to '000' - this is invalid as the values should range from '001' through '999.'
- When the 5ESS/OSPS receives the CPDL Module 856, it takes the value in the module and populates AMA Table 283 of AMA Module 321.
- The 5ESS/OSPS does not evaluate the value used from the CPDL Module 856. Its value ranges from '001' through '999.'
- If the 5ESS/OSPS does not receive the CPDL Module 856 and the caller wants call completion, there will be no value to put into AMA Table 283, AMA Module 321. The 5ESS/OSPS will mark the AMA as invalid (it puts the value 'AB' in the Hexadecimal Identifier of the AMA record). In short, it looks like no 5ESS/OSPS development is needed to handle the AMA Module 321, AMA Table 283 value that the Local DA service has requested for Call Completion.

5.4 Billing Impacts

There are several areas in which billing is impacted and is discussed in the following sections.

5.4.1 Recorded Information Collection System Impacts

The AMA records for local DA (always Sent Paid) and LD Sent Paid (made via 1+900-555-1212) will contain AMA module 321. It is not possible for the Recorded Information Collection System (RICS) to distinguish one AMA record from the other. RICS would create the same EMI record for both cases. By assigning different values as the Service ID for local DA and LD Sent Paid in the AMA Module 321, it is possible to distinguish one AMA record from the other. This solution makes it possible for pricing local DA Call Completion at a rate different from that of LD DA Call Completion.

[13] Conversation with T. O'Malley 2/23/96.

5.4.2 Message Processing System Impacts

The Message Processing System (MPS) will rate each local DA EMI record uniformly. All local DA calls that result in Call Completion will be rated as per tariff.

5.4.3 Local Billing System Impacts

5.4.3.1 CCS Billing

- The Local Billing System (LBS) will have to accumulate the local DA calls for each customer. LBS will allow a specific number of free local DA calls per customer per billing period.
- The bill image will show the total number of chargeable local DA calls (the number of local DA calls above the allotted number of free local DA calls).

5.4.3.2 BCS Billing (MSH)

Same as stated in Local DA Technical Plan Issue 1.0 document.

6. NATIONAL DIRECTORY ASSISTANCE PLATFORM

6.1 Required Platform Capabilities (LCM)

The following NDA platform capabilities[14] are required to provide local directory assistance using the 5ESS® OSPS based architecture:

1. The Platform shall receive the local DA traffic via the same trunk group as the 900-555-1212 traffic. Implementation, however, shall allow for potential of routing the local DA traffic via a different trunk group, if the need arises in the future.

2. The Platform shall be able to identify incoming local Directory Assistance (DA) traffic and distinguish them from the existing incoming platform traffic. Local DA traffic is identified by a unique routing number to be assigned for local DA traffic. The routing number will share the same first six digits (currently 719-030) with the existing 900-555-1212 traffic.

3. The Platform shall be capable of translating a routing number delivered to the platform into a 900-NXX-XXXX number (900-NXX-XXXX refers to the unique 900-number to be assigned to local DA). Although one routing number is anticipated at this time, the implementation should provide the flexibility for additional routing number and 900-NXX-XXXX pair(s) for local DA, if the need arises. (The estimated maximum number of routing numbers for local DA service is 10. Only one is anticipated at this time).

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[14] (a) L. C. Mui, "Excell Requirements for Local DA", email to J. Tessier, 2/2/96.
(b) J. Tessier to Excell Agent Services, "Excell DA Platform Change Request #JT-001", 2/2/96.
(c) E. C. Berberich, "Requirements for CPDL link to 5ESS for 411 Service", October 30, 1995.
(d) C. Apple, J. Tessier, "Excell DA Platform Change Request # CWA-003", December 13, 1995.

4. For a specific routing number, the Platform shall be capable of displaying a character string XXXX to indicate local DA service in the existing field for Service Type (currently used to display existing service types) on the agent screen. The specific value of the character string XXXX is populated on a call-by call basis.

5. The value of the character string XXXX shall be populated for each local DA call as identified by the unique local DA routing number.

6. For the 900-555-1212 service, the called number 900-555-1212 is displayed on the screen. The local DA called number (i.e., 900-NXX-XXXX) shall also be displayed in the same display field on the screen.

7. The Platform will receive and display the customer's ANI (same as for the 900-555-1212 service).

8. For the local DA traffic, the Platform shall be able to use the NPA in the customer's ANI to determine and display the state and default locale information. The DA agent shall not prompt caller for state information.

9. For local DA calls, the Platform shall be able to determine by comparing the NPA-NXX of the calling number (customer's ANI) and the City/State combination of the requested listing to determine if the customer request is for a long distance or local (intraLATA toll and intraLATA local) directory listing. This information can be derived from the LERG (Local Exchange Routing Guide) or equivalent information source.

10. An option, selectable on a state-by-state basis, shall be provided to specify if the Excell Directory Assistance platform is required to determine if the customer requested listing is for a long-distance or local (intraLATA toll or intraLATA local) listing. For clarity, this option will be referred to as the LDA-LISTING-TYPE-DETERMINATION option (default is YES). If the LDA-LISTING-TYPE-DETERMINATION option is set to YES, the Platform shall determine if the requested listing is for a long distance or local (intraLATA toll and intraLATA local) directory listing.

11. An option, selectable on a state-by-state basis, shall be provided to specify if the Platform should honor a listing request if the customer requested listing is for a long-distance listing. For clarity, this option will be referred to as the LDA-LD-PERMITTED option (default is NO). If LDA-LD-PERMITTED option is set to YES, honor either local (intraLATA toll or intraLATA local) or long-distance request. Otherwise, honor only local requests. If the LDA-LS-PERMITTED option is set to NO), an LD-CALL indicator set to "N" (NO) shall be displayed on the screen if the call is a long distance listing. When this indicator is displayed, Methods and Procedures (M&Ps) shall be defined for agents to turn down the customer listing request.

12. The Listing Access Complete Data Message (EIS to PSM) must be populated with the LISTING SERVICES MODULE [855C] (refer to RECORDING section for details). NOTE: The LISTING ACCESS COMPLETE Data Message is sent to the 5ESS/OSPS after the Agent presses the "Record Ticket" or the call is released. For local DA calls, the Listing Services Call Completion Module shall be populated and sent to the 5ESS/OSPS by the Platform. The 5ESS/OSPS shall translate the Module Code value "856C" into "321C" to properly identify the Call Completion AMA Module.

6.2 Agent Platform and Database Architecture (JT)

6.2.1 Call Servicing Center (CSC)

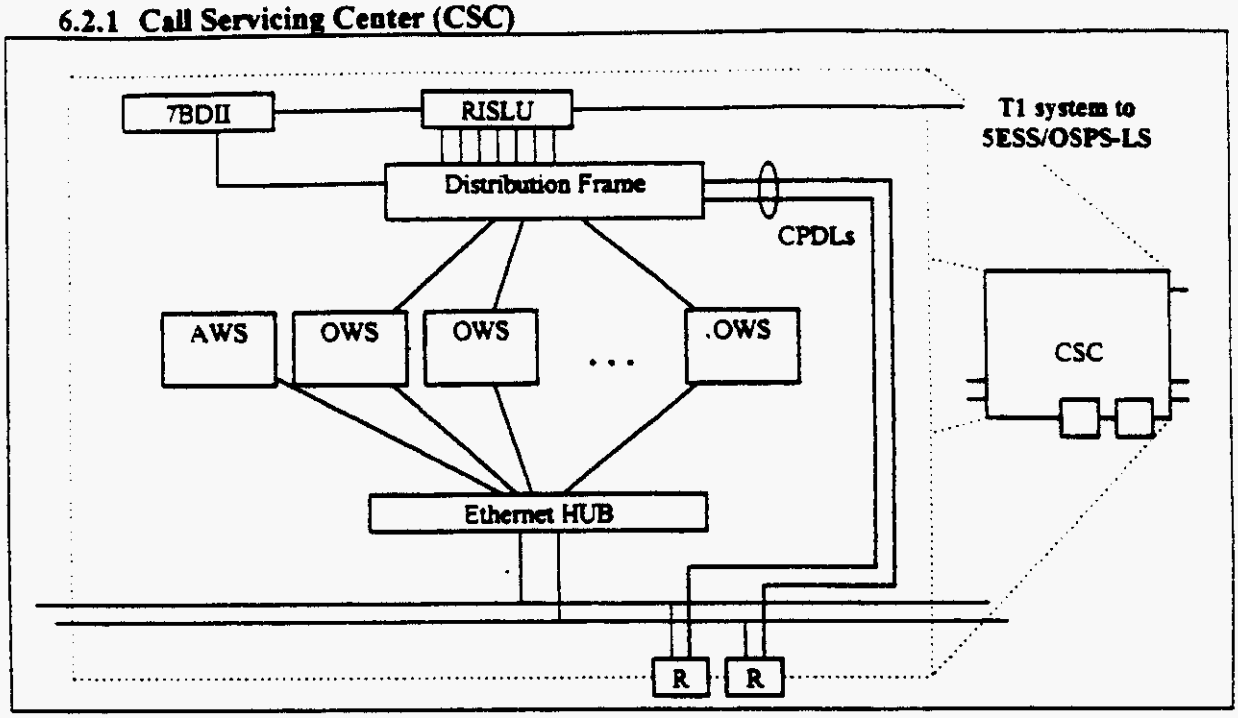

Figure 4: Structure of a CSC

The CSC is where the Directory Assistance agents are located. The Directory Assistance call terminates within the CSC. The CSC uses a data connection with a DOC to obtain listings and service the call.

6.2.1.1 Functional description of a CSC

A call arrives on the T1 carrier system from the 5ESS/OSPS-LS. The T1 carrier system enters the RISLU where the individual calls are isolated. The Distribution Frame routes each individual call to an OWS, while the 7BDII handles the CPDLs.

Each OWS services one call at a time.

There are two routers to provide reliability. If one fails, the other can be used instead.

6.2.1.2 Components of a CSC

T1 System	This system is a specially provisioned ISDN PRI interface with 23 B channels and 4 D channels (written 23B+4D vs. 23B+D for regular PRI). All these channels are multiplexed together on the T1 carrier at the DS1 level (24 x 64 kbps). Each B channel carries a voice signal at 64 kbps. Each D channel carries a data signal at 16 kbps and is used for control messages.
RISLU	Demultiplexes the individual B channels from the T1 carrier system.
7BDU	Demultiplexes the individual D channels from the T1 carrier system. Each channel is also brought down from a 16 kbps D channel to a 9.6 kbps CPDL channel for call processing messages.
Distribution Frame	Routes the B channels to the OWSs and the CPDLs to the routers.
OWS	Operator WorkStation. Used by the agent to service a call.
AWS	Administration WorkStation. Used by the vendor to manage the CSC.
Ethernet HUB	Provides connectivity within the CSC, and allows the workstations to access the DOC through the routers.
Router (R)	Connects the CSC to one or more DOCs.
Site LAN	Interconnects part of the components on the site. With this LAN, it is possible to add new equipment to the site and to connect them with the other components already in place.

6.2.2 Data Operations Center (DOC)

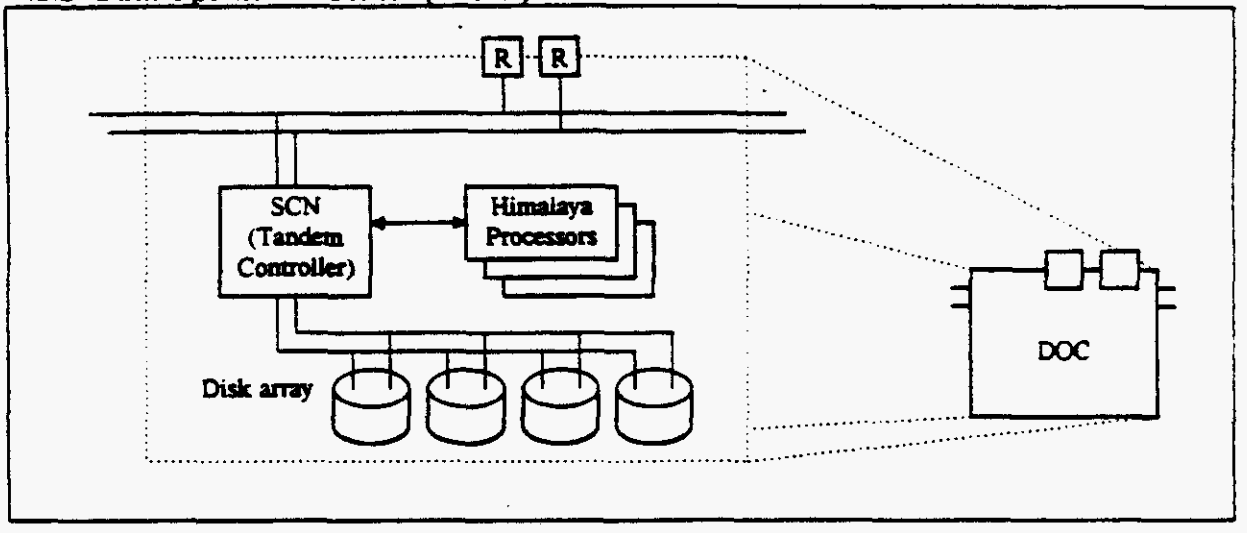

Figure 5: Structure of a DOC

The DOC is where the LSDB is located. The CPDLs terminate within the LSDB, as well as the data channels for the OWSs. The DOC distributes the LSDB among multiple disks, including a mirror image of the data, so that failure of a single disk does not mean that data becomes unreachable.

6.2.2.1 Functional description of a DOC

A search request comes to the SCN for processing. The SCN dispatches it to an available Himalaya Processor, which then searches the LSDB in parallel with other Himalaya Processors. The resulting matches are sent back to the originating OWS. The SCN also controls the VFNs for the playing of announcements and listings. There are two routers to provide reliability. If one fails, the other can be used instead.

6.2.2.2 Components of a CSC

SCN	Coordinates and manages operations on the listings DB.
Himalaya Processors	Performs searches in the listings DB.
Disk array	Contains the listings DB. Each entry is mirrored on a separate disk to prevent failures in one disk from making information unavailable.
Router (R)	Connects the DOC to one or more CSCs and other DOCs.
Site LAN	Interconnects part of the components on the site. With this LAN, it is possible to add new equipment to the site and to connect them with the other components already in place.

6.2.3 Dual-DOC Architecture

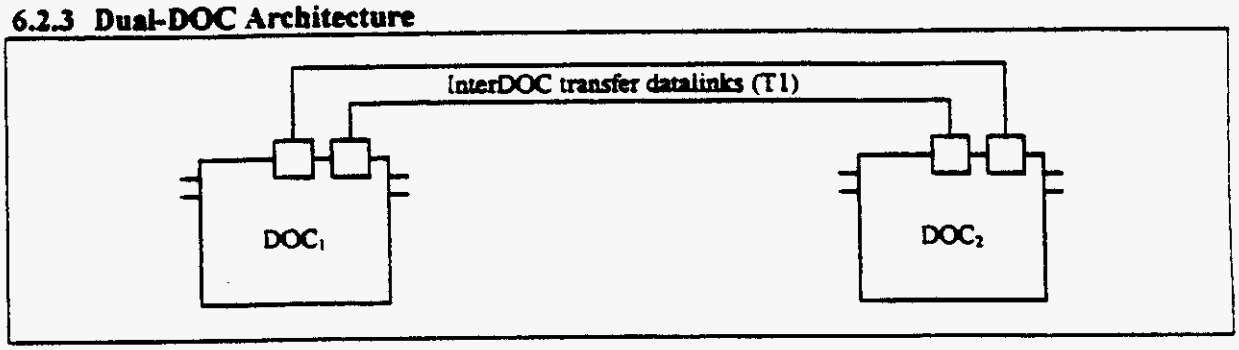

Figure 6: Dual-DOC Architecture

Each DOC contains a complete replica of the entire LSDB. In case DOC_1 fails, DOC_2 has to be able to handle DOC_1's traffic in addition to its own, and *vice versa*. The InterDOC transfer datalinks are used to divert traffic from one DOC to the other, as well as to keep them synchronized.

6.2.4 CSC-DOC Interconnections

In addition to CSCs and DOCs, the vendor site can also contain voice feature nodes (VFN), which are a type of auto-response units (ARU). These VFNs are under the control of the SCNs in the DOCs, and a message pathway must therefore exist between the VFNs and the SCNs.

VFNs can be located either:

1. at the agent DOC site
2. at the 5ESS/OSPS-LS
3. at the agent CSC site

These three cases are illustrated below in examples that include three (3) CSCs and a Dual-DOC. This by no means implies limitations on the number of CSCs and/or DOCs and are only used for illustrative purposes. The current configuration being used is the first one, with the VFNs located at the DOC site. Further study is required to determine which solution is most desireable in the long term, taking into account the following factors:

- availability
- reliability
- operational mode transition smoothness
- performance degradation under successive component failure
- life cycle costs
- testability
- deployment speed

6.2.5 Configuration with VFNs at the agent DOC site

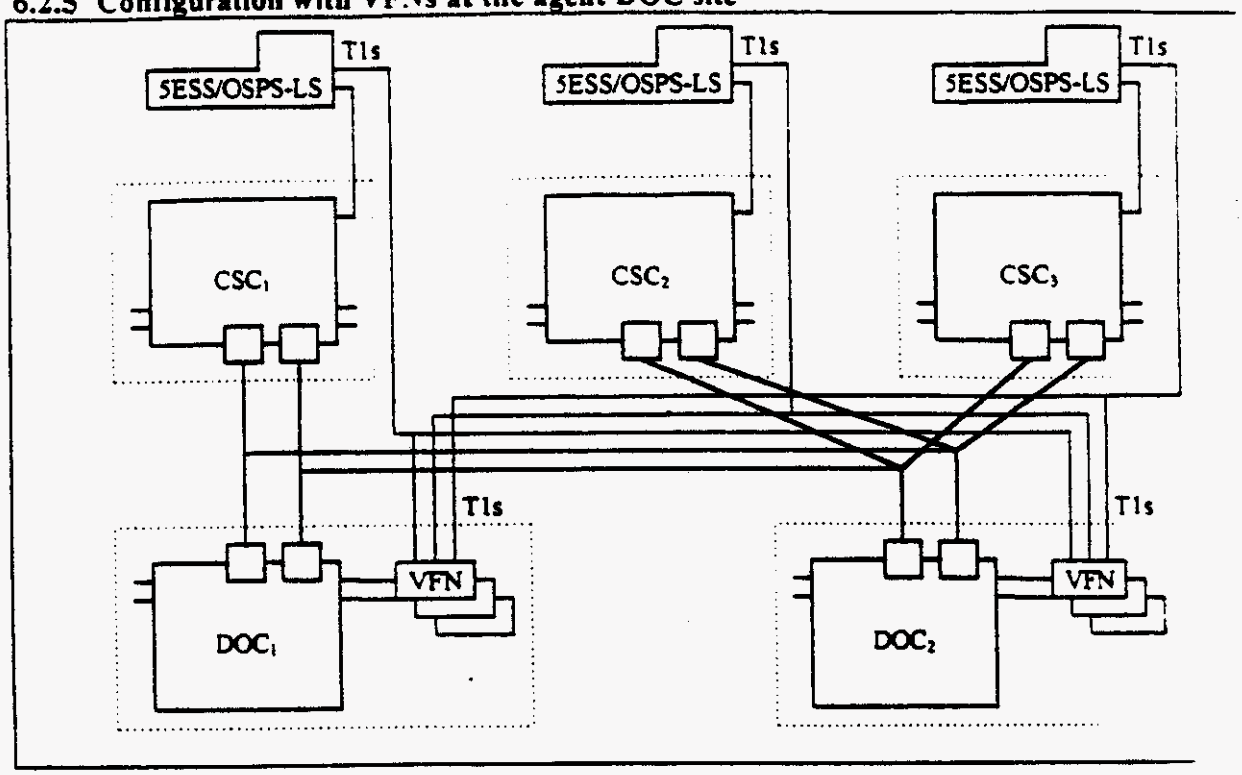

Figure 7: VFNs at DOC site

The VFNs in each DOC must have T1 links to each 5ESS/OSPS-LS that uses a CSC. Since both DOCs serve all CSCs, so must the CFN pools. The doted squares delimits the various sites and what each contains. This is the current configuration being used by Excell Agent Services.

6.2.6 Configuration with VFNs at the agent CSC site

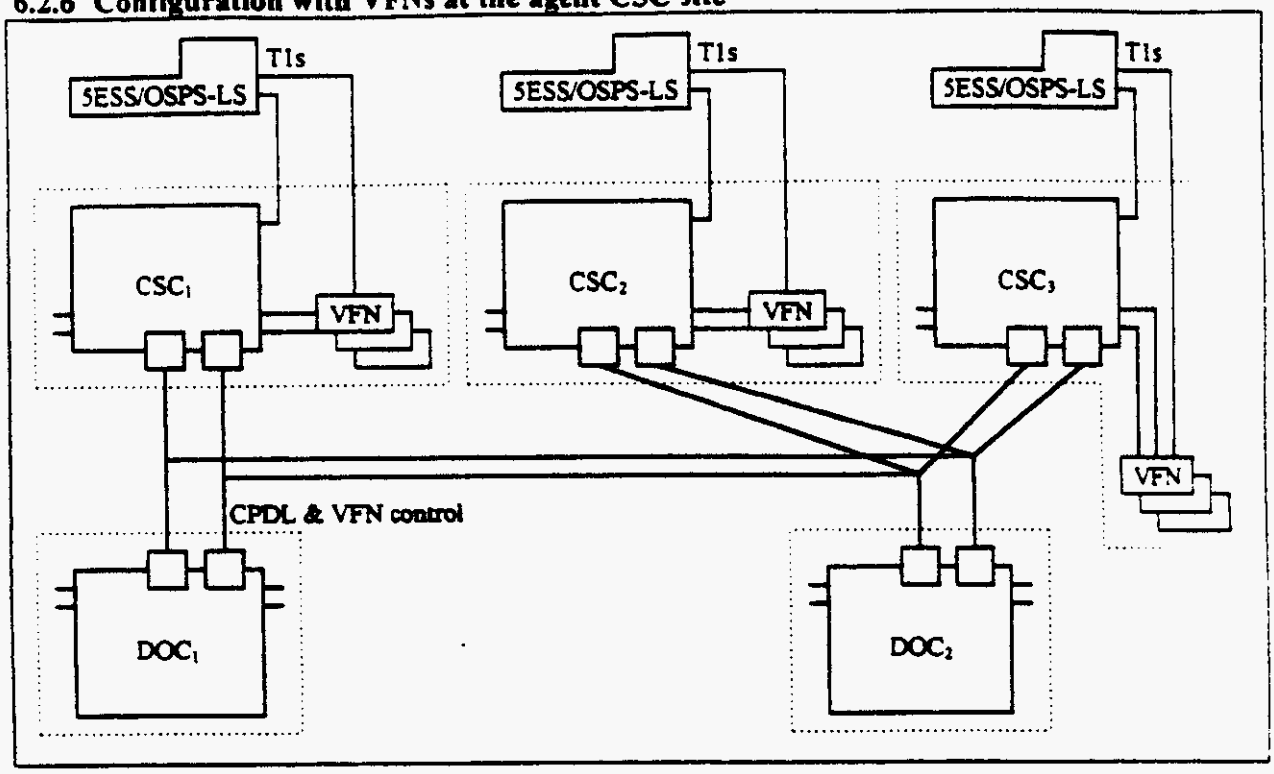

Figure 8: VFNs at CSC site

In this configuration, each VFN pool is associated with only one 5ESS/OSPS-LS, the one associated with its CSC's site. But in this configuration, greater bandwidth is required by the routers and the InterDOC transfer datalinks as they must also carry VFN control messages in addition to CPDL and listing traffic.

6.2.7 Configuration with VFNs at the 5ESS/OSPS-LS site

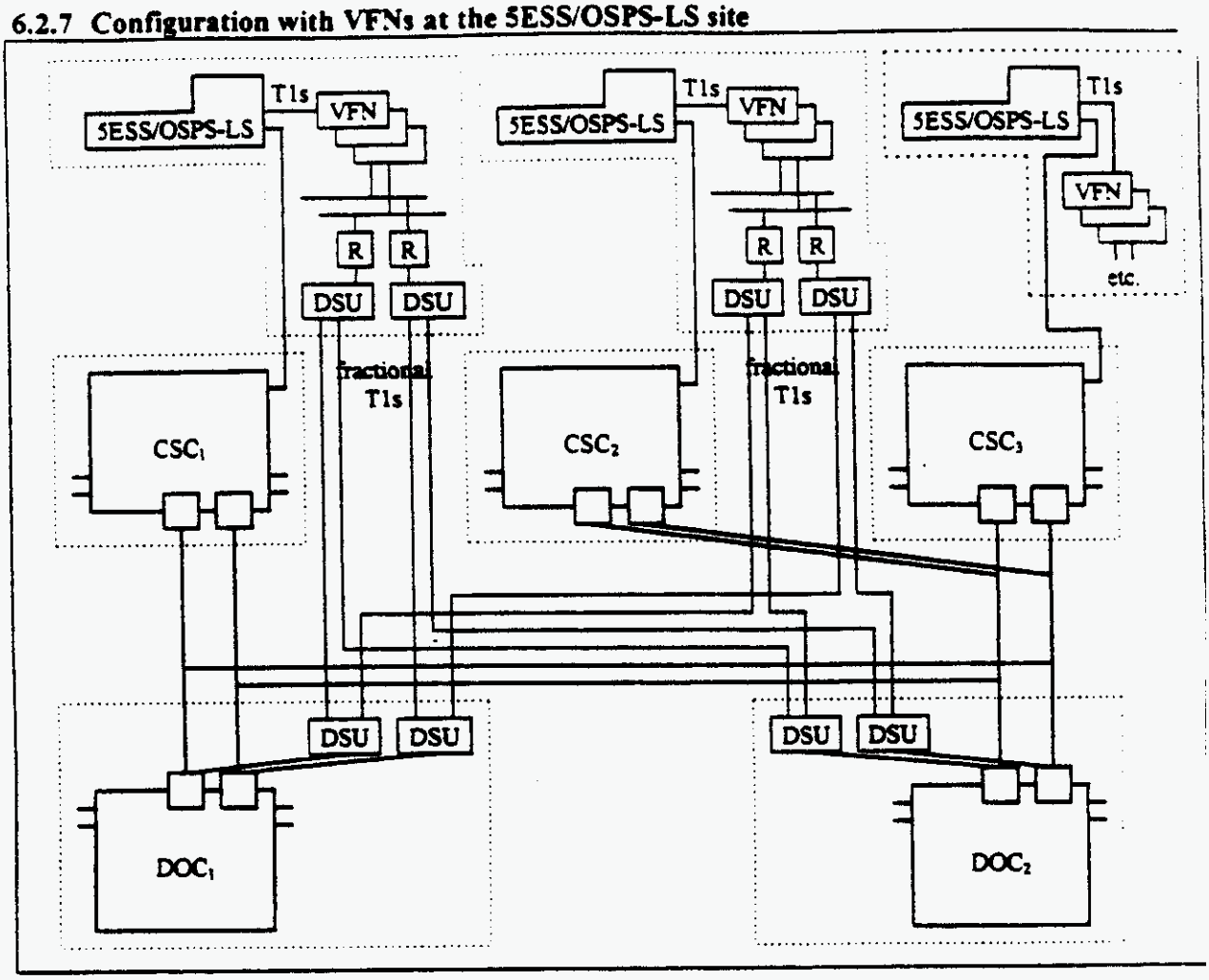

Figure 9: VFNs at 5ESS/OSPS-LS site

6.3 Agent Platform / 5ESS OSPS Interface Specifications (JT)

6.3.1 Description of Current CPDL

The following descriptions are taken from version 4.0 of the 5ESS SWITCH AND 5ESS-2000 SWITCH - OPERATOR SERVICES POSITION SYSTEM - CALL PROCESSING DATA LINK - INTERFACE SPECIFICATION, dated December 1995. They have been modified to reflect the way they are implemented in the platform provided by Excell Agent Services.

The first tables gives a brief description of the CPDL message types used in local Directory Assistance. It also indicates which message types can contain data modules, and which cannot. It finally tells whether the OSPS or the LSDB originates a given message type. OSPS, here, is taken to mean the 5ESS/OSPS-LS responsible

for the Directory Assistance service. The LSDB is the vendor platform that provides the Directory Assistance service, including the Directory Assistance agent.

The second table is a reproduction of table 4-21 from the source document mentioned above. It indicates, in a context of AMA recording, which data modules can be used in which message type.

The tables are followed by a number of figures that show the flow of control between various components during a Directory Assistance call. The following notation is used:

- Time flows vertically from top to bottom. All time is relative and is used solely to illustrate sequencing.
- Each participant is illustrated by a vertical line.
- A single line denotes no activity at a given time.
- A split line (or box) denotes some activity at a given time.
- A labeled arrow indicates a flow of information, in the direction of the arrow, between two processes.
- CPDL messages are written in SMALL CAPITALS.
- Agent key presses are written in SMALL CAPITALS in between square brackets ('[' and ']'). Eg. [ENTER]
- Text written in the Times font is indicative only.

The figures illustrate the following cases:

1. Three listing with two verbal releases and one release to an ARU
2. One listing with verbal release due to ARU failure
3. One listing with release to an ARU and Call Completion

Each figure is followed by a short description of the various steps that take place in that example. Each step is numbered according to the figure to which it relates. For example, step 2-5 is the fifth step of Figure 2.

6.4 Summary tables

CPDL provides the following messages. Note that the complete CPDL specification include other messages that are not being shown here.

Name	Description	DM	Sender
ACTION CONFIRMED	Acknowledges a previous LISTING ACCESS COMPLETE message.		OSPS
ACTION DENIED	Signified to the LSDB that a previously requested action cannot be completed. It can be used in response to TRANSFER REQUEST, LISTING ACCESS COMPLETE or REQUEST POSITION RELEASE messages.		OSPS
ARU PORT SELECT	In response to a TRANSFER REQUEST that does not request call completion, or if call completion checks fail on on a TRANSFER REQUEST that does request call completion.		OSPS
CALL COMPLETION ARU PORT SELECT	In response to a TRANSFER REQUEST that does request call completion.		OSPS
COMPLETE CALL	Used to request call completion to a number that was specified in a previous TRANSFER REQUEST message. See tables 4-21 and 4-22 for permitted data modules.	✓	LSDB
DISCONNECT	Used to tell the LSDB that its participation in the call is terminated (eg. user hangs up).		OSPS
LISTING ACCESS COMPLETE	Indicates that a listing was verbally released to the caller. See tables 4-21 and 4-22 for permitted data modules.	✓	LSDB
POSITION SEIZURE	Indicates that an operator is handling a call. Tells the LSDB to create a record for the call.		OSPS
REQUEST POSITION RELEASE	Used when the operator requests release of the call through the "request position release" (RPR) key on the KDT.		LSDB
TRANSFER REQUEST	Used to transfer the call to another destination (eg. ARU). See tables 4-21 and 4-22 for permitted data modules.	✓	LSDB

The following table is a copy of table 4-21, dealing with the data modules for AMA recording.

Module Name	ID	LISTING ACCESS COMPLETE	TRANSFER REQUEST	COMPLETE CALL
Call completion class of charge	804c	*	*	x
FGD carrier ID	811c	autocollect	autocollect	x
Last	000c	✓	✓	✓
Listed/referral number	801c	*	*	x
Listing service	855c	*	*	x
Listing service call completion	856c	x	x	✓

✓ ... always * ... as required x ... never

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6.5 Example figures

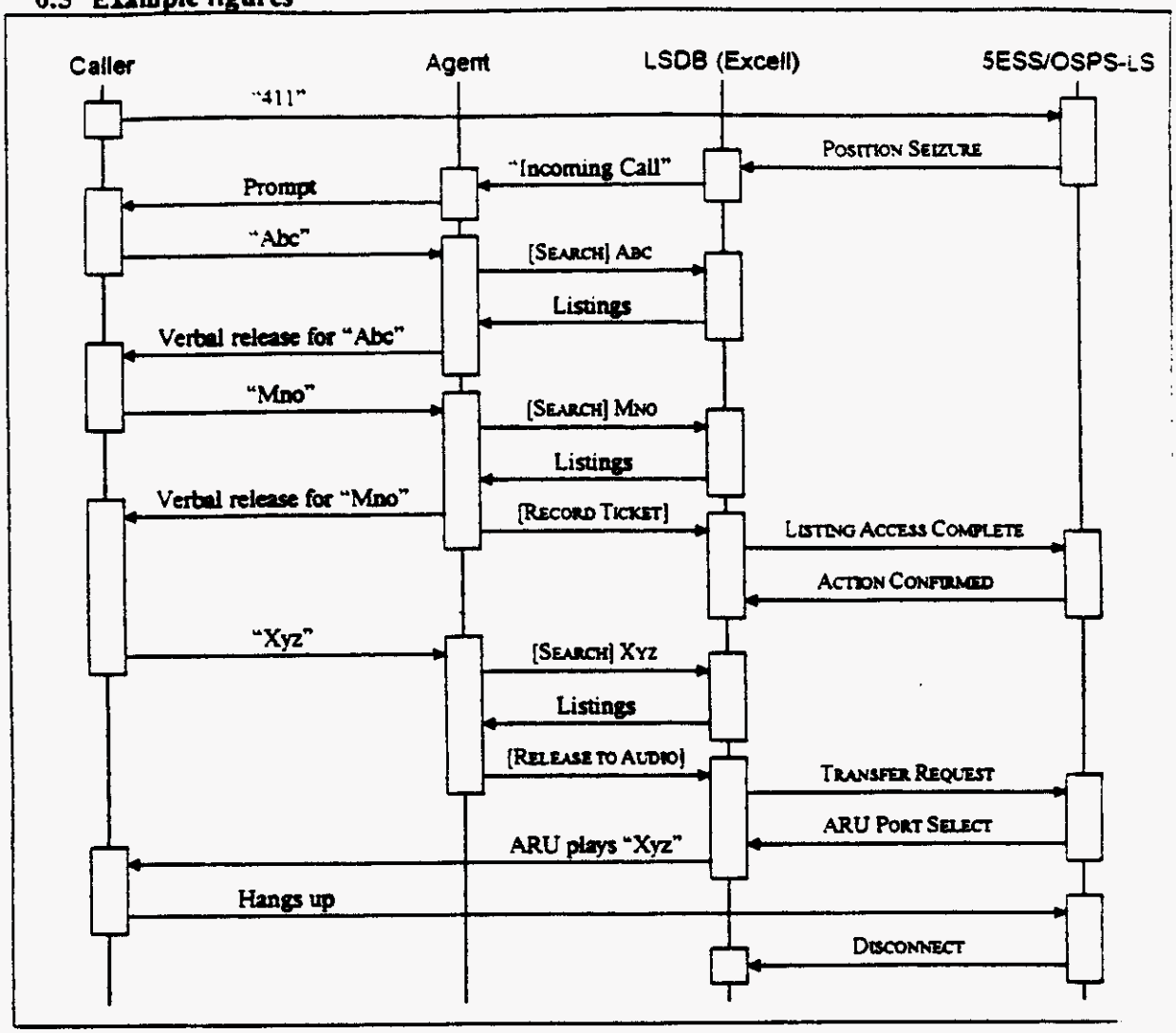

Figure 10: Three listing with two verbal releases and one release to an ARU

Notes for Figure 10: Three listing with two verbal releases and one release to an ARU

1-1. The caller gets connected to the 5ESS/OSPS-LS by dialing an access number (eg. "411").

1-2. The 5ESS/OSPS-LS sends a Position Seizure CDPL message to the LSDB.

1-3. The LSDB prints the string "Incoming Call" (or equivalent) on the agent's screen.

1-4. The agent prompts the caller for the first search criteria to be used.

1-5. The agent presses the appropriate [Search] key on his/her keyboard to retrieve listings from the LSDB.

1-6. The agent selects the appropriate listing and releases it verbally key. This operation occurs for every odd release that is not the last release for the call.

1-7. The agent prompts the caller for the second search criteria to be used.

1-8. The agent presses the appropriate [Search] key on his/her keyboard to retrieve listings from the LSDB.

1-9. The agent selects the appropriate listing, releases it verbally, and presses the [Record Ticket] key. This operation occurs for every even release that is not the last release for the call.

1-10. The LSDB sends a Listing Access Complete CPDL message to be sent back to the 5ESS/OSPS-LS. indicating information to be added to the AMA record for the call. This message contains the Listing services (855c) data module with the information for the AMA records.

1-11. The 5ESS/OSPS-LS acknowledges with an Action Confirmed CPDL.

1-12. The agent prompts the caller for the third search criteria to be used.

1-13. The agent presses the appropriate [Search] key on his/her keyboard to retrieve listings from the LSDB.

1-14. The agent then selects the appropriate listing and presses the [Release to Audio] key key. This operation occurs only for the last release, regardless of whether it is odd or even.

1-15. The LSDB sends a Transfer Request CPDL message to be sent back to the 5ESS/OSPS-LS, requesting that the call be transferred to an ARU. The message identifies a group of ARUs, not necessarily a particular ARU. This message contains the Listing services (855c) data module with the information for the AMA records.

1-16. The 5ESS/OSPS-LS selects an ARU and acknowledges with an ARU Port Select CPDL message, at which point the agent is released from the call.

1-17. The LSDB instructs the ARU to play the announcement.

1-18. When the caller hangs up (by going on-hook), the 5ESS/OSPS-LS sends a Disconnect CPDL message to the LSDB to indicate that the call processing is over.

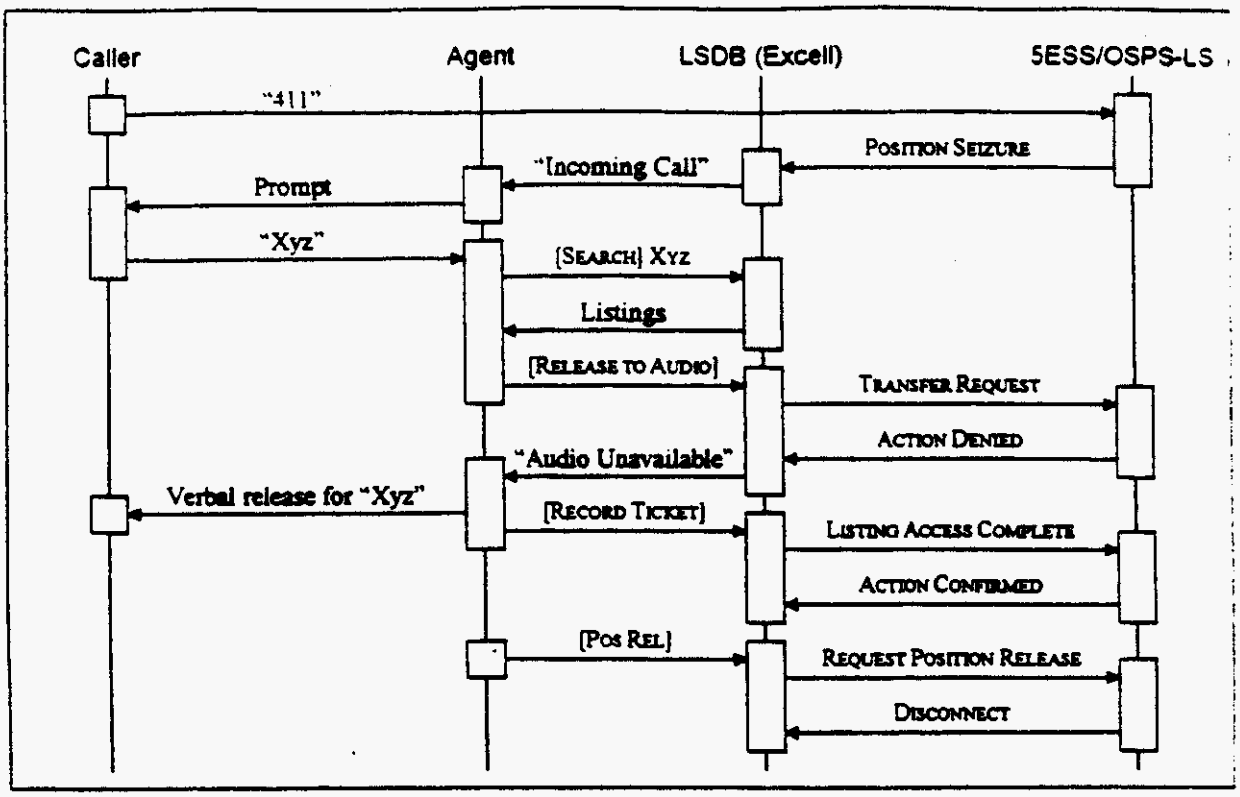

Figure 11: One listing with verbal release due to ARU failure

Notes for Figure 11: One listing with verbal release due to ARU failure

2-1. The caller gets connected to the 5ESS/OSPS-LS by dialing an access number (eg. "411").

2-2. The 5ESS/OSPS-LS sends a POSITION SEIZURE CDPL message to the LSDB.

2-3. The LSDB prints the string "Incoming Call" (or equivalent) on the agent's screen.

2-4. The agent prompts the caller for the search criteria to be used.

2-5. The agent presses the appropriate [SEARCH] key on his/her keyboard to retrieve listings from the LSDB.

2-6. The agent then selects the appropriate listing and presses the [RELEASE TO AUDIO] key.

2-7. The LSDB sends a TRANSFER REQUEST CPDL message to be sent back to the 5ESS/OSPS-LS, requesting that the call be transferred to an ARU. The message identifies a group of ARUs, not necessarily a particular ARU. This message contains the Listing services (855c) data module with the information for the AMA records.

2-8. The 5ESS/OSPS-LS responds with an ACTION DENIED CPDL message, indicating that no ARU is available. It discards the TRANSFER REQUEST CPDL message, including the Listing services (855c) data module that was contained in it.

2-9. The LSDB prints the string "Audio Unavailable" (or equivalent) on the agent's screen.

2-10. The agent then selects the appropriate listing, releases it verbally, and presses the [RECORD TICKET] key.

2-11. The LSDB sends a LISTING ACCESS COMPLETE CPDL message to be sent back to the 5ESS/OSPS-LS, indicating information to be added to the AMA record for the call. This message contains the Listing services (855c) data module with the information for the AMA records.

2-12. The 5ESS/OSPS-LS acknowledges with an ACTION CONFIRMED CPDL.

2-13. The agent presses the [POS REL] key on his/her keyboard to terminate the call.

2-14. The LSDB sends a REQUEST POSITION RELEASE CPDL message to be sent back to the 5ESS/OSPS-LS, requesting that the call be terminated.

2-15. The 5ESS/OSPS-LS sends a DISCONNECT CPDL message to the LSDB to indicate that the call processing is over.

6.6 Handling of call completion

Call completion is handled by the following steps, some of which have already been described as part of Figure through Figure .

1. The 5ESS/OSPS-LS sends a Position Seizure CPDL message to the LSDB to indicate that a call has arrived.

2. The agent handles the call and retrieves the desired listing. The agent then presses the [RELEASE TO AUDIO] key to transfer the call to an ARU.

3. The LSDB sends a TRANSFER REQUEST CPDL message to the 5ESS/OSPS-LS. This message has two special fields that help the 5ESS/OSPS-LS in handling the remainder of the call:

Field	Description
destination ID	This field indicates where the call is to be transferred. It should indicate a group of ARUs for which call completion screening is needed.
alternate destination ID	This field indicates an alternate destination for the call, should the one provided through the destination ID field prove unusable. It should indicate a group of ARUs that will not prompt for call completion.

4. Call completion is performed, and the next action depends on the result of this screening.

   a) If the screening passes, an available ARU is selected from the group designated by the "destination ID" field and the 5ESS/OSPS-LS sends a CALL COMPLETION ARU PORT SELECT CPDL message back to the LSDB, indicating which specific ARU was selected.

   b) If the screening fails, an available ARU is selected from the group designated by the "alternate destination ID" field and the 5ESS/OSPS-LS sends a ARU PORT SELECT CPDL message back to the LSDB, indicating which specific ARU was selected.

   In either case, if no ARU is available, the 5ESS/OSPS-LS discards the TRANSFER REQUEST CPDL message and sends back an ACTION DENIED CPDL message to the LSDB. The remainder of the call is then handled as was shown in Figure .

5. The LSDB then plays the listing, using the ARU designated by the response it got to the TRANSFER REQUEST CPDL message.

   a) If the LSDB received a CALL COMPLETION ARU PORT SELECTED CPDL message, it then waits to see if the caller will accept call completion.

   b) If the LSDB received an ARU PORT SELECTED CPDL message, the processing stops after the listing as been played.

   The remaining steps apply only if the call completion screening was successful.

6. If the caller refuses call completion, the call terminates here. If he/she accepts the call completion, the LSDB then sends a COMPLETE CALL CPDL message to the 5ESS/OSPS-LS, asking for the caller to be connected with the listed number.

7. The 5ESS/OSPS-LS sends a DISCONNECT CPDL message to the LSDB, terminating its participation on the call.

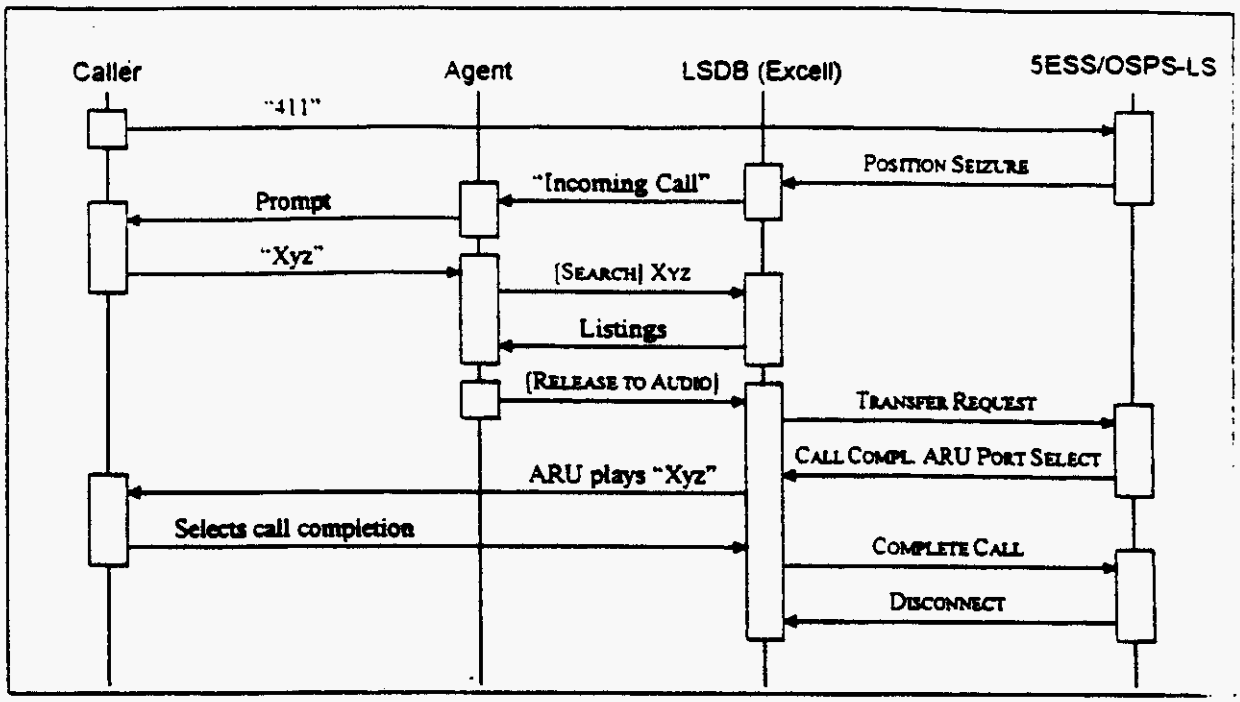

Figure 12: One listing with release to an ARU and Call Completion

Notes for Figure 12: One listing with release to an ARU and Call Completion

3-1. The caller gets connected to the 5ESS/OSPS-LS by dialing an access number (eg. "411").

3-2. The 5ESS/OSPS-LS sends a Position Seizure CDPL message to the LSDB.

3-3. The LSDB prints the string "Incoming Call" (or equivalent) on the agent's screen.

3-4. The agent prompts the caller for the search criteria to be used.

3-5. The agent presses the appropriate [Search] key on his/her keyboard to retrieve listings from the LSDB.

3-6. The agent then selects the appropriate listing and presses the [Release to Audio] key.

3-7. The LSDB sends a Transfer Request CPDL message to be sent back to the 5ESS/OSPS-LS requesting that the call be transferred to an ARU. The message identifies a group of ARUs, not necessarily a particular ARU. This message contains the Listing services (855c) data module with the information for the AMA records.

3-8. The 5ESS/OSPS-LS selects an ARU and acknowledges with a Call Completion ARU Port Select CPDL message, at which point the agent is released from the call. A call completion screening is performed first, and if it fails, the call behaves as described in Figure with an ARU Port Select CPDL message instead of the Call Completion ARU Port Select CPDL message.

3-9. The LSDB instructs the ARU to play the announcement, followed by a prompt for call completion.

3-10. The caller indicates that he/she wants the call to be completed.

3-11. The LSDB sends a Complete Call CPDL message to be sent back to the 5ESS/OSPS-LS, requesting that the call be connected. This message contains the Listing services call completion (856c) data module with the information regarding call completion for the AMA records.

3-12. When the caller is connected to the remote party, the 5ESS/OSPS-LS sends a Disconnect CPDL message to the LSDB to indicate that the call processing is over.

6.7 Proposed modifications

In order to make this service more flexible, we would like to introduce the following modifications. These will require development in the LSDB at the vendor site, as well as some 5ESS/OSPS-LS development to capture the added information properly.

1. The LSDB shall keep track of the type of each request that is being relieved. For each type, a counter shall be maintained that counts the number of requests of this type that have taken place for the current call.
2. When the agent presses either the [RECORD TICKET] or the [POS REL] key, the LSDB shall send the content of each non-null counter to the 5ESS/OSPS-LS. Each counter shall be placed in a Listing service (855c) data module and those modules shall be placed in LISTING ACCESS COMPLETE CPDL messages, as many as it takes to send all the Listing service (855c) data modules.
3. As each LISTING ACCESS COMPLETE CPDL message is acknowledged by the 5ESS/OSPS-LS with an ACTION CONFIRMED CPDL message, the counters corresponding to the Listing service (855c) data modules contained in that CPDL message shall be reset to 0.
4. When the agent presses the [RELEASE TO AUDIO] key, the LSDB shall send the content of each non-null counter to the 5ESS/OSPS-LS. Each counter shall be placed in a Listing service (855c) data module. All but the last one of those modules shall be placed in LISTING ACCESS COMPLETE CPDL messages, as many as it takes to send all but one of the Listing service (855c) data modules. The last Listing service (855c) data module shall be placed in the TRANSFER REQUEST CPDL message resulting from the key press.
5. All other call processing shall remain unchanged.

Call scenarios

With these modifications, it becomes possible to handle the following scenarios:

1. The agent handling a call can press the [RECORD TICKET] key after each single listing that is released. This results in a LISTING ACCESS COMPLETE CPDL message being sent to the 5ESS/OSPS-LS for each individual request. The counter in the Listing service (855c) data module will always have a count of "1". This scenario generates a lot of traffic on the CPDLs, but ensures that the 5ESS/OSPS-LS gets the records as soon as possible. This might be desirable in order to prevent fraudulent use of the directory assistance service.
2. The agent handling a call never presses the [RECORD TICKET] key. The information is gathered for the duration of the call and only passed to the 5ESS/OSPS-LS when the agent presses either the [POS REL] or the [RELEASE TO AUDIO] key. This scenario tries to minimize the CPDL traffic required. A security concern might be raised if the caller hangs up before the agent can press the trigger for information transfer. At that point, the LSDB receives a DISCONNECT CPDL message from the 5ESS/OSPS-LS and gets disconnected. Some recovery mechanism is required for the 5ESS/OSPS-LS to maintain the connection until the LSDB has finished transferring all the data. It is not clear if this capability is in place in today's 5ESS/OSPS-LSs.
3. A combination of the above two scenarios can also be used to balance each's advantages vs. their respective disadvantages.

What happens if the caller asks for two listings, receives the first one verbally, and then hangs up before the operator has hit any CPDL generating trigger? Even though an AMA record has been opened in the 5ESS/OSPS-LS for the call, the 5ESS/OSPS-LS has no way of putting the request type information in that AMA record. In the current situation, this is not a problem since the service is differentiated based on its routing number, and all elements in a given service have the same rating (for billing). But we are now

introducing variations in that rating, and we must ensure that the information makes its way from the LSDB to the 5ESS/OSPS-LS.

The first two scenarios are illustrated in the following two figures. The steps are the same as the ones in Figure , so we will not duplicate them.

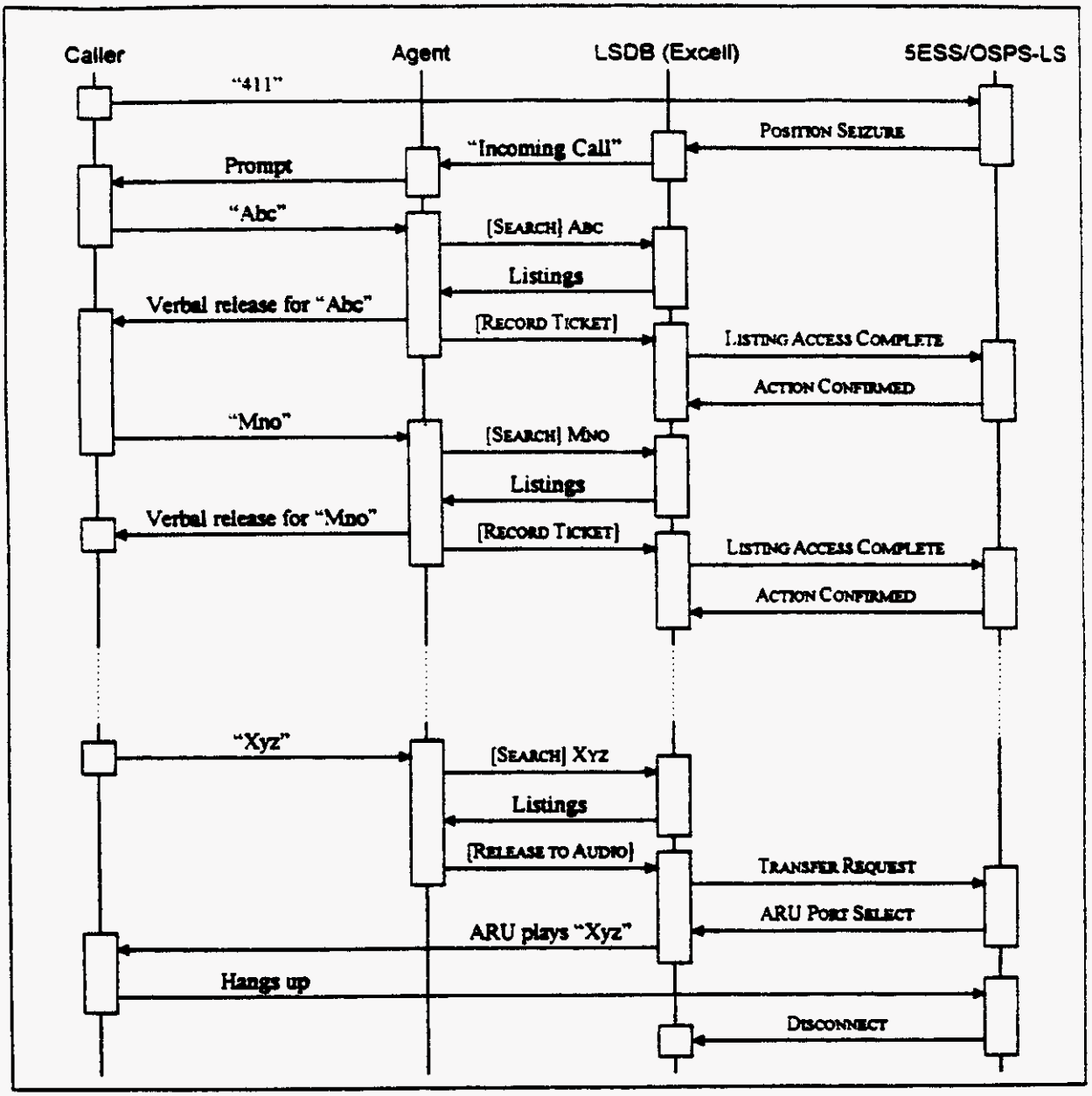

Figure 13: Many listings according to scenario #1

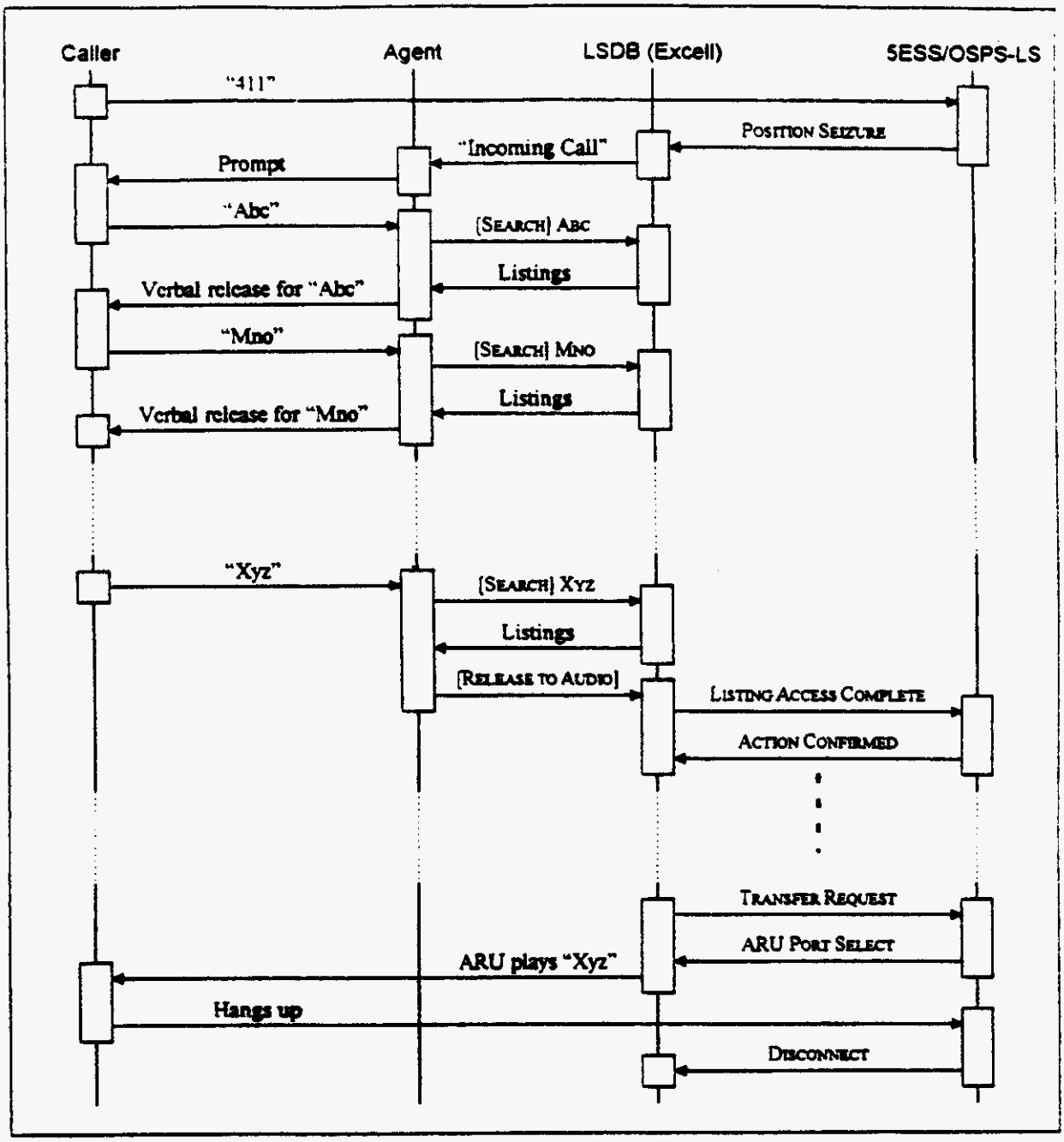

Figure 14: Many listings according to scenario #2

7. FEATURE INTERACTIONS

7.1 Multiquest Interaction (GD / LCM)

A unique 900-number has been assigned by Multiquest for local DA use.

7.2 Network Access Interruption Interaction (GD)

As described in Section 8.1, Network Access Interruption (NAI) Interaction, of the Issue 1 document, local DA "411" or "555-1212" traffic routed on "900-NXX-XXXX" will receive appropriate NAI treatment at the 4ESS™ OAS, but will not be eligible for any CLDADJ treatment. (Note that NAI treatment for DA LD call completion is provided at the Regional 5ESS® OSPS.

Any NAI changes applicable to "900-555-1212" should apply to "900-NXX-XXXX". Specifically, CLDADJ supported ANI-based services should not apply for "900-55-1212" and "900-NXX-XXXX" traffic since network billing recording is handled at the Regional 5ESS® OSPS for both DA and LD call completion.

Any issues associated with the proposal to remove the FEN Block on "900 services" (to receive AT&T Call / Bill Organizer treatment at CLDADJ) should not apply to both "900-555-1212" and "900-NXX-XXXX". (CCS DA Product Management is aware of this issue and is expected to get involved in the resolution.)

There seems to be no critical concerns associated with NAI treatment at the 4ESS™ OAS (other than the potential issues resulting from removing FEN Block to send "900 services" to the CLDADJ for ANI-based service treatment).

7.3 CLD Adjunct Interaction (LCM)

Please refer to Issue 1.0 document.

7.4 National DA Platform Interaction (LCM)

Please refer to Issue 1.0 document.

7.5 Special Network Accessibility Platform Interaction (ECB)

Please refer to Issue 1.0 document.

7.6 LOCAL NUMBER PORTABILITY IMPACTS (LCM)

Please refer to Issue 1.0 document.

8. PERFORMANCE

Performance assessment to be provided.

9. OPERATIONS

Operational impacts assessment to be provided.

10. TIME / COSTS ASSESSMENTS (LCM)

In the Issue 1 document, the forecast[15] of 1.1 million residential customers by year-end 1996 was used. For the new set of data, the call volume data used is 13.8 M residential and 8.8 M business annual local DA calls in 1996, and 170.9 M residential and 42.1 M business local DA calls in 1997. The network impact and NDAP facility add-on requirements were used to reflect the specified demand.

In the LEC Service Resale, the ability to route all AT&T customers' local DA traffic to the AT&T NDAP is subject to negotiation with the incumbent LEC.

10.1 National DA Platform Service Costs

(The data in this section is from the Issue 1.0 document and stated here for completeness.)

Directory Services Product Management provided an estimated cost of 27 1/2 cents per message for CCS local service to access the National DA platform. This cost is based on a 25 cents / message cost (agent fees for handling the call and the listing charge) under the recently implemented vendor agreements and a 10% additional charge for OA&M and training expenses.

Additional expense may be necessary if the servicing of local DA calls imposes significant additional work for the customer care center.

10.2 Network Access Charge

(The data in this section is from the Issue 1.0 document and stated here for completeness.)

For the LD Directory Assistance calls, AT&T pays a network access charge of $0.04 / minute to the LEC at whose End Office the customer line terminates. In the case of Loop Resale, the End Office is the AT&T Local End Office. In the case of LEC Service Resale, the network access charge may be negotiated as part of a package for the LEC to route the local DA calls to the AT&T network.

[15] Forecast data from H. Rubnitz.

10.3 Core Network Costs

(The data in this section is from the Issue 1 document and stated here for completeness.)

A Core Network impact study[16] was done to assess the inter-toll impact of the local DA traffic to the existing busy-hour traffic. The study results indicate there is network traffic impact since the local DA busy-hour traffic is coincident to the network's busy-hour traffic. This translates into additional trunking requirements and associated costs (capital, provisioning, and maintenance). In the remainder of this section, the major trunking and equipment costs from the Ingress trunk side of the AT&T End Office (through the ASN) to the Egress trunk side of the AT&T End Office

	1996	1997 Incremental
Residential customers	1,100,000	9,500,000
Residential DA calls (monthly)	2,518,230	21,748,350
Business customer lines	700,000	1,550,000
Business DA calls (monthly)	1,602,510	3,548,415

The following are core network costs for the cases of (a) Denver site only, and (b) Denver + California sites. In each case, consider the cases of DA with 0%, 12%, and 30% call completion, and list the Capital (additional trunking and terminations required to handle the local DA traffic and optional call completion), Provisioning (trunk provisioning), and Maintenance costs. This set of data is based on year-end residential subscribers in 1996 = 1,100,000. The data summarized below considered network costs for the 0%-, 12%-, and 30%-call completion take rates.

	<— 0% Comp. ——>		<– 12% Comp. ——>		<– 30% Comp —>	
	1996 cost (Million $)	Incr 1997 (Million $)	1996 cost (Million $)	Incr 1997 (Million $)	1996 cost (Million $)	Incr 1997 (Million $)
(Denver Only)						
Capital	1.369	8.214	2.901	22.591	7.260	56.497
Provisioning	0.063	0.381	0.134	1.045	0.336	2.614
Maintenance	0.161	0.970	0.341	2.661	0.855	6.653
(Denver + California)						
Capital	1.405	8.375	2.918	22.805	7.332	57.050
Performance	0.065	0.391	0.135	1.058	0.340	2.646
Maintenance	0.167	0.995	0.344	2.693	0.866	6.736

[16] Core Network impact study by P.K. Eswaran, 12/8/95.

There should not be any additional network facility impact if the 411 service is to handle both local and long distance listing requests and call completion, provided the forecasted 411 call volume does not change.

10.4 Add-On Facility Costs for NDAP Platform

(The data in this section is from the Issue 1 document and stated here for completeness.)

The projected residential local subscribers forecast was also used to assess facilities impact[17] on the NDAP platform

The call volume data used is based on y/e total residential customers of 1.1 M in 1996 and 10.6 M in 1997, and y/e total business lines of 0.7 M in 1996 and 2.25 M in 1997. This translates into 13.8 M residential and 8.8 M business annual local DA calls in 1996, and 170.9 M residential and 42.1 M business local DA calls in 1997. Based on the projected local DA call volume, it is estimated that a total of 200 additional agent positions need to by added by year-end 1996, and a total of 1424 (including the 200 positions in 1996) agent positions are needed by year-end 1997 due to the local DA traffic. Agent Work Time of 60 seconds and 30% call completion rate are assumed.

	1996	1997 Incremental
Agents positions Requirements for local DA:		
Capital	$ 0.9 M	$ 5.8 M
RTU	$ 0.3 M	$ 1.5 M

The capital[18] dollar estimate covers the add-on switching equipment up to the point of interface at the vendor location, and include power for the CSC for switching, the RISLUs (Remote Integrated Service Line Units) and PSMs (Position Switching Modules) for the additional agent positions and trunking required. It does not(based on the current traffic volume forecast) include any associated capital unless 5ESS® OSPS equipment is required. Since a switch augment is required, at least 34 weeks should be allowed.

An evaluation of facility impact, if any, was done[19] and it was determined that if the forecasted 411 call volume does not change, then there should not be additional facility impact if the 411 service is to handle both local and long distance listing requests and call completion..

10.5 Network Routing and Provisioning Costs

(The data in this section is from the Issue 1.0 document and stated here for completeness.)

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[17] Facility impact study on the NDAP platform was done by J. Alexander, 12/8/95.

[18] Vendor (e.g. Excell) is responsible for agent positions; agent positions are not included in the capital cost estimate.

[19] Analysis was done by J. Alexander, 2/96.

The 4ESS™ Network routing translations for 900-NXX-XXXX local DA calls will be similar to the *AT&T Directory Assistance for Any Distance℠* service (900-555-1212) and assignment of unique non-dialable routing number 719-030-XXXX (with the leading digit of XXXX set to a digit other than "1") will be done as part of HI-CAP Originating Table (HOT) translation.

Routing provisioning will be done by the appropriate OS process associated with Multiquest 900. Initial contact with Multiquest organization has been established to assess time and costs. The cost item is currently negotiated by CCS Product Management.

10.6 Development Costs

(The data in this section is from the Issue 1 document and stated here for completeness.)

NOTE changes in the following cost items from Issue 1 cost data (listed in table below):
– 5ESS OSPS DACC recording change (received PASS 2 estimate)
– EXCELL / Volt Delta development estimate to include all 3 options of mixed local / LD listing requests
– 5ESS OSPS 411 AMA recording change (TBD)

The development efforts to support local DA are listed below. Costs for switch development are listed in this section if the development is needed on AT&T switches. Development needed for LEC End Office are listed in the subsequent section titled "Other Costs".

- (FOR Loop Resale Only)
  5ESS® switch development is needed to restore carrier ID to properly route 411 calls to the AT&T 4ESS™ OAS (Item 1) – This effort is listed here (for the Loop Resale case) to restore the carrier ID which is not properly set when the dialed "411" digits is converted to the "900-NXX-XXXX" number. The SAME development effort is listed in the "Other Costs" section below for the LEC Service Resale environment to set the carrier ID so that the DA call can be properly routed to the AT&T 4ESS™ switch (OAS) as described in the "Access Architecture" section. An alternative to the 5ESS® development is to direct route all DA calls to the 4ESS™ OAS assuming proper engineering of trunks, and that there is no call overflow to an access tandem.
- 5ESS® OSPS development is required to identify the call as a local DA call in the AMA record, using indicator value passed by the EXCELL Listing Service Database (LSDB) to the switch to identify local DA calls (Item 2). This development is required in order to charge for DA Call Completion at a rate different from the LD DA call completion rate.
- Enhancements in the NDA platform to handle local DA calls, and to support local DA call completion (Item 3). If the decision is to mix long distance and local DA calls without any requirement to differentiate for purposes of DA agent / location routing and AMA recording, then a portion of the development may not be needed. However, such a decision can be made only if there is no regulatory requirements to differentiate the long distance and local DA service, and if there is no conflicting interest between the long distance and local DA revenue stream.
- Recording / billing changes.

The following summarizes a rough estimation of the development costs:

Name of Development	Costs Estimated (Rough approximation)	Time
1. 5ESS® (route 411 calls to ASN)	$ 1.6 M (5E12), or $1.8 M (5E11 software update 3Q 96)	3Q96 (if 5E11 software upgrade) or 4Q97 (if 5E12)[20]
2. 5ESS® OSPS (DACC charge recording change)	**less than $0.9 M (Pass 2 estimate)**	**6/96 if committed by 3/96.**
3. EXCELL / Volt Delta (dev)	**$476K (development), $10K monthly maintenance.**	**TBD**
4. RICS (identify local DACC and suppress billing of 900-NXX-XXXX AMA records)	TBD	TBD
5. 5ESS® OSPS (411 AMA recording change)	**TBD**	**TBD**

* 4ESS™ assessment: Based on current architecture assumptions, no 4E development is needed for call processing. The "routing / provisioning" is provided as part of "Multiquest 900 process".[21]

* 5ESS® assessment: No additional 5ESS® support or development cost other than the item listed in the Development Costs section above, and for which estimates was already provided.[22]

* SNOW-T development for dedicated trunk group provisioning: No development cost included for provisioning a new trunk type modifier since local DA will not require the provisioning of a new dedicated FGD trunk group between the terminating 4ESS switch and the 5ESS® OSPS Listing Service switch.

* Estimate for Multiquest support: currently being negotiated by CCS Product Management (H. Rubnitz) with the respective Product Management organizations (Multiquest and Directory Services). The capabilities required include: (a) OAS will use its HI-CAP Originating Table (HOT) to translate the new 900-NXX-XXXX number to a unique routing number, and (b) the ability to translate the 900-NXX-XXXX number to two routing numbers in fixed proportion.

* SNOW-R provisioning support may not be needed if network provisioning is handled as part of the HI-CAP Originating Table (HOT) support.

* MPS and local billing systems changes need to be worked with CIO - V. Franco organization.

* Estimates for other support from Operation Support Systems (OSSs) -- to be determined. It is expected that the OSS support needs are very similar to that of the *AT&T Directory Assistance For Any Distance*℠ service (900-555-1212).

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[20] rough time estimate assuming received go-ahead for development in 12/95 time frame.
[21] As per G. Dengel, 11/20/95 email.
[22] As per T. Dunn, 11/19/95 fax.

* Estimates for the needed NVT testing and other deployment expenses -- to be determined.

10.7 Other Costs

(The data in this section is from the Issue 1 document and stated here for completeness.)

In the LEC Resale environment, when the Local End Office is a 5ESS® or 1A ESS, there is a need for switch development to correctly route the call to the AT&T 4ESS™ switch (OAS). Since the switch is a LEC End Office, part of negotiation should include defining the responsible company that would pay for the development. These costs (listed below) are therefore NOT listed at this time as part of AT&T's development costs in the immediately preceding section.

The following is a description of the required switch (5ESS® and 1A ESS™) development:

- When using a unique Line Class Code and "Rate and Route" translations to separate and alter the default route (LEC) of the local AT&T customer's Directory Assistance (411) traffic, and to route these calls to the AT&T 4ESS™, development is needed to enhance the route index to provide a carrier code for outpulsing on indirect equal access trunks. This carrier code would also be used by access recording. Enhanced route index should be able to go over the same route that existing FGD routing does.
- The same capability should exist on the 1A ESS™ switch so that 411 calls from the 1A ESS™ end office can be routed to an equal access 4ESS™ switch.

Name of Development	Costs Estimated (Rough approximation)	Time
1. 5ESS® (route 411 calls to ASN)	$ 1.6 M (5E12), or $1.8 M (5E11 software update 3Q 96)	3Q96 (if 5E11 [illegible] update) or 4Q97 (if 5E11
2. 1A ESS (route 411 calls to ASN)	$ 5.7 M (for LEC Service Resale)	TBD (3Q96 or 1Q97)

11. BCS IMPACTS ASSESSMENT (MSH)

The Local DA Technical Plan has been reviewed by the BCS team[25] and found that BCS access methods other than the LEC analog loop would also be compatible with the Local DA Plan without any modification..

It is therefore appropriate that the earlier restriction placed on the scope of the Local DA Technical Plan can now assume a broad definition of Loop resale as defined in the Loop Resale Technical Plan , Draft 3.0. December 21, 1995, Coordinator Troy Adams. The Loop Resale configuration now includes includes access loops (the component between the customer premises and the AT&T LSO) configured in multiple ways:

[23] rough 5ESS® time estimate assuming received go-ahead for development in 12/95 time frame.
[24] rough 1A ESS time estimate assuming received go-ahead for development in 12/95 time frame.
[25] BCS connectivity options evaluated by P. Zahray, S. Ganesan, M. S. Huq, as per P. Zahray email 2/23/96

- Analog loops leased from the incumbent LEC, unbundled at the LEC LSO and extended to the AT&T LSO.

- Connectivity provided directly from the customer premises to the AT&T LSO through AT&T built SONET transport facilities.

- "Hub and Spoke" arrangements where the connectivity is provided by a combination of AT&T built SONET transport and built or leased "spokes" off the SONET rings.

12. ISSUES (ALL)

1. Do we need to separate the analysis of intraLATA toll and intraLATA local or can we assume that as local service provider we are the default carrier for both intraLATA local and intraLATA toll calls ?

2. Also, do we need to provide equal access for customers who may be PICed to another carrier for intraLATA toll and / or interLATA traffic? Currently the NDAP platform does not have this type of customer information.

3. If a local customer requests AT&T to block 900 number usage, his 411 calls will fail due to the internal use of the 900-number in the architecture.

13. REFERENCES

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Maybach, M. (Coordinator), "Project Reroute Phase II Technical Plan", September 8, 1995.

Adams, T. E., Ganesan, S., Levy, D. E. (Coordinators), "Loop Resale Technical Plan", Draft 3.0, December 22, 1995.

Bilder, M. (Coordinator), "CCS LNP Technical Plan", Issue 1, Draft 5, February 23, 1996.

14. GLOSSARY

AILS	Automatic Inward Line Screening
ANI	Automatic Number Identification
CAP	Competitive Access Provider
CAT	Contract and Access Tariff
CLD	Consumer Long Distance
CPDL	Call Processing Data Link
CSC	Call Servicing Center
DA	Directory Assistance
DACC	Directory Assistance Call Completion
DMOQ	Direct Measure of Quality
DOC	Data Operations Center (Listing Service Data Base)
DTMF	Dual Tone Multifrequency
EO	End Office
FGD	Feature Group D
HAS	Hand-off AT&T Switch
HOT	HI-CAP Originating Table
LATA	Local Access and Transport Area
LBS	Local Billing System
LD	Long Distance
LEC	Local Exchange Carrier
LERG	Local Exchange Routing Guide
LNP	Local Number Portability
LS	Listing Service
LSP	Local Service Provider
LSDB	Listing Service Database
LSO	Local Switch Office
MDF	Main Distributing Frame
MPS	Message Processing System
NDAP	National Directory Assistance Platform
NAI	Network Access Interruption
NPA	Numbering Plan Area
OAS	Originating AT&T Switch
OLI	Originating Line Indication
OLS	Originating Line Screening
OSPS	Operator Service Position System
PCP	Positive Call Processing
PSM	Position Switching Module
PUC	Public Utility Commision
RICS	Recorded Information Collection System
RISLU	Remote Integrated Services Line Unit
RTNR	Real Time Network Routing

1	RTU	Right To Use
2	SA	Special Applications
3	SDN	Software Defined Network
4	SNOW-R	Service Now - Routing
5	SNOW-T	Service Now - Trunking
6	T&A	Toll and Assistance

Local Operator Services

Technical Plan

Issue 1.0 (Approval Copy)

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1. INTRODUCTION (LCM)

This document presents the technical plan for offering local Operator Services (OS) using AT&T's 5ESS® Operator Services Position System (OSPS) which is currently servicing AT&T's interLATA OS traffic and AT&T-provided OS for Article IV companies[1]. AT&T Local residential and business customers dial 0+ 7/10 digits or 0- to obtain service for calling card and local operator services. This service would enable customers to experience the AT&T brand for local Operator Services. The use of the OSPS platform enables the sharing of a common user interface for local and interLATA operator services, and provides the opportunity for synergy in service evolution. Furthermore, the sharing of the platform may result in unit cost advantage.

In the current plan, we consider both the LEC Service Resale and basic access arrangement of Loop Resale with the leased loop terminated at the LEC MDF and hand-off to the AT&T local end office. Please refer to Section 1.3 for the scope of this planning effort.

1.1 Overview (LCM)

AT&T Local customers can reach operator services by dialing with the prefixes: 1+[2], 0+ (interLATA and intraLATA), 0-, 00-, and 01+[3]. In the LEC (Local Exchange Carrier) Service Resale[4] environment, there are two ways to provide operator services. (1) The LEC can provide operator assisted IntraLATA (toll and local) service for AT&T local customers. This is not the preferred AT&T option, and this option is not being addressed by this TP. (2) The LEC can route all AT&T customers' operator services calls (InterLATA and IntraLATA) to an AT&T 5ESS® OSPS using switch-dependent techniques such as Line Class Codes (described in more details in the "Access Architecture" section of this document). Calls routed to and handled by the 5ESS® OSPS will be branded AT&T. In the Loop Resale[5] environment, the AT&T Local End Office[6] will route the customer-originated requests for interLATA and intraLATA operator services[7] to an AT&T 5ESS® OSPS. This TP addresses the case (2) alternative.

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[1] Article IV companies are Independent Operating Companies whose local operator service is provided by AT&T on a contractual basis. Input from Dennis Pearson.

[2] Normally 1+ is used for Hotel / Motel and Coin operator services. It is not being addressed in this document. Refer to Section 2.2.2 "Restrictions and Limitations".

[3] A 01+ call must be dialed with a country code (CC) and a national number (NN). A typical operator assisted international dialed number will look like this, 01+CC+NN. The caller is given Automated Calling Card Service (ACCS) treatment by the T&A application. After hearing the ACCS prompt tone, sometimes called the "bong tone" the caller can elect to bail out to an operator by dialing 0, doing nothing and timing out, or flash the switch hook, in any case they will be put into a queue awaiting the next available T&A operator. The operator can assist the customer by offering alternative billing options such as: collect, bill to third, etc. The dialing with prefix 01+ or 011+(for direct dial international calls) are not described in this Technical Plan which is intended to address local operator services only. The handling of these calls should remain unchanged.

[4] With LEC Service Resale, AT&T local service is provided by the LEC network and AT&T resells LEC service.

[5] With Loop Resale, the LEC loops will be separated at the Main Distributing Frame (MDF) at the LEC End Office and transported to an AT&T-owned 5ESS® End Office.

[6] Local End Office is defined in Section 1.2 "Terminology".

[7] Assuming that business decision is to offer combined interLATA and intraLATA service. If the offer includes customer selection of interLATA carrier, then the InterLATA operator service may have to be routed to the platform of the PICed carrier of choice if it is not AT&T.

The proposed plan focus on the technical feasibility of having the AT&T customers' local OS calls routed by the LEC End Office or AT&T Local End Office to an AT&T 5ESS® OSPS for handling.

In the remainder of this document, the focus is on the local OS (e.g., 0+ and 0-) calls. The term "0+ calls" refers to 0+ 7/10 digits for IntraLATA toll and IntraLATA local calls which are currently handled by the LEC by default. The term "0-" referred to operator assistance calls currently handled by the LEC. For customers who are PICed AT&T for InterLATA service, it is implicit that the 0+ InterLATA and the 00- (InterLATA operator assistance) calls are already routed to and handled by the AT&T 5ESS® OSPS and are not discussed in this document.

1.2 Purpose (LCM)

The purpose of this document is to provide Local Service planners and Product Management with a service architecture plan to implement an AT&T branded local Operator Service (OS). It also provides input for engineering, development, provisioning, operations, testing, and Methods and Procedures (M&P) revisions.

This plan:

1. establishes the synergy between the AT&T interLATA and local OS.
2. is an alternative to the current Plan of Record of local OS provided by the incumbent Local Exchange Carrier (LEC) for LEC Service Resale.[8]
3. assesses the feasibility of using existing 5ESS® OSPS platform to service local operator service calls as quickly as possible for both Loop and LEC Service Resale environments.
4. identifies any service feature outage and proposes plan to resolve identified issues.
5. identifies any development efforts that are required to support items 3 and 4 above, and identifies those effort which are needed prior to initial service.
6. serves as an interface document with Operator Service Channel Management and basis for the identification of areas that may require new Methods and Procedures (M&Ps) and operator training.
7. provides Product Management with the data needed to build a business plan.
8. provides input for engineering, provisioning, development, testing, and call billing.

[8] Current Plan of Record is AT&T-provided local OS for Loop Resale.

1.3 Terminology (ALL)

The following terms are used throughout the document.

Local Service - Consists of switch-based features and other services (for example, local Operator Services) which have been traditionally offered by the LEC to residential and business customers. AT&T will offer these features and services to the AT&T residential and business customers via a local tariff filing, as it enters the local market.

Local End Office - refers to the switch where customer lines terminate. In this document, references are made to the LEC End Office in the LEC Service Resale environment and AT&T Local End Office in the Loop Resale environment.[9]

LEC Service Resale - Local Service is provided using LEC network services.

Loop Resale - In this type of architecture, AT&T leases the loop facilities to the end customers home, but purchases and manages its own local end office switch. The strictest definition of the term "loop resale" includes only intraLATA local and intraLATA toll traffic served by an AT&T purchased and managed local end office switch with leased loop facilities to the customer's homes or businesses.[10]

IntraLATA call - A call placed (originating and terminating) within a single LATA. IntraLATA calls fall into two categories: **local (non-toll)** and **toll calls**. The local calls are referred to as **intraLATA local** calls and are those that are placed to (NPA) NXXs in the AT&T customer's local calling area. These calls normally do not incur charges based on the distance of the call or the duration of the call. The toll calls are referred to as **intraLATA toll** calls and are those calls that are placed to (NPA) NXX's located within the AT&T customer's LATA. These calls incur charges allowed by state tariffs, for both distance and duration.

In the remainder of this document, the terms "intraLATA call", "intraLATA toll call", and "intraLATA local call" are used. The term "intraLATA calls" refers to both the "intraLATA local calls" and "intraLATA toll calls".

Operator Services Position System Toll and Assistance (OSPS T&A) - The OSPS *Toll and Assistance (T&A)* application is a major application to the 5ESS® Switch. OSPS T&A relies on the features and facilities provided by the 5ESS® Switch in such areas as automatic call distribution, administration, billing, access to external databases, interflow, maintenance, and trunking. However, OSPS T&A is unique because human operators, using Video Display Terminals (VDT) or Operator Work Stations (OWS) and / or Automated Positions using Voice Recognition Call Processing (VRCP) interact directly with the automated aspects of the architecture and the calling customer.

Local Operator Services - Local operator services describe the type of calls handled by the 5ESS® OSPS that will be included in the AT&T Local Service offering (as specified by the term "Local" in "Local Operator Services"). These services are accessed via customer originated 0+(intraLATA) calls and 0- calls. These access methods are explained and the available service features are described in section 2.4 "Local Operator Service and Call Features".

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[9] The Local End Office is sometimes referred to as the "Local Switch Office (LSO)" in other documents that address Local Service.

[10] T. E. Adams, et. al., Loop Resale Technical Plan, Draft 3.0, December 22, 1996.

IPIC - a switch feature supported by the 1A ESS Switch and the 5ESS Switch that allows a calling party to presubscribe to a carrier to carry intraLATA toll calls.

1.4 Scope (LCM)

This document covers the technical planning information for providing local operator services for local residential and business customers who choose AT&T as their local service provider.

- This plan addresses local operator services which are available to AT&T local customers who dial with a prefix of 0+ (intraLATA) and 0- to reach operator services. It is assumed that customers dialing with prefix of 0+ (interLATA), 00-, and 01+ would work as currently for AT&T-provided interLATA operator services and are not discussed in this document.
- This plan considers both the LEC Service Resale and basic access arrangement of Loop Resale with the leased loop terminated at the LEC MDF and hand-off to the AT&T local end office. It is recognized, however, that there are other connectivity options to be analyzed on an on-going basis, and there are others to be considered as viable options as soon as the technology becomes mature. As is needed, this document will be updated in the future to address other Loop Resale access environment.
- BCS access options being considered currently for Loop Resale affect the access arrangement from the Customer Premise Equipment to the end office switch, but will be compatible with the 0+ / 0- calls at the end office in the LEC Service Resale and basic Loop Resale arrangements.[11] Loop Resale would include access loops (the component between the customer premises and the AT&T LSO) configured in multiple ways:
  - Analog loops leased from the incumbent LEC, unbundled at the LEC LSO and extended to the AT&T LSO.
  - Connectivity provided directly from the customer premises to the AT&T LSO through SONET transport facilities.
  - "Hub and Spoke" arrangements where the connectivity is provided by a combination of AT&T built SONET transport and built or leased "spokes" off the SONET rings.
- Dial-around using one of the 3- or 4-digit CIC codes (for example, 0288 as in 10288) to reach AT&T operator services is not addressed in this document because the 3- or 4-digit CIC code directs caller to an interexchange carrier.

1.5 Guide to the Document (LCM)

This Technical Plan proposes method for routing the 0+/0- calls from the LEC End Office or AT&T Local End Office to the AT&T 5ESS® OSPS, and evaluates applicable local operator service call flows to determine if the existing 5ESS® OSPS is able to handle local OS calls and to identify any impacts and enhancements required to support local operator services.

This Technical Plan contains the following sections:

1. INTRODUCTION section provides a brief description of the planning effort, the purpose, the scope, and the structure of the document.

[11] Data provided by M. S. Huq, S. Ganesan, P. Zahray. (Also refer to Loop Resale Technical Plan, T. E. Adams (Coordinator), Issue 3.0, December 21, 1995.

2. SERVICE DESCRIPTION section provides a definition of the local OS service, service assumptions, call volume assumptions, target market, as well as any restrictions and limitations of the proposed service. High-level descriptions of the various operator services call types are also provided.

3. HIGH-LEVEL ARCHITECTURE DESCRIPTION section provides an overview of the selected architecture.

4. TECHNICAL DESCRIPTION section provides the technical description of the access architecture and call flows. For each call type, there are two sub-sections titled "Local Call Flow" and "Local Service Impacts". The "Local Call Flow" sub-section describes the call flow for Local Service offering of the specific call type. The "Local Service Impacts" sub-section summarizes any changes or needs specific to Local Service as is reflected in the call flow, as well as additional issues or supports required from the Local Service perspective.

   The Local Service impacts identified for each call type are summarized in the SUMMARY IMPACTS ASSESSMENT section.

5. RECORDING / BILLING section provides a description of the recording and billing impacts.

6. FEATURE INTERACTIONS section describes interactions with other features.

7. PERFORMANCE section describes any performance impacts.

8. 5ESS® OSPS OPERATIONS section lists some high-level service operations impacts and refer to an Operations Technical Plan for detailed service operations strategy.

9. LOCAL TARIFF DATA section describes other support services that may be impacted.

10. SUMMARY IMPACTS ASSESSMENT section provides an assessment summary of efforts needed to routing local Operator Service traffic to the AT&T 5ESS® OSPS platform for handling.

11. BUSINESS AND REGULATORY ISSUES section provides some business and regulatory issues as well as some negotiation perspectives.

12. FUTURE WORK section considers the next-steps.

13. ISSUES section provides a list of issues / action items that have been identified. Most of the issues are expected to be resolved. A few others may remain as suggestions for future implementation.

14. REFERENCES section lists documents referenced.

15. GLOSSARY section lists acronyms and abbreviations.

2. SERVICE DESCRIPTION

2.1 Service Definition (LCM)

This document addresses an AT&T branded local Operator Services (OS)[1,2] that would allow AT&T Local Service customers to dial 0+ (intraLATA) / 0- to access either the AT&T automated Operator Services and / or a live operator for calling card and other local operator services. In addition, 5ESS® OSPS Toll and Assistance (T&A) can handle other calls that involve special types of services including Busy Line Verification/Emergency Interrupt (BLV/EI), Emergency Agency Call, and Operator-assisted Directory Assistance.

The local OS service offering is being considered for the LEC Service Resale and Loop Resale environment. The local operator services calls are routed by the LEC End Office to an AT&T 5ESS® OSPS in the LEC Service Resale, and by the AT&T Local End Office to an AT&T 5ESS® OSPS in the basic Loop Resale. The current (uncommitted) target date for initial (limited) availability is June, 1996, and is limited to one or more selected trial sites.

2.2 Assumptions (LCM)

2.2.1 Service Assumptions

The following assumptions were made:

1. Dial access for AT&T's local OS service will match that of the incumbent LEC traditional "0+/0-" service.
2. AT&T will provide local OS service for both LEC Service Resale and Loop Resale Local Service architectures.
3. 5ESS® OSPS will have the ability to distinguish intraLATA calls from interLATA calls.
4. Access to the AT&T 5ESS® OSPS is from the LEC end office in the LEC Service Resale environment, and AT&T end office switch for Loop Resale.
5. FG-C address signaling must be in the MFJ Operator Services Expanded Signaling format.
6. (a) Wink signaling can be Inband (IB), Expanded Inband (EIS), or Multiwink (MW).
   (b) OSPS will determine the originating NPA from the incoming trunk group.
   (c) Require ANI-II digit.
7. Emergency calls (0-) and Emergency tracing are supported.
8. Operator recall (switch flash) function not available during conversation, but capability works during ACCS (Automatic Calling Card Service) call setup.
9. Service provided to residential and business customers.
10. Current plan is to route 0- calls to APS (Automated Position System). However, this Technical Pan addresses both alternatives of routing 0- calls to APS and to a live operator to accommodate future changes in policy.
11. All local operator service completed calls are recorded at the AT&T 5ESS® OSPS.
12. Also refer to "Restrictions and Limitations" section below for call types not to be supported based on input from Product Management.

[1,2] L. Connelly, "Local Operator Service Market Service Description" (Draft), 3/26/96.

13. Additional PDD (Post Dialing Delay) for AT&T Local Operator Service calls is not considered a competitive disadvantage. We recognize there may be an increase in PDD. However, this increase is not viewed as significant at this time to warrant extra development to compensate for possible excess PDD.
14. 0+ InterLATA calls, 00-, 01+, and 011 calls work as is today and are not impacted.
15. Same branding-phrases are used for 0+(intraLATA), 0+(interLATA), and 0- calls.
16. 0+ intraLATA calls are routed to the 5ESS® OSPS via the existing trunk groups carrying the 0+interLATA and 00- traffic.
17. 0- calls[13] are also routed to the 5ESS® OSPS via existing trunk groups carrying the 0+interLATA and 00- traffic. This implies that the 0- calls are subject to the VRCP (Voice Recognition Call Processing) treatment unless development (not yet authorized, Time / Cost request in progress) is done to distinguish and separate the 00- and 0- traffic at the 5ESS® OSPS.
    (For planning purpose, the Technical Team has considered both cases of routing 0- calls directly to a live operator, or to an Automated Position (AP) with the option to bail out to an AT&T operator. This document includes both call flows (sections 4.2.3 and 4.2.4), and describes the technical feasibility to implement each of the two call flow scenarios (section 4.1.1.4 on "Separation of 00- and 0- Traffic"). It is intended to provide Product Management with the flexibility to implement one of the two call flows in a specific geographic region (or state) to satisfy any regulatory requirement or service / marketing strategy.)
18. 5ESS® OSPS cannot distinguish between intraLATA toll and intraLATA local calls.

2.2.2 Restrictions and Limitations

2.2.2.1 Call Types Limitations

Based on input from Local Product Management[14], the following call types will not be part of AT&T's initial local service offering. Consequently, this document does not address these call types:

- **Public coin phone:** A sent-paid call from a coin-station is placed in the Automatic Coin Toll Service (ACTS) feature, an announcement is played requesting an initial coin deposit amount. The coin deposits are monitored automatically.

- **Hotel/Motel:** A sent-paid call from a hotel/motel line requires operator assistance to obtain the guest's room number from the calling party. This allows the call to be real-time rated[15] and allows the Automatic Charge Quotation System (ACQS) to direct proper billing to the hotel/motel establishment. The Real-Time Rating System (RTRS) is a data base containing rating information for those calls requiring mechanized rating.

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[13] Local OS Product Management (3/22/96) has made a determination in coordination with Regulatory that there is no requirement identified to date which would preclude VRCP treatment for 0- calls. However, this situation will be closely monitored after initial market entry. The Technical Team has been adised to continue with the technical planning for the capability to separate 00- and 0- traffic at the 5ESS® OSPS.

[14] As per Local Operator Services Operator Services Product Management. Feasibility study on coin, hotel, and motel intraLATA traffic will be conducted as a separate effort outside the scope of this Technical Plan.

[15] Real-Time Rating System is a vendor technology managed by CCS-CTO for non-Lucent based tehnologies used by CCS.

- ACS (Accessible Communications Service) / Telecommunications Relay Service for the speech or hearing impaired customers: No requirement on ACS calls.

- **Prison Calls**

This document will not address LEC Resale scenarios with 0+ intraLATA and 0- calls provided by the LEC.

2.3 OS Call Volume Assumptions (LCM)

Based on the call volume forecast[16] associated with subscriber forecasts of 1.1 M residential subscribers and 0.7 M business subscribers for year-end 1996, and 1.1 calls per subscriber per month, the projected Busy Hour Call Attempts (BHCA) is 34K.

2.4 Target Market (LCM)

The target market for local OS is the AT&T residential and business customers who dial "0+" or "0-" to request calling card service for intraLATA calls and local operator services in both the LEC Service Resale and Loop Resale environment.

[16] The 1.1 M residential subscriber forecast data and 1.1 calls/subscriber/month data are provided by L. Connelly. The 0.7 M business subscriber data provided by B. Filak for the Local Directory Assistance Technical Plan (Issue 1.0, 2/8/96, L. C. Mui ,coordinator) and is consistent with the 1.1 M residential subscribers forecast timeframe.

2.5 Local Operator Service and Call Types (TAD, LCM)

2.5.1 Customer Access to Local Operator Services

The call types that will be handled by AT&T operators are those which are dialed with the following prefixes: 0+, 0-, 00-, and 01+. This document addresses local operator services available to customers when dialing with prefixes of 0+(intraLATA) and 0- (refer to preceding "Scope" section and footnote on 1+ and 01+ prefixes in the earlier "Overview" section for more details).

2.5.1.1 0+ (intraLATA) Calls

A 0+ dialed domestic call can be dialed 0+ 7/10 digits.[17] [18] The caller is first given Automated Calling Card Service (ACCS) by the T&A application. After hearing the ACCS prompt tone, the caller can enter their AT&T honored calling card or elect to bail out from ACCS by dialing 0, doing nothing and timing out, or flash their switchhook. If the customer enters a calling card number, the call will proceed in the normal manner. If the customer dialed 0, time out, or flashed, they will be connected to the Automated Position System (APS). The automated position (AP)[19] will now prompt the customer for various assisted services such as collect, person-to-person, third-number, etc. In any case the customer will be given the opportunity to bail out to a live operator. For a 0+ call flow, see section 4.2.1.

2.5.1.2 0- Call

A 0- call is a call that reaches an AT&T operator on a seizure only basis. The 0- call is dialed to obtain operator assistance in setting up a call, or for other assistance which may or may not be directly related to a particular call. For the 0- call, the AT&T operator obtains the forward number / called number since it has not been dialed by the customer. The back number / calling number / ANI is signaled by the originating office and accompanies the call for screening and billing purposes. Other 0- calls are made to report an emergency, or to request information (e.g., an NPA code or a rate quote). 0- calls to OSPS can be accomplished in two ways: (1) direct to a live operator, or (2) first to an AP with the option to bail out to a live operator. For a call flow depicting both accesses, see sections 4.2.3 and 4.2.4.

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[17] 0+ calls can reach AT&T from an access line presubscribed to another IC/IXC if prefixed with an AT&T acces code 10XXX (for example, 102880 or 10102880).

[18] Interchangeable NPAs within the future will do away with 7-digit dialing.

[19] The Automated Position (AP) is a collection of hardware and application software that provides a platform for DTMF and speech recognition functions, as well as announcement functions, in implementing 5ESS® OSPS T&A related functions. The AP provides the opportunity for full automation of collect, third number, 00-, and calling card calls. It also partially automates the handling of person-to-person calls. The AP allows a calling party making a 0+ call to enter a call type identifier by using speech. Recognized spoken call-types phrases include "Credit Card," "Calling Card," "Collect," "Third Number," "Person," and "Operator." With the IIB2-R1 feature (FRF#4921), the phrases "Credit" and "Information" are added.

In the LEC Resale environment, in the event that the LEC End Office cannot send ANI, the AT&T operator will intervene and ask for calling number. This is the ONI (Originating Number Identification) feature. In the event that an ANIF (ANI Fail) occurs, the AT&T operator will intervene and ask for the calling number. Once the calling number is recorded, the call will proceed as normal.

2.5.2 Local Operator Services Features

The following operator services calls[20], available to customers when dialing with prefixes of 0+(intraLATA) and 0-, have been assessed by the Local Operator Service Technical team. A brief description of each service is included in this section focusing on Local Service. Other services traditionally supported by OS call servicing but are not planned for AT&T Local Service, including descriptions on InterLATA and international calls, Coin call service, Hotel / Motel calls, and prison calls are not assessed and are not discussed in this document.

In addition, there are other calls that involve special types of services, i.e., Busy Line Verification / Emergency Interrupt (also known as Busy Line Interrupt) (BLV/EI)[21], Emergency Agency Calls, Emergency Trace, and Operator Transfer Service. These calls are described in the following subsections of this section.

NOTE: In this section, a high-level description of the various local operator service calls are described. For more details on these calls than the high-level description presented here, please refer to the later section on on "Local Operator Service Call Flows" which provides a call flow description and any identified impacts for each call.

2.5.2.1 Automated Calling Card Service

With Automated Calling Card Service (ACCS), the called number and the calling card number are entered by the calling party. A 0+ dialed call that can be dialed 0+ 7/10 digits can be automated. After OSPS receives a call signaled with the Forward number 0+NXX-XXXX or 0+NPA-NXX-XXXX, the call is given Automated Calling Card Service (ACCS) treatment by the T&A application. The card number input to ACCS by the customer is validated by accessing a database such as the Line Information Data Base (LIDB), an AT&T card database, or a vendor provided card validation database. The type of card validation query and database accessed depends on the card number and the features activated.

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[20] AT&T 5ESS® OSPS Local Operator Services section by T. Dunn in the Loop Resale Technical Plan, Draft 2, October 19, 1995.

[21] "Emergency Interrupt" is also known as "Busy Line Interrupt". For simplicity, the remainder of the document will use the terminology "Busy Line Verify / Emergency Interrupt (BLV / EI)". For readers more accustomed to the terminology "Busy Line Interrupt (BLI)", it represents the same service.

2.5.2.2 Automatic Sequence Calling

Once an ACCS call has been completed and the called party has hung up, or before the called party answers, the AT&T customer can place another call without re-entering their calling card or credit card number again. This is accomplished by pressing the # sign located on the DTMF keypad of their telephone. This subsequent call is known as a "Sequence Call." Since divestiture, initial calls arriving at an AT&T operator services switch were assumed to be pre-subscribed to AT&T as their carrier of choice. The Modification of Final Judgment (MFJ) plan prevented IC's from allowing customers to switch between carriers after the initial call. As a result, AT&T is required to do LATA mapping on all subsequent calls. For example, if the initial call was an interLATA call the subsequent call could not be a local or intraLATA Toll call. This feature is known as Carrier Selection Enforcement (CSE).[22] Currently, with few exceptions, most State regulators allow IC's/IXC's to handle local and intraLATA Toll calls.

2.5.2.3 Automated Sequence Dialing, Following Operator Release

Automated sequence dialing following operator release allows callers initially served by an AT&T operator or automated position to place an automated sequence call whether or not the initial call was completed. This capability is available on card billed calls released from the position before outpulsing of the call. OSPS treatment of customer-keyed number is otherwise the same as is available to callers on initial ACCS calls.

2.5.2.4 Person-to-Person Call

The Person-to-Person rate class call is used by the customer or APS to specify that the call is intended for a specified person identified by the caller, and allows the call to be charged at a person-to-person rate. OSPS billing begins when the desired party or an acceptable alternate is reached.

2.5.2.5 Station-to-Station Call

The Station-to-Station rate class call is used by the customer when he/she does not specify the person, department, office, extension, etc. to be reached.

2.5.2.6 Collect Call

This class of charge allows the 5ESS® OSPS operator or APS to indicate that a call is to be charged to the called party, as requested by the calling party and agreed to by the called party.

[22] Carrier Selection Enforcement (CSE) will be covered further in the "Feature Interactions" section.

2.5.2.7 Bill-to-Third Call

This class of charge allows the 5ESS® OSPS operator or APS to indicate that the call is billed to a third number, as requested by the calling party, and in some circumstances agreed to by the third number party when the system or the AT&T operator requests verbal acceptance.

2.5.2.8 Operator Assisted or APS Calling Card Service

Operator-assisted calling card service provides assistance to a caller that makes a calling card or credit card call but does not choose to enter the billing information themselves. Customers may choose to speak their card number using the connected digit feature for some cards (14 digits). The AT&T operator or AP enters the billing information (e.g., calling card or commercial card number). The entered billing number is validated utilizing the same procedures as for Automated Calling Card Service (ACCS). Appropriate position displays are provided to indicate valid and invalid billing numbers.

Some examples of the categories of calling cards include (but not limited to):

- AT&T-issued calling cards.
- Commercial credit card calls.
- Telephone Line Number (TLN) cards
  - LEC TLN cards and LEC RAO cards
  - AT&T TLN cards (only if future business decision to support TLN cards)
- Purchase limit cards (e.g., Global Cards, TRYME card, NEXCOM card, etc.)

When a local customer makes an intraLATA call using Purchase Limit Card, the call is rated as local calls, and the bill information will be sent to the appropriate biller and is billed at local usage rate.

Prepaid Cards are purchased at flat postal rates for the minutes of usage. If intraLATA local calls are made, all the calls will get the same flat rate / minute charge.

2.5.2.9 Busy Line Verify/Emergency Interrupt

On a BLV/EI [23] call when requested by the AT&T local customer, an AT&T operator will either access the trunks or access another operator to access the BLV/BLI trunks to determine the status of the line, and, if warranted, cut in to deliver an emergency interruption. A special Verify Network is required to connect a BLV/EI call. An AT&T operator can only verify the lines in the verify network to which the 5ESS® OSPS is connected. The BLV trunk is a 4-wire trunk connected via a selected toll office for access to an incoming End Office trunk. When either the AT&T or LEC operator takes the key action to interrupt a line, the Emergency Interrupt (EI) feature applies an alerting tone over the BLV trunk and is followed by a tone every 10 seconds. The calling party's receive path is still muted while the AT&T operator is connected to the verified party. The AT&T operator receives permission to use the verify network if a **Verify OK** indication is received after pressing the **VERIFY** soft key. The AT&T operator can determine the status of a line by monitoring the line for conversation. The conversation heard by the AT&T operator is made unintelligible, but still recognizable as speech, by passing it through a scrambler

[23] does not work with the Remote Call Forwarding (RCF) or RCF+ solutions of LNP.

circuit and then to the AT&T operator. The BLV/EI feature mutes the calling customer's receive path during this operation.

To verify lines which are not in the verify network to which the 5ESS® is connected, the AT&T operator must place an outgoing Inward call to the distant operator system via the ASN (AT&T Switched Network), using the MF Inward signaling format. A typical MF Inward signaling format would be: KP+NPA+TTC+OSDC+ST, where: TTC is the Terminating Toll Center and OSDC is the Operator Special Dialed Code that determines the service requested. The NPA and TTC are optional. This information must be obtained from the CSIDS database. The CSIDS database contains dialing codes, inward operator route codes, etc. The operator is made aware of this procedure after pressing the ***VERIFY*** *softkey and* ***VERIFY INDET*** *(indeterminate) is displayed and the Route # Field is highlighted.* Once connected the AT&T operator requests the distant operator to verify the distant line's status, then reports to the customer.

BLV / EI service is a chargeable service, where tariffs apply, for either verification and/or emergency interruption. Also, an AMA recording is generated, and real-time rating is provided on coin and hotel/motel origination's.

2.5.2.10 0- Emergency Agency Call

An Emergency Agency call occurs when a caller dials 0-, instead of 911 or other means to reach appropriate agencies, to report an emergency. This document addresses emergency calls that occur when a caller dials 0-. The AT&T operator will depress the EMERG key to ensure the call will not be released. In addition, the AT&T operator will access the CSIDS (Call Servicing Information Delivery System) database to locate the appropriate agency, based on the city and state information provided by the caller. The CSIDS database contains the access numbers for many agencies such as: Police, Fire, Hospitals, Rescue Squads, Burn Centers, Poison Control Centers, etc. It must be noted that although the capability exists, some of the up-to-date data may not exist for certain localities. **In order for AT&T to handle local emergency traffic then negotiation with the LEC required to locate the data source to keep the CSIDS data base current. (Refer to the "Emergency Call / Emergency Trace" sub-section in the "Local Operator Service Call Flows" section.)**

2.5.2.11 Emergency Trace / Annoyance Request

Caller makes an emergency or annoyance assistance request to trace the origin of a call. The AT&T operator will locate the appropriate *referral information* in CSIDS and provide to the customer. If requested, the operator will dial the referral number.

A special case is the handling of hostage situation. If an AT&T operator receives the initial call, the AT&T operator personnel will contact the appropriate law enforcement agency and follow the directions of the agency until the call is removed from the position.

2.5.2.12 Operator Transfer Service

Operator Transfer Service is a LEC tariffed service that is charged on a per message basis. Calls arriving at a local operator services location and wanting their call to be handled by AT&T are transferred to AT&T on a incoming hand-off trunk arrangement. Access from the local operator services location is handled on a dedicated trunk basis. Once connected to an AT&T operator, the call can now progress as the customer originally intended, i.e., 0-, 0+, DDD, IDDD, 800, etc.[24] This service is not currently used by AT&T today.[25] **If AT&T Product Management wants to use this hand-off arrangement to reroute calls to other IC/IXC operator locations, it will first have to file a tariff.** Presently, the LEC/ICO hand-off charges range from 22 cents to 46 cents per message. Projections for 1995 indicate that 234.6 million messages nationwide representing an expense to AT&T of 70.7 million dollars will be processed through this service.[26] **Operator methods training, routing codes, and trunk group provisioning by signaling type will be required.** If AT&T elects not to tariff this service, then AT&T operators can turn back callers requesting transfer to their COC. A turn back is necessary when there is no trunking / routing established to connect to the requested service provider. The AT&T operator in these cases informs the caller to: "Hang up and dial your call again or call your service provider for assistance." This is known as a hard turn back.[27] As a last resort, AT&T can route these calls to the caller's COC via a LEC AT. In these cases, AT&T will incur LEC access charges and receive no revenue.

NOTE: Operator Transfer Service is included in the list of Local Operator Services in the MSD.[28]

2.5.2.13 Operator-Handled Directory Assistance Calls

When dialing "0-" to reach the AT&T operator , customer can ask for assistance to retrieve a local telephone listing. The CICADA service (product is DIRECToryLINK) is used today by OSPS for all customer requests for DA. It is requested in ACCS and is also supported by the AT&T operators. In addition to assisting customers to retrieve a directory listing, the CICADA feature also offers call completion by the OSPS operator.

2.5.2.14 Time and Charges

Time and Charges (T&C) is a service where an AT&T operator provides a verbal quotation of the elapsed time and associated charges for a call. The AT&T operator must request the customer to stay on the line after the call. The AT&T operator performs a specific key action to record the request. At the conclusion of the call, OSPS notifies an AT&T operator, not necessarily the original operator, of the time and charges for the call. The AT&T operator reports the time and charges to the calling party, called party, or the third party as requested.

The OSPS performs timing and sends query to the RTRS (Real Time Rating System) to determine the charges. An AT&T operator can also query CSIDS for time and charges. In response to the Time and Charges request, the AT&T operator provides verbal quotation of the elapsed time and associated charges for a call.

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[24] Conversation with M. C. Pollman, August 1, 1995.

[25] Refer to Issue 8 in section 12.2 titled "Other Issues Addressed".

[26] Correspondence from L. C. Mui and W. Diak, June 22, 1995.

[27] Conversation with W. Diak, August 16, 1995.

[28] L. Connelly, Local Operator Services Marketing Service Description" (draft), 3/26/96.

The Charges-and-Minutes Display feature displays the charges and elapsed time associated with a real-time rated Time & Charges call.

2.5.2.15 Rate Quote

The Rate Quote feature allows the AT&T operator to obtain charging rate (depending on tariff rate) for an operator-assisted or AP call placed from a calling line, if requested by the calling, called, or third party. The 5ESS® OSPS obtains the rates from the Real-Time Rating System (RTRS) data base or the AT&T operator obtains the rates from CSIDS depending on the nature of the request.

The Rate Quote feature allows the AT&T operator to answer callers' questions regarding the charges that they are billed for a specific call type at a specific time.

3. HIGH-LEVEL ARCHITECTURE DESCRIPTION (LCM)

The AT&T 5ESS® OSPS is used to service the local operator and calling card traffic.

When AT&T Local Service is offered via LEC Service Resale, the LEC End Office will route the local operator services (OS) requests of AT&T customers to an AT&T 5ESS® OSPS. (Additional details provided in the "Access Architecture" sub-section of the "TECHNICAL DESCRIPTION" section.)

When AT&T Local Service is offered via Loop Resale (i.e. the facility build scenario), LEC loops will be separated at the Main Distributing Frame (MDF) at the LEC End Office and transported to AT&T's Local End Office (5ESS®). The 5ESS® End Office will route the local operator traffic to an AT&T 5ESS® OSPS. (Additional details provided in the "Access Architecture" sub-section of the "TECHNICAL DESCRIPTION" section.)

When AT&T Local Service is offered via the End Office of a CAP (Competitive Access Provider), local operator traffic is also routed to the AT&T 5ESS® OSPS.

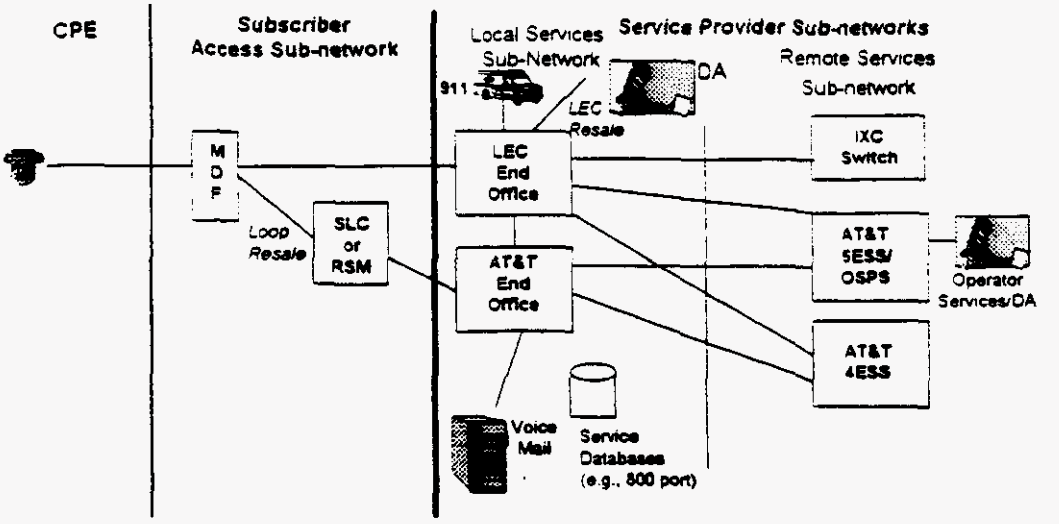

Figure 1 - End-to-End Telephone Architecture

Local operator services will be provided by an existing AT&T 5ESS® OSPS presently handling AT&T interLATA consumer originated traffic in a designated geographic area. All customer traffic originating from an AT&T Local End Office will have their automatic call processing handled by the serving 5ESS® OSPS or will be interflowed to one of the Mega-system OSPSs for operator intervention. Billing and call completion will still be handled by the serving 5ESS® OSPS. Presently, AT&T is employing a Mega-system network utilizing the OSPS interflow feature capability (refer to FEATURE INTERACTION *section for additional details.*).

The use of dedicated trunking to the OSPS is discussed under the topic of "Trunking Options" in the "Access Architecture" sub-section of the "TECHNICAL DESCRIPTION" section.

4. TECHNICAL DESCRIPTION

4.1 Access Architecture (LCM)

This Technical Plan considers the offering of local Operator Services (OS) in both the *Loop Resale* and *LEC Service Resale* environment. There is a specific access arrangement required by each of the two environment in bringing the local OS calls from the LEC End Office in LEC Service Resale and AT&T Local End Office in Loop Resale) to the AT&T 5ESS® OSPS. The access architecture for each of the two scenarios are summarized here. The rest of the local OS architecture and call flows (see "Call Flows" section) are identical for both cases.

In the *Loop Resale* environment, connectivity from the customer premise to the AT&T Local End Office is provided through the loop leased from the incumbent LEC to the AT&T Local End Office. The leased loop terminates at the LEC's MDF (Main Distributing Frame) and is handed off to AT&T transport equipment to the AT&T Local End Office. In the *LEC Service Resale* environment, POTS service is provided on leased LEC facility. See Figure 2 below. In the *Loop Resale* environment, the 5ESS® switch is used as the AT&T Local End Office. AT&T customers dial 0+/0- calls to obtain local operator and calling card services.

Local OS Calls Access Architecture

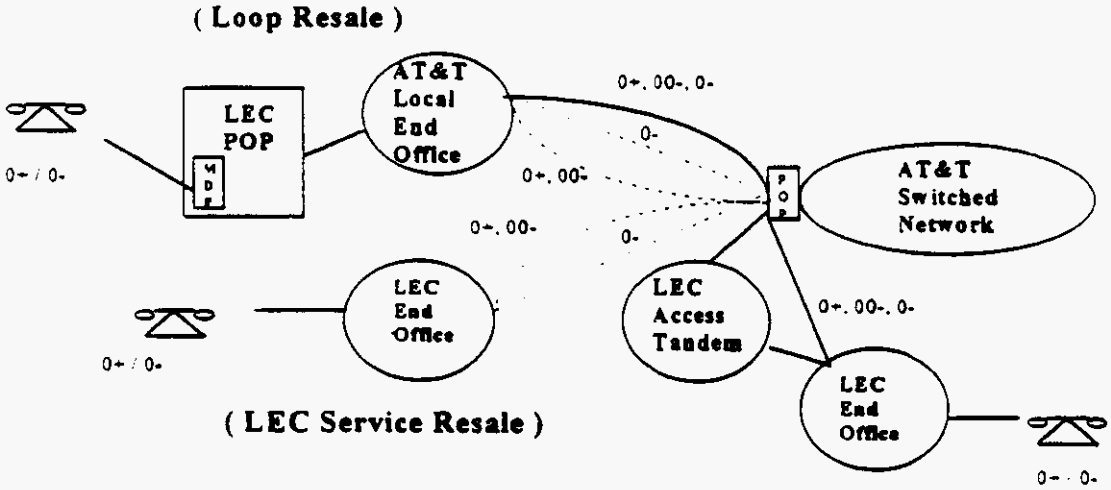

Figure 2: Local OS Calls Access Architecture

(The dash lines show trunking arrangement if 0- traffic is routed via separate trunk group. Current view is to route 0+, 00-, and 0- via same trunk group.)

In the *LEC Service Resale* environment, the LEC End Office may be an AT&T 5ESS® switch, an AT&T 1A ESS™ switch, AT&T No. 5 Crossbar switch, or other vendor switches. AT&T customers dial 0+/0- to obtain local operator and calling card services. The provisioning of a new class of service (e.g. a new line class code - rate center (LCC-RAX) for the 5ESS® OSPS or an equivalent scheme for other switches) may be used to separate AT&T customers and route their OS calls to the AT&T 5ESS® OSPS platform. One or more line class code - rate centers (LCC-RAXs) must be created for use in provisioning AT&T local customers whose line terminates at the LEC end-office switch. The LCC-RAX combinations specifying the allowable line characteristics combinations to support service offerings to AT&T local customers at the 5ESS® end office. Each of the AT&T LCC-RAXs is set up to enable proper routing of the customer-dialed OS calls to the AT&T 5ESS® OSPS. The set of AT&T LCC-RAXs is defined on each end-office switch with AT&T local customer line terminations. Each AT&T customer is assigned only one of the LCC-RAXs..

For the case of the 1A ESS™ switch, the local OS calls can be routed to the 5ESS® OSPS using a special route index. For other vendor switches, the routing solution is switch-dependent, but is generally regarded as feasible (not verified) since line class codes - rate center and enhanced / special route index are basic switch capabilities. This access arrangement will need to be negotiated with the incumbent LEC as part of the LEC Service Resale negotiations.

In the future, *LEC Service Resale* can be easier if regulatory ruling is in place to require incumbent LECs to unbundle services such as local operator service, or to implement the capability for customer to specify a local service provider.

This access architecture has synergy with CAT (Consolidated Access Traffic) as a longer term Access Architecture with some issues to resolve (refer to section 6.6).

4.1.1 LEC Service Resale Access Architecture (LCM)

The following information is an assessment of the feasibility for routing 0+ (intraLATA) and 0- calls from AT&T local customer lines to an AT&T 5ESS® OSPS to service operator-assisted calls in the LEC Service Resale environment.

In this section, "AT&T local customer lines" refer to those lines at the LEC End Office when the subscribers have become AT&T customers in the LEC Service Resale environment.

4.1.1.1 Routing of AT&T 0+ (IntraLATA) and 0- Traffic to the AT&T OSPS

To route the local Operator Services traffic to the AT&T 5ESS® OSPS in the LEC Service Resale environment, the LEC end office must have the ability to distinguish between AT&T and LEC customer lines, and to route the calls to the AT&T 5ESS® OSPS. In the following sections, the AT&T switches are examined to assess the feasibility.

4.1.1.1.1 5ESS® End-Office Switch

AT&T local customer lines will be provisioned with a unique Line Class Code, unique Screening Code (SC), and Digit Analysis Selector (DAS). This provisioning serves the purpose of separating the AT&T local "0+" and "0-" traffic from the LECs. For local "0+" calls, a unique Route Index is provided to route via a dedicated AT&T OSPS trunk group with EIS (Extended Inband Signaling) signaling to a specified AT&T 5ESS® OSPS. For "0-" calls, a unique Route Index is provided to route via an AT&T OSPS trunk group dedicated to "0-" calls, and with EIS signaling, to the AT&T 5ESS® OSPS. The non-AT&T lines are not affected.

4.1.1.1.2 1A ESS™ End-Office Switch

For AT&T 1A ESS™, Line Class Code will NOT be used. AT&T local lines will be provisioned with a unique Chart in the Chart Class Column translator. This provisioning serves the purpose of separating the AT&T local "0+" and "0-" traffic from the LECs. For local "0+" calls, a unique Traffic Service Position route index is used to access the unique AT&T 0+ trunk group. For "0-" calls, a Special Route Index is used to access the unique AT&T 0- trunk group.

4.1.1.1.3 No. 5 Crossbar Switch

For the AT&T No. 5 Crossbar switch, Line Class Code will NOT be used. Instead, a new Class of Service, with special routing information to route the "0+" and "0-" calls to an AT&T 5ESS® OSPS, can be defined for a Vertical Group. AT&T customer lines can be assigned to the Vertical Group for the special class of service.

4.1.1.1.4 Other Vendor End-Office Switch

For other vendor switches, similar capability to the above 5ESS® and / or 1A ESS™ are believed to exist since all switches do have such screening and routing capabilities. The terminology may differ, however.

4.1.1.1.5 Recording Option Setting

The option of "no AMA record" on the LEC switch should be selected so recording is done at the 5ESS® OSPS. This would imply the LEC and AT&T would have to negotiate some charging arrangement since no access record is generated for the LEC to charge AT&T. One such negotiation may be a flat fee for routing all AT&T local operator service traffic to the AT&T network.

4.1.1.2 Class of Service Provisioning and Administration

4.1.1.2.1 Defining a New Class of Service

One or more line class code - rate centers (LCC-RAXs) must be defined (as described in the preceding section) for use in provisioning AT&T local customers whose line terminates at the LEC end-office switch. The new class of services are one or more line class code - rate center (LCC-RAX) combinations specifying the allowable line characteristics combinations to support service offerings to AT&T local customers at the 5ESS® end office. Each of the AT&T LCC-RAXs is set up to enable proper routing of the customer dialed OS calls to the AT&T 5ESS® OSPS. The set of AT&T LCC-RAXs is defined on each end-office switch with AT&T local customer line terminations. Each AT&T customer is assigned one of the LCC-RAXs.

4.1.1.2.2 Provisioning

When a customer is provisioned for AT&T local service, the customer line must be provisioned with the AT&T class of service code to enable the proper switch screening and routing of AT&T local "0+" and "0-" traffic to AT&T 5ESS® OSPS.

4.1.1.2.3 Administration

An important factor in the Administration of the new class of service is that the LEC has correctly provisioned the customer with one of the AT&T class of service codes. To the LECs, this represents an additional step in their OAM&P process.

When a customer terminates local service subscription with AT&T, the line must be provisioned to disable the switch screening and routing previously provisioned to route AT&T local "0+" and "0-" traffic to AT&T 5ESS® OSPS. This can be accomplished through service order provisioning.

4.1.1.3 Trunking Options

1. For AT&T local customer lines, it is possible to route "0-" calls via a dedicated trunk group (Modified Feature Group C trunks) to a specified AT&T 5ESS® OSPS so that the call can be handled by an AT&T operator without the upfront Automated Position treatment. This means we can have "0-" calls routed to and handled by an AT&T operator team. (The handling of "0-" calls by an AT&T operator team would eliminate legal concern regarding the handling of emergency calls).

2. The trunk group for the "0+" (intraLATA) traffic can be the same as the existing trunk group for AT&T's "0+" (interLATA) traffic and the same VRCP announcement message can be used and there is no need to distinguish the two types of "0+" calls.

3. If "00-" and "0-" traffic are routed via the SAME trunk group, some development is needed for the 5ESS® OSPS to be able to distinguish between the incoming "00-" and "0-" traffic (e.g. 00- traffic to receive VRCP treatment and 0- traffic to be handled by an AT&T operator team). An alternative to development is to use of a dedicated trunk group for "0-" traffic. See the following section on Separation of "00-" and "0-" traffic.

4. For lines NOT subscribed to AT&T, the "0+" and "0-" call handling are NOT AFFECTED.

5. Current plan is to route 0- calls to APS. [29]

To provide Product Management with the flexibility to support any regulatory / legal requirements, and to satisfy the cost-saving objective on trunking requirements, this TP offers both alternatives of routing 0- calls with and without dedicated trunking to the OSPS. Technical feasibility and solution for each of the two options will be assessed. It is therefore possible to use dedicated trunking in a specific state, and shared trunking in other states, as appropriate.

4.1.1.4 Separation of 00- and 0- Traffic

Automation which was added to the AP 3/Q 1994 was intended to give front end menu treatment to calls dialed 00-, 10102880 or 102880. Independent Company (ICO) Article 4, "0-" traffic was not supported. It was felt that Article 4, "0-" traffic using speech recognition may have emergency service liability implications and/or other legal implications. For local service, there are economic reasons for aggregating all call types (0-, 00-, and all 0+) on one trunk group[30]. This means that the 5ESS® OSPS will need to be capable of separating out the "0-" traffic and routing it to a live operator while still routing the "0+" calls to the AP (Automated Position). Using the proper carrier start pulse (ST for interexchange carrier, and STP for local carrier) in the signaling from an equal-access End Office / Access Tandem, and the presence (or lack thereof) of 0 signaled from the End Office/Access Tandem, the 5ESS® OSPS is able to separate the "0-" traffic without any development provided different carrier indication is used for the 0- and 00- traffic. 5ESS® OSPS development is required to separate the 0- and 00- traffic routed over the same trunk group and shared the same "0288" carrier indication. An alternative may be to route the 0- traffic over a different trunk group to separate the "00-" and "0-" traffic.

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[29] As per Product Management meeting of 3/22/96.

[30] OSPS response to Preliminary Planning Estimates for 0-/00- Call Separation for Local Service Operator service feature(Request from L. Mui and T. Dunn,9/95) is being re-assessed to take into consideration of the carrier indication.

A decision to automate the "0-" local traffic was made after a review from the Regulatory perspective to assess any potential legal requirement for servicing "0-" traffic by a live operator. There is still a concern by some of the emergency liability even if there is no legal requirements. This concern can be alleviated by (a) development to separate 00- and 0- traffic at the OSPS, or (b) routing via separate trunk groups.

4.1.2 Loop Resale Access Architecture (GJK)

With loop resale, AT&T will own and manage the local end office (i.e., AT&T Local End Office) while operator services will be provided by an AT&T 5ESS® OSPS. Trunks must be available between the AT&T Local End Office and the AT&T 5ESS® OSPS to provide intraLATA operator services to AT&T local customers as well as interLATA operator services to AT&T local customers who also choose AT&T as their interLATA (and, in the future, intraLATA toll) carrier. The trunks used to carry traffic from the AT&T Local End Office to the AT&T 5ESS® OSPS are one-way Modified Feature Group C trunks. The transport architecture for these trunks is described in the Loop Resale Technical Plan[31]

The AT&T Local End Office will route 0+, 00-, and 0- traffic to a specific AT&T 5ESS® OSPS using a dedicated trunk group, and these calls will receive Voice Recognition Call Processing[32] announcement treatment. If desirable, the AT&T Local End Office can route "0-" traffic to a specific AT&T 5ESS® OSPS using a separate, dedicated trunk group so that the calls can be handled by an AT&T operator. Please refer to the preceding "Trunking Options" and "Separation of 00- and 0- Traffic" sections.

Outgoing calls from the AT&T 5ESS® OSPS (e.g., calls where operator enters a forward number or calls where calling party enters a forward number, etc.) will be routed back through the AT&T Switched Network and will not be directly routed from the AT&T 5ESS® OSPS to an AT&T Local End Office.

[31] Loop Resale Technical Plan Draft 3.0 (Coordinators: T. E. Adams, S. Ganesan, D. E. Levy), December 22, 1995.

[32] As per Local Operator Service Product Management, 3/22/96.

4.2 Local Operator Services Call Flows (LCM)[33] [34]

This section describes the call flow for each of the major local Operator Services calls. **For each call-type section, the "Call Flow" sub-section describes the call flow. The "Local Service Impacts" sub-section summarizes outages, work required to make feature work, and other local service considerations, if any.**

The following calls are discussed in individual sections to follow.

Section 4.2.1 - 0+ (IntraLATA) Call w/ Automated Position
Section 4.2.2 - 0+ (IntraLATA) Call -- ACCS with Bail Out to Operator
Section 4.2.3 - 0- Call thru Automated Position and Bail Out to Operator
Section 4.2.4 - 0- Call (Operator-Handled)
Section 4.2.5 - Sequence Calls
Section 4.2.6 - Automated Sequence Calls, Following Operator Release
Section 4.2.7 - Operator-assisted Directory Assistance Calls
Section 4.2.8 - Emergency Calls
Section 4.2.9 - Real Time Rated Calls
Section 4.2.10 - Busy Line Verify / Emergency Interrupt

Sections 4.2.1 - 4.2.4 are intended to be general call flows divided into categories of 0+(intraLATA) and 0- calls, and with / without automated positions. Sections 4.2.5 - 4.2.10 are intended to focus on more details of the specified call type.

Throughout this section, the term "5ESS®" refers to a 5ESS® or other vendor end office switch in the LEC Service Resale environment, and an AT&T 5ESS® end office switch in the Loop Resale environment. The term "5ESS® OSPS" refers to the AT&T 5ESS® OSPS used to service operator service calls.

4.2.1 (IntraLATA) Call w/ Automated Position (TAD / LCM)

4.2.1.1 Call Flow

1. Customer goes off hook.
2. 5ESS® looks up customer record.
3. 5ESS® transmits dial tone.
4. 5ESS® does line screening.
5. Customer dials 0+7/10 digits.[35]
6. 5ESS® determines call is a request for operator assistance.
    a) In accordance with the customer profile, and/or local regulatory rules the call could be routed as follows:
        - If Customer dials an IntraLATA toll call and the Customer has selected a carrier other than AT&T, the call will be routed to a LEC Access Tandem (AT) or other carrier.

[33] Authors acknowledge input from P. Thomson.
[34] Authors acknowledge input from C. Most, S. Scharm, and the Operator Call Servicing team.
[35] With INPA, if calls is handled by LEC local office, the local dialing plan could block 7-digit dialing. If OSPS does receive 7 digits, OSPS will prepend the NPA to the 7-digits.

- If Customer dials an InterLATA toll call and the Customer has selected an Interexchange Carrier (IXC) other than AT&T, the call will be routed to a LEC AT or to other carrier.

b) If the 5ESS® is not equipped with an OSPS T&A application, the 5ESS® will route the call to a terminating Switch Module (SM) that has an idle trunk to an OSPS T&A in a distant 5ESS®.

c) If the 5ESS® is equipped with an OSPS T&A application the 5ESS® routes the call through the originating SM on a loop around trunk to an incoming SM, then through the ACD to a position.

7. In all cases the selected trunks will employ Modified Operator Services (MOS) signaling protocols, i.e. Feature Group C (FGC).
   a) Address signaling must be in MFJ Operator Services Expanded Signaling format.
   b) Wink signaling can be Inband (IB), Expanded Inband (EIS), or Multiwink (MW).
   c) OSPS will determine the originating NPA from the incoming trunk group.
8. A typical 0+ address signaled format will be:
   a) KP+NPA+NXX+XXXX+ST3P or KP+NXX+XXXX+ST3P, where Customer dialed 0+NPA+NXX+XXXX or 0+NXX+XXXX.
9. The Customer's ANI will be outpulsed after receiving a wink from the 5ESSÊ® OSPS in the following format:
   KP+II+NXX+XXXX+ST.
10. In 6a, 6b, and 6c above an AMA Access Charge record is made in the local originating 5ESS®.
11. 5ESS® OSPS receives called and calling numbers.
12. If access line is restricted to Operator-Handled treatment only, the call will be delivered to an AT&T operator bypassing the ACCS feature.
13. If there are no restrictions, the call will be given the bong tone in the ACCS (Automated Calling Card Service).
14. ACCS provides the initial prompt, branding and instructional announcement. After branding the ACCS announcement will say, "Please enter your Calling Card Number and Pin or major Credit Card and the four digit expiration date now."
15. If an AT&T calling card is keyed in by the customer, OSPS will send a query to the AT&T CAS card validation database. Also, commercial credit cards queries are sent to the AT&T CCC database. A query will be sent to the Network Access Interrupt (NAI) database, if a LEC card is entered.
    a) If the card is invalid, an announcement will be played to the Customer asking them to enter their card number again.
    b) If the card number is invalid after the second attempt, the Customer will be so advised and the call will be terminated, and Operator Bail Out treatment applies in specific cases, such as CAS geographic restriction.
    c) If the card number is valid, the call will be allowed to proceed normally without operator intervention.

(Text in italics indicates call processing by the Automated Position.)

16. The customer elects to do nothing or dials 0, the Customer will be distributed to an AP which will provide a prompting announcement that explains how service can be requested. The customer will hear the following initial AP announcement, "This is AT&T, please say Collect, Calling Card, Third Number, Person to Person or Operator now."

17. The customer still does nothing, after time out a second announcement will be played. The customer will hear, "Sorry, please say Collect, Calling Card, Third Number, Person to Person, or Operator now."

18. If the customer says "Collect", go to step 33.

19. If the customer says "Calling Card", go to step 26.

20. If the customer says "Third Number", go to step 37.

21. If the customer says "Person-to-Person" go to step 45.
22. If customer says "Operator", go to step 29.
23. If customer says a foreign language keyword (e.g." espanol") recognized by APS, go to step 46.
24. If the customer still does nothing, the AP will play a final announcement, "Please hold for operator assistance."
Go to step 29.
25. In addition callers may reach an AT&T operator by saying "Operator," dialing 0, or flashing, or timing out after the bong tone or after any announcement has started.

(Continue from line 16 and 17 -- if customer says "Calling Card")

26. If the customer says "Calling Card," the AP will play an announcement to the customer that says, "Please Touch Tone or speak your Calling Card Number now."
27. If the customer speaks the Calling Card number and it is invalid or unintelligible the customer will be instructed to hold for an AT&T operator as in 24 above. If Calling Card is valid, the call will be given ACCS like treatment without operator intervention.
28. If the customer elects to enter their Calling Card number via the Touch Tone method, and it is invalid, the customer will be given a second chance to re-enter their Calling Card Number. If the Calling Card Number is still invalid the customer will hear an announcement that says , "Please hang up and dial again, the card number you have dialed is not valid." The customer is now disconnected. If the Calling Card number is valid the call will be given ACCS like treatment without operator intervention.
Go to 47.

(Continue from line 16 and 17 – if customer dials 0 or says "Operator")

29. If the Customer had elected to dial 0, or say "Operator", the AP will transfer the customer to a Toll and Assistance (T&A) queue awaiting the next available operator. (It could be interflowed to a megasystem host site.)
30. When an AT&T operator is attached, Originating Line Screening (OLS) and/or Terminating Code Screening (TCS) restrictions, if any, will appear on the screen.
31. The Customer can elect to place an alternately billed call, e.g., Station Collect, Station Bill to Third, or a Person, etc.
32. When operator class charges the call, the appropriate database query will be sent.
    a) If a BLG OK indicator is displayed on the screen, the AT&T operator will allow the call to proceed normally.
    b) If a BLG DENY indicator is displayed on the screen, the AT&T operator will advise the Customer to seek another form of alternate billing or terminate the call.

Go to step 47.

(Continue from line 16 and 17 -- if customer says "Collect")

33. If the customer says "Collect, " the AP will check to see if collect calls are being automated and if billing acceptance is required. An NAI query is sent by the OSPS for Collect calls.
    a) With the automation of collect calls, the AP uses name recording , nameless protocol operation, or a location recording to identify the calling party to the called party being billed for the call.
    b) With More Efficient Call Handling (MECH) operation, the AP identifies collect as the billing type. The call is then released to the system for normal MECH handling. The AP does not record the callers name.

c) *In Second Operator Name Identification (SONIC) treatment, collection of the calling party's name is deferred until the billed party has answered.*

d) *In operator transfer mode, the AP if billing acceptance is required, transfers the call to an AT&T operator for name collection and completion.*

34. *If billing acceptance is required for automated collect calls and name recording is being used for this call, the calling party will be prompted to speak his/her name.*

35. *The call will now be outpulsed. On called party answer, the AP plays a charge acceptance prompting announcement including the recorded calling party name.*

36. *If the called party says "No," the forward connection is released and the calling party hears an announcement that charges were refused and they should hang up.*
If the called party says "Yes," the calling party will be fully connected and both parties will hear an announcement to proceed with the call.
Go to step 47.

(Continue from line 16 and 17 -- if customer says "Third Number")

37. *If the calling party says "Third Number," a prompt to dial the third number will be given.*

38. *If the calling party provides a 10-digit third number, an NAI query is sent by the OSPS, and when BLG OK is received from NAI, then enter Improved Third Number Acceptance (ITNA) feature. If ITNA specifies that third party billing acceptance is not required, the calling customer will be released from the AP and will be connected to the called party on called party answer.*

39. *If third number billing requires acceptance from the third party and name recording is turned on, the calling party will be prompted for their name, which will be recorded.*

40. *After speaking their name, the calling party will hear normal network responses, i.e., ringing, busy, etc., following outpulsing of the third number.*

41. *On third party answer and if no answering machine is detected, the calling party will be split and muted while the third party hears a charge acceptance announcement If the third party says "Yes," the AP will release the third party and release the call to the system.*

42. *If an answering machine is detected by the AP (on interflowed collect or any third number acceptance call) the following announcement will be played back: "Caller, we appear to have reached an answering device. Please hold for an operator, who will assist you with your call."*

43. *If the third party says "No," the third party connection will be released, and the calling party will hear an announcement that the charges were refused and that they should hang up. Also an option, if specified, the calling party can be connected to an AT&T operator.*
Go to step 47.

44. *If the caller says Person or Person-to-person, the AP will play the following announcement to the caller when person charging is requested and MECH treatment is being given: " Thank you for your person-to-person call. Please hold, an operator will assist you when your party answers." The call will be given MECH treatment similar to a collect call.*
Go to 47.

(Continue from line 16 and 17 -- if customer says "Person" or "Person to Person")

45. *If the calling party says "Person", "Person Collect", or " Person to Person," the AP will either transfer the call to an AT&T operator or as an alternative, the AP can assign the call PERSON PAID and give MECH treatment similar to that given for collect calls.*
Go to step 47.

(Continue from line 16 and 17 -- if customer says a foreign language keyword recognized by APS)

46. If the calling party says a foreign language keyword recognized by APS, the call is routed to the MLOS (Multi-Lingual Operator Services) center, and billing records are generated at the center. Go to step 47

47. In all of the above 0+ call types, OSPS will control the call until either the calling party or called party disconnects.
48. Upon completion of the call, OSPS will generate an appropriate AMA call record.

4.2.1.2 Local Service Impacts

1. The enhancement to distinguish intraLATA (toll and local) and 0- calls from all other calls is being worked as part of this technical planning effort (see section 10.2 item 2).

2. In those cases when the Collect or Third Number called parties refuse charges on AP-handled call, the Local Product Management can elect to bring the calling party to an AT&T operator rather than playing an announcement instructing the caller to hang up, assuming that we have implemented the capability stated in item 1 above to distinguish intraLATA and 0- calls from all other calls.

3. The 0+ (intraLATA) calls arriving at an AT&T operator's position will be identified as "0288 ATT"[36] in the Primary Data Region of the Operator Work Station (OWS) or Video Display (VDT) terminal. In addition, when a call is transferred to an AT&T operator from an AP, the AP will forward a message containing information about the call and the reason for the transfer. The text will be displayed to the AT&T operator upon position seizure.

4. MLOS (Multi-Lingual Operator Services) impact, if any, is being assessed.

5. Features such as MLOS and CICADA may be requested via APS or the AT&T operator, and are part of the standard OSPS offering. If for any reason that these features are to be excluded, then development is required. At this time, no reason for exclusion has been identified.

4.2.2 (IntraLATA) Calls -- ACCS with Bail Out to Operator (TAD / LCM)

4.2.2.1 Call Flow

1. Customer goes off hook.

[36] Issue 16 in the "ISSUES" section was identified to address the proper carrier indication at the 5ESS® OSPS for local OS calls. The alternatives are LEC, 0288 (AT&T), or another 4-digit code. A conference call eas held on 1/18/96 (J. Atkins, K.C. Choi, T. Dunn, C. Most, L. Mui, T. O'Malley, D. Pearson, and P. Thomson) and it was decided that the local OS calls should be identified with a carrier indication of "0288" (AT&T). Refer to "Conference Call Minutes - Carrier Indication" email, L.Mui, 1/18/96.

2. 5ESS® looks up customer record.
3. 5ESS® transmits dial tone.
4. 5ESS® does *line screening*.
5. Customer dials 0+7/10 digits.
6. 5ESS® determines call is a request for operator assistance.
   a) In accordance with the customer profile, and/or local regulatory rules the call could be routed as follows:
      - If customer dials an IntraLATA toll call and the Customer has selected a carrier other than AT&T, the call will be routed to a LEC Access Tandem (AT) or to other carrier.
      - If Customer dials an InterLATA toll call and the Customer has selected an Interexchange Carrier (IXC) other than AT&T, the call will be routed to a LEC AT or to other carrier.
   b) If the 5ESS® is not equipped with an OSPS T&A application, the 5ESS® will route the call to a terminating SM that has an idle trunk to an OSPS T&A in a distant 5ESS®. (assumed customer PICed AT&T).
   c) If the 5ESS® is equipped with an OSPS T&A application the 5ESS® routes the call through the originating SM on a loop around trunk to an incoming SM, then through the ACD to a position. (assumed customer PICed AT&T).
7. In all cases the selected trunks will employ Modified Operator Services (MOS) signaling protocols, i.e. Feature Group C (FGC).
   a) Address signaling must be in MFJ Operator Services Expanded Signaling format.
   b) Wink signaling can be Inband (IB), Expanded Inband (EIS), or Multiwink (MW).
   c) OSPS will determine the originating NPA from the incoming trunk group.
8. A typical 0+ address signaled format will be:
   KP+NPA+NXX+XXXX+ST3P or KP+NXX+XXXX+ST3P, where the Customer dialed 0+NPA+NXX+XXXX or 0+NXX+XXXX.
9. Customer's ANI will be outpulsed after receiving a wink from the 5ESS® OSPS in the following format:
   KP+II+NXX+XXXX+ST
10. In 6a, 6b, and 6c above an AMA Access Charge record is made in the local originating 5ESS®.
11. 5ESS® OSPS receives called and calling numbers, returns ACCS prompt (bong tone) then awaits customer's action.
12. Customer can elect one of four (4) possible options.
    a) Key in a calling card number utilizing their keypad or an acoustical DTMF coupler,
    b) Key in 0 (Zero) for an AT&T operator utilizing their keypad or an acoustical DTMF coupler,
    c) Flash their access line's switch hook and an AT&T operator will be attached,
    d) Do nothing, and time out to an AT&T operator.
13. If an AT&T calling card is keyed in by the customer, OSPS will send a query to the AT&T CAS card validation database. Also, commercial credit cards queries are sent to the AT&T CCC database. A query will be sent to the Network Access Interrupt (NAI) database, if a LEC card is entered.
    a) If the card is invalid, an announcement will be played to the Customer asking them to enter their card number again.
    b) If the card number is invalid after the second attempt, the Customer will be so advised and the call will be terminated, and Operator Bail Out treatment applies in specific cases, such as CAS geographic restriction.
    c) If the card number is valid, the call will be allowed to proceed normally without operator intervention.
14. If the customer says a foreign Language keyword recognized by APS, the call will be routed to the appropriate MLOS centers.

15. If the Customer had elected to dial 0, flash, or time out, the call will be placed in queue awaiting the next available AP. To get a live operator, the customer must then dial 0, flash, timeout, or say OPERATOR at AP.
16. When an AT&T operator is attached, Originating Line Screening (OLS) and/or Terminating Code Screening (TCS) restrictions, if any, will appear on the screen.
17. The Customer can now elect to place an alternately billed call, e.g.,Station Collect, Station Bill to Third, or a Person, etc.
18. When operator class charges the call, the appropriate query will be sent.
    a) If a BLG OK indicator is displayed on the screen, the AT&T operator will allow the call to proceed normally.
    b) If a BLG DENY indicator is displayed on the screen, the AT&T operator will advise the Customer to seek another form of alternate billing or terminate the call.
19. In all of the above 0+ calls, OSPS will control the call until either the calling party or called party disconnects.
20. Upon completion of the call, OSPS will generate an appropriate AMA call record.

4.2.2.2 Local Service Impacts

1. The 0+ (intraLATA) calls arriving at an AT&T operator's position will be identified as "0288 ATT" in the Primary Data Region of the Operator Work Station (OWS) or Video Display (VDT) terminal.

2. Features such as CICADA and MLOS may be requested via APS or the AT&T operator, and are part of the standard OSPS offering. If for any reason that these features are to be excluded, then development is required. At this time, no reason for exclusion has been identified.

4.2.3 Call thru Automated Position and Bail Out to Operator (TAD / LCM)[37]

4.2.3.1 Call Flow

1. Customer goes Off Hook.
2. 5ESS® looks up customer record.
3. 5ESS® transmits dial tone.
4. 5ESS® does line screening.
5. Customer dials 0- call.
6. 5ESS® determines the call is a request for operator assistance.
    a) If 5ESS® is not equipped with an OSPS, the 5ESS® will route the call to a terminating SM that has an idle trunk to an OSPS in a distant 5ESS®.
    b) If the 5ESS® is equipped with OSPS, the 5ESS® routes the call through the originating SM on a loop around trunk to an incoming SM, and then through an ACD to the position.
7. In all cases the selected trunks will employ Feature Group C signaling protocols. A typical address signaled format will be:
    a) KP+ST+KP+II+NXX+XXXX+ST.
    b) Address signaling must be in Multifrequency Operator Services Expanded Address Signaling format.

[37] Information on 0- with Automated Position from Koulter.

c) Wink signaling can be inband (IB), Expanded Inband (EIS), or Multi Wink (MW).
d) OSPS will determine NPA from the incoming trunk group.

8. In 6a and 6b above an AMA Access Charge record is made in the originating 5ESS®.

9. 5ESS® OSPS does originating line screening (OLS) on signaled ANI.

10. If access line is restricted to Operator-Handled treatment only, the call will be delivered to an AT&T operator bypassing the Automated Position (AP) feature. The customer will receive treatment similar to a call dialed 0- without AP. See call flows in the following section labeled "0- Call (Operator-Handled)".

11. If there are no restrictions, the call will be placed in queue awaiting the next available AP.

(Text in italics indicates call processing by the Automated Position.)

12. When the AP is attached, the caller will hear "AT&T", followed by an AP announcement, "To place a call, please dial the number you are calling now; or for assistance, say Operator now."

NOTE: Indetermate Information Bureau[38] (IIB2) Front End Menu (to be deployed in near future) is an automated service to provide an alternate means of delivering information to customers. The menu will provide prompt for: DA, area code, country code, name of place, (2) Dialing Instructions, (3) Rates, (4) Time-of-day, (5) Switch to AT&T (Winback), and (6) Operator.

13. If the customer elects to do nothing, in 5 seconds a second announcement will be played, "Sorry, your response was not understood. This will be followed by "To place a call ..."

14. If the customer still does nothing or is intelligible the following will occur, a) an AT&T Operator is attached or b) an announcement stating, "Your response was not understood, please hang up and try your call again." Followed by a disconnect.

15. If the customer elects to dial in the number that they intend to call, e.g., 7 or 10 digits, a prompt (bong tone only) is heard followed by an AP initial announcement. The call flows will now proceed as if it were a 0+ call with AP. See section on "0+ (IntraLATA) Call with Automated Position". Beginning with step 17.

16. If the customer said "Operator" or dialed 0 the AP will transfer the call to an AT&T operator for further treatment.

17. The call is now placed in queue awaiting the next available operator.

18. When an AT&T operator becomes available, the call will be displayed on the OWS/VDT as 0- NON COIN. The FWD# will appear blank and the 10 digit BK# (ANI) will be displayed. If any calling restrictions, as a result of OLS, will also be displayed to the AT&T operator.

19. The AT&T operator will now determine the nature of the customer's request.

20. The Customer can elect to place an alternately billed call, e.g., Station Collect, Station Bill to Third, or a Person, etc.

21. The AT&T operator class charge the call (e.g., collect, DDD, card, etc.). This will be retained for the call record When operator class charges the call, the appropriate database query will be sent.
    a) If a BLG OK indicator is displayed on the screen, the AT&T operator will allow the call to proceed normally.
    b) If a BLG DENY indicator is displayed on the screen, the AT&T operator will advise the Customer to seek another form of alternate billing or terminate the call.

22. If the customer requests the operator to complete the call the following procedures will be observed:

[38] Input from N. Hoque, 2/96.

a) If the customer asks for assistance dialing because of difficulty dialing themselves, the AT&T operator after obtaining the forward number depresses ENTER and class charge appropriately. The AT&T operator enters a trouble code associated with the difficulty i.e., TBL #, two digit code, and presses ENTER and POS REL (Position Release).

b) If customer does not indicate difficulty reaching their called party, the AT&T operator after obtaining the forward number, depresses ENTER, and class charge appropriately, and POS REL.

23. If the customer requests that the AT&T operator determine if a particular line is busy or idle then a special local BLV (Busy Line Verify) network is employed. This is a local network maintained by the LEC. If AT&T does not have access to it the AT&T operator can obtain the appropriate routing information from CSIDS and place an outgoing Inward call to the distant operator system that has a BLV network connection to the line.

a) After verifying status of the called party's line, the AT&T operator informs the originating customer and depresses RECRD TICKT (Record Ticket) and POS REL keys to record call for billing purposes.

b) If the originating customer requests that the AT&T operator interrupt called party, the AT&T operator depresses EI (Emergency Interrupt) and informs the called party the reason for the interrupt. The AT&T operator can offer the customer the option to complete the call to called party or let the originating customer dial the call themselves. In either case the AT&T operator depresses RECRD TICKT and POS REL to record call.

c) Refer to "Busy Line Verify / Emergency Interrupt" section for additional information.

24. If the customer says a foreign Language keyword recognized by APS, the call will he routed to the appropriate MLOS centers.

25. In all the above 0- call types, 5ESS®OSPS will control the call until either calling party or called party disconnects.

26. Upon completion of the call(s) an AMA billing record will be generated by the 5ESS® OSPS for operator assistance.

4.2.3.2 Local Service Impacts

1. The 0- calls arriving at an AT&T operator's position will be identified as "0288 ATT" in the Primary Data Region of the Operator Work Station (OWS) or Video Display (VDT) terminal.

2. A decision to automate the "0-" local traffic should include a review from the regulatory perspective to assess any potential legal requirement for servicing "0-" traffic by a live operator. There is a general concern of the emergency liability even if there is no legal requirements.

3. If access to the 5ESS® OSPS is via an Access Tandem, it could preclude some capability (e.g., flash during pre-call setup) from getting to the AT&T operator.

4. Features such as MLOS, CICADA, and IIB may be requested via APS or the AT&T operator, and are part of the standard OSPS offering. If for any reason that these features are to be excluded, then development is required. At this time, no reason for exclusion has been identified.

4.2.4 Call (Operator-Handled) (TAD / LCM)

4.2.4.1 Call Flow

1. Customer goes Off Hook.
2. 5ESS® looks up customer record.
3. 5ESS® transmits dial tone.
4. 5ESS® does line screening.
5. Customer dials 0- call.
6. 5ESS® determines the call is a request for operator assistance.
    a) If 5ESS® is not equipped with an OSPS, the 5ESS® will route the call to a terminating SM that has an idle trunk to a 5ESS® OSPS in a distant 5ESS®.
    b) If the 5ESS® is equipped with OSPS, the 5ESS® routes the call through the originating SM on a loop around trunk to an incoming SM, and then through an ACD to the position.
7. In all cases the selected trunks will employ Feature Group C signaling protocols. A typical address signaled format will be:
    a) KP+ST+KP+II+NXX+XXXX+ST.
    b) Address signaling must be in Multifrequency Operator Services Expanded Address Signaling format.
    c) Wink signaling can be *Inband (IB), Expanded Inband (EIS), or Multi Wink (MW).*
    d) 5ESS® OSPS will determine NPA from the incoming trunk group.
8. In 6a and 6b above an AMA Access Charge record is made in the originating 5ESS®.
9. 5ESS® OSPS does originating line screening (OLS) on signaled ANI.
10. The call is now placed in queue awaiting the next available operator.
11. When an AT&T operator becomes available, the call will be displayed on the
    a) OWS/VDT as 0- NON COIN. The FWD# will appear blank and the 10 digit BK# (ANI) will be displayed. If any calling restrictions, as a result of OLS, will also be displayed to the AT&T operator.
12. The AT&T operator will now determine the nature of the customer request. The customer can elect to place an alternately billed call, e.g., Station Collect, Station Bill to Third, or a Person, etc.
13. When operator class charges the call, the appropriate database query will be sent.
    a) If a BLG OK indicator is displayed on the screen, the AT&T operator will allow the call to proceed normally.
    b) If a BLG DENY indicator is displayed on the screen, the AT&T operator will advise the Customer to seek another form of alternate billing or terminate the call.
14. If the customer requests the AT&T operator to complete the call the following procedures will be observed:
    a) If the customer asks for assistance dialing because of difficulty dialing themselves, the AT&T operator after obtaining the forward number depresses ENTER, and class charge appropriately. The AT&T operator enters a trouble code associated with the difficulty i.e., TBL #, two digit code, and presses ENTER, and POS REL (Position Release).
    b) If customer does not indicate difficulty reaching their called party, the AT&T operator after obtaining the forward number, depresses ENTER, class charge appropriately, and POS REL.
15. If the customer requests that the AT&T operator determine if a particular line is busy or idle then a special local BLV (Busy Line Verify) network is employed. This is a local network maintained by the LEC. If AT&T does not have access to it the AT&T operator can place an outgoing Inward call to the distant operator system that has a BLV network connection to the line.

a) After verifying status of the called party's line, the AT&T operator informs the originating customer and depresses RECRD TICKT (Record Ticket) and POS REL keys to record call for billing purposes.

b) If the originating customer requests that the AT&T operator interrupt called party, the AT&T operator depresses EI (Emergency Interrupt) and informs the called party the reason for the interrupt. The AT&T operator can offer the customer the option to complete the call to called party or let the originating customer dial the call themselves. In either case the AT&T operator depresses RECRD TICKT and POS REL to record call.

Refer to the "Busy Line Verify / Emergency Interrupt" section for additional information.

16. In all the above 0-call types, 5ESS® OSPS will control the call until either calling party or Called party disconnects.

17. Upon completion of the call(s) an AMA billing record will be generated.

4.2.4.2 Local Service Impacts

1. The 0- calls arriving at an AT&T operator's position will be identified as "0288 ATT" in the Primary Data Region of the Operator Work Station (OWS) or Video Display (VDT) terminal.

2. If access to the 5ESS® OSPS is via an Access Tandem, it could preclude some capability (e.g., flash during pre-call setup) from getting to the AT&T operator.

4.2.5 Sequence Calls (TAD)

Once an ACCS call has been completed and the called party has hung up, or before the called party answers, an AT&T customer can place another call with or without re-entering their calling card or credit card number again.

4.2.5.1 Assumptions

For the following call flow scenario, it is assumed that:

- A caller originated a call from an access line equipped with DTMF signaling capability.
- The caller entered the calling card number using the automated calling card service or AP.

  Or an AT&T operator enters calling card number for customer. (If operator or AP, call must have been released from position before outpulsing or outpulsed from position and FWD# answered.)
- The called party answered; conversation was completed; and an on-hook indication was received from the called party.

  Or the called party did not answer, but the calling party is still on the line

4.2.5.2 Call Flow

1. Calling party presses the # key
2. 5ESS® OSPS makes an appropriate AMA record for the first call. Determines that ACCS calling card sequence calls are allowed. Provides an ACCS announcement to prompt the calling party to dial another number.
3. The calling party dials a North American Numbering Plan (NANP) number or dials 01+ an international number.
4. 5ESS® OSPS collects the digits and identifies them as a valid forward number, and sends an appropriate CARD query. If allowed, 5ESS® OSPS outpulses the call to the forward number.
5. Calling party hears ringing.
6. Called party answers.
7. 5ESS® OSPS begins chargeable timing.
8. Called party talks to calling party and then hangs up.
9. Calling party can now place another sequence call or hang up.
10. 5ESS® OSPS generates the appropriate AMA record for a calling card call.

4.2.5.3 Local Service Impacts

1. If the first call is local, and the second is an interLATA call and if AT&T is the local service provider, then there is no problem. For description of issue when changing carrier, refer to "LATA Mapping, Carrier Selection Enforcement and IntraLATA Toll Presubscription" sub-section in the "FEATURE INTERACTION" section.

2. A policy must be established on the handling of sequence calls. One possibility is to enforce the Carrier of Choice (COC) of the first call to be applicable to all subsequent sequence calls.

4.2.6 Automated Sequence Dialing, Following Operator Release (TAD)

The following is the call flow for the automatic sequence dialing, following operator release. This call-type is also known as Subsequent Calls. The call flow scenario is similar to Sequence calls. Once a call has been made by an AT&T operator entering the calling card number, the calling customer can make additional calls without re-entering their calling card or credit card again.

4.2.6.1 Assumptions

For the following call scenario, it is assumed that:

- The call was setup by an AT&T operator with a back card number class of charge.
- The AT&T operator entered calling card, or credit card was valid.

4.2.6.2 Call Flow

1. Caller requests operator to place a calling card call to a forward number. Operator enters new number provided by caller.
2. 5ESS® OSPS collects the digits and identifies them as a valid forward number.
3. Operator requests from caller a calling card number if customer has not already entered it on previous call.
4. 5ESS® OSPS sends a validation query to the appropriate card validation database.
5. If card is valid the call will automatically outpulse.
6. Operator releases from call.
7. Calling party hears ringing.
8. Called party answers.
9. 5ESS® OSPS begins chargeable timing.
10. Called party talks to calling party and then hangs up.
11. Calling party can now place a sequence call by pressing the # key or hang up..
12. 5ESS® OSPS generates the appropriate AMA record for a calling card call.

4.2.6.3 Local Service Impacts

1. If the first call is intraLATA, and the second is an interLATA call and if AT&T is the local service provider, then there is no problem. For description of issue when changing carrier, refer to "LATA Mapping, Carrier Selection Enforcement and IntraLATA Toll Presubscription" sub-section in the "FEATURE INTERACTION" section.

2. A policy must be established on the handling of sequence calls. One possibility is to enforce the Carrier of Choice (COC) of the first call to be applicable to all subsequent sequence calls.

4.2.7 Operator-assisted Directory Assistance Calls (LCM)

4.2.7.1 Call Flow

DA calls may be handled by either having the AT&T operator retrieve listing information from the Directory Assistance (DA) bureau or to hand-off the call to the DA bureau. Today, the standard OSPS offering for DA is the CICADA feature. The call flow is as follows:

1. Customer calls "0-" or "0+" ACCS to NPA-555-1212, and reaches an AT&T operator.
2. Customer requests operator to retrieve telephone listing number.
3. Operator offers to provide instruction or to connect customer to a directory assistance bureau..

4. Operator prompts customer for City (also State, if it is needed for identification), and operator retrieves the DA bureau telephone number.

5. If customer has requested instruction, the AT&T operator would provide the DA bureau telephone number to the customer. Call flow ended.

6. If customer has requested connection to the DA bureau, operator would establish the connection to the DA Bureau.

7. Operator presses POS REL.

8. Call flow ended.

4.2.7.2 Local Service Impacts

1. At the present time, the AT&T interLATA operator routes the DA call to the NDA Platform in some states and the local DA bureau (LEC) in the remaining states. A Product decision (based on business decision and regulatory requirements) needs to be made if DA calls should be directed to the AT&T National DA Platform (NDAP) which will be servicing AT&T local DA. This will then be implemented by M&P for specific regions.

2. The CICADA feature may be requested via APS or the AT&T operator, and is part of the standard OSPS offering. If for any reason that these features are to be excluded, then development is required. At this time, no reason for exclusion has been identified.

4.2.8 Emergency Call Handling [39]

There are two categories of ***Emergency calls***: (a) Emergency calls to Official Public Emergency Agency (e.g., police, fire department, ambulance, military authorities), (b) Emergency calls to Non-Official Public Emergency Agencies (e.g., hospitals, doctors, crisis center, life guards), (c) Emergency Trace or Annoyance calls, and (d) Hostage situations. On any Emergency calls to Official Public Emergency Agencies, no charge applies. The Non-Official category of calls are chargeable.

4.2.8.1 Call Flow - Emergency Calls

(a) Sample scenario - 0- NON COIN Official Agency Emergency Call

1. Call arrives at the position and OWS/VDT displays 0-NON-COIN, carrier 0288 ATT, and the Back number.

2. Customer requests an emergency agency ("Police" used in this example).

3. Operator asks for City and requests the customer to hold the line.

4. Operator presses EMERG soft key. EMERG, MANUAL TICKET and NO CHARGE are displayed.

[39] Emergency call flows in this section provided by S. Scharm of Operator Call Servicing.

(a) Tariff must determine chargeable and non-chargeable for intraLATA toll and intraLATA local for designated area.

5. Operator presses MAIN DB to access CSIDS. secures number for the police by using the NPA-NXX of the back number (BK#) displayed.

6. Operator presses the forward number (FWD#) key and input the digits of the retrieved number. The number is outpulsed.

7. Operator presses DETAIL and inputs "POLICE" in the Detail field. Presses ENTER.

8. Forward party goes off hook, agency answers, and conversation begins.

9. Operator presses HOLD to place the call on hold.

10. A new call arrives on loop 2. While processing the call on loop 2, loop 1 ICON blinks. Operator excuses her/himself from the call. Presses LOOP #, input "1" for loop 1, presses ENTER.

11. The emergency call is redisplayed. The call has terminated.

12. Operator presses MAKE BUSY, RECRD TICKT and POS REL, and the Emergency call is released from the position.

13. Operator reaccesses loop 2 to continue the second call.

14. Emergency ticket is printed at the appropriate printer at the end of the call.

(b) Sample scenario - 0- NON COIN Non-Official Agency Emergency Call

1. Call arrives at the position and OWS/VDT displays 0-NON-COIN, carrier 0288 ATT, and the Back number.

2. Customer requests connection to an Non-Official Emergency Agency ("Doctor" used in this example). The customer provides the number.

3. Operator requests customer to hold the line.

4. Operator presses EMERG soft key. MANUAL TICKET and NO CHARGE are displayed.

(a) Tariff must determine chargeable and non chargeable for intraLATA toll and intraLATA local for designated area.

5. Operator presses forward number (FWD #) key and inputs the number.

Operator presses SEND and PAID, and STATION PAID is displayed. BLG CHECK is also displayed. When BLG OK is displayed, the call is outpulsed.

6. Operator presses DETAIL and inputs "DOCTOR" in Detail field. Presses ENTER.

7. Forward number answers and conversation begins.

8. Operator presses POS REL.

9 Emergency ticket is printed at the appropriate printer at the end of the call.

(c) Emergency Trace/Annoyance Calls

Caller makes a request to trace the origin of an Emergency or Annoyance call.

Operator Methods and Procedures[40] need to be developed in coordination with Corporate Security to handle this type of calls. These procedures are outside the scope of this Technical Plan.

The following is a suggested call flow provided by Operator Call Servicing organization and is captured in this document for information only. The call scenario applies to an AT&T Local Customer 's request.[41]

1. AT&T Local Customer dials 0- and requests a trace on the origin of an Emergency or Annoyance call.
2. The AT&T operator will access CSIDS and retrieve the appropriate number based on the Back number NPA NXX.
3. The AT&T operator will provide the number to the customer.
4. If the customer requests, the AT&T operator will connect the customer, Class Charge appropriately and POS REL.

(d) Hostage Situation

Operator Methods and Procedures need to be developed in coordination with Corporate Security and Local Law Enforcement to handle this type of calls. These procedures are outside the scope of this Technical Plan.

The following are procedures suggested by the Operator Call Servicing organization, and is included in this document for information only. Within the current LEC environment, the call is controlled at the local switch. The AT&T operator is not involved if the initial call from the hostage holder is made directly to law enforcement. If an AT&T local operator receives the initial call, the local operator office personnel will contact the appropriate law enforcement agency and follow the directions of the agency until the call is removed from the position. Local actions are required to control incoming and outgoing calls from the hostage telephone during negotiations.

4.2.8.2 Local Service Impacts (LCM)

[40] Listed as Issue 6 in the section 12.2 titled "Other Issues Addressed".

[41] The local OS addressed by this plan is offered to AT&T Local Customers only. The service offer is not extended to Non-AT&T Local Customers and ICO Customers. Please refer to Service Definition section.

4.2.8.2.1 Emergency Referral Numbers

For Emergency Call, it is necessary to provide operator with up-to-date contact information for proper referral and connectivity. As AT&T enters local business, the frequency of emergency calls would increase and the need to have up-to-date emergency information would be more pronounce.

A longer term solution is an industry-wide requirement to be mandated by the PUC to have up-to-date emergency referral numbers available to all carriers.

The planning for 911 service is outside the scope of this document. The Plan of Record is 911 service negotiated as part of the contract in the LEC Service Resale arrangement. AT&T will need to provide 911 service in the Loop Resale environment. For 911 planning, refer to the Loop Resale Technical Plan (Reference 5 document).

4.2.8.2.2 Impacts on Emergency Agency Calls

There are occasions when a customer calls an AT&T operator and requests connection to an official emergency agency and then hangs up or leaves the line as the connection is being established. In this case, the AT&T operator would advise the agency a party was trying to reach them and would then be guided by the agency. As directed by the agency, the AT&T operator would either provide the back number, ring back the calling party, call back the calling party, or provide any call details. This call scenario is impacted by the following issues:[42]

4.2.8.2.2.1 Local Number Portability

NOTE: This is not an issue for LEC Resale and the expected limited use of RCF-based solution for market entry.

The issue of which number will be displayed to the AT&T operator, the LEC ported number or the AT&T number, must be resolved. If it is the AT&T number, we must determine if this number will be sufficient for the agency to respond properly, i.e. access the customer address to dispatch to the location. In order to ensure appropriate emergency call handling it may be necessary to have the LEC ported number as well as the AT&T number available or displayed to the AT&T operator.

In addition, it is necessary to determine the requirement of AT&T to provide agencies with cross references for address information related to customers with an AT&T number and a LEC ported number, and customers with only an AT&T number. As we will be serving customers who have LEC ported numbers and AT&T numbers as well as customers with only AT&T numbers, this information must be accessible to the emergency agencies.

The ability to ring back a LEC ported number or an AT&T number must be assessed. We must determine if there is a difference in treatment for customers who have a LEC ported number and an AT&T number and those customers who only have an AT&T number.

If Local Number Portability is in place, it is the current understanding[43] that the customer back number is sufficient as reference number for the public emergency agency to locate the caller's address in emergency situations. It is, therefore, not necessary to have both the ported number and the original number for .

[42] Included input provided by S. Scharm.

[43] As per conversation with R. Manzo 1/16/96.

4.2.9 Real Time Rated Calls (LCM)

4.2.9.1 Call Flow[45] [46]

The Real Time Rating System (RTRS) is accessed by the OSPS for calls requiring rates. The AT&T operator also queries CSIDS for rate quotes depending on the request. The following are some call flow scenarios.

4.2.9.1.1 Purchase Limit Calling Card (e.g., Global card)

1. A 0+ or 0- call comes in and the caller uses a Purchase Limit calling card.
2. A calling card query is sent to the CAS database to determine the status and the balance.
3. 5ESS® OSPS sends an initial query to RTRS to verify if there is sufficient balance in the account to cover talk for the initial period charge.
4. If return and is OK, outpulsing occurs, and forward party answers.
5. OSPS timers start.
   (a) When timer expires, 5ESS® OSPS sends query to calculate the charges.
   (b) 5ESS® OSPS compares the last balance and the current charges.
   (c) If the limit has not been exceeded, the call is allowed to continue, and the timer is again set.
6. 5ESS® OSPS also sends update to the CAS system with the most recent debit.
7. This process repeats for each time interval set by the timer.
8. When the caller disconnects, if a message is sent by CAS to disconnect this call (e.g. card limit is exceeded), then special announcements, warnings, and termination applied.

4.2.9.1.2 Rate Quote

Sample Call Flow - Customer request for Rate Quote[47]

1. Customer requests rate quote for current date.
2. Operator accesses RTRS.
3. A query is sent to the RTRS requesting rate information for the class of the charge (for example, sent-paid, calling card).
4. For the different types of cards, the DIFF Card feature can track different rates depending on the card type, as determined by the card number.

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[45] Conversation with W. Chang.
[46] Conversation with C. Azar.
[47] Rate Quote call flow provided by S. Scharm.

4.2.9.1.3 Time and Charges

Sample Call Flow - 0+ Paid[48]

1. Customer requests Time and Charges on a call.
2. Operator presses the T&C soft key and requests the customer to remain on the line at the end of the call.
3. At PR OK, the AT&T operator presses POS REL and the call proceeds.
4. When the call is terminated, and the calling party remains on the line, OSPS attaches an AT&T operator. The AT&T operator quotes the T&C and presses POS REL.
5. When the call is terminated and the customer does not remain on the line, OSPS attaches an AT&T operator. The AT&T operator outpulses the calling party number, quotes the charges and presses POS REL.

Note: If the call is billed other than paid, i.e. Collect, Bill to Third number, or charges are to be quoted to another party, additional key actions are required.

4.2.9.2 Local Service Impacts

4.2.9.2.1 RTRS Database

In order for RTRS to apply unique rates to intraLATA calls (i.e., rates different than for toll intraLATA calls), RTRS must be able to distinguish an **intraLATA local** call versus an **intraLATA toll** call or **interLATA call.**[49]

A process does currently exist in support of the Article IV company operator services and can be used as a model for local service. RTRS currently distinguishes **intraLATA local** calls from **intraLATA toll** and **interLATA** calls only for those Article IV independent LECs that AT&T provides Operator Services for. Local calling area data is entered into the RTRS database for the Article IV LECs by the RTRS Database Administration Organization. To support initial trials of local service, the RTRS Database Management organization may be able to update the database with the local calling area data. To support a national deployment of local service, however, it is not possible to manually maintain all the local calling NXX pairs or rate center pairs to determine a local calling area. Development is needed to mechanize the loading of data into RTRS from a data feed such as a tape or file. A data source is also needed for the local tariff data for each state as AT&T enters local market. The interface and process need to be

[48] Time and Charges call flow provided by S. Scharm.
[49] Description of RTRS issues provided by A. Myers.

established to implement the update. To anticipate growth in the local customer base, it is important that sufficient capacity is planned to support the data and the traffic.

4.2.10 Busy Line Verify / Emergency Interrupt (LCM)[50] [51]

If customer requests the AT&T operator to determine if a particular line is busy or idle, the local BLV (Busy Line Verify) network is employed. Today, the BLV network is a local network maintained by the LEC. If AT&T does not have access to it, the AT&T operator can place an outgoing Inward call to the distant operator system that has a BLV network connection to that line.

4.2.10.1 Call Flow

(a) Sample Call Flow 0- NON Coin Call - Forward Number Can Be Verified by AT&T Operator

1. Call is made via 0- to reach an AT&T operator.
2. Customer requests to verify a busy line and provides a 10 digit number.
3. The AT&T operator enters the forward number, presses PAID and asks customer if the line should be interrupted if there is conversation. PR OK is displayed.
4. Customer states he/she does not want the line interrupted.
5. The AT&T operator depresses the VERIFY soft key and asks the customer to hold. VERIFY OK is displayed.
6. The AT&T operator presses FWD # and SEND keys. FWD# ICON goes off hook and scrambled conversation is heard.
7. The AT&T operator presses RECRD TICKT and SPLIT BK.
8. The AT&T operator reports to the customer there is conversation on the line.
9. Customer acknowledges the report and hangs up. BK ICON goes on-hook
10. The AT&T operator presses POS REL key to end the call.

(b) Sample Call Flow 0- NON Coin Call - Forward Number Cannot be Verified by AT&T Operator

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[50] Input from J. Atkins and P. Thomson on BLV/EI.

[51] Input from C. Most, S. Scharm, and C. Lee on BLV issues and operator M&P, and BLV call flows from S. Scharm.

1. Call is made via 0- to reach an AT&T operator.

2. Customer requests to verify a busy line and provides a 10 digit number.

3. The AT&T operator enters the forward number, presses PAID and asks customer if the line should be interrupted if there is conversation. PR OK is displayed.

4. Customer states he/she does not want the line interrupted.

5. The AT&T operator presses the VERIFY soft key and asks customer to hold. VERIFY DENY is displayed.

6. The AT&T operator presses CANCEL CALL.

7. The AT&T operator reports to the customer the number cannot be verified.

8. Customer acknowledges report and hangs up. BK ICON goes on-hook.

9. The AT&T operator presses POS REL key to release from call.

(c) Sample Call Flow 0- NON Coin Call - Forward Number Verified Through Inward Operator at Other Local Company

1. Call is made via 0- to reach an AT&T operator.

2. Customer requests to verify a busy line and provides a 10 digit number.

3. The AT&T operator enters the forward number, presses PAID and asks customer if the line should be interrupted if there is conversation. PR OK is displayed.

4. Customer states he/she does not want the line interrupted.

5. The AT&T operator depresses the VERIFY soft key and asks customer to hold. VERIFY INDET is displayed.

6. The AT&T operator presses MAIN DB to access CSIDS.

7. The AT&T operator determines BLV Inward Route and inputs the number.

8. The AT&T operator presses MAIN DB to return to processing screen and SEND.

9. Inward operator answers.

10. The AT&T operator requests verification only on the 10 # number.

11. Inward operator acknowledges.

12. Inward operator performs the verification and reports there is conversation on the line.

13. The AT&T operator acknowledges the report, presses RECRD TICKT. Forward end of call is released. Class Charge and FWD # are retained.

14. The AT&T operator presses SPLIT BK and provides a report to the customer.

15. Customer acknowledges and hangs up. BK ICON goes on-hook.

The AT&T operator presses POS REL key to end the call.

(d) Sample Call Flow 0- NON Coin Call - Busy Line Interrupt Through Inward Operator at Other Local Company

1. Call is made via 0- to reach an AT&T operator.

2. Customer requests to verify a busy line and provides a 10 digit number.

3. The AT&T operator enters forward number, presses PAID and asks customer if the line should be interrupted if there is conversation. PR OK is displayed.

4. Customer states he/she does want the line interrupted.

5. The AT&T operator requests the customer's name, depresses the VERIFY soft key and asks the customer to hold. VERIFY INDET is displayed.

6. The AT&T operator presses MAIN DB to access CSIDS.

7. The AT&T operator determines BLV Inward Route and inputs the number.

8. The AT&T operator presses MAIN DB to return to processing screen and SEND.

9. Inward operator answers.

10. The AT&T operator presses EI soft key.

11. The AT&T operator requests verification and interruption of the 10 # number and supplies the customer's name.

12. Inward operator acknowledges.

13. Inward operator performs verification and reports the called party will release the line.

14. The AT&T operator acknowledges. Inward operator hangs up.

15. The AT&T operator presses RECRD TICKT.

16. The AT&T operator reports to the customer the line is clear and asks if they wish to dial or be connected.

17. Customer states they will dial and hangs up. BK ICON goes on-hook.

The AT&T operator presses POS REL to release the call.

4.2.10.2 Local Service Impacts

1. If the choice is LEC provided BLV capability, AT&T Local Service Negotiation Team needs to determine if existing agreements in place with the LECs for InterLATA Operator Services will also cover Local Operator Services. If not, it is necessary to negotiate with the LEC to provide for operator's capability to request LEC operator to perform BLV / EI since the LEC operator has signaling to control BLV circuits.
2. AT&T has provided BLV capability on behalf of article IV ICOs. If AT&T is to provide its own capability, then it will have to deploy additional trunking to handle the BLV trunking needs to handle BLV / EI.
3. As we enter the local market via the LEC Service Resale or Loop Resale environment, it is difficult for the AT&T operator to determine if a particular line needs to be routed to an AT&T, LEC, or another carrier's operator for BLV.

5. RECORDING / BILLING (ECB)

5.1 Local Switch Office Recording (ECB)

For the case of LEC Resale, OS recording at the LEC End Office will not be impacted because calls are expected to be routed to the AT&T 5ESS/OSPS. When the LEC End Office is requested to route the call to the ASN, it will send the call via a dedicated trunk group. At this point, the LEC End Office will generate an access record. There will be no AMA recording required for these calls at the LEC End Office.

For the case of Loop Resale, OS recording at the AT&T Local End Office will not be impacted because calls are expected to be routed to the AT&T 5ESS® OSPS. When the AT&T Local End Office routes the call to the ASN, it will send the call via a dedicated trunk group. At this point the AT&T Local End Office will generate an access record. There will be no AMA recording required for these calls at the AT&T Local End Office.

5.2 AT&T Switched Network Recording (ECB)

5.2.1 AMA Recording Using 5ESS® OSPS

The AT&T 5ESS® OSPS AMA recording is currently handled by the billing system. The RICS software will have to be updated to handle the new AMA Structure Codes, Call Codes and Modules that RICS did not previously handle. These primarily include access AMA records. There will be no new AMA requirements for the 5ESS® OSPS.

If the LEC provides the Operator Service and a call is completed, the EMI records will contain information indicating Call Completion.

5.2.1.1 CICADA Call Completion AMA Record

CICADA Call Completion for calls processed by the 5ESS® OSPS is indicated by the appending of an AMA Module 321 to the AMA structure. CICADA Call Completion applies to both the Loop Resale and the LEC Resale. A call completed by the AT&T operator is an "operator assisted" call or "operator completed" call and is billed as such.

5.2.2 Need for Identification of AMA Record

Currently, there is no immediate need to distinguish the interLATA 5ESS® OSPS AMA record from the local 5ESS® OSPS AMA record.

5.2.3 Methods of Distinguishing the AMA Records

For the Loop Resale case, the Local OS AMA records are created at some designated 5ESS® OSPS to which the Local 5ESS® directs the calls. These AMA records look similar to regular 5ESS® OSPS AMA records.

For the LEC Resale case there are either AT&T 5ESS® OSPS AMA records or the EMI records. There is currently no way to determine if the 5ESS® OSPS AMA records were locally-originated (e.g. 0- and 00- will look the same). LEC handling of OS calls, however, will create EMI records that will be obtained by AT&T. These records can be identified as Local OS records.

5.3 LNP Recording Impacts (ECB)

5.3.1 Local Routing Number (LRN) Solution

The analysis of Local Number Portability (LNP) has not yet been completed. An LNP AMA module for Illinois, however, has been defined. The AMA module for Local Routing Number (LRN) will be used initially. One copy of this AMA Module will be appended to the AMA structure for each porting of the Originating Number, Terminating Number, or Bill-to-3rd Party Number.. The AMA Module contains a table indicating which number is ported, the ported number, and a table indicating geographic location (reserved for future use). More details of LNP are contained in 'CCS Local Number Portability Technical Analysis Brief / Technical Plan,' Issue 1, Draft 5, February 23, 1996.

5.3.2 Remote Call Forwarding Plus (RCF+) Solution

Remote Call Forwarding Plus (RCF+) is similar to LNP in that it permits customers to relocate within the same local call area but to another carrier.

No AMA recording impacts are expected. More details of RCF+ are contained in 'CCS Local Number Portability Technical Analysis Brief / Technical Plan,' Issue 1, Draft 5, February 23, 1996.

5.4 Recording Impact Summary (ECB)

With the introduction of various local services (e.g., Local calling, Local Operator Services, Local DA, etc.), there will be a significant increase in AMA records and / or EMI records. This will impact the billing stream components - BILLDATS, RICS, MPS, etc. Other Local Service projects currently under development indicate these impacts as well.

5.5 Billing Impact

5.5.1 Billing Data Acquisition and Transport (BILLDATS) System (ECB)

The BILLDATS acts as an interface between the 4ESS™ and 5ESS® switches and the RICS processors. No impacts other than an increase in the number of AMA records is expected. The increase, however, is not known at this time but should not be significant.

BILLDATS will see significant increases in the number of AMA records as local traffic increases in AT&T-owned switches (e.g., Loop Resale traffic, Local DA, etc.). This may cause the need for more links between BILLDATS and AT&T's 5ESS® OSPS switches as well as more BILLDATS collectors.

5.5.2 Recorded Information Collection (RICS) System (ECB)

RICS will see significant increases in AMA record processing for the Loop Resale case and for the case in which LEC Resale directs local OS calls to an AT&T 5ESS® OSPS.

For the case of LEC Resale with LEC-handled OS calls, the LEC will record the calls and sell the EMI (Electronic Message Interchange records to AT&T. These records will be processed by MPS thus bypassing BILLDATS and RICS.

A detailed document[52] describing the RICS requirements for AMA recording is currently being written/finalized. It may be necessary for other RICS requirements to handle local Operator Services.

5.5.3 Message Rating (ECB)

The rating system will be processing either EMI records from RICS (for the LEC Service Resale case with AT&T-handled OS calls and the Loop Resale case) or EMI records purchased from the LEC (for the LEC Service Resale case with the LEC-handled OS calls). In either case, the message rating system will, however, be processing more records.

5.5.4 Local Billing System Impacts (ECB)

It is not certain at this time if a separate local service billing system will be used. Regardless, there will be significant impact to the billing system due to the increase in volumes of AMA records and/or EMI records.

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[52] J. P. Dowens, B. M. Sullivan, "IntraLATA/Local Service Recording - RICS Technical Plan - Issue 1.2. December 1, 1995".

6. FEATURE INTERACTIONS

6.1 5ESS® OSPS Interaction (LCM)

Local OS calls will be routed to the 5ESS® OSPS. Since carrier of "0288" is used for 00- and 0-, the separation of 00- and 0- would require routing the two types of traffic over separate trunk groups. The 00- traffic can be subject to VRCP treatment and the 0- traffic can then be routed to a live operator team.

If any future Product directive requires differentiation in interLATA and intraLATA call handling, the capability can be provided by an additional indicator on the operator screen to indicate interLATA or intraLATA. This indicator would require development, but the OSPS has the capability to make this distinction. To further differentiate intraLATA toll and intraLATA local calls, additional development effort is required.

6.2 Limitations with Mega-Systems Multi-Point Interflow (TAD)[53]

The only limitation that Multi-Point Interflow has is a geographic restriction that is inherent to all 5ESS® OSPS applications. When a call is interflowed from an originating / sending OSPS to a receiving OSPS for operator assistance, the AT&T operator cannot call the originating customer back if the connection has been released and the originating customer is not in the receiving OSPS's calling area. The AT&T operators currently have a workaround. They access a loop and depress the CONFR or FWD# key, and then set up a ten-digit telephone number to access an external party.

Operators cannot honor customer Delay Call requests in this environment. If the incumbent LEC honors them, then the customers will consider this as a limitation. All coin control signaling capabilities are intact and still working. This includes "Ringback" and operator hold.

6.3 LATA Mapping, Carrier Selection Enforcement and IntraLATA Toll Presubscription (TAD)

Currently, the 5ESS® OSPS functionality supports call completion's for both intraLATA and interLATA calls. 5ESS® OSPS determines whether a call is intraLATA or interLATA by performing a function called LATA mapping. Basically, LATA mapping compares the LATA number of the originating and terminating numbers. If the LATA numbers match, the call is intraLATA; if the LATA numbers do not match, the call is interLATA. 5ESS® OSPS incoming trunk group data defines, for calls originating on a particular trunk group, whether intraLATA only, interLATA only, or both intraLATA or interLATA call completion is allowed. The determination as to which value applies is derived from the applicable tariff. For example, when a call is received on a incoming trunk designated as interLATA only, the caller cannot switch called numbers and place an intraLATA call without violating the tariff. To conform with the tariff, 5ESS® OSPS utilizes a feature called Carrier Selection Enforcement (CSE). This feature will block the subsequent call and inform the customer with an announcement or the AT&T operator with an applicable display.[54] In many states, AT&T is certified and tariffed to complete intraLATA calls.

[53] Input from P. Thomson.

[54] An operator will allow a blocked call to proceed if it is an emergency call.

With the entry of AT&T into local services, LATA mapping and CSE has some short comings. Presently, LATA mapping cannot differentiate between local and intraLATA Toll. In addition, except for Article 4 Independent Companies (ICO's) AT&T OSPS T&A assumes all incoming calls to be AT&T with a Carrier Identification Code (CIC) of 288. Hence, it cannot determine who the COC is on subsequent calls. This can lead to some misrouted calls or calls that are turned back.

In response to an industry demand for an intraLATA Toll PIC functionality, Network Systems has developed a special feature called InterLATA Carrier's intraLATA capability (ICLATA). This feature is currently being made available to 5ESS® End Office as a local feature. This capability allows a Local End Office to assign different carriers to local and/or intraLATA Toll. The customer's access line interLATA PIC is still assigned as before. This feature is also known as IPIC. IPIC data specifies who will handle intraLATA Toll 0+ or 0- traffic. If the pre-subscribed intraLATA Toll carrier does not handle intraLATA Toll 0+ or 0- traffic, this traffic will be handled by the local exchange company (LEC). **The issue here is that 5ESS® OSPS T&A cannot differentiate between intraLATA local and intraLATA toll. There is no concept of intraLATA toll within the digit analysis tables to which OSPS has access. If OSPS could identify that the call was intraLATA toll and the signaled carrier is the COC, on sequence calls or calls where the AT&T operator is asked to change the forward or called number, a definitive carrier check cannot be made without the IPIC feature being available.** For example, if the initial intraLATA toll call was AT&T and the subsequent call was either intraLATA local or interLATA, OSPS cannot correctly identify the COC for the call.

The recommended solutions require development across multiple systems and/or extensive OSPS development. A preliminary Pass 0 time and charges estimate showed OSPS development impacts to be medium to high. Presently, Network Systems uses the following scale to determine estimated costs for a Pass 0 T&C. High is over 4 Million dollars, Medium is between 1 to 4 Million dollars, and Low is under 1 Million dollars. Development costs of outside systems, Such as RTRS, LIDB, etc., if impacted are not available as yet and would be in addition to OSPS. The recommended OSPS solutions are as follows:

(1) IntraLATA Toll Determination Through Expanded Digit Analysis. This approach requires a significant amount of tariff related data and would have an estimated OSPS development impact of ***medium.***

(2) IntraLATA Toll Determination Through a Data Base Query. This approach requires minimal OSPS data. However, this solution would require at least one data base dip on every intraLATA call. It would require RTRS development in addition to OSPS if it is necessary to distinguish intraLATA toll from intraLATA local calls. This approach would have an estimated OSPS development impact of ***medium to high.***

(3)PTC (Presubscribed Toll Carrier) Determination Through Trunking. This approach would require that the local office switch calls for those customers that are pre-subscribed to a particular carrier for intraLATA toll calls on separate trunks. This approach would have an estimated OSPS development impact of ***Medium.***

(4) PTC Determination Through Signaling. With this approach the originating line's PTC would be signaled by the local office or access tandem on every call requiring operator assisted calls. Incoming ISUP signaling would be required to support this approach. In addition, industry wide agreement and development on operator services ISUP signaling would be a requirement. It is highly unlikely that this approach will be implemented in the near future. There would be an estimated OSPS development impact of ***High*** required to support this solution.

(5) PTC Determination Through Line Information Data Base (LIDB) Query. PTC information is retrieved from the LIDB, or equivalent data base, which is the current source for pre-subscription data associated with an access line. This solution requires that LIDB maintain intraLATA toll pre-subscription

data. The cost of a LIDB query would be incurred on every intraLATA toll call. This approach would have an estimated OSPS development impact of ***Medium to High***.[55]

(6) Do Nothing. Apply Digit Analysis, LATA mapping, and CSE as is done today. Since 5ESS® OSPS cannot distinguish between an intraLATA local call and an IntraLATA toll call, calls will be mishandled. The impact of mishandling will be the loss of revenue for carriers. If CSE is not applied, the call will be misrouted and handled by the initially signaled carrier.

Some of the above recommended solutions, except #6, require either new industry standards, development across multiple systems and/or extensive 5ESS® OSPS T&A development. One of the above recommended solutions must be selected for further consideration. A request for Pass 1 or Pass 2 time and cost estimate can be submitted to Network Systems. This will offer a more detailed estimate that will provide a higher degree of accuracy with respect to the cost and time frame to develop the feature. Upon receiving the estimate, a commitment in writing will be required to secure development.

6.4 Multi-Linqual Operator Services (LCM)[56]

Multi-Lingual Operator Services (MLOS) is currently provided by special teams of dedicated operators who have been certified as fluent speaker in the language they are assisting. These operators serve customers on the OSPS platform. Access to the appropriate MLOS team is possible in a variety of ways including transfer by the OSPS operator, automated access using Word Spotting and Special Access Codes, and provision of special 800#.

Use of AT&T MLOS operators should be possible in both LEC Service Resale and Loop Resale environments since up until 1/1/96 MLOS operators provided language assistance to GTE, on a contract basis. In a LEC Resale environment, it is possible to transfer the call to the AT&T MLOS operator for call completion or bridge the MLOS operator on to provide translation service.

The support of MLOS is pending Product Management decision. At this time, MLOS remains an issue and will be addressed when given policy to support it.

6.5 Local Number Portability and 5E OSPS T&A (LCM, TAD)

Local Number Portability (LNP) is the capability for customers to change their Local Service Provider (LSP) while retaining their current telephone number. In the LNP environment, the NPA-NXXs which the LEC owns and leases numbers to other LSPs (e.g. AT&T) in the LEC Service Resale will be opened to portability, and the numbers leased from the LEC will be considered ported. The local OS service, along

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[55] Echols, T., "Comments Regarding OSPS Support of IntraLATA Toll Presubscription Functionality," June 26, 1995.
AT&T Translation Guide (TG5), "IntraLATA PIC Capability", Division 2, Section 4A149, May 1995.

[56] Input provided by C. Most, S. Scharm, and Operator Call Servicing team.

with other CCS / BCS features and services, is being assessed[57] for LNP impacts to ensure it is compatible with the various proposed LNP implementations.

There are several interim and permanent solutions being studied.[58] Certain interim solutions will require extensive development in the ASN and appear to be 1 to 2 years away. Unfortunately, AT&T must meet the customers needs in an earlier timeframe. Of the available alternatives, LNP with Remote Call Forwarding (RCF+) seems the most likely candidate. It is ready now, it can be applied on a line by line basis and does not require direct trunking between end offices from which customers numbers have been ported and the office to which they have been ported.[59] Unfortunately, RCF+ has some shortcomings when applied to operator services. When an AT&T operator attempts to verify a ported number they will always attempt to verify the ported number in the end office from which the customer left. Let's refer to this as a ported number A. The RCF+ can direct a normal call to ported number B. In reality, the AT&T operator or inward operator can only test ported number A. It will always look idle. This is not a new situation. RCF has already interfered with accuracy of the response / report of the BLV/EI feature long ago. In addition, calls arriving at an AT&T operator's position from a ported customer will always show their ANI to be ported number B. This is can lead to confusion and eventually customer dissatisfaction. Of course, the billing number populated in the AMA call record will be ported number B.

LNP is applicable to any call *to* an AT&T local service customer. LNP is needed to correctly route their calls. In addition, LNP has implications on calls *from* our customers, in that their caller ID/ANI must be the correct number. LNP applies only to Loop Resale and LEC Resale with AT&T-handled operator services. LNP has feature interactions with the following 5ESS® OSPS T&A features:

1. Telephone Line Number (TLN) based Calling Cards.[60]
2. TLN card billing if ported cards are honored.
3. Non Card billing of ported numbers.
4. Originating and terminating access charging.
5. Inward and BLV calls.

To date, there is no new LNP issues introduced by the local OS architecture. The areas of potential impact, including call routing and recording, are shared by other AT&T services. The solutions currently being addressed for these areas of service impacts would satisfy the needs of local OS service. Additional information will be added to this section in the future as needed.

6.5.1 Call Routing Impacts

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[57] CCS LNP Technical Plan (M. Bilder, coordinator) to address CCS LNP impacts on local features and services.

[58] Bhagat, P. K., et al., "Local Number Portability", Technical Plan, Core Feature Request #4216, Draft copy, June 5, 1995.

Bhagat, P. K., et al., "Local Number Portability with Carrier Portability Codes", Feasibility Report, NSD Tracking Number 4949, Draft Copy, June 15,1995.

Choy, M., et al, "Local Number Portability", Technical Plan.

[59] Correspondence with E. G. Burns, May 19, 1995.

[60] TLN Calling Card is not currently being considered as part of the local service offering. This status may change as a result of future business needs.

The local OS call completion is handled at the Regional 5ESS® OSPS. For calls involving an ANI which is ported, relevant information to complete the call (e.g. routing information) will be retrieved at the 5ESS®. This method will satisfy local OS as well as other services that have call completion occurring at the 5ESS®.

6.5.2 Recording Impacts

The LNP guidelines for recording are being discussed by the industry. There are various assumptions which are well accepted, but are subject to change. The method to be selected will apply to local DA as well as other services. Refer to the earlier "Recording" section for the current assessment of LNP impacts on local DA recording.

6.6 Consolidated Access Traffic (TAD)

The Consolidated Access Traffic (CAT) feature will consolidate 0+/0- and 1+ Hotel/Motel (1+H/M) traffic with 1+ direct dialed traffic from the access provider networks into the AT&T Switched Network (ASN). Coin calls (i.e., calls using coin signaling over MF-signaled trunks) are not within the scope of CAT; neither are calls that arrive at the 5ESS/OSPS over "Direct Connect" trunks.

Local Operator Services planning included routing the 0+ (intraLATA) / 0- traffic over the same trunk group as the 0+ (interLATA) and 00- traffic to the 5ESS® OSPS. This combined routing is considered an important cost saving objective by Local Service Product Management. If CAT is deployed, and the 0- traffic is being routed via the same trunk group, the CAT consolidation effort would resulted in routing the 0+ (intraLATA) and 0- traffic to the 4ESS™, as well. It is therefore necessary to assess the impact to the local OS features.

With the CAT feature[61] (anticipated earliest trunk transition is 4Q/97), local OS will lose the operator hold and ringback features since SS7 does not support hold or ringback. Flash also is not processed through an access tandem. 5ESS® OSPS serving local OS traffic cannot ignore the AT&T local customers needs for possible emergency situations where operator hold and/or ringback is required. These impacts are applicable to various 0+, 00-, and 0- call types when access to the AT&T operator is requested and the operator action requires these capabilities. The impacts on operator hold and ringback are particularly of concern for the 0- traffic because of the needs for operators to handle emergency calls.

The Local Operator Services Technical Team,[62] with participation from the CAT Technical Team, are evaluating the feasibility of potential 5ESS / OSPS development to provide the equivalent capability served by the operator-hold and the ring-back capabilities. One possibility is to extract the customer ANI and have it available for operator use. When there is a need to perform an operator ring-back, the ANI saved will be used by the AT&T operator to ring-back the customer. The potential solution resulting from the feasibility study can be included in CAT Phase 2 to restore the Local OS functionalities which are lost when CAT is deployed.

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[61] T. Dunn email 1/19/96 re CAT impacts on local OS.

[62] L. Mui, "CAT and Local Operator Services Interactions Meeting Minutes", meeting particpants: G.Buhler, T. Dunn, G. Kersus, D. Levy, L. Mui, Feb. 12, 1996.

Further investigation[63] by the Local Operator Services Technical Team has uncovered a workaround that will retain ANI at the position until the AT&T operator releases it. Previous development for features that use non-coin signaling have had developed a substitute for operator hold. This substitute capability for operator hold is called Pseudo Operator Hold. As a consequence of this development, operators have the ability to determine the originating (ANI) number of a call that has released from their position. Essentially what happens is, if a call reaches an AT&T operator's position and then disconnects, the call information will remain on the VDT/OWS screen with the calling party icon indicating an on-hook. The AT&T operator needs only to call back the 10 digit back number to re-establish the connection. If the call has been interflowed and the caller is outside the scope of the receiving OSPS, the AT&T operator must first set up a conference call to reach the back number.

Unfortunately, the AT&T operator cannot place a call to a forward number if the back number has been interflowed. This is known as a delayed call and will fail the digit analysis check. This is due to the calling number not being a legitimate number served by the receiving OSPS. This has been a problem since Multi-point was implemented and will require development in 5ESS@ OSPS to correct. A temporary workaround can be accomplished if local calls are prevented from being interflowed and are only served by those OSPS's in their areas. More effort[64] is in progress to identify a satisfactory solution to restore the operator hold and ring-back capabilities. Some potential solutions studied are listed in the "Assessment of New Development Efforts" sub-section of the "SUMMARY IMPACTS ASSESSMENT" section.

6.6.1 Typical Call Scenarios

A typical call scenario for a 0- Emergency call in tomorrow's environment[65] might play out as follows: AT&T Local customer in California dials 0- or is overflowed from a E911 / B911 facility reaches a live AT&T operator. An operator homing on Phoenix or Dallas[66] 5ESS® OSPS answers call. Customer says their house is on fire and asks for the fire department. Then in the excitement, the caller hangs up without giving their address. The connection between the caller and the operator is dropped but because of "Pseudo Operator Hold" feature the directory number of the access line the customer used to place the call remains on the position until released by the operator. The operator attempts to re-establish the connection is unable to reach the customer on the same loop that the call arrived on. If attempted, the call would fail digit analysis check, i.e., the saved ANI in the back number field would appear in *reverse video* and not outpulsed, thereby blocking the call. This is because the caller in California is not within the serving area of Phoenix or Dallas. The operator, in this case must place a "Conference Call"[67] to re-establish the connection to the calling party. The operator can now, if the caller answers, get the address. The operator using the City and State provided by the caller, queries the CSIDS database to obtain the telephone number of the fire department located closest to the caller. Having obtained the number, the operator must place the caller on hold and call the fire department on a separate loop. After giving the

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[63] T. Dunn, "Local Operator Services, Consolidated Access Traffic and Multipoint Interflow: Not So Perfect Together", March 15, 1996.

[64] Joint technical planning meeting meeting, attendees: G. Buhler, T. Dunn, T. Echols, K. Fowler, M. S. Huq, G. Kersus, D. Levy, B. Malmi, and L. Mui.
L. Mui, "CAT - Local OS Technical Planning 3/22/96 Meeting Minutes" email, 3/24/96.

[65] Tomorrow's environment includes: a NonCoin MF FG-D or SS7 incoming trunk from an access provider to 4ESS™, SS7 intertoll signaling from 4ESS™ to 5ESS®, Multipoint interflow and the Consolidated Access Traffic cost reduction initiative adopted.

[66] Phoenix or Dallas are the Multipoint interflow pair that serves AT&T customer originated traffic in the California area.

[67] Similar to a delayed call. A dummy back number is used to make the back number look like it originated from the sending OSPS.

fire department the location of the fire. the operator can now return to the caller and advise them that help is on the way.

If the above call scenario had been an emergency call for an ambulance or a Poison Control Center. where the caller and the emergency agency must be connected together the call become even more difficult. For instance. an AT&T Local customer in California upon reaching a live operator, requests the Poison Control Center in their area. If the caller does not hang up the operator looks up the number of Poison Control Center in the City and State provided by the caller and calls forward to the number provided. In this case the forward and back numbers are to be connected. No problem here. If the caller inadvertently hangs up and the connection is lost. the operator must place a delayed call. Since both the called party and the calling party are not geographically located in Phoenix or Dallas, the two calls cannot be connected. Once again as in the first scenario, the digit analysis check will prevent the calls from being completed.

The workarounds mentioned above are not acceptable solutions in today's world or in the Local Operator Services in the future. A better solution will give our operators greater flexibility in call processing.[68] An abbreviated scenario will play out as follows: The operator depresses the BK# (back number) key. This time the retained pseudo back number instead of showing in *reverse video* and blocking will *highlight* and begin outpulsing and ringing the calling station. As the back party answers the operator can enter a forward number and depresses SEND to begin outpulsing. Upon chargeable answer the operator can class charge on interLATA calls and depress EMERG key on local calls to suppress charging.

6.7 Real Time Rating System (KCC, MEF)

To anticipate growth in the AT&T local customer base, it is important that sufficient capacity and a more mechanized update method be planned and developed to support the traffic. Some software development will be needed to recognize intraLATA calls on a national basis, and to build separate feed to mechanize . This effort, however, may not be essential to initial deployment.

A request for time / cost estimate[69] is in progress for the RTRS development effort required to support local service. The request will be based on a minimum of 16 sets of tariff data. An assessment of the existing database capacity is also being requested.

6.8 Call Servicing Information Delivery System

Feature interaction with the Call Servicing Information Delivery System (CSIDS) to be assessed. A request for time / cost estimate is in progress for CSIDS impacts.[70]

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[68] Suggested by S. Scharm, March 21, 1996.

[69] K. C. Choi requested an RTRS time/cost estimate. A. Myers preparing the estimates. Tariff information is provided by L. Connolly to A. Myers.

[70] P. Bozza preparing the time / cost estimates. Tariff information is provided by L. Connelly to P. Bozza.

6.9 Line Information Data Base (LCM)

Billed Number Screening (BNS) is invoked by issuing a TCAP query message to the Line Information Data Base (LIDB) to obtain information such as whether the Billed Number may accept Collect or Third Number Billing calls (with or without verification), and may include the type of service / equipment on a line (e.g. POTS, prison, pay phone).

7. PERFORMANCE (DMM, DS)

This section addresses the Post Dial Delay(s) (PDD) expected to be encountered by customers requiring operator service assistance features for the local service offering.

Figure 3 provides an overall architecture for non-AT&T and AT&T End Offices (EO's) connecting to operator services systems.

7.1 Post Dial Delay

The PDD addressed in this document is divided into two scenarios.

PDD 1 - The amount of time to reach the OSPS response and,

PDD 2 - The amount of time to reach the destination number response.

PDD 1 for an end user to an OSPS, is measured from the time the caller has pressed or dialed the last digit of an operator code (0-, 00-) until receipt of an audible network response. PDD 2 for an end user, is the amount of time the caller must wait after the entering the last digit of their calling card number, or after the AT&T operator has entered the last digit of the forward number, until receipt of an audible network response.

A valid network response for a **VOICE** call to an OSPS may be one of the following:

- Audible Ringing,
- Station Busy Tone (60 ppm),
- All Circuits Busy Tone (120 ppm),
- Special Information Network Announcements,
- Special Information Tones (SIT),
- Calling Card Alerting Tone, or
- Network Operator Answer.

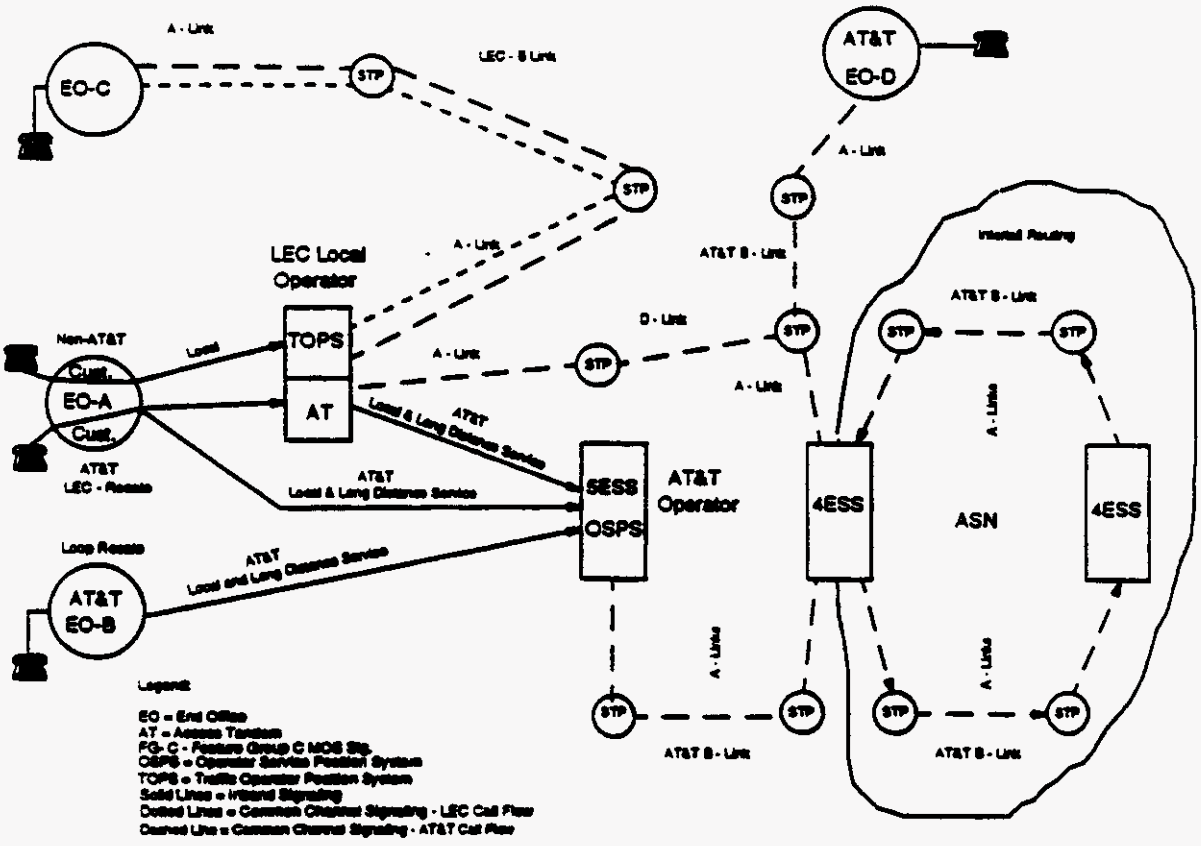
A valid network response for a **VOICE** or **VOICEBAND DATA** call from an OSPS to a forward number may be one of the following:

- Audible Ringing,
- Station Busy Tone (60 ppm),
- All Circuits Busy Tone (120 ppm),
- Special Information Network Announcements
- Special Information tones (SIT),
- Called Party Answer, or
- Modem Data Set Ready (Answer) Tone.

7.1.1 PDD 1 - Assumptions

It assumed that direct connections from the EO's to the TOPS, to the LEC AT and to the OSPS employs Feature Group C Modified Operator Services (MOS) inband signaling. Additionally, the trunks from the LEC AT to the 5ESS® OSPS are assumed to utilize Feature Group C MOS inband signaling as well. Refer to Figure 4.

Operator Post Dial Delay
Architecture
Figure 3



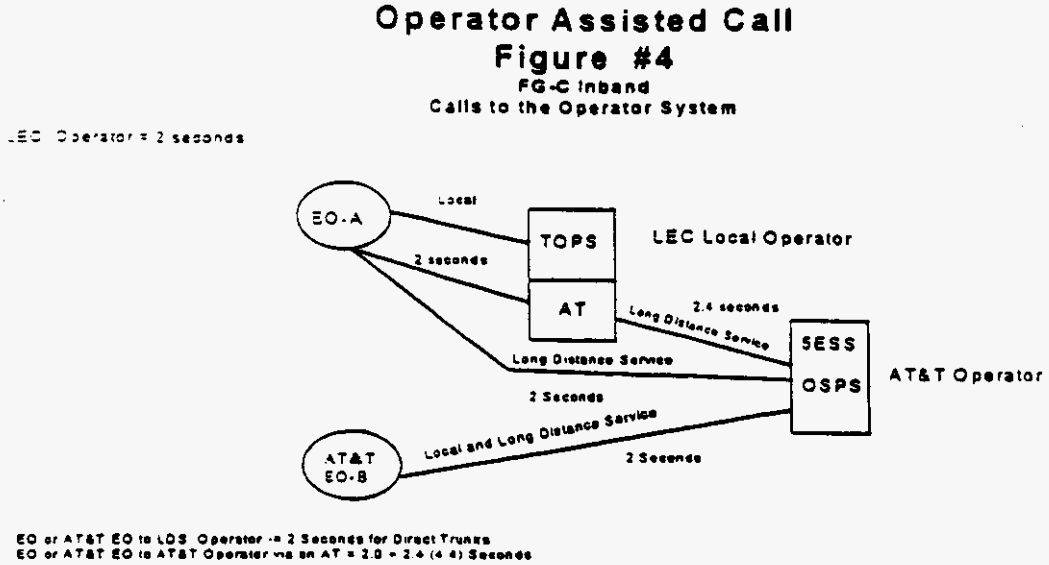


Figure 4

PDD's 1A - 1D address only Multifrequency (MF) digit protocols. Dial Pulse (DP) address digit protocol has a time out period of 4 to 5 seconds to allow for additional digits (Reference 10) when connecting to OSPS. The PDD's for completing to destination EO's are the same as provided in this model.

It is noted here, that all permutations were not evaluated in this model. It is presumed that PDD's for AT&T customers from non-AT&T EO's via AT's to non-AT&T destination EO's will be the same as presently encountered for AT&T interLATA calls. PDD's for LEC Long Distance operator calls, to destination EO's, is beyond the scope of this document.

End Office (EO-A) is assumed to be a non-AT&T EO. When an AT&T customer desires a Local Operator, the call is typically routed to a Local Exchange Company (LEC) Traffic Operator Position System (TOPS). When the customer desires an AT&T interLATA operator, the call may be routed two different ways.

a) Via an Access Tandem (Intermediate Switch) or

b) Over direct trunks to the OSPS.

EO-B is assumed to be an AT&T EO. In this instance it is assumed the customer can reach an AT&T intraLATA or interLATA operator over direct AT&T trunks from the AT&T EO to the OSPS. It is assumed that the PDD for direct trunks from non-AT&T EO's and AT&T EO's will experience relatively the same PDD. The main focus of this model is to acquaint the reader with the difference in PDD to destination EO's.

7.1.2 PDD 1 - Summary

1. PDD 1-A is from a LEC End Office (EO-A) to a LEC Traffic Operator Position System (TOPS).

   2.0 Seconds

2. PDD 1-B is from an non-AT&T End Office (EO-A) via an Access Tandem (AT) to an AT&T OSPS.

   4.4 Seconds

3. PDD 1-C is from an non-AT&T End Office (EO-A) with direct trunks to the OSPS.

   2.0 Seconds

4. PDD 1-D is from an AT&T End Office (EO-B) with direct trunks to the OSPS.

   2.0 Seconds

7.1.3 PDD 2 - Assumptions

Figure 5 can be used as a reference to determine the PDD's from the LEC TOPS to LEC EO's and from the AT&T OSPS to destination LEC or AT&T EO's.

It is assumed that the connections from the TOPS or OSPS to destination EO's will utilize Common Channel (SS7) Signaling. The model for PDD 2 assumes only one pair of Signal Transfer Points (STP's) in any connection to a connecting switch (LEC or AT&T). C. R. Johnson's Post Dialing Delay Technical Memorandum (Reference 9) was used as reference for the data in this document.

Operator Assisted Call PDD to Destination End Office

Figure #5

Calls to DTN's from Operator Systems

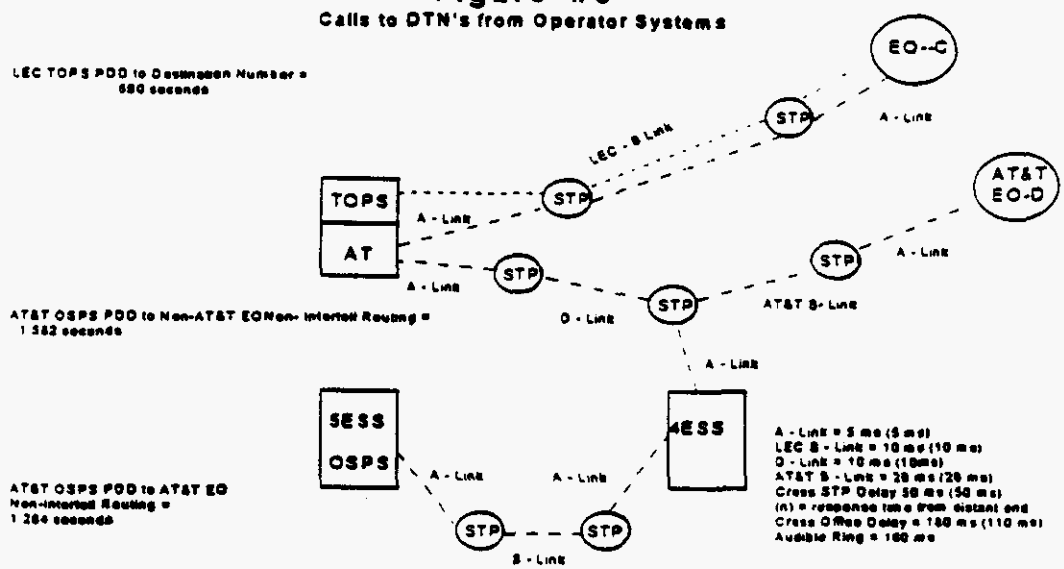


Figure 5

7.1.4 PDD 2 - Summary

1. PDD 2 is from the TOPS to LEC EO's (EO-C).

   .7 Seconds

2. PDD 2-A is from the OSPS through the 4ESS™ via the AT to a non-AT&T EO (EO-C).

   1.6 Seconds

3. PDD 2-B is from the OSPS through the 4ESS™ directly to an AT&T EO (EO-D).

1.3 Seconds

Figure 6 adds additional PDD due to the routing through multiple AT&T 4ESS's™. Routing of this type may occur when the 4ESS™ that serves the 5ESS® OSPS is not the same 4ESS™ that serves the AT&T EO (EO-D). This type of routing can also occur if AT&T TrueVoice™ feature is enabled on operator assisted calls.

1. PDD 2 is from the TOPS to LEC EO's (EO-C).

.7 Seconds

2. PDD 2-A is from the OSPS through multiple 4ESS's™ (Intertoll Routing) to a LEC AT to a non-AT&T EO (EO-C).

2.6 Seconds

3. PDD 2-B is from the OSPS through multiple 4ESS™ (Intertoll Routing) to an AT&T EO (EO-D).

2.4 Seconds

Operator Assisted Call PDD to Destination Local Office

Figure 6

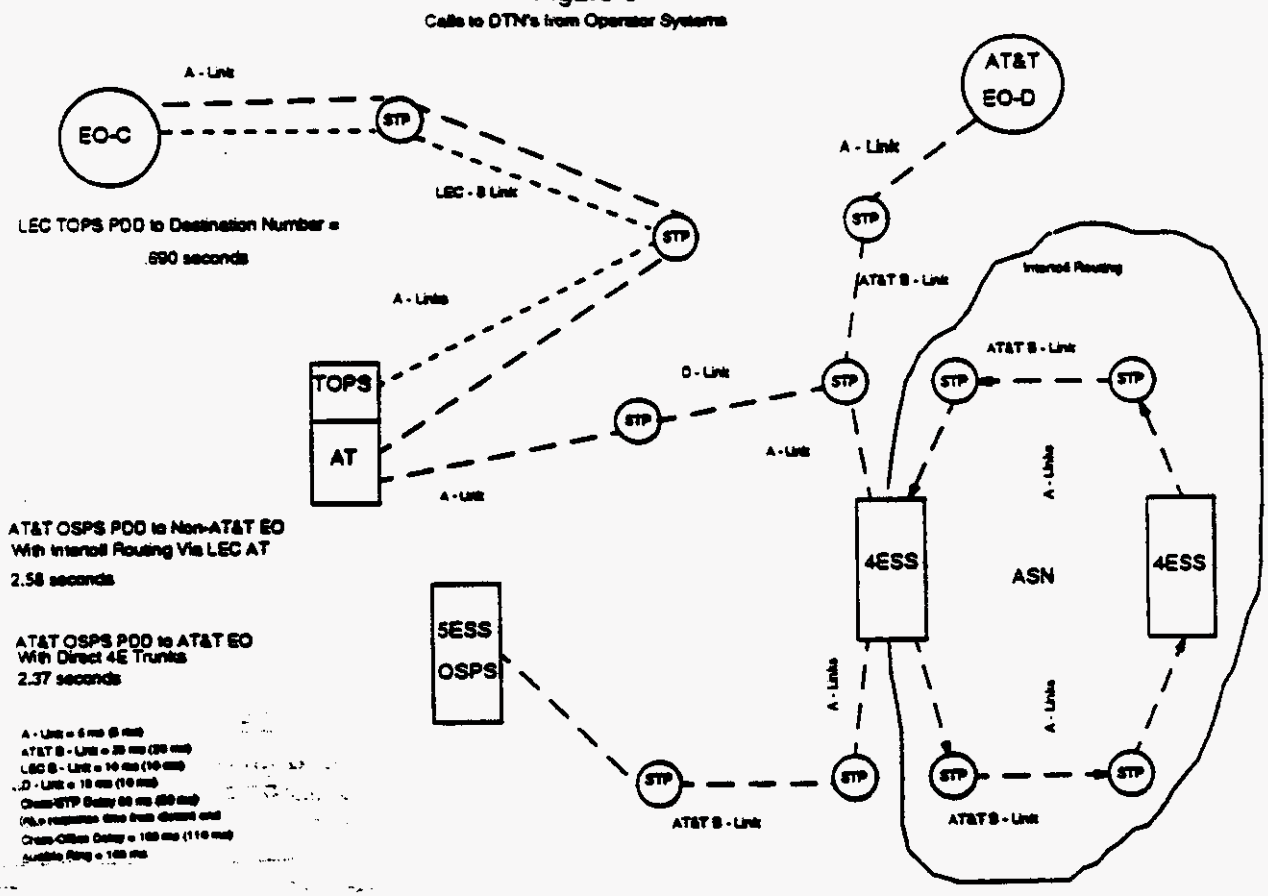


Figure 7 provides an improvement in PDD 2 A & B by having direct trunks from the 5ESS® OSPS to the LEC AT and direct trunks to an AT&T EO (EO-D). This trunking arrangement is considered redundant with trunking arrangements provided in figure 5. While this arrangement will provide an improvement in PDD, the economics of providing duplicate trunks with those provided from the 4ESS™ to the AT and to the AT&T EO (EO-D) is to be considered. The existing trunks from the 4ESS™ are assumed to be in place to complete InterLATA calls from calls outside of the local service area.

1. PDD 2 is from the TOPS to LEC EO's (EO-C).

   .7 Seconds

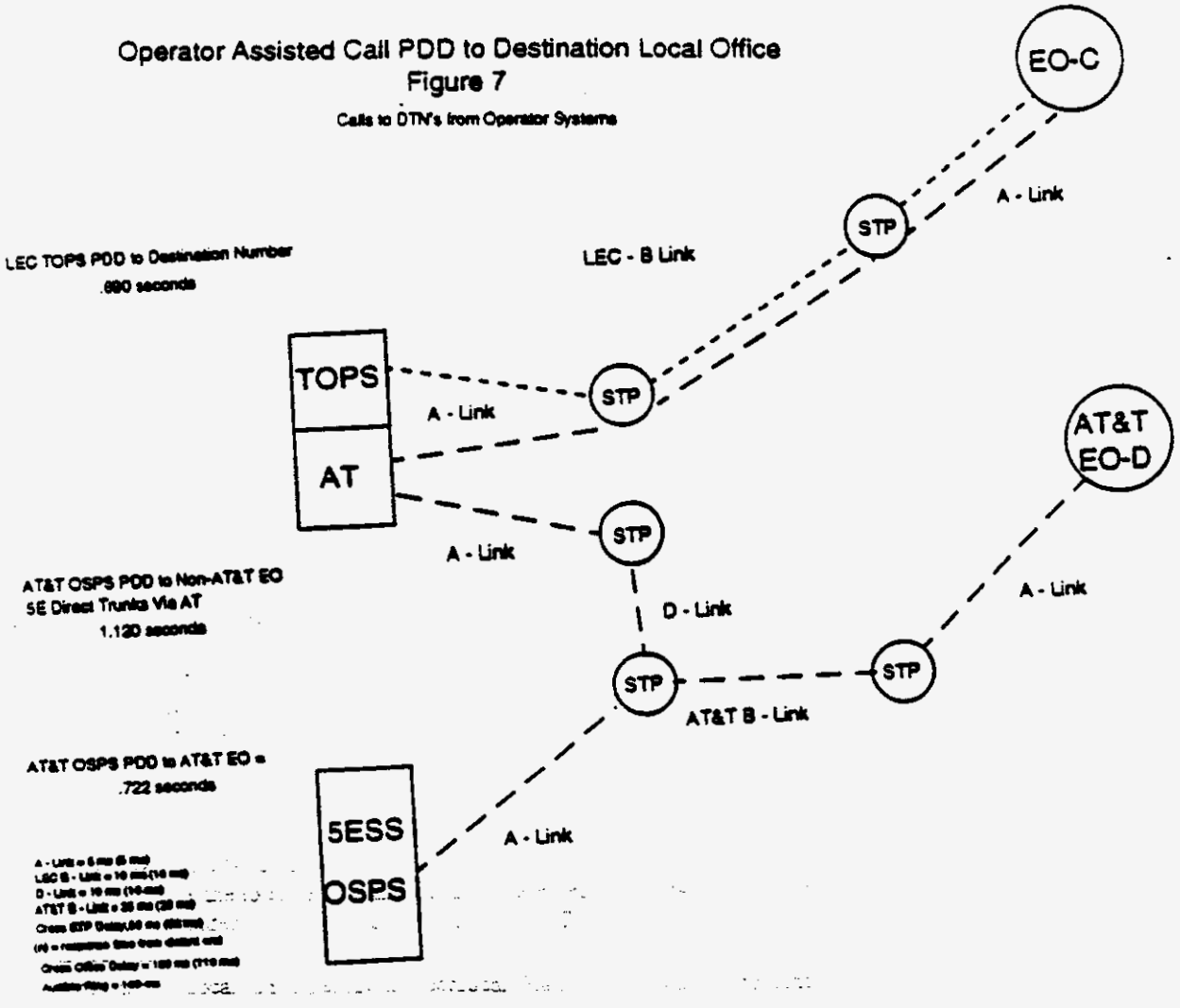
2. PDD 2-A is from the OSPS via direct trunk to a LEC AT to a non-AT&T EO (EO-C).

   1.1 Seconds

3. PDD 2-B is from the OSPS directly to an AT&T EO (EO-D).

   .7 Seconds

Operator Assisted Call PDD to Destination Local Office
Figure 7
Calls to DTN's from Operator Systems



8. 5ESS® OSPS OPERATIONS

Detailed planning of the Operations, Administration, Maintenance, and Provisioning (OAM&P) strategy and the functional requirements of the Operations Support Systems and the functional roles and responsibilities of Work Centers needed for the support of the Local OS traffic will be documented in the Local OS Operations Technical Plan (OTP)[71]. The OTP will use this Technical Plan as the base document for the needed operations planning.

This section outlines at a high level some potential operations impacts to provide the local OS described in this Technical Plan. Implementation will require the coordination of the following processes:

Network Service Management

1. Planning, Design and Scheduling Traffic engineering - initiate required activities and processes. Provide engineering M&P's and implementation schedules.
2. Traffic engineering for site specific equipment requirements.
3. Intertoll forecasting and servicing to provide trunk forecast appropriate to this service.
4. Provisioning to provide necessary M&P and 5ESS / OSPS data base changes to support this service.
5. Surveillance & maintenance to provide the required testing of the equipment.
6. Call Servicing / performance support to provide M&Ps for call servicing.

Operations Support Systems

IntraLATA OS operations needs for the 5ESS® OSPS is the same as for the interLATA OS. The increase in Switching Modules (SMs), Position Switching Modules (PSMs), Voice Recognition Call Processing (VRCPs), announcement circuits, trunking, operator positions need to be included in the planning.

Customer Care

Customer provisioning, assistance, and other care processes must be defined to support this service.

9. LOCAL TARIFF DATA (LCM)

9.1 Population of RTRS Data Base

RTRS needs to have process established to receive and interpret new tariff filed to handle local service, and to ensure that the data is populated into the RTRS data base to be available at the service starting date. Coordination and sufficient notice and scheduling are necessary. Currently Article IV contracts local calling area NXX pairs and rate table structures are inputted to RTRS.

9.2 Population of CSIDS Data Base

CSIDS database must also receive the local service tariff data. The RTRS concerns for data feed, capacity / thruput, and mechanization considerations are also applicable to CSIDS.

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[71] C.-M. Wang (coordinator), Local OS Operations Technical Plan, C.-M. Wang (coordinator), to be published.

10. SUMMARY IMPACTS ASSESSMENT (LCM, ALL)

10.1 Assumptions

1. Considered 5ESS® Remote call forwarding or RCF+ capability as the initial LNP (Local Number Portability) solution.
2. Long term industry-wide LNP solution, which would also impact the 5ESS® OSPS (for interLATA and intraLATA service), will be worked by other LNP teams, and will not be addressed in this Technical Plan.
3. The BLV / EI capability, as described in the Call Flow section, is not in working condition due to an RCF implementation of LNP. This outage is applicable to both interLATA and intraLATA Operator Service.

10.2 Assessment of New Development Efforts

1. Identification and Routing of 0- Calls

   5ESS® OSPS capability is needed to identify 0- traffic when it is routed from an end office (AT&T or other vendor switch) to the AT&T OSPS and is combined with the 00- and 0+ customer-originated traffic via the same trunk group and sharing the carrier indication of "0288" (AT&T). This development is needed if it is required to separate the 00- and 0- traffic at the OSPS.

   STATUS: An FRF (FRF name: Local OS 00- and 0- Separation) was submitted to Lucent Technologies for a PASS 1 TIME / COST estimate. Requirements are currently being developed. For this effort, MF modified FGC is assumed. See item 8 for additional information.

2. Identification of IntraLATA Call Origination

   5ESS® OSPS capability is needed to identify AT&T local subscriber-originated calls originated by customer dialing 0- or 0+intraLATA and resulted in bailing out to the operator. The OSPS needs to display an indicator on the operator workstation screen for the origin of the call (e.g., customer-dialed 0- or 0+intraLATA call. An application for this new indicator is for operators to apply new M&Ps specific to intraLATA calls.

   STATUS: An FRF (FRF name: Identification of Local Subscriber 0+intraLATA and 0- calls) was submitted to Lucent Technologies for a PASS 1 TIME / COST estimate. Requirements are currently being developed.

3. RTRS

   An assessment is in progress to determine if there is mechanization and capacity improvement necessary for RTRS to support Local OS.

   STATUS: Time / Cost assessment in progress.

4. CSIDS

An assessment is in progress to determine if there is mechanization and capacity improvement necessary for CSIDS to support Local OS.

STATUS: Time / Cost assessment in progress.

5 Billing

The development of the local biller is outside the scope of this Technical Plan. At this time, there is no development identified to support any Local Operator Service initiated billing requirements. However, a time and cost assessment for billing is requested[72] to ensure the local residential and business billers can handle all Local Operator Services billing needs.

STATUS: A time and cost assessment for billing is in progress.

6. Expanded Speech Recognition Vocabulary for Emergency Calls

Future development may be desirable to expand the vocabulary of the Speech Recognition capability to include recognition of emergency-related words such as "Fire", "Police", "Emergency", "Ambulance", etc. The spoken "Emergency" word should result in immediate connection to an AT&T operator.

7. Operator-Hold Work Around in CAT Environment

Development is needed to implement a work around for the operator hold function which is not operable when CAT (Consolidated Access Traffic) is deployed. With the FG-C facility, operator - hold works, and when the customer calls for emergency assistance and hangs up unexpectedly, the connection does not break until the operator releases the call. For FG-D facility, the connection is broken when the customer hangs up. Pseudo-operator-hold is the work around since the customer's back number is still on the screen, operator can call back customer to re-establish the connection. If the call is outside the scope of the receiving OSPS, the AT&T operator must first set up a conference call to reach the back number. However, operators cannot place a call to a forward number if the back number has been interflowed. Development on the 5ESS® OSPS is needed to allow these "delay calls" to be completed, in emergency situations, when the originating (back) and terminating (forward) NPA NXXs are foreign to the receiving OSPS.

STATUS: a Time / cost estimate has been submitted.

8. Separation and Routing of 00- and 0- in CAT Environment

In the CAT environment, there is a need to be able to distinguish 00- and 0- calls , and route differently.

STATUS: in feasibility study.
This item is listed separately from the item 1 development effort since this item specifically addresses the need to have the capability to separate and route the 00- and 0- calls in the CAT environment, which would influence the solution (e.g. the source of the call type) to distinguish the 00- and 0- calls.

9. Additional Service Management and Engineering Peg Counts

[72] Billing Time / Cost assessment request to Cote Trout.

Development may be needed for CAT (Call Analysis and Tracking) to support (a) Access Service Management and Engineering peg count, and (b) Access Management data required by Product Management to satisfy call analysis and tracking to reflect usage and other internal business needs.

The following applies to CAT reports for Local Operator Services:[3]

(a) If we do nothing today (i.e., not differentiating 0-/local from 00-/non-local operator services), nothing will break. The 0- calls will be added to the counts for 00- calls.

(b) If we need to differentiate 0- from 00-, then such distinction needs to be in the AMA records generated by the 5ESS® OSPS, such as using a new AMA module, or new structure code, etc. CAT samples the AMA records received from RICS and classifies the data, both completed (i.e., called messages in CAT) vs. uncompleted (i.e., called attempts in CAT) calls, into different groupings. The report capabilities in CAT can then use these groupings to generate standard or special/customized reports for the various users.

STATUS: The AMA recording needs will be included in the development effort being assessed to identify and route 0- calls (see item 1 above). Billing requirements will not be specified until there is decision to go ahead with the development specified by item 1.

10. Equal Access on Local Operator Services Call Completion

A local customer can reach an AT&T operator by dialing 0- or 0+ and bailed out to the operator. The customer has the ability to request call completion (Person-to-Person, Collect, etc). If the calling number is a interLATA number, and the local customer is PICed to a non-AT&T carrier for interLATA calls, then the ability to comply with carrier of choice is necessary. Furthermore, the AT&T 5ESS® OSPS needs the customer's interLATA and intraLATA PIC information.

STATUS: The Technical Team is accessing the feasibility for a solution. The Team is also working with Lucent Technologies on alternative solutions. This capability is a required feature. It is not, however, a must-have working capability for DAY-1 as we make our market entry. What is required is a robust solution. In fact, a solution to this problem may very well fall into the category of an industry solution.

The team is actively pursuing a solution. However, a date should not be targeted at the moment for an available solution until we have a better understanding of the problem and the feasibility of a solution.

10.3 Assessment of Other Supporting Requirements

This section summarizes action items that need to be performed or considered. These items are not necessarily within the scope of the technical planning . They are logged here for documentation purpose.

1. In the LEC Service Resale environment, the routing of OS calls from the LEC End Office to the AT&T 5ESS® OSPS would require definition of AT&T class of service (or equivalent routing mechanism) and associated customer provisioning to be performed by the LEC. This would involve negotiation as part of the Resale package.
2. A separate trunk group is needed to route the 0- traffic to the specified 5ESS® OSPS from the Local End Office if it is necessary to separate the 00- and 0- traffic at the 5ESS® OSPS.

[3] As per conversation with G. Oyler. Summarized in C.M. Wang email 3/28/96.

3. Additional OSPS resources (operator positions, other facilities) need to be assessed to handle the increase in call volume.
4. Operator force management needs to take into account the increase in call volume.
5. RTRS database would need to be updated with the local tariff data as we enter local service state by state.
6. CSIDS would need to be updated with the local tariff data as we enter local service state by state.
7. Overall, there will be significant increases in AMA record processing by RICS, EMI records processing by MPS, and significant impact to the billing system due to the increase in volumes of AMA records and / or EMI records.
8. Population and maintenance of the emergency number database.
9. Establish interface with 5ESS® Equipment Engineering on additional operator positions.

10.4 Recommended Testing / Verification

End-to-end test scenarios should be set up to verify:

1. each local OS call type, as outlined in the Technical Plan, including the functionality, recording, and billing (at least one billing cycle).
2. the separation and routing of AT&T OS calls from the LEC End Office.
3. separation of 00- and 0- calls (if implemented).

10.5 Other Considerations

1. To date, the need for operators to distinguish between local and toll operator service calls for call handling has not been clearly identified. When such a need is identified, 5ESS® OSPS development may be necessary.
2. The current implementation of BLV / EI will not work correctly in some situation (e.g. , with the Remote Call Forwarding Plus implementation of Local Number Portability).

10.6 Operator Methods and Procedures

1. Any new or updates to the M&Ps will be provided by the Channel Management organization.
2. At the time of LNP, we need to re-assess if any additional information must be displayed or made available to the AT&T operators on the workstation screen for proper call handling.

11. BUSINESS AND REGULATORY ISSUES (LCM)

For LEC Service Resale, the ability for AT&T to handle local OS traffic for AT&T customers depends on the success of negotiations with the incumbent LEC. The following discusses some issues and negotiation points, but is not intended to be a complete list.

11.1 Business and Regulatory Issues

The following summarizes business / regulatory issues to be resolved:

1. If AT&T Local Service is to request LEC to perform BLV / EI as is currently done for toll Operator Service, then contractual agreement must be set up as part of the LEC / Loop Resale arrangement.
2. For LEC Service Resale, it is desirable to negotiate a contract with the LEC to provide 911 service.
3. A policy must be established on the handling of sequence calls. One possibility is to enforce the Carrier of Choice (COC) of the first call to be applicable to all subsequent sequence calls. If the first call is local, and the second is an interLATA call and if AT&T is the local service provider, then there is no problem. For description of issue when changing carrier, refer to "LATA Mapping, Carrier Selection Enforcement and IntraLATA Toll Presubscription" sub-section in the "FEATURE INTERACTION" section.

11.2 Negotiations Perspectives

- Emergency Numbers

  Negotiation with the LEC should include providing AT&T with a list of emergency numbers currently used by the LEC operators, and on-going updates of that list of numbers. Additionally, it is to AT&T's interest to push for new regulations and make it mandatory for LECs to provide current listings of emergency numbers with on-going update. This is necessary to safeguard public safety in emergency situations, as well as providing proper competitive climate in the Resale environment.

  All AT&T local customer lines must be provisioned (as per switch specifications) to enable switch screening and routing to separate the AT&T and LEC "0+ (IntraLATA)" and "0-" traffic. The AT&T traffic should be routed to a specified AT&T 5ESS® OSPS. For all non-AT&T lines, "0-" call handling would not be affected.

- The routing solutions described in this document for routing local OS calls (at least on the 5ESS®[74] and 1A ESS™) assumed the 0+ (intraLATA) traffic can share the existing trunk groups with the interLATA traffic and will be subject to VRCP announcement treatment. The 0- traffic can share the same trunk group with the 00- traffic if it is not required to separate the 0- and 00- traffic at the AT&T 5ESS® OSPS. If there is a need to separate the 0- and 00- traffic at the OSPS, then either

[74] 5ESS® OSPS initial response to Preliminary Planning Estimates for 0-/00- Call Separation capability for Local Service Operator service feature (requested by L. Mui / T. Dunn / K.C. Choi 9/95) of no development effort would only work if the 0- and 00- traffic were to assume different carrier indication, as per J. Atkins email of 1/16/96. Our more recent assessment to address Issue #16 (carrier indication) reveals that the local traffic should be associated with the same "0288" carrier indication as for LD traffic. This implies that some development effort is required to deliver 00- and 0- separation . The effort is currently being assessed.

separate trunk groups should be used, or some 5ESS® OSPS development may be needed. The need and the associated effort is being reassessed.

It should be noted, however, that without development, the routing is still OK by (a) routing 0- and 00- traffic on separate trunk groups if it is required to separate the traffic at the OSPS, or (b) via the same trunk group if traffic separation is not required.

- The routing solution described in this document should be viewed as an interim solution in the LEC Resale environment since
  - a) it would require LEC to agree to this routing.
  - b) it would require LEC to provision each AT&T customer.
  - c) there are some other issues for negotiation with LEC. (e.g. resolve access AMA record handling).

- In the LEC Resale environment, there is a need for an industry-wide push for LEC commitment to provide competing local carriers ability to route these calls.

- Other vendor switches would most likely (although we have not verified on their switches) be able to handle the same routing since ONLY BASIC, EXISTING switch capabilities are used. These capabilities should be available in all switches today. It is anticipated that there is some degree of variation in the implementation steps for a vendor switch, similar to the differences between the 5ESS® and 1A ESS™ solution as described in the preceding section on "Access Architecture".

- When OS calls are routed by the LEC to the AT&T platform, there mus t not be any signaling delay that makes call setup time longer.

- Audit / measurement capabilities must be available.

Bear in mind that having the LEC to agree to routing our local "0+" and "0-" calls is not going to be easy since (a) there is work (provisioning and maintenance of customer lines, some billing process) involved, and (b) conflict of business interest. However, the technical solution does exist and that is a favorable bargaining point.

12. FUTURE WORK (LCM)

There is an on-going effort to evaluate other means of routing local traffic from the LEC End Office to the AT&T 5ESS® OSPS in the LEC Service Resale environment.

13. ISSUES (ALL)

13.1 Open Issues

This section lists issues that have been raised and need to be addressed from the Technical Plan's perspective. The following items have been identified for this category.

1. ANI-II DIGITS

ISSUE: Check to see if we preserve the ANI-II digit as we route calls from LEC end office to the 5ESS OSPS.

OWNER: L. Mui

RESOLUTION: ANI-II digit is preserved.

STATUS: CLOSED

2. EMERGENCY CALL HANDLING

ISSUE: For emergency call handling, Channel Management organization expressed a concern that both the original number and the LRN number may be needed when Local Number Portability is implemented. An example of such a need is the use of the back number as a referral number to locate caller address in emergency situations.

OWNER: J. ATKINS / R. MANZO / L. MUI

NOTES: (1) With the database LRN method of LNP, the original number is signaled in the ANI. This should not represent a problem as long as the addresses can be keyed off of the original number nation-wide. (2) For the Remote Call Forwarding solution of LNP, this is a problem.

STATUS: OPEN

3. DIALED DIGITS IN SEQUENCE CALL

ISSUE: If dialing sequence call, and 0+7 digits is dialed, is the NPA associated with the incoming trunk present in number that is input to OSPS? Check with development.

RESOLUTION: - 7-digit dialing on automated sequence calls is an option - When 7-digit is allowed as forward number, the NPA of the back number is prepended.

OWNER: J. Atkins / P. Thomson

STATUS: CLOSED

4. CARRIER INDICATION

ISSUE: Should AT&T local use carrier indication of LEC, 288 (for AT&T) or another 4-digit code.

OWNER: L. Mui

NOTES: - 1/18 conference call to discuss desired code for carrier indication.
Attendees: J. Atkins, K.C. Choi, T. Dunn, C. Most, L. Mui, T. O'Malley, D. Pearson, P. Thomson).
- Use 288 (documented in email)

NOTES - AT&T local OS traffic will use carrier indication of 0288 (for AT&T) to receive same call handling treatment as for existing AT&T traffic.

STATUS: CLOSED

5. CAT FEATURE INTERACTION

ISSUE: In the CAT environment, the operator hold and ringback features are no longer operational. It has also been identified that the ability to distinguish 00- and 0- calls is missing at the 4ESS™ and therefore can not route appropriately. (In the pre-CAT environment where the 00- and 0- calls are routed to the 5ESS® OSPS, the ability to distinguish 00- and 0- calls exist, but some development effort (assessment in progress by Lucent Technologies) is required if routing via same trunk group. No problem if 00- and 0- are routed via separate trunk groups.)

OWNER: L. Mui

STATUS:
- Meeting of Local Operator Service and CAT Technical Team 2/12/96
  attendees: G. Buhler, T. Dunn, G. Kersus, D. Levy, L. Mui
  Group decided feasibility study is needed to assess 5ESS® OSPS solution (2/12/96)
- T. Dunn did an in-depth analysis of the affected capabilities and potential solutions (3/15/96)
- Meeting of Local Operator Service and CAT Technical Team 3/21/96
  attendees: G. Buhler, T. Dunn, T. Echols, K. Fowler, M. S. Huq, G. Kersus, D. Levy, R. Malmi (representing T. Itri), L. Mui
  T. Dunn and T. Echols presented their findings. Group identified and agreed on the need to do development, and to proceed with feasibility and time/cost assessment of the specific items of development. Group established broad guidelines on the ownership of each item of development.

6. EQUAL ACCESS

ISSUE: Compliance to equal access is an issue that Product is working with legal / regulatory. Pending the outcome of the analysis, there may be additional technical assessment to satisfy any identified requirements.

OWNER: L. Mui (same issue also listed in "Other Issues Addressed" sub-section with L. Connelly as owner)

STATUS: required effort, if any, is pending outcome of analysis by legal / regulatory.

13.2 Other Issues Addressed

This section lists issues that were raised during the Technical Plan review , but pertain to issues which can not be resolved by the Technical Team. An example of this category is an issue that would require Local Service Product Management policy setting. These issues are important to fully define the service offering, and in many cases, may impact specific aspects of the service offering (e.g., call servicing).

For these issues, an owner is identified to work the specific issue. These issues are recorded in this TP, but are considered as a CLOSED issue from the TP perspective once the OWNERSHIP of the issue has been identified. It has been agreed that status of these items will be addressed and tracked by the Local OS Project Team.

If the resolution of any of these issues should impact the assumptions of this TP, the Technical Team will evaluate them and assess any additional planning that may be needed.

1. EMERGENCY CALL HANDLING

   ISSUE: Obtain Product Management policy decision if 0- emergency calls need to be handled by a live operator.

   OWNER: D. Berger / L. Connelly

2. INTRALATA PRESUBSCRIPTION

   ISSUE: Need to find out when IPIC is in use in states when AT&T plans for local market entry (e.g. CA, IL).

   OWNER: G. Kersus

3. PREFERENCE FOR SEQUENCE CALLS

   ISSUE: Policy needs to be established on Carrier of Choice enforcement when a customer is making sequence calls.

   OWNER: T. Dunn

   RESOLUTION: See Feature Interaction section.

   STATUS: CLOSED

4. OPERATOR SERVICE CALL VOLUME

   ISSUE: Obtain from Product Management residential / business OS call volume data for use in assessing facility requirements and for traffic impact studies.

   OWNER: D. Berger / L. Connelly

5. USE OF LEC OPERATOR

ISSUE: If LEC operator system is used to handle AT&T local traffic in the LEC Service Resale environment, the following concerns have been identified.

If LEC operator is used to handle our calls, fraud control is not feasible (5ESS OSPS currently queries AT&T's Network Access Interrupt (NAI) database for fraud control.)

LEC operator will not be able to update the Purchase Limit card account to reflect usage.

AT&T is planning to terminate with all LECs their license to honor the AT&T calling card when used in the LEC network. This presents a problem if AT&T is to use the LEC operator system to handle calling card and operator-handled calls. This means that AT&T customers will not be able to use the AT&T cards for intraLATA calls.

Cannot / unwilling to provide AT&T branding.

There may be other issues (to be identified) which suggest that LEC operator system will not be able to fully support AT&T customers' needs.

STATUS: NO ACTION REQUIRED. (Not an issue for this TP. It is logged for information only.)

6. EMERGENCY TRACE

ISSUE: Emergency trace can be requested by customers who dial 0- to reach an AT&T operator. There is currently no procedures in place to address the emergency trace request. What organization owns this issue? M&Ps for operator handling of emergency trace needs to be implemented in coordination with the organization that owns the issue. One small part of that procedure is to provide AT&T Operator Call Servicing with the appropriate referral number for inclusion in CSIDS.

OWNER: D. Berger (to identify owner of this issue) / Corporate Security

7. OPERATOR-HANDLED DIRECTORY ASSISTANCE

ISSUE: Obtain Product Management position to specify the desirable handling of operator-handled Directory Assistance calls when customer dials "0-" for directory assistance. This is needed by Channel Management for establishing Methods and Procedures.

OWNER: D. Berger / L. Connelly

8. OPERATOR TRANSFER SERVICE

ISSUE: Obtain Product Management position on the handling of customer requests to transfer to another service provider. Should AT&T provide the transfer (and imposed transfer service charge) or provide customer with dialing instruction for reaching the other service provider?

OWNER: D. Berger / L. Connelly

9. LOCAL RATES AND CHARGING MECHANISM

ISSUE: Tariff and Regulatory need to provide tariff information state-by-state to the RTRS and CSIDS databases so that it can appropriately rate the calls.

OWNER: D. Berger / L. Connelly

10. DIALING 500/700/800/900 CALLS

ISSUE: For 0- calls, obtain Product Management direction on 500/700/800/900 calls requested by customer. Should operator dial or provide dialing instruction to customer?

OWNER: D. Berger / L. Connelly

11. CALL VOLUME ASSUMPTIONS

ISSUE: Need to obtain the following call volume forecast data from Product Management. This data is also required by Channel Management for staffing purpose.
- Is the specified 1.1 calls per subscriber representing call attempts or call completion rate?
- % of forecast calls that would required VRCP support.

ISSUE: OCS Channel will need volume assumptions based on the use of VRCP, where applicable.

OWNER: D. Berger / L. Connelly

12. LOCAL VS LD

ISSUE: Obtain Product information if any OS service would require different OS handling for intraLATA call types.

OWNER: D. Berger / L. Connelly

13. ACCESS SERVICE MANAGEMENT / ENGINEERING PEG COUNTS

ISSUE: Identify Access Service Management and Engineering peg counts for local OS

OWNER: Gary Oyler

14. IDENTIFY TRACKING DATA

ISSUE: Assess measurement data required by Product Management to satisfy call analysis and tracking to reflect usage and other internal business needs. This may result in CAT (Call Analysis and Tracking) development.

OWNER: D. Berger / G. Oyler

15. 5ESS EQUIPMENT ENGINEERING

ISSUE: Establish interface with 5E Equipment Engineering on additional operator positions. Sms. PSMs, service circuits (conformance circuits, announcement circuits, etc), and APS.

Owner: T. Dunn / B. Skeels

16. LOCAL MARINE CALLS

ISSUE: Product Management policy - Will Local Service offering include Local Marine Calls? Will LEC or AT&T handle local marine calls?

OWNER: D. Berger / L. Connelly

17. MULTI-LINGUAL OPERATOR SERVICES (MLOS)

ISSUE: Product Management policy - Will Local Operator Services include support for MLOS? This service is currently offered by the OSPS, as is documented in this TP. If MLOS is to be excluded, then some development may be necessary to suppress the feature.

OWNER: D. Berger / L. Connelly

18. USE OF CICADA SERVICE FOR DA

ISSUE: Product Management policy - Will Local Operator Services include use of CICADA? This service is currently offered by the OSPS, as is documented in this TP.. If CICATA is to be excluded, then some development may be necessary to suppress the feature.

OWNER: D. Berger / L. Connelly

19. CALLING CARD AND BILL-TO-THIRD ON INTRALATA LOCAL CALLS

ISSUE: Need Product Management clarification - If a customer comes to operator and wants to charge an intraLATA local call to a Card or Bill-to-third. Does the AT&T operator advise the customer that the call is a "free call" within the Local Calling Area? Today, customers are dialing 10288 and making local calls, but pay intraLATA rates.

OWNER: D. Berger / L. Connelly

20. HANDLING OF REQUEST FOR SERVICE FROM NON-AT&T CUSTOMERS

ISSUE: How does Product Management want operators to handle requests for service for which AT&T is not currently their provider? When do we transfer vs. WinBack? Are there any requirements related to transfer?

OWNER: D. Berger / L. Connelly

21. TIME & CHARGES

ISSUE: Will we do Time & Charges for intraLATA (toll and local), or is this an IntraLATA toll issue?

OWNER: D. Berger / L. Connelly

22. LEC CARDS

ISSUE: Will AT&T be honoring LEC cards? Will non-honored card calls default to the AT&T operator?

OWNER: D. Berger / L. Connelly

23. PURCHASE LIMIT CARDS

ISSUES: If an intraLATA call is billed to the Purchase Limit Card, what messages will the customer hear on a customer dialed call?

What messages will the AT&T operator see when the call is operator dialed?

Will Purchase Limit Cards be allowed for intraLATA local as well as intraLATA toll calls?

What rates will apply?

OWNER: D. Berger / L. Connelly

24. OPERATOR HOLD AND RINGBACK

ISSUE: Since an AT&T operator may be required to ring back a customer in an emergency situation and all emergency calls are held at the position, it is necessary to identify the legal issues related to the inability to ring back or hold a call at the position.

OWNER: D. Berger / L. Connelly

25. EQUAL ACCESS

ISSUE: Compliance to equal access is an issue that Product is working with legal / regulatory. Pending the outcome of the analysis, there may be additional technical assessment to satisfy any identified requirements. Product will advise Technical Team of the outcome.

OWNER: L. Connelly

14. REFERENCES

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3. AT&T PUB 60120, "5ESS® OSPS Interface Technical Specification for Domestic Toll and Assistance Applications," issue 1.00, April 1991.
4. L. C. Mui (Coordinator), "Local Directory Assistance Technical Plan ", Approved Copy, February 8, 1996.
5. T. E. Adams, S. Ganesan, D. E. Levy (Coordinators), "Loop Resale Technical Plan", Draft 3.0, December 22, 1995.
6. L. C. Mui, "Conference Call Minutes - Carrier Indication" email to document conference call (J. Atkins, K.C. Choi, T. Dunn, C. Most, L. Mui, T. O'Malley, D. Pearson, and P. Thomson) to discuss carrier indication for local OS calls, January 18, 1996.
7. G. Buhler (Coordinator), "Consolidated Access Traffic Technical Prospectus - Final for Review Copy," November 13, 1995.
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9. R. Johnson, "Post Dialing Delay Objectives for 1995 Long Distance Service Direct Distance Dialed Calls", December 30, 1988.
10. AT&T Pub 60220, 5ESS® OSPS Interface Technical Specification for Domestic Toll and Assistance Applications, April 1991.
11. C.-M Wang. (Coordinator), "Local OS Operations Technical Plan", to be published.
12. L. L. Connelly, "Local Operator Service Marketing Service Descriotion", Draft, March 26, 1996.
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15. GLOSSARY

ACCS	Automatic Calling Card Service
ACS	Accessible Communications Service
ACQS	Automatic Charge Quotation System
ACTS	Automatic Coin Toll Service
AILS	Automatic Inward Line Screening
ALEC	Alternate Local Exchange Carrier
AMA	Automatic Message Recording
ANI	Automatic Number Identification
ANIF	Automatic Number Identification Fail
AP	Automated Position
ASN	AT&T Switched Network
AT	Access Tandem
BILLDATS	Billing Data Acquisition and Transport System
BLV	Busy Line Verification
CAP	Competitive Access Provider
CAT	Consolidated Access Trunking
CICADA	Completion of InterLATA Calls Accessing Directory Assistance
CLD	Consumer Long Distance
COC	Carrier of Choice
CPDL	Call Processing Data Link
CSC	Call Servicing Center
CSE	Carrier Selection Enforcement
CSIDS	Call Servicing Information Delivery System
DA	Directory Assistance
DACC	Directory Assistance Call Completion
DMOQ	Direct Measure of Quality
DTMF	Dual Tone Multifrequency
EI	Emergency Interrupt
EIS	Extended Inband Signaling
EMI	Electronic Message Interchange
EO	End Office
FGC	Feature Group C
FGD	Feature Group D
IB	Inband
ICO	Independent Companies
IIB	Indeterminate Information Bureau
IPIC	IntraLATA PIC
IXC	interexchange carrier
LBS	Local Billing System
LD	Long Distance

LEC	Local Exchange Company
LERG	Local Exchange Routing Guide
LIDB	Line Information Database
LNP	Local Number Portability
LRN	Local Routing Number
LS	Listing Service
LSDB	Listing Service Database
LSO	Local Switch Office
LSP	Local Service Provider
MECH	More Efficient Call Handling
MDF	Main Distributing Frame
MFJ	Modification of Final Judgment
MLOS	Multi-Lingual Operator Service
MOS	Modified Operator Service
MPS	Message Processing System
MW	Multi Wink
NAI	Network Access Interrupt
NPA	Numbering Plan Area
OAS	Originating AT&T Switch
OLI	Originating Line Indication
OLS	Originating Line Screening
ONI	Originating Number Identification
OS	Operator Service
OSPS	Operator Service Position System
OWS	Operator Work Station
POP	Point of Presence
PSM	Position Switching Module
PTC	Presubscribed Toll Carrier
RCF+	Remote Call Forwarding Plus
RICS	Recorded Information Collection System
RISLU	Remote Integrated Services Line Unit
RTNR	Real Time Network Routing
RTRS	Real Time Rating System
RTU	Right To Use
SA	Special Applications
SDN	Software Defined Network
SM	Switching Module
SNOW-R	Service Now - Routing
SNOW-T	Service Now - Trunking
T&A	Toll and Assistance
TCS	Terminating Code Screening
T&CS	Time and Charges Service
VDT	Visual Display Terminal
VRCP	Voice Recognition Call Processing

Southern Region

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April 2, 1996

Suzie Lavett
BellSouth
Room E5G 3535 Colonnade Parkway
Birmingham, Alabama 35243

HAND DELIVERED

Dear Suzie:

This letter confirms that the following information which was shared with you, and identified at the time of disclosure, during our conference call of Friday, March 22, 1996, is proprietary and confidential.

> AT&T estimates that by year end 1996, it will be sending 1000 orders per business day to BellSouth for resale services and that this volume will grow to 3000 orders per business day by mid year 1997. This is a forecast of future events, and as such is subject to variation dependent upon many factors, including the wholesale price of the services. It is our feeling that these estimates could vary by as much as plus or minus 20%.
>
> It is our belief that order volumes of this magnitude can only be handled via electronic interfaces. To meet our customer service requirements, we would like to begin joint testing of these electronic interfaces on or about July 1, 1996. We will need your commitment to and descriptions of your proposed electronic interfaces by April 15, 1996.

As you agreed prior to the sharing of this information, it is for use by BellSouth only for the purposes of negotiating an interconnection agreement with AT&T under the Telecommunications Act of 1996, and only by BellSouth's representatives who have a "need to know" regarding our negotiations and the implementation of agreements reached in those negotiations.

Yours truly,

Jay M. Bradbury

200734

Administrative

April 10, 1996

MEMORANDUM

TO: Suzie Lavett

FROM: Jay Bradbury

SUBJECT: TSR Implementation Timeline

Here is the Total Services Resale Implementation Timeline which I drew and we discussed on Monday, April 8.

200803

TOTAL SERVICES RESALE IMPLEMENTATION TIMELINE

PHASE	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
PHASE NAME	OBTAINING AGREEMENT IN PRINCIPLE	DEVELOPMENT AND OPERATIONAL TRIAL	SERVICE READINESS TRIAL	SERVICE DELIVERY RAMP UP	GENERAL AVAILIBILITY
INTERVALS	OBTAINED BY 4/15/96	60 to 90 DAY INTERVAL	45 to 75 DAY INTERVAL	30 to 60 DAY INTERVAL	
VOLUME OF ACCOUNTS		25 to 50 INTERNAL TRIAL ACCOUNTS	50 to 100 INTERNAL TRIAL ACCOUNTS	100 to 1000 LIVE CUSTOMER ACCOUNTS	VOLUMES OF 1000 ORDERS/DAY GROWING TO 3000 ORDERS/DAY BY MID-YEAR 1997
AT&T REQUIRED TIMELINE		BEGINS 4/15/96	BEGINS 7/1/96	BEGINS 9/1/96	BEGINS 10/1/96
BEST CASE TIMELINE		BEGINS 4/15/96	BEGINS 6/15/96	BEGINS 8/1/96	BEGINS 9/1/96
WORST CASE TIMELINE		BEGINS 4/15/96	BEGINS 7/15/96	BEGINS 11/1/96	BEGINS 1/1/97

APRIL 10, 1996
JMB

CSG Market Development

1200 Peachtree St.
Atlanta, GA 30309

4/29/96

Suzie Lavett (VIA FAX 529-7496)
BellSouth
Room E56
3535 Colonnade Parkway
Birmingham, AL 35243

Dear Suzie:

As we committed last week, in an effort to provide BellSouth information which might help influence the outcome of your electronic interface business case, we are providing the attached analysis.

The attached spreadsheet provides an analysis of the projected labor costs of our Customer Network Service Center (CNSC). The CNSC will conduct all ordering, provisioning, and maintenance activities required to interface with BellSouth in support of AT&T Local service. This analysis, which is based on the best information available to date, is derived from service demand projections, time and motion studies, and observed frequency of certain service activities. The analysis compares several different operational modes: 1) fully mechanized two way electronic interface between CNSC and BellSouth, 2) Partially mechanized one way electronic interface from CNSC to BellSouth, and 3) Fully manual process with paper work orders prepared and faxed between the CNSC and BellSouth. [Note that for the purposes of this analysis, electronic interfaces do not describe real time electronic access to BellSouth systems and information, which remains AT&T's desired end state. Instead, electronic interfaces describe the electronic passage of data between companies and automatic "flow through" to downstream systems within AT&T. (e.g.: EDI interfaces currently under consideration by BellSouth.)]

After reviewing the attached, you will find that this preliminary analysis:

1. More clearly quantifies the projected AT&T local service demand previously shared with BellSouth by J. Bradbury. (for AT&T's first year in the local services resale business)
2. Clearly depicts the order of magnitude of difference in the resources required to support customers in manual, semi-electronic, and fully electronic modes.
3. Demonstrates the significant cost savings gained with electronic interfaces.

In order to accurately quantify the specific costs associated with the long term electronic interfaces which would provide AT&T real time access to BellSouth systems/information (ECI), AT&T would need to partner with BellSouth as we suggested in our 4/24 Core Team meeting. AT&T continues to be willing to collaborate with BellSouth in order to finally make positive progress with the electronic interface issue after eight months of discussion.

Sincerely,

Mason Fawzi
AT&T Negotiations Program Manager

cc: P. Foster

200895

PRELI

CUSTOMER NETWOR[K] SERVICE CENTER
BELL SOUTH TSR HEADCOUNT ANALYSIS
CONNECTIVITY OPTION CNSC to LSP
HEADCOUNT REQUIREMENTS & LABOR COSTS

SUMMARY (estimated CNSC HC costs per order)	ANNUAL VOLUME	ESTIMATED CUMULATIVE LABOR COSTS	ESTIMATED LABOR $'S per UNIT	COST DIFFERENTIAL per UNIT	ESTIMATED WORKTIME per Prov ORDER
FULLY MECHANIZED TWO WAY ELECTRONIC INTERFACE CNSC <----> LSP.	528,000	$13,821,600	$26	$0	7 min
PARTIALLY MECHANIZED ONE WAY ELECTRONIC INTERFACE CNSC ----->LSP.	528,000	$18,178,900	$34	$8	14 min
MANUAL PROCESS PAPER ORDERS MANUALLY PREPARED & FAXED	528,000	$24,403,800	$46	$20	24 min

DETAIL CNSC HC & LABOR COST ESTIMATES		MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6	MONTH 7	MONTH 8	MONTH 9	MONTH 10	MONTH 11	MONTH 12
1) FULLY MECHANIZED (TWO WAY INTERFACE)	CUMULATIVE LINES	22,000	44,000	66,000	88,000	110,000	132,000	198,000	264,000	330,000	396,000	462,000	528,000
(CNSC <---->LSP)	HEADCOUNT	40	60	60	60	78	87	176	264	231	288	264	308
	CUMULATIVE LABOR COSTS	301,400	676,200	1,119,000	1,634,200	2,218,000	2,866,800	4,183,200	5,799,600	7,440,600	9,372,200	11,606,800	13,821,600
2) PARTIALLY MECHANIZED (ONE WAY INTERFACE)	CUMULATIVE LINES	22,000	44,000	66,000	88,000	110,000	132,000	198,000	264,000	330,000	396,000	462,000	528,000
(CNSC ----->LSP)	HEADCOUNT	64	76	84	93	102	111	248	276	303	330	359	382
	CUMULATIVE LABOR COSTS	483,000	1,036,400	1,664,700	2,360,600	3,124,600	3,956,200	5,817,300	7,888,300	10,164,000	12,640,300	15,313,300	18,178,900
3) MANUAL PROCESS (PAPER WORK ORDERS)	CUMULATIVE LINES	22,000	44,000	66,000	88,000	110,000	132,000	198,000	264,000	330,000	396,000	462,000	528,000
(PAPER WORK ORDERS FAXED TO & FROM CNSC & LSP)	HEADCOUNT	99	108	118	127	138	146	352	396	407	434	460	486
	CUMULATIVE LABOR COSTS	742,300	1,557,000	2,442,700	3,397,900	4,421,200	5,511,300	8,181,600	11,000,800	14,054,400	17,308,900	20,760,000	24,403,800

Assumptions:

1) This analysis was prepared to demonstrate the Headcount and cost efficiencies gained through an electronic interface between the CNSC and BellSouth.
2) Headcount and labor cost estimates were derived based on time study data of the CNSC provisioning and maintenance processes.
   Allowances were made to adjust the process time to reflect the three different connectivity scenarios discussed below.
3) The Bell South Headcount analysis presents the Headcount requirements for three different connectivity scenarios between the CNSC and BellSouth.
   Scenario I - assumes a fully mechanized process between the CNSC and BellSouth with a two way electronic interface between the CNSC and BellSouth. Work Orders electronically flow between the various Work Centers.
   Scenario 2 - assumes a partially mechanized process between the CNSC and BellSouth with a one way electronic interface between the CNSC and BellSouth. Work Orders flow electronically from the CNSC to BellSouth.
   BellSouth to the CNSC is via Fax or E-Mail.
   Scenario 3 - assumes a completely manual process between the CNSC and BellSouth. Manually prepared Work Orders will be faxed to and from the CNSC to BellSouth.
4) Headcount and labor cost estimates represents Occupational, Supervisor and Management staffing requirements only. The estimate does not account for other Mgmt Positions such as Database Mgr's, Network Mgr's, etc. required to support the forecasted volume.
5) Headcount and labor cost estimates include allowances for Disconnects, Rejects, Changes, Jeopardies, Suspends, Restores and Maintenance for troubles and provisioning errors.
6) The analysis is proprietary and intended for AT&T internal use only.
7) The estimated Headcount and labor cost requirements are preliminary and therefore subject to change. Refinements will occur concurrent with the receipt of any new information concerning connectivity option, demand, or other.

200896

electronic interfaces

A. Alvit

AT&T

CSG Market Development

5/23/96

1200 Peachtree St.
Atlanta, GA 30309

To: S. Lavett

From: P. Foster

RE: AT&T Forecast and Letter

I wanted to make you aware of an omission from the 5/22/96 forecast cover letter that I faxed to you last night. The one word omission may materially impact your interpretation of the letter. The last sentence in the third paragraph on the second page should read as follows: "Put another way, [significant] TSR discounts and effective operational interfaces which deliver service concurrently and at parity with BellSouth will make TSR a more attractive approach for AT&T".

As a result, I am re-sending a revised copy of the letter and will hand deliver the original when we meet later this week.

PH/m

200928

AT&T

CSG Market Development

1200 Peachtree St.
Atlanta, GA 30309

May 22, 1996

Via Fax and Hand Delivery

Suzie Lavett
Lead Negotiator
BellSouth
3535 Colonade Parkway
Birmingham, AL

Dear Suzie:

This letter responds to your May 6, 1996 memo in which you request revised AT&T forecast data for BellSouth's use in resource and other planning for electronic interfaces.

First, I would like to comment on your statement that "It would assuredly be imprudent for BellSouth to continue to work toward these and other electronic interfaces unless significant and protracted resale demand exists." The Telecommunications Act of 1996 does not condition an ILEC's obligation to provide comparable capabilities to requesting carriers on any sort of demonstration of a "resale demand". Also, as we have discussed, in competitive markets, suppliers must often take risks without the luxury of guaranteed returns. These issues aside, we have provided the attached forecast data which represents our current best assessment of demand for AT&T local service through December 2001. As you can see, AT&T's forecasted demand is sufficiently large that management of wholesale operations with manual processes would be inefficient and would not meet AT&T's needs for comparable service and capabilities. Other reseller demand will further impact BellSouth's ability to manage manual interface processes efficiently.

Secondly, BellSouth should not assume that Total Services Resale (TSR) is only a short-term alternative for AT&T. The "BellSouth Study" (which we have not seen), which concluded that resale was not a viable long-term alternative for AT&T. has apparently failed to recognize that the wholesale market mandated by the Act is likely to be a robust one, and may have prejudiced BellSouth's desire to pursue robust operational interfaces in support of TSR. It would be helpful if BellSouth would provide the studies which concluded that TSR was not a viable long-term alternative for AT&T. If Bellsouth would provide this information, it would provide a solid basis for further discussions aimed at understanding the future wholesale supplier/buyer relationship between our companies.

As you have requested, the attached data provides projected demand for both residence and business classes of service through December 1997. Although not requested, we have

also attached annual forecasts through 2001. [AT&T is providing the attached forecast under the conditions outlined in the confidentiality agreement executed between BellSouth and AT&T. Accordingly, this information should be protected from BellSouth's retail units.] Note that we have provided both a "high" and "low" demand assessment. Due to the uncertainties associated with a market that is monopoly based and in pre-competitive stages, and the facts discussed below, we are unable to project within a +/- 5% range as you request. For our joint planning purposes, you may assume that the volume is distributed approximately in proportion to the size of your business in each state within the region. Obviously, the actual distribution may be impacted by differing TSR discounts, access charges, competitive alternatives, etc.

The amount of this forecast that will take the form of "unbundled loops", "unbundled ports", and the other unbundled elements desired by AT&T is dependent on BellSouth's pricing decisions for these unbundled elements and for TSR. These BellSouth pricing decisions will directly impact AT&T's network build decisions.

As was discussed at the May 8, 1996 Core Team meeting, AT&T is a rational consumer. Accordingly, we will make "build versus buy" decisions which maximize benefits for AT&T customers and shareholders. As I am sure you are aware, it is not economically prudent for AT&T to overbuild entire incumbent LEC networks. In addition, capital earmarked for AT&T local network construction has not been fully allocated to specific markets. The attractiveness of the TSR discount and the degree to which BellSouth's wholesale processes allows AT&T to effectively serve its customers will be key in influencing such decisions. Put another way, significant TSR discounts and effective operational interfaces which deliver service concurrently and at parity with BellSouth will make TSR a more attractive approach for AT&T.

We are providing this information in spite of the uncertainties of a market that will mature from a monopoly to competition:

1. Until AT&T can quantify TSR discounts, access price reductions, and the efficiency of operational interfaces provided by BellSouth, we cannot determine where to deploy capital.
2. AT&T will provide local service through a mosaic approach, utilizing TSR, unbundled network elements, ALEC leases, and full AT&T build scenarios to reach customers. Because we are creating the capability to support a variety of unbundled network elements and network configurations provided by multiple suppliers, the degree to which we utilize unbundled network elements from BellSouth will depend upon TSR discount levels, the prices of facilities-based competitors, the scope of their networks, and the competitiveness of BellSouth's unbundled network elements compared to other facilities-based competitors. Because the number of facilities-based competitors is fluid, and the relative cost of unbundled network elements and TSR is currently unknown, we cannot fully project the degree to which it will be rational for AT&T to utilize unbundled network elements.

In closing, I find it necessary to respond to comments in your May 6 memo regarding the work that BellSouth has completed in support of developing operational interfaces to accommodate the initial entry of alternative local service providers. While some progress has been made, BellSouth's progress to date falls short of AT&T's expectations and BellSouth's obligations under the Act and that which would be required for any world class business to service its customers effectively. I believe the operational interfaces developed by BellSouth to date rely primarily upon manual processes, fax transmissions, and manual data entry. Additionally, while BellSouth has assessed the resources required to provide number administration via ATLAS for resellers, this small step was accomplished only after 8 months of negotiations. Additionally, AT&T has yet to actually gain access to ATLAS. I am, however, encouraged by the cooperative activity undertaken by our companies within the last two weeks to develop EDI interfaces. I hope that the progress made in this area will be swift and significant.

If you have any questions or comments, please do not hesitate to call.

Sincerely,

Preston Foster
Lead Negotiator
AT&T

DRAFT - Subject to revision
Preliminary Forecast

AT&T Demand View - High
(BellSouth Territories)

CONSUMER		1998	1999	2000	2001
	Lines	3,770,886	5,456,845	5,474,873	5,554,033
BUSINESS					
	Lines	294,849	601,955	900,675	972,404
TOTAL					
	Lines	4,065,735	6,058,800	6,375,547	6,526,438

AT&T Demand View - Low
(BellSouth Territories)

CONSUMER		1998	1999	2000	2001
	Lines	535,009	1,215,734	1,921,420	1,944,373
BUSINESS					
	Lines	137,596	280,912	420,315	453,789
TOTAL					
	Lines	672,606	1,496,647	2,341,734	2,398,162

200332

DRAFT - Subject to revision
Preliminary Forecast

AT&T Demand View
(BellSouth Territories)

High Estimate

	Jun-96	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97	Jul-97	Aug-97	Sep-97	Oct-97	Nov-97	Dec-97
Consumer																			
Lines	25	25	50	300	300	16,315	16,315	30,722	30,722	165,518	165,518	165,518	165,518	165,518	165,518	165,518	165,518	165,518	165,518
Business																			
Lines	5	10	15	15	30	812	812	927	927	4,440	4,440	4,440	4,440	4,440	4,440	4,440	4,440	4,440	4,440
Total																			
Lines	30	35	65	315	330	17,127	17,127	31,649	31,649	169,958	169,958	169,958	169,958	169,958	169,958	169,958	169,958	169,958	169,958

Low Estimate

	Jun-96	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97	Jul-97	Aug-97	Sep-97	Oct-97	Nov-97	Dec-97
Consumer																			
Lines	25	25	50	300	300	6,275	6,275	7,090	7,090	36,628	36,628	36,628	36,628	36,628	36,628	36,628	36,628	36,628	36,628
Business																			
Lines	5	10	15	15	30	379	379	433	433	2,072	2,072	2,072	2,072	2,072	2,072	2,072	2,072	2,072	2,072
Total																			
Lines	30	35	65	315	330	6,654	6,654	7,522	7,522	38,700	38,700	38,700	38,700	38,700	38,700	38,700	38,700	38,700	38,700

200933

DRAFT - Subject to revision
Preliminary Forecast

AT&T Demand View
(BellSouth Territories)
Cumulative Total By Month

High Estimate

	Jun-96	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97	Jul-97	Aug-97	Sep-97	Oct-97	Nov-97	Dec-97
Consumer																			
Lines	25	50	100	400	700	17,015	33,330	64,052	94,773	260,292	425,810	591,328	756,846	922,364	1,087,883	1,253,401	1,418,919	1,584,437	1,749,955
Business																			
Lines	5	15	30	45	75	887	1,700	2,627	3,554	7,994	12,434	16,873	21,313	25,753	30,193	34,632	39,072	43,512	47,951
Total																			
Lines	30	65	130	445	775	17,902	35,030	66,679	98,328	268,285	438,243	608,201	778,159	948,117	1,118,075	1,288,033	1,457,991	1,627,949	1,797,907

Low Estimate

	Jun-96	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97	Jul-97	Aug-97	Sep-97	Oct-97	Nov-97	Dec-97
Consumer																			
Lines	25	50	100	400	700	6,975	13,250	20,340	27,429	64,057	100,686	137,314	173,942	210,570	247,199	283,827	320,455	357,083	393,711
Business																			
Lines	5	15	30	45	75	454	833	1,266	1,699	3,770	5,842	7,914	9,986	12,058	14,130	16,202	18,274	20,345	22,417
Total																			
Lines	30	65	130	445	775	7,429	14,083	21,605	29,128	67,826	106,528	145,228	183,928	222,628	261,328	300,029	338,729	377,429	416,129

200934

LAST TRANSACTION REPORT FOR HP FAX-700 SERIES VERSION: 01.00

FAX NAME: NEW MARKET DEVELPMNT DATE: 23-MAY-96
FAX NUMBER: 4048108967 TIME: 06:35

DATE	TIME	REMOTE FAX NAME AND NUMBER	DURATION	PG	RESULT	DIAGNOSTIC
23-MAY	06:31 S	404 420 0031	0:03:29	8	OK	663840100184

S=FAX SENT
O=POLLED OUT(FAX SENT)

TO PRINT THIS REPORT AUTOMATICALLY. SELECT AUTOMATIC REPORTS IN THE SETTINGS MENU.
TO PRINT MANUALLY. PRESS THE REPORT/SPACE BUTTON. THEN PRESS ENTER.

200935

FAX COVER SHEET

AT&T / CSG MARKET DEVELOPMENT

TO: Suzie Lavett **FAX:** ( ) 420-0031

VOICE: ( ) 529-7496

DATE: 5/23/96 **(8) Pages Including Cover**

From: Mason Fawzi, Access Planning Manager
1200 Peachtree Street
Room 10144
Atlanta, GA 30319

Voice: (404)810-8574
Fax: (404)810-8477

Comments: Revision.

C:FAWZIFAX

200936

William J. (Jim) Carroll
Vice President

Room 4170
1200 Peachtree St., NE
Atlanta, GA 30309
404 810-7262

June 5, 1996

Via Hand Delivery
Mr. Charles B. Coe
BellSouth Telecommunications, Inc.
675 West Peachtree Street, NE - Suite 4514
Atlanta, Georgia 30375

SUBJECT: Proposed Agreement on Total Services Resale ("TSR") Issues

Dear Charlie:

We have established an objective to try to reach closure on issues related to TSR by July 1, 1996. In furtherance of this objective, the attached proposal builds on the discussions we have had to date.

I want to emphasize that I am making a "package proposal." No single item or sub-group of items stands alone. This proposal is contingent upon BellSouth's acceptance of the entire proposal.

I also emphasize that this entire proposal represents AT&T Proprietary Restricted information containing commercially sensitive material whose disclosure to unauthorized persons could harm AT&T. It is being provided under the terms of our confidentiality agreement, entered into for purposes of negotiations under the Telecommunications Act of 1996, and therefore, may not be disclosed or used in any way by BellSouth in any regulatory proceedings or with any other parties and should be restricted to individuals within BellSouth with a "need to know" regarding the negotiations.

Even where disclosure is restricted to those having a "need to know" for purposes of our negotiations, I caution BellSouth against disclosing single items or subgroups on a standalone basis. Again, this is a package proposal and should always be represented by BellSouth as such.

I look forward to your expeditious response.

Sincerely yours,

Attachments

201011

AT&T/BellSouth Southern Region
Total Services Resale ("TSR") Proposal

This outlines a region-wide proposal to resolve all issues related to Avoidable Costs in connection with TSR pursuant to the Telecommunications Act of 1996 (the "Act"). AT&T proposes the following:

- Region-wide Base Line ("B.L.")discount on all services available for discount = 25% off BellSouth's "Retail Rates" (herein defined as prices actually charged by BellSouth to its customers) for both residence and business. The proposal embodied herein is based on a combination of analytical data (AT&T's Cost Model) and business judgment. This judgment is without the benefit of service specific avoidable cost studies by BellSouth (which, to date, BellSouth has not provided) and without the underlying, supporting cost data that would be required to validate such study results. If additional data becomes available that supports requesting more service specific discounts or different discount levels before execution of this proposal, this proposal may be withdrawn or modified by AT&T.

- The B.L. discount will be indexed to BellSouth's Retail Rates. As those prices are reduced, the B.L. discount and other discounts described herein will apply to the lower prices.

- Electronic interfaces will be operational by September 1, 1996. Until electronic interfaces are proven operational in a consistent manner that provides operational and customer parity to AT&T and its customers for ninety consecutive days, the following Operational Parity discounts will apply in addition to the B.L. discount and any Volume and Term discounts discussed below. The DMOQs (performance metrics) upon which the Operational Parity discounts will be eliminated will be mutually agreed upon by AT&T and BellSouth.

Area for Additional Discount	Operational Parity Discount
1) Pre-Service Ordering Interfaces	3%
2) Service Order Processing and Provisioning Interfaces	3%
3) Directory Listing and Line Information Data Base	3%
4) Service Trouble Reporting Interfaces	3%
5) Daily Local Usage Data	3%
TOTAL	15%

- Volume and Term ("V&T") commitments will increase the Base Line discounts as depicted below.

Minimum Commitment (3 Year Term)		
Effective Date@	Lines (M)#	B.L.+V&T Discount*
4/1/97	.070	27.5%
7/1/97	.185	30.0%
10/1/97	.300	32.5%
1/1/98	.416	30.0%
4/1/98	.600	37.5%
7/1/98	.800	40.0%
10/1/98	1.000	42.5%
1/1/99	1.200	45.0%

@Monthly Commitments start on the effective date. Commitments are for cumulative resold lines (basic residence lines plus business lines). The 1/1/99 Commitment is for twelve months.

#If commitment levels are achieved at an earlier date than the Dates of Minimum Commitment, then that B.L. + V&T Discount will be awarded at the earlier date(s).

*Discounts are off BellSouth's Retail Rates.

This proposal is contingent upon the following:

1. Acceptance of this comprehensive package in total including the "New Offer" column in the Attachment, which includes unresolved TSR operational issues which have been identified to date.

2. Agreement on appropriate terms and conditions for resale of local services including the following:

   -Converting agreements reached to date on TSR operational issues into mutually acceptable contract language.

   -AT&T's right to use the resold services for its own use or resale to others for purposes of offering services of any kind.

   -AT&T's right to obtain local services pursuant to discounts available by virtue of Commission orders or in any other BellSouth agreements and/or applicable tariffs which AT&T finds more favorable and count those purchases toward fulfillment of its volume commitments.

3. Acceptable resolution of issues related to Unbundled Network Elements ("UNEs").

4. BellSouth will notify AT&T of any agreements to resell local services or to provide unbundled network elements into which it enters where the prices, terms, and/or conditions are different than those which have been made available to AT&T. In that event, AT&T shall have the option to substitute those prices, terms, and conditions in whole or in part for the relevant prices, terms, and conditions which had been offered to AT&T.

Attachment

THIS REPRESENTS A PROPOSAL FROM AT&T TO BELLSOUTH IN CONNECTION WITH THE NEGOTIATIONS UNDER THE FEDERAL TELECOMMUNICATIONS ACT OF 1996

DESCRIPTION OF ISSUE	NEW OFFER
Services available for resale	All current and new BellSouth services shall be available for unrestricted resale at the agreed to discount except as may be noted below. For example, AT&T requests BellSouth to remove all tariff restrictions which prohibit or limit the aggregation and resale of services to unaffiliated users.
Grandfathered	Existing - AT&T would consider negotiating only specific current Grandfathered services which would be available for resale at the agreed to discounts. Future - AT&T proposes that prior to filing requests for Grandfathering additional services at the PSC, these plans would be reviewed and agreed to by AT&T.
Lifeline & Link-Up	AT&T proposes that Lifeline/Link-Up service be provided for resale at the Retail Rates to the end user, less the agreed to discounts.
N11 (except 411, 611 and 911)	BellSouth agrees to not offer of new N11 services for 12 months from the date of any agreement, but that the existing N11 offerings would not be available for resale.
911, E911	BellSouth agrees to provide the necessary unbundled elements in order for AT&T to provide a comparable 911/E911 offering to government agencies. Such unbundled elements would be available by 1/1/97.
Contract Service Arrangements, Special Arrangements, and Promotions	BellSouth will make all CSAs, SAs, and Promotions available for resale on a "switch as is" (transfer of the contract) basis until the "B.L. + V&T" discount is at or exceeds 40%, after which CSAs, SAs, and Promotions would not be available for resale.
State Specific Discount Plans and Services(e.g., Louisiana Education Discount)	BellSouth agrees that these services are available for resale at the agreed to discounts.
Services with no discount	
Installment Billing	AT&T will agree to the non-availability of Installment Billing for resale, provided that AT&T and BellSouth reach acceptable payment terms as part of the terms and conditions of the commercial contract executed between the two companies.
Non-Recurring Charges	OUTPLOC - BellSouth will charge $8.00 per "switch as is" change, until electronic interfaces are operational, at which time BellSouth will charge the TSLRIC cost of processing a "switch as is" order. All Other - BellSouth agrees that non-recurring services will be available for resale at the agreed to discounts.
Inside Wire Maintenance Program	AT&T proposes that this service be provided for resale at the agreed to discounts.

THIS REPRESENTS A PROPOSAL FROM AT&T TO BELLSOUTH IN CONNECTION WITH THE NEGOTIATIONS UNDER THE FEDERAL TELECOMMUNICATIONS ACT OF 1996

Notification Process	
Existing and New Services	Price Changes - BellSouth agrees to put in place an electronic system to provide for notice of proposed price changes 30 days before they are proposed to become effective. The target date for process definition and review is 9/1/96. If the process is agreed to, the implementation effective date would be 10/1/96. New Services, Withdrawals of Existing Services, Other Changes to Existing Services - AT&T proposes that BellSouth provide AT&T advance notification of new services, discontinued services and changes to existing services concurrent with BellSouth's internal notification for process, system, and operational changes.
Technology and Operational Changes	BellSouth agrees to put in place an electronic system to notify AT&T at least six months before any new technology or operational changes are made.
Branding	
General Employee Contact with AT&T Customers	AT&T proposes that BellSouth produce a documented plan around its methods and procedures, training and approaches that would be used with BellSouth's personnel to assure that BellSouth meets AT&T's branding requirements. The process, methods and procedures, training and scripts will be reviewed and agreed to by AT&T and BellSouth by 8/1/96.
Installation and Repair Contact with AT&T Customers	AT&T proposes that AT&T provide branded material to BellSouth Installation and Repair forces to use for customer contact/leave behind material at no charge to BellSouth. AT&T will stock and replenish the material to assure availability at the locations designated by BellSouth. AT&T requests that BellSouth support the arrangement by pre-notification of material supply exhaust to AT&T so stock is readily available. Specific conditions and assurance that the stock is used properly by technicians will be agreed to by BellSouth and AT&T by 9/1/96.
Operator Services and Directory Assistance	AT&T proposes that Operator Services and Directory Services brand to AT&T where AT&T utilizes BellSouth resold Operator and Directory Services. AT&T would review the scripts used by BellSouth operators as they handle operator services and directory assistance.
Electronic Interfaces - Providing Customer Usage Data in Unrated Format	BellSouth has agreed to provide unrated customer usage data. AT&T requests that BellSouth provide usage data sample prior to 6/5/96, in order for AT&T to analyze. Provided the indicators and elements needed for billing retain the integrity AT&T needs and requires, AT&T will accept BellSouth's unrated messages process of unrated to rated to unrated.

THIS REPRESENTS A PROPOSAL FROM AT&T TO BELLSOUTH IN CONNECTION WITH THE NEGOTIATIONS UNDER THE FEDERAL TELECOMMUNICATIONS ACT OF 1996

OUTPLOC Information	
Local service	BellSouth will meet the requirements in full as outlined in AT&T's Local Account Maintenance document dated 3/27/96.
Long distance service	Where AT&T is the customer's Local Service Provider, any order changing the customer's PIC is to be sent from AT&T. BellSouth will reject PIC changes from IXCs and notify AT&T of such rejection.
Direct Routing to AT&T for Operator Services, Directory Assistance, and Repair	BellSouth agrees to provide direct routing to AT&T, utilizing the best technical solution available. In the event a solution is not forthcoming by 10/1/96, or if the solution cannot be implemented in a specific LSO due to equipment exhaust where additional capacity cannot be added, AT&T will utilize BellSouth operator, directory, and repair services, branded to AT&T as proposed above.
Rates to be Applied when AT&T Local Customer Makes a Local/IntraLATA Collect, 3rd Number, or Calling Card Call to a BellSouth Customer	AT&T's position is that the "Originating" Local Service Providers' rates apply; that BellSouth will record the call and send the "unrated" message to AT&T. AT&T would "rate" the call and send it back to BellSouth for billing.

UNBUNDLED NETWORK ELEMENT FORECAST TEAM

ORIGINAL TEAM ROSTER

Doug Ripley
Pat Baker
Mike Triebert
Joe Spencer
Robert Oakes
Fred Perrin
Robert McGrew
Jim Pierson

MERGED FORECAST TEAM ROSTER

ALL OF THE ABOVE, PLUS:
Michelle Augier
Bob Cavallo
Ray Crafton
Stephanie Marinac
Phyllis Worcester
Donna Hassebrock
Kirk Odegaard
Tom McGinty
Karen Dowdle

Assumptions for Local Demand Forecast*

	Consumer	Business
Source of Baseline Data	SSO (Plan of Record I)	Salthouse Demand Model
Aggressive View (High)	Baseline + 30%	Baseline + 50%
Conservative View (Low)	Shift Growth Curves out one year less 50%	Reduce Baseline by 50%

***Assumptions also used by Central Region for Projection provided Ameritech**

UNBUNDLED NETWORK ELEMENT FORECAST TEAM

MISSION STATEMENT

TO DEVELOP A FORECAST OF AT&T CUSTOMER DEMAND FOR EACH OF THE UNBUNDLED NETWORK ELEMENTS PROPOSED BY AT&T FOR NEGOTIATION WITH BELL SOUTH TELEPHONE AND SELECTED INDEPENDENT TELEPHONE COMPANIES (RANGE ESTIMATES OR DATA POINTS BOUNDED WITH CONFIDENCE AND VARIANCE FROM MEAN ARE OK) NO LATER THAN 5/01/96 FOR HANDOFF THROUGH AT&T WIRELESS TO OUR NEGOTIATING TEAMS. OUR TEAM'S OUTPUT IS EXPECTED TO BE A MATRIX OF "HOW MUCH", "WHICH ELEMENTS", BY MARKET, INITIALLY AND FOR THE NEXT FIVE YEARS.

SOURCES OF INPUT

Information	Type	Source
1. Proposed Plan Of Record II, (Tier I, II, III Markets)	Data	H.S. Bennett
2. Current MSA Population	Fact	D. Gibson
3. A. CSB consumers, by market	Fact	K. Dowdle
B. Business DS-0 equivalents, by market	Fact	K. Dowdle
4. Market growth projections over 5 year period	Data	K. Dowdle
5. Market Share objective	Data	R.E. Allen
6. Connectivity Options, by LSO (Screening Tool output)	Data	P. Baker
7. List of Unbundled Network Elements	Data	H.Q. M.C.
8. Market Boundaries	Data	S.S. LSO
9. U.N.E. Training	Data	H.Q.
10. CAP Deployment Plans and Schedules	Data	C.B.D.M.
11. Market/Connectivity Options Timeline	Data	S.S. POR
12. Ranging Parameters	Data	Central Territory, TSR Forecast Methodology

Unbundling Assumptions

Basic Team Assumptions:

We will rely on known fact and data, wherever available as a foundation for our modeling tool and allocation factors.

We will modify or model/tool based upon any source of new fact and data that will displace one or more assumptions the team has made, and rerun the tool to determine the magnitude and sensitivity of the change(s).

We will have been effective in our identification of resources and expertise required to be inclusive and successful.

Aggregating assumptions in process rather than at the front of the design process will not impact the validity of the team's output.

Local market entry is critical to protect AT&T's LD market.

Tool Design:

The tool will be built by using a process of determining percentages that will apply to the type of option that may require unbundled LEC elements (e.g. 30% of local business customers will utilize The 4E Solution in 1997).

The tool will be built by using a process of determining the percentages of customers will use a particular unbundled element. (e.g. 100% of all customers with The 4 E Solution will require Dedicated LEC transport).

The tool will take the forecasted total customers (provided by Karen Dowdle) and apply to that, the percentages presented above. This will provide the total amount of customers that will use the particular network unbundled element.

Formula: TSR forecast • Percent Option Usage • Percent element used by option

Network Elements

We will present an estimate to the LEC composed of 17 network elements
Two Designs:

- We have found two network designs that require a forecast for ordering unbundled elements: AT&T build, and ALEC lease arrangement. The team has identified the southern cities into three tiers: AT&T build cities, CAP provided cities, and TSR cities respectively.

- We are assuming that a CAP lease as a part of an AT&T build scenario is identical in impact to and AT&T build as far as the monopoly LEC is concerned.

- ALEC resale will be an interim solution between RBOC TSR and AT&T infrastructure deployment.

- AT&T will provide its own DA and OS in all scenarios.

- Unbundled elements would provide greater savings than TSR.

The Tool Output:

- The intent is for each unbundled element to provide the number of customers (Consumer) and DS0s (Business) that will utilize that element. We will not provide the usage. For example we will not provide the number of database dips. We will provide the number of customers who may need to make data base dips. BellSouth must apply their knowledge to the numbers provided to them. Bell can deduce an average number of dips per customer and apply this to the number of customers we provide to them.

- Demand stated as a product of the tool will always be end of period rather than mid-year, start of year or mean.

- The output is for a local service forecast only.

- Access is not unbundled.

- TSR is TSR regardless of the vendor: LEC, CAP, or Cable Co.

- Assume AT&T will reach economic equilibrium in terms of dedicated transport, between CAP and LEC, independent of the demand for network unbundled elements

Assume co-location agreements will not allow deployment of AT&T DACS and we will negotiate for lease/purchase of LEC DACS. Thus, 100% of customers are assumed to have access to LEC DACS.

Network Element Assumptions

- Loop combination is used for local loop because we do not know the LEC's network design.
- Every customer will have a NI. The wireless design will utilize the LEC NI due to the reliability of grounding by a trained technician.
- 100% of customers will use common elements (for things like 911, intraLATA, Tandem access.)
- We will use the LSO percentages to determine the percent of customers that will use Wireless, Loop and TSR as a final methodology for service.
- The local loop option includes : POTS, ISDN, and Centrex as an offer
- AT&T will provide Bell South a 9 state forecast.

AT&T Build Assumptions:

- Tampa will be our study city for estimating tier one cities.
- Assume all CAP switch/ LEC Local Loop scenarios look like the Tampa market
- Preliminary analysis and tool outputs will assume:

  A. Deployment of AT&T infrastructure in Tampa which is ready to serve in the year percentage option use begin.
  B. AT&T will own and operate at least one 5E provisioning local dial tone in a build scenario.

CAP Switch / LEC local Loop Assumptions:

- Jacksonville will be our study city for estimating tier two cities.
- Assume all CAP switch/ LEC Local Loop scenarios look like the Jacksonville market.
- For tier two - Where AT&T uses ALEC switches and does not build, we assume AT&T will handle ordering the local loop from the LEC.
- Assume that CAP switches can interconnect wit AT&T OA and DA.
- AT&T will not provide Bell a forecast for the CAP interconnection elements.

Nodal Assumptions:

- All nodal customers that choose AT&T for local service will use the 4E solution.
- 4E local customers will begin to migrate to the 5E option starting in the year 2000.
- 35% of the business market's local lines will be nodal.

	BellSouth TSR FOR TIER ONE CITIES - BUSINESS				
		1997	**1998**	**1999**	**2000**
	Atlanta		24,394	45,163	62,957
	S. E. Florida	3,679	17,712	32,792	45,712
	Orlando		5,660	10,478	14,606
	Charlotte		4,710	8,720	12,155
	Greensboro		4,217	7,807	10,883
	Memphis		5,743	10,632	14,822
	Nashville			10,789	15,040
	TOTAL	3,679	62,435	126,381	176,176
	BellSouth TSR FOR TIER ONE CITIES - Consumer				
		1997	**1998**	**1999**	**2000**
	Atlanta		343,382	469,080	471,366
	S. E. Florida	132,758	278,912	377,481	379,480
	Orlando		89,120	120,615	121,254
	Charlotte		56,592	78,499	78,629
	Greensboro		50,670	70,284	70,400
	Memphis		79,133	124,601	125,257
	Nashville			126,441	127,106
	TOTAL	132,758	897,808	1,367,001	1,373,493

1	**2001**
2	64,168
3	46,592
4	14,887
5	12,389
6	11,093
7	15,107
8	15,330
9	179,565
10	**2001**
11	478,793
12	385,478
13	123,171
14	79,933
15	71,568
16	127,224
17	129,102
18	1,395,270

19 Prepared by Joe Spencer 5/28/96

200972

BellSouth TSR FOR TIER TWO CITIES - BUSINESS

	1997	1998	1999	2000	2001	%of state	% service
New Orleans		4,170	9,979	16,391	18,898	40.4%	50%
Jacksonville	403	1,939	3,590	5,004	5,100	7.4%	50%
Louisville	202	3,211	7,685	12,622	14,553	64.9%	50%
Raleigh	377	1,816	3,363	4,688	4,778	19.9%	50%
Greenville		2,253	5,392	8,856	10,211	39.3%	50%
Birmingham			6,006	9,865	11,375	31.0%	50%
Knoxville		1,706	3,158	4,403	4,487	16.1%	50%
Baton Rouge			4,249	6,978	8,046	17.2%	50%
Charleston			3,169	5,206	6,002	23.1%	50%
Mobile			3,526	5,792	6,678	18.2%	50%
Columbia			2,991	4,913	5,664	21.8%	50%
Lexington	91	1,440	3,446	5,660	6,525	29.1%	50%
Chattanooga		1,155	2,138	2,981	3,038	10.9%	50%
Jackson		2,598	6,218	10,212	11,774	48.1%	50%
Montgomery			2,209	3,628	4,183	11.4%	50%
TOTAL	1,072	20,288	67,120	107,199	121,313		

BellSouth TSR FOR TIER TWO CITIES - Consumer

	1997	1998	1999	2000	2001		
New Orleans		17,997	47,818	48,081	48,737	40.4%	35%
Jacksonville	10,173	21,372	28,925	29,078	29,538	7.4%	35%
Louisville	4,670	26,286	57,241	57,374	58,375	64.9%	35%
Raleigh	7,076	15,278	21,192	21,227	21,579	19.9%	35%
Greenville		20,263	45,060	45,153	45,893	39.3%	35%
Birmingham			27,126	27,301	27,651	31.0%	35%
Knoxville		16,454	25,909	26,045	26,454	16.1%	35%
Baton Rouge			20,358	20,470	20,750	17.2%	35%
Charlston			26,486	26,540	26,975	23.1%	35%
Mobile			15,926	16,029	16,234	18.2%	35%
Columbia			24,995	25,047	25,457	21.8%	35%
Lexington			25,666	25,726	26,174	29.1%	35%
Chattanooga		11,140	17,541	17,633	17,910	10.9%	35%
Jackson		4,265	18,010	24,013	24,566	48.1%	35%
Montgomery			9,975	10,040	10,169	11.4%	35%
TOTAL	21,918	133,056	412,228	419,757	426,463		

Prepared by Joe Spencer 5/28/96

Summary Page

BellSouth 9 State View

	1997	1998	1999	2000	2001
Element					
NID	-	50,000	225,000	300,000	400,000
Loop Dist	-	-	-	-	-
Loop Con/Mult	-	-	-	-	-
Loop Feeder	-	-	-	-	-
Loop Combination	50,000	30,000	550,000	600,000	650,000
Local Switching	-	-	-	-	-
Operator Serv.	-	-	-	-	-
DA	-	-	-	-	-
Common Trans	50,000	350,000	750,000	900,000	100,000
Ded Trans	50,000	350,000	750,000	900,000	100,000
Data Switching	-	-	-	-	-
Dig Cross Con	50,000	30,000	550,000	600,000	650,000
SS7 M. Transfer	50,000	350,000	750,000	900,000	100,000
SST	50,000	350,000	750,000	900,000	100,000
SCP /data bases	50,000	350,000	750,000	900,000	100,000
Tandem Switching	50,000	350,000	750,000	900,000	100,000
AIN	-	-	-	-	-

* The numbers above represent the number of lines by year that AT&T forecasts will be ordered from BellSouth

	Summary Page	BellSouth 9 State View				
		1997	1998	1999	2000	2001
	Element					
	NID	-	49,379	225,555	302,168	383,699
	Loop Dist	-	-	-	-	-
	Loop Con/Mult	-	-	-	-	-
	Loop Feeder	-	-	-	-	-
	Loop Combination	43,961	312,441	566,688	634,831	666,459
	Local Switching	-	-	-	-	-
	Operator Serv.	-	-	-	-	-
	DA	-	-	-	-	-
	Common Trans	39,597	354,183	746,606	906,579	1,008,101
	Ded Trans	39,597	354,183	746,606	906,579	1,008,101
	Data Switching	-	-	-	-	-
	Dig Cross Con	39,597	304,803	521,051	604,411	624,402
	SS7 M. Transfer	39,597	354,183	746,606	906,579	1,008,101
	SST	39,597	354,183	746,606	906,579	1,008,101
	SCP /data bases	39,597	354,183	746,606	906,579	1,008,101
	Tandem Switching	39,597	354,183	746,606	906,579	1,008,101
	AIN	-	-	-	-	-
	* The numbers above represent the number of lines by year that AT&T forecasts will be ordered from BellSouth					

TAMPA

Market Type : **AT&T Build**

Year **1997**

		WAO	5E LL No DA			TOTAL
Residence	**155,137**					
	Element					
	NID	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	38,784			38,784
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	-	38,784			38,784
	Ded Trans	-	38,784			38,784
	Data Switching	-	-			-
	Dig Cross Con	-	38,784			38,784
	SS7 M. Transfer	-	38,784			38,784
	SST	-	38,784			38,784
	SCP /data bases	-	38,784			38,784
	Tandem Switching	-	38,784			38,784
	AIN	-	-			-

		4 E Solution	5E LL No DA			TOTAL
Business	**3,908**					
	Element					
	NID	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	1,172			1,172
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	1,368	1,172			2,540
	Ded Trans	1,368	1,172			2,540
	Data Switching	-	-			-
	Dig Cross Con	1,368	1,172			2,540
	SS7 M. Transfer	1,368	1,172			2,540
	SST	1,368	1,172			2,540
	SCP /data bases	1,368	1,172			2,540
	Tandem Switching	1,368	1,172			2,540
	AIN	-	-			-

200976

TAMPA

Market Type : **AT&T Build**

Year **1998**

Residence 325,929

Element	WAO	5E LL No DA			TOTAL
NID	32,593	-			32,593
Loop Dist	-	-			-
Loop Con/Mult	-	-			-
Loop Feeder	-	-			-
Loop Combination	-	81,482			81,482
Local Switching	-	-			-
Operator Serv.	-	-			-
DA	-	-			-
Common Trans	32,593	81,482	-		114,075
Ded Trans	32,593	81,482			114,075
Data Switching	-	-			-
Dig Cross Con	-	81,482			81,482
SS7 M. Transfer	32,593	81,482			114,075
SST	32,593	81,482			114,075
SCP /data bases	32,593	81,482			114,075
Tandem Switching	32,593	81,482			114,075
AIN	-	-			-

Business 18,816

Element	4 E Solution	5E LL No DA			TOTAL
NID	-	-			-
Loop Dist	-	-			-
Loop Con/Mult	-	-			-
Loop Feeder	-	-			-
Loop Combination	-	7,526			7,526
Local Switching	-	-			-
Operator Serv.	-	-			-
DA	-	-			-
Common Trans	6,586	7,526			14,112
Ded Trans	6,586	7,526			14,112
Data Switching	-	-			-
Dig Cross Con	6,586	7,526			14,112
SS7 M. Transfer	6,586	7,526			14,112
SST	6,586	7,526			14,112
SCP /data bases	6,586	7,526			14,112
Tandem Switching	6,586	7,526			14,112
AIN	-	-			-

TAMPA

Market Type : **AT&T Build**

Year **1999**

	WAO	5E LL No DA			TOTAL
Residence 441,114					
Element					
NID	66,167	-			66,167
Loop Dist	-	-			-
Loop Con/Mult	-	-			-
Loop Feeder	-	-			-
Loop Combination	-	110,279			110,279
Local Switching	-	-			-
Operator Serv.	-	-			-
DA	-	-			-
Common Trans	66,167	110,279			176,446
Ded Trans	66,167	110,279			176,446
Data Switching	-	-			-
Dig Cross Con	-	110,279			110,279
SS7 M. Transfer	66,167	110,279			176,446
SST	66,167	110,279			176,446
SCP /data bases	66,167	110,279			176,446
Tandem Switching	66,167	110,279			176,446
AIN	-	-			-

	4 E Solution	5E LL No DA			TOTAL
Business 34,837					
Element					
NID	-	-			-
Loop Dist	-	-			-
Loop Con/Mult	-	-			-
Loop Feeder	-	-			-
Loop Combination	-	13,935			13,935
Local Switching	-	-			-
Operator Serv.	-	-			-
DA	-	-			-
Common Trans	12,193	13,935			26,128
Ded Trans	12,193	13,935			26,128
Data Switching	-	-			-
Dig Cross Con	12,193	13,935			26,128
SS7 M. Transfer	12,193	13,935			26,128
SST	12,193	13,935			26,128
SCP /data bases	12,193	13,935			26,128
Tandem Switching	12,193	13,935			26,128
AIN	-	-			-

Market Type : **AT&T Build**

Year **2000**

	WAO	5E LL No DA			TOTAL
Residence 443,451					
Element					
NID	88,690	-			88,690
Loop Dist	-	-			-
Loop Con/Mult	-	-			-
Loop Feeder	-	-			-
Loop Combination	-	110,863			110,863
Local Switching	-	-			-
Operator Serv.	-	-			-
DA	-	-			-
Common Trans	88,690	110,863			199,553
Ded Trans	88,690	110,863			199,553
Data Switching	-	-			-
Dig Cross Con	-	110,863			110,863
SS7 M. Transfer	88,690	110,863			199,553
SST	88,690	110,863			199,553
SCP /data bases	88,690	110,863			199,553
Tandem Switching	88,690	110,863			199,553
AIN	-	-			-

	4 E Solution	5E LL No DA			TOTAL
Business 48,562					
Element					
NID	-	-			-
Loop Dist	-	-			-
Loop Con/Mult	-	-			-
Loop Feeder	-	-			-
Loop Combination	-	24,281			24,281
Local Switching	-	-			-
Operator Serv.	-	-			-
DA	-	-			-
Common Trans	14,569	24,281			38,850
Ded Trans	14,569	24,281			38,850
Data Switching	-	-			-
Dig Cross Con	14,569	24,281			38,850
SS7 M. Transfer	14,569	24,281			38,850
SST	14,569	24,281			38,850
SCP /data bases	14,569	24,281			38,850
Tandem Switching	14,569	24,281			38,850
AIN	-	-			-

TAMPA

Market Type : **AT&T Build**

Year **2001**

		WAO	5E LL No DA			TOTAL
Residence	**450,460**					
	Element					
	NID	112,615	-			112,615
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	112,615			112,615
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	112,615	112,615			225,230
	Ded Trans	112,615	112,615			225,230
	Data Switching	-	-			-
	Dig Cross Con	-	112,615			112,615
	SS7 M. Transfer	112,615	112,615			225,230
	SST	112,615	112,615			225,230
	SCP /data bases	112,615	112,615			225,230
	Tandem Switching	112,615	112,615			225,230
	AIN	-	-			-

		4 E Solution	5E LL No DA	-		TOTAL
Business	**49,497**					
	Element					
	NID	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	27,223			27,223
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	12,374	27,223			39,598
	Ded Trans	12,374	27,223			39,598
	Data Switching	-	-			-
	Dig Cross Con	12,374	27,223			39,598
	SS7 M. Transfer	12,374	27,223			39,598
	SST	12,374	27,223			39,598
	SCP /data bases	12,374	27,223			39,598
	Tandem Switching	12,374	27,223			39,598
	AIN	-	-			-

Residence					
	1997	1998	1999	2000	2001
WAO	0%	10%	15%	20%	25%
5E LL No DA	25%	25%	25%	25%	25%
TSR	75%	65%	60%	55%	50%
TOTAL	100%	100%	100%	100%	100%

Business					
	1997	1998	1999	2000	2001
4 E Solution	35%	35%	35%	30%	25%

5E LL No DA	30%	40%	40%	50%	55%
TSR	35%	25%	25%	25%	20%
TOTAL	100%	100%	100%	105%	100%

Percent Element Use

Residence	WAO	5E LL No DA		
Element				
NID	100%	0%		
Loop Dist	0%	0%		
Loop Con/Mult	0%	0%		
Loop Feeder	0%	0%		
Loop Combination	0%	100%		
Local Switching	0%	0%		
Operator Serv.	0%	0%		
DA	0%	0%		
Common Trans	100%	100%		
Ded Trans	100%	100%		
Data Switching	0%	0%		
Dig Cross Con	0%	100%		
SS7 M. Transfer	100%	100%		
SST	100%	100%		
SCP /data bases	100%	100%		
Tandem Switching	100%	100%		
AIN	0%	0%		

Percent Element Use

Businesss	4 E Solution	5E LL No DA		
Element				
NID	0%	0%		
Loop Dist	0%	0%		
Loop Con/Mult	0%	0%		
Loop Feeder	0%	0%		
Loop Combination	0%	100%		
Local Switching	0%	0%		
Operator Serv.	0%	0%		
DA	0%	0%		
Common Trans	100%	100%		
Ded Trans	100%	100%		
Data Switching	0%	0%		
Dig Cross Con	100%	100%		
SS7 M. Transfer	100%	100%		
SST	100%	100%		
SCP /data bases	100%	100%		
Tandem Switching	100%	100%		
AIN	0%	0%		

Summary Page

TAMPA

	1997	1998	1999	2000	2001
Element					
NID	-	32,593	66,167	88,690	112,615
Loop Dist	-	-	-	-	-
Loop Con/Mult	-	-	-	-	-
Loop Feeder	-	-	-	-	-
Loop Combination	39,957	89,009	124,213	135,144	139,838

1	Local Switching	-	-	-	-	-
2	Operator Serv.	-	-	-	-	-
3	DA	-	-	-	-	-
4	Common Trans	41,325	128,187	202,573	238,402	264,828
5	Ded Trans	41,325	128,187	202,573	238,402	264,828
6	Data Switching	-	-	-	-	-
7	Dig Cross Con	41,325	95,594	136,406	149,712	152,213
8	SS7 M. Transfer	41,325	128,187	202,573	238,402	264,828
9	SST	41,325	128,187	202,573	238,402	264,828
10	SCP /data bases	41,325	128,187	202,573	238,402	264,828
11	Tandem Switching	41,325	128,187	202,573	238,402	264,828
12	AIN	-	-	-	-	-

13 * The numbers above represent the number of lines by year that AT&T forecasts will be ordered from BellSouth

200931

14 ***TAMPA***

15 **Market Type** : **AT&T Build**

16 **Total For** **All Years**

			WAO	5E LL No DA			TOTAL
17							
18	**Residence**	**1,816,091**					

1		*Element*				
2		NIU				
3		Loop Dist				
4		Loop Con/Mult				
5		Loop Feeder				
6		Loop Combination				
7		Local Switching				
8		Operator Serv.				
9		DA				
10		Common Trans				
11		Ded Trans				
12		Data Switching				
13		Dig Cross Con				
14		SS7 M. Transfer				
15		SST				
16		SCP /data bases				
17		Tandem Switching				
18		AIN				
19			4 E Solution	5E LL No DA		TOTAL
20	**Business**	**155,620**				
21		*Element*				
22		NIU				
23		Loop Dist				
24		Loop Con/Mult				
25		Loop Feeder				
26		Loop Combination				
27		Local Switching				
28		Operator Serv.				
29		DA				
30		Common Trans				
31		Ded Trans				
32		Data Switching				
33		Dig Cross Con				
34		SS7 M. Transfer				
35		SST				
36		SCP /data bases				
37		Tandem Switching				
38		AIN	-	-		-

BellSouth 9 State View

Market Type : **AT&T Build**

Year **1997**

200983

		WAO	5E LL No DA			TOTAL
Residence	**146,034**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	36,508			36,508
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	-	36,508			36,508
	Ded Trans	-	36,508			36,508
	Data Switching	-	-			-
	Dig Cross Con	-	36,508			36,508
	SS7 M. Transfer	-	36,508			36,508
	SST	-	36,508			36,508
	SCP /data bases	-	36,508			36,508
	Tandem Switching	-	36,508			36,508
	AIN	-	-			-

		4 E Solution	5E LL No DA			TOTAL
Business	**3,679**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	1,104			1,104
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	1,288	1,104			2,391
	Ded Trans	1,288	1,104			2,391
	Data Switching	-	-			-
	Dig Cross Con	1,288	1,104			2,391
	SS7 M. Transfer	1,288	1,104			2,391
	SST	1,288	1,104			2,391
	SCP /data bases	1,288	1,104			2,391
	Tandem Switching	1,288	1,104			2,391
	AIN	-	-			-

BellSouth 9 State View

Market Type : **AT&T Build**

Year 1998

		WAO	5E LL No DA			TOTAL
Residence	**987,589**					
	Element					
	NIU	49,379	-			49,379
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	246,897			246,897
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	49,379	246,897			296,277
	Ded Trans	49,379	246,897			296,277
	Data Switching	-	-			-
	Dig Cross Con	-	246,897			246,897
	SS7 M. Transfer	49,379	246,897			296,277
	SST	49,379	246,897			296,277
	SCP /data bases	49,379	246,897			296,277
	Tandem Switching	49,379	246,897			296,277
	AIN	-	-			-

		4 E Solution	5E LL No DA			TOTAL
Business	**62,435**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	21,852			21,852
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	21,852	21,852			43,705
	Ded Trans	21,852	21,852			43,705
	Data Switching	-	-			-
	Dig Cross Con	21,852	21,852			43,705
	SS7 M. Transfer	21,852	21,852			43,705
	SST	21,852	21,852			43,705
	SCP /data bases	21,852	21,852			43,705
	Tandem Switching	21,852	21,852			43,705
	AIN	-	-			-

BellSouth 9 State View

Market Type : **AT&T Build**

Year 1999

		WAO	5E LL No DA			TOTAL
Residence	**1,503,701**					
	Element					
	NIU	225,555	-			225,555
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	375,925			375,925
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	225,555	375,925			601,480
	Ded Trans	225,555	375,925			601,480
	Data Switching	-	-			-
	Dig Cross Con	-	375,925			375,925
	SS7 M. Transfer	225,555	375,925			601,480
	SST	225,555	375,925			601,480
	SCP /data bases	225,555	375,925			601,480
	Tandem Switching	225,555	375,925			601,480
	AIN	-	-			-

		4 E Solution	5E LL No DA			TOTAL
Business	**126,381**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	50,552			50,552
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	44,233	50,552			94,786
	Ded Trans	44,233	50,552			94,786
	Data Switching	-	-			-
	Dig Cross Con	44,233	50,552			94,786
	SS7 M. Transfer	44,233	50,552			94,786
	SST	44,233	50,552			94,786
	SCP /data bases	44,233	50,552			94,786
	Tandem Switching	44,233	50,552			94,786
	AIN	-	-			-

BellSouth 9 State View

Market Type : **AT&T Build**

Year **2000**

200935

		WAO	5E LL No DA			TOTAL
Residence	**1,510,842**					
	Element					
NIU		302,168	-			302,168
Loop Dist		-	-			-
Loop Con/Mult		-	-			-
Loop Feeder		-	-			-
Loop Combination		-	377,711			377,711
Local Switching		-	-			-
Operator Serv.		-	-			-
DA		-	-			-
Common Trans		302,168	377,711			679,879
Ded Trans		302,168	377,711			679,879
Data Switching		-	-			-
Dig Cross Con		-	377,711			377,711
SS7 M. Transfer		302,168	377,711			679,879
SST		302,168	377,711			679,879
SCP /data bases		302,168	377,711			679,879
Tandem Switching		302,168	377,711			679,879
AIN		-	-			-

		4 E Solution	5E LL No DA			TOTAL
Business	**176,176**					
	Element					
NIU		-	-			-
Loop Dist		-	-			-
Loop Con/Mult		-	-			-
Loop Feeder		-	-			-
Loop Combination		-	88,088			88,088
Local Switching		-	-			-
Operator Serv.		-	-			-
DA		-	-			-
Common Trans		52,853	88,088			140,941
Ded Trans		52,853	88,088			140,941
Data Switching		-	-			-
Dig Cross Con		52,853	88,088			140,941
SS7 M. Transfer		52,853	88,088			140,941
SST		52,853	88,088			140,941
SCP /data bases		52,853	88,088			140,941
Tandem Switching		52,853	88,088			140,941
AIN		-	-			-

BellSouth 9 State View

Market Type : **AT&T Build**

Year **2001**

		WAO	5E LL No DA			TOTAL
Residence	**1,534,797**					
	Element					

200936

JLS
6/3/96

NIU	383,699	-			383,699
Loop Dist	-	-			-
Loop Con/Mult	-	-			-
Loop Feeder	-	-			-
Loop Combination	-	383,699			383,699
Local Switching	-	-			-
Operator Serv.	-	-			-
DA	-	-			-
Common Trans	383,699	383,699			767,399
Ded Trans	383,699	383,699			767,399
Data Switching	-	-			-
Dig Cross Con	-	383,699			383,699
SS7 M. Transfer	383,699	383,699			767,399
SST	383,699	383,699			767,399
SCP /data bases	383,699	383,699			767,399
Tandem Switching	383,699	383,699			767,399
AIN	-	-			-

		4 E Solution	5E LL No DA			TOTAL
Business	**179,565**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	98,761			98,761
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	44,891	98,761			143,652
	Ded Trans	44,891	98,761			143,652
	Data Switching	-	-			-
	Dig Cross Con	44,891	98,761			143,652
	SS7 M. Transfer	44,891	98,761			143,652
	SST	44,891	98,761			143,652
	SCP /data bases	44,891	98,761			143,652
	Tandem Switching	44,891	98,761			143,652
	AIN	-	-			-

Residence					
	1997	1998	1999	2000	2001
WAO	0%	5%	15%	20%	25%
5E LL No DA	25%	25%	25%	25%	25%
TSR	75%	70%	60%	55%	50%
TOTAL	100%	100%	100%	100%	100%

Business					
	1997	1998	1999	2000	2001
4 E Solution	35%	35%	35%	30%	25%
5E LL No DA	30%	35%	40%	50%	55%
TSR	35%	30%	25%	20%	20%
TOTAL	100%	100%	100%	100%	100%

200937

Percent Element Use

Residence	WAO	5E LL No DA		
Element				
NIU	100%	0%		
Loop Dist	0%	0%		
Loop Con/Mult	0%	0%		
Loop Feeder	0%	0%		
Loop Combination	0%	100%		
Local Switching	0%	0%		
Operator Serv.	0%	0%		
DA	0%	0%		
Common Trans	100%	100%		
Ded Trans	100%	100%		
Data Switching	0%	0%		
Dig Cross Con	0%	100%		
SS7 M. Transfer	100%	100%		
SST	100%	100%		
SCP /data bases	100%	100%		
Tandem Switching	100%	100%		
AIN	0%	0%		

Percent Element Use

Businesss	4 E Solution	5E LL No DA		
Element				
NIU	0%	0%		
Loop Dist	0%	0%		
Loop Con/Mult	0%	0%		
Loop Feeder	0%	0%		
Loop Combination	0%	100%		
Local Switching	0%	0%		
Operator Serv.	0%	0%		
DA	0%	0%		
Common Trans	100%	100%		
Ded Trans	100%	100%		
Data Switching	0%	0%		
Dig Cross Con	100%	100%		
SS7 M. Transfer	100%	100%		
SST	100%	100%		
SCP /data bases	100%	100%		
Tandem Switching	100%	100%		
AIN	0%	0%		

Summary Page

BellSouth 9 State View

Tier 1 Markets

Element	1997	1998	1999	2000	2001
NIU	-	49,379	225,555	302,168	383,699
Loop Dist	-	-	-	-	-
Loop Con/Mult	-	-	-	-	-
Loop Feeder	-	-	-	-	-
Loop Combination	37,612	268,749	426,478	465,799	482,460
Local Switching	-	-	-	-	-
Operator Serv.	-	-	-	-	-
DA	-	-	-	-	-
Common Trans	38,900	339,981	696,266	820,820	911,051

Ded Trans	38,900	339,981	696,266	820,820	911,051
Data Switching	-	-	-	-	-
Dig Cross Con	38,900	290,602	470,711	518,651	527,351
SS7 M. Transfer	38,900	339,981	696,266	820,820	911,051
SST	38,900	* 339,981	696,266	820,820	911,051
SCP /data bases	38,900	339,981	696,266	820,820	911,051
Tandem Switching	38,900	339,981	696,266	820,820	911,051
AIN	-	-	-	-	-

Markets include:
- Atlanta
- S. E. Florida
- Orlando
- Charlotte
- Greensboro
- Memphis
- Nashville

* The numbers above represent the number of lines by year that AT&T forecasts will be ordered from BellSouth

200939

BellSouth 9 State View

Market Type = **AT&T Build**

Total For **All Years**

		WAO	5E LL No DA			TOTAL
Residence 5,682,963						
Element						
NIU						
Loop Dist						

JLS
6/3/96

1		Loop Con/Mult				
2		Loop Feeder				
3		Loop Combination				
4		Local Switching				
5		Operator Serv.				
6		DA				
7		Common Trans				
8		Ded Trans				
9		Data Switching				
10		Dig Cross Con				
11		SS7 M. Transfer				
12		SST				
13		SCP /data bases				
14		Tandem Switching				
15		AIN	-	-		-
16			4 E Solution	5E LL No DA		TOTAL
17	**Business**	**548,236**				
18		***Element***				
19		NIU				
20		Loop Dist				
21		Loop Con/Mult				
22		Loop Feeder				
23		Loop Combination				
24		Local Switching				
25		Operator Serv.				
26		DA				
27		Common Trans				
28		Ded Trans				
29		Data Switching				
30		Dig Cross Con				
31		SS7 M. Transfer				
32		SST				
33		SCP /data bases				
34		Tandem Switching				
35		AIN				

BellSouth 9 State View

Market Type = **CAP SWITCH**

Year **1997**

220931

		WAO	5E LL No DA			TOTAL
Residence	**24,110**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	6,027			6,027
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	-	-			-
	Ded Trans	-	-			-
	Data Switching	-	-			-
	Dig Cross Con	-	-			-
	SS7 M. Transfer	-	-			-
	SST	-	-			-
	SCP /data bases	-	-			-
	Tandem Switching	-	-			-
	AIN	-	-			-

		4 E Solution	5E LL No DA			TOTAL
Business	**1,072**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	322			322
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	375	322			697
	Ded Trans	375	322			697
	Data Switching	-	-			-
	Dig Cross Con	375	322			697
	SS7 M. Transfer	375	322			697
	SST	375	322			697
	SCP /data bases	375	322			697
	Tandem Switching	375	322			697
	AIN	-	-			-

Market Type : **CAP SWITCH**

Year **1998**

		WAO	5E LL No DA			TOTAL
Residence	**146,362**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	36,590			36,590
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	-	-			-
	Ded Trans	-	-			-
	Data Switching	-	-			-
	Dig Cross Con	-	-			-
	SS7 M. Transfer	-	-			-
	SST	-	-			-
	SCP /data bases	-	-			-
	Tandem Switching	-	-	-		-
	AIN	-	-			-

		4 E Solution	5E LL No DA			TOTAL
Business	**20,288**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	7,101			7,101
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	7,101	7,101			14,202
	Ded Trans	7,101	7,101			14,202
	Data Switching	-	-			-
	Dig Cross Con	7,101	7,101			14,202
	SS7 M. Transfer	7,101	7,101			14,202
	SST	7,101	7,101			14,202
	SCP /data bases	7,101	7,101			14,202
	Tandem Switching	7,101	7,101			14,202
	AIN	-	-			-

BellSouth 9 State View

Market Type : **CAP SWITCH**

Year **1999**

		WAO	5E LL No DA			TOTAL
Residence	**453,451**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	113,363			113,363
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	-	-			-
	Ded Trans	-	-			-
	Data Switching	-	-			-
	Dig Cross Con	-	-			-
	SS7 M. Transfer	-	-			-
	SST	-	-			-
	SCP /data bases	-	-			-
	Tandem Switching	-	-			-
	AIN	-	-			-

		4 E Solution	5E LL No DA			TOTAL
Business	**67,120**					
	Element					
	NIU	-	-			-
	Loop Dist	-	-			-
	Loop Con/Mult	-	-			-
	Loop Feeder	-	-			-
	Loop Combination	-	26,848			26,848
	Local Switching	-	-			-
	Operator Serv.	-	-			-
	DA	-	-			-
	Common Trans	23,492	26,848			50,340
	Ded Trans	23,492	26,848			50,340
	Data Switching	-	-			-
	Dig Cross Con	23,492	26,848			50,340
	SS7 M. Transfer	23,492	26,848			50,340
	SST	23,492	26,848			50,340
	SCP /data bases	23,492	26,848			50,340
	Tandem Switching	23,492	26,848			50,340
	AIN	-	-			-

BellSouth 9 State View

Market Type : **CAP SWITCH**

Year **2000**

230933

JLS
6/3/96

			WAO	5E LL No DA			TOTAL
Residence	461,733						
	Element						
	NIU		-	-			-
	Loop Dist		-	-			-
	Loop Con/Mult		-	-			-
	Loop Feeder		-	-			-
	Loop Combination		-	115,433			115,433
	Local Switching		-	-			-
	Operator Serv.		-	-			-
	DA		-	-			-
	Common Trans		-	-			-
	Ded Trans		-	-			-
	Data Switching		-	-			-
	Dig Cross Con		-	-			-
	SS7 M. Transfer		-	-			-
	SST		-	-			-
	SCP /data bases		-	-			-
	Tandem Switching		-	-			-
	AIN		-	-			-

			4 E Solution	5E LL No DA			TOTAL
Business	107,199						
	Element						
	NIU		-	-			-
	Loop Dist		-	-			-
	Loop Con/Mult		-	-			-
	Loop Feeder		-	-			-
	Loop Combination		-	53,600			53,600
	Local Switching		-	-			-
	Operator Serv.		-	-			-
	DA		-	-			-
	Common Trans		32,160	53,600			85,759
	Ded Trans		32,160	53,600			85,759
	Data Switching		-	-			-
	Dig Cross Con		32,160	53,600			85,759
	SS7 M. Transfer		32,160	53,600			85,759
	SST		32,160	53,600			85,759
	SCP /data bases		32,160	53,600			85,759
	Tandem Switching		32,160	53,600			85,759
	AIN		-	-			-

BellSouth 9 State View

Market Type : **CAP SWITCH**

Year **2001**

			WAO	5E LL No DA			TOTAL
Residence	469,109						
	Element						

NIU	-	-			-
Loop Dist	-	-			-
Loop Con/Mult	-	-			-
Loop Feeder	-	-			-
Loop Combination	-	117,277			117,277
Local Switching	-	-			-
Operator Serv.	-	-			-
DA	-	-			-
Common Trans	-	-			-
Ded Trans	-	-			-
Data Switching	-	-			-
Dig Cross Con	-	-			-
SS7 M. Transfer	-	-			-
SST	-	-			-
SCP /data bases	-	-			-
Tandem Switching	-	-			-
AIN	-	-			-

	4 E Solution	5E LL No DA			TOTAL
Business **121,313**					
Element					
NIU	-	-			-
Loop Dist	-	-			-
Loop Con/Mult	-	-			-
Loop Feeder	-	-			-
Loop Combination	-	66,722			66,722
Local Switching	-	-			-
Operator Serv.	-	-			-
DA	-	-			-
Common Trans	30,328	66,722			97,050
Ded Trans	30,328	66,722			97,050
Data Switching	-	-			-
Dig Cross Con	30,328	66,722			97,050
SS7 M. Transfer	30,328	66,722			97,050
SST	30,328	66,722			97,050
SCP /data bases	30,328	66,722			97,050
Tandem Switching	30,328	66,722			97,050
AIN	-	-			-

Residence					
	1997	1998	1999	2000	2001
WAO	0%	0%	0%	0%	0%
5E LL No DA	25%	25%	25%	25%	25%
TSR	75%	68%	60%	55%	50%
TOTAL	100%	93%	85%	80%	75%

Business					
	1997	1998	1999	2000	2001
4 E Solution	35%	35%	35%	30%	25%
5E LL No DA	30%	35%	40%	50%	55%
TSR	35%	30%	25%	20%	20%
TOTAL	100%	100%	100%	100%	100%

Percent Element Use

Residence	WAO	5E LL No DA		
Element				
NIU	0%	0%		
Loop Dist	0%	0%		
Loop Con/Mult	0%	0%		
Loop Feeder	0%	0%		
Loop Combination	0%	100%		
Local Switching	0%	0%		
Operator Serv.	0%	0%		
DA	0%	0%		
Common Trans	0%	0%		
Ded Trans	0%	0%		
Data Switching	0%	0%		
Dig Cross Con	0%	0%		
SS7 M. Transfer	0%	0%		
SST	0%	0%		
SCP /data bases	0%	0%		
Tandem Switching	0%	0%		
AIN	0%	0%		

Percent Element Use

Businesss	4 E Solution	5E LL No DA		
Element				
NIU	0%	0%		
Loop Dist	0%	0%		
Loop Con/Mult	0%	0%		
Loop Feeder	0%	0%		
Loop Combination	0%	100%		
Local Switching	0%	0%		
Operator Serv.	0%	0%		
DA	0%	0%		
Common Trans	100%	100%		
Ded Trans	100%	100%		
Data Switching	0%	0%		
Dig Cross Con	100%	100%		
SS7 M. Transfer	100%	100%		
SST	100%	100%		
SCP /data bases	100%	100%		
Tandem Switching	100%	100%		
AIN	0%	0%		

Summary Page

BellSouth 9 State View

Tier 2 Markets

Element	1997	1998	1999	2000	2001
NIU	-	-	-	-	-
Loop Dist	-	-	-	-	-
Loop Con/Mult	-	-	-	-	-
Loop Feeder	-	-	-	-	-
Loop Combination	6,349	43,691	140,211	169,033	183,999
Local Switching	-	-	-	-	-
Operator Serv.	-	-	-	-	-
DA	-	-	-	-	-
Common Trans	697	14,202	50,340	85,759	97,050

Ded Trans	697	14,202	50,340	85,759	97,050
Data Switching	-	-	-	-	-
Dig Cross Con	697	14,202	50,340	85,759	97,050
SS7 M. Transfer	697	14,202	50,340	85,759	97,050
SST	697	14,202	50,340	85,759	97,050
SCP /data bases	697	14,202	50,340	85,759	97,050
Tandem Switching	697	14,202	50,340	85,759	97,050
AIN	-	-	-	-	-

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Cities include:

New Orleans
Jacksonville
Louisville
Raleigh
Greenville
Birmingham
Knoxville
Baton Rouge
Charlston
Mobile
Columbia
Lexington
Chattanooga
Jackson
Montgomery

* The numbers above represent the number of lines by year that AT&T forecasts will be ordered from BellSouth

BellSouth 9 State View

Market Type = **CAP SWITCH**

Total For **All Years**

		WAO	5E LL No DA			TOTAL
Residence	1,554,764					
	Element					
	NIU					
	Loop Dist					
	Loop Con/Mult					

JLS
6/3/96

1		Loop Feeder				
2		Loop Combination				
3		Local Switching				
4		Operator Serv.				
5		DA				
6		Common Trans				
7		Ded Trans				
8		Data Switching				
9		Dig Cross Con				
10		SS7 M. Transfer				
11		SST				
12		SCP /data bases				
13		Tandem Switching				
		AIN	-	-		-

			4 E Solution	5E LL No DA			TOTAL
14							
15	**Business**	**316,992**					
16		***Element***					
17		NIU					
18		Loop Dist					
19		Loop Con/Mult					
20		Loop Feeder					
21		Loop Combination					
22		Local Switching					
23		Operator Serv.					
24		DA					
25		Common Trans					
26		Ded Trans					
27		Data Switching					
28		Dig Cross Con					
29		SS7 M. Transfer					
30		SST					
31		SCP /data bases					
32		Tandem Switching					
33		AIN					

Attachment 6

PROPOSED RECOVERY OF COSTS INCURRED BY BELLSOUTH TO PROVIDE ELECTRONIC INTERFACES

Below are the prioritized options for cost recovery of the one time, up front net costs BellSouth will incur to implement the electronic interfaces requested by AT&T, as agreed to by the joint AT&T/BellSouth Negotiating Core Team on June 19, 1996.

1. The net costs BellSouth incurs will be recovered on a future date, once the market is more mature in terms of number of players (e.g., 7/1/98), by assessing each ALEC reseller on that date based on the prorated ALEC market share, using number of resold lines. To compensate BellSouth for the time value of money of the unrecovered costs, BellSouth will increase the amount to be recovered by an annual carrying charge until the date of recovery.

2. On a date certain before the market is mature (e.g., 1/1/97), the net costs BellSouth incurs will be recovered by assessing each ALEC reseller on that date based on the prorated ALEC market share, using number of resold lines. At a later date, BellSouth will true-up recovery, and remit to AT&T such additionally recovered funds.

3. On a date certain before the market is mature (e.g., 1/1/97), the net costs BellSouth incurs will be recovered by assessing each ALEC reseller on that date based on the prorated ALEC market share, using number of resold lines. As other ALEC resellers make use of the interfaces after that date, BellSouth will collect, on a per line basis, recovery of these net costs, and remit to the ALECs who were assessed on the first date, each ALECs share of any funds received by BellSouth.

4. AT&T will remit to BellSouth the total net costs incurred by BellSouth to provide the electronic interfaces. AT&T will then own the interfaces, and will have the sole option to license these interfaces to BellSouth and other ALECs who make use of them.

TOTAL SERVICES RESALE IMPLEMENTATION TIMELINE

PHASE	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
PHASE NAME	OBTAINING AGREEMENT IN PRINCIPLE	DEVELOPMENT AND OPERATIONAL TRIAL	SERVICE READINESS TRIAL	SERVICE DELIVERY RAMP UP	GENERAL AVAILIBILITY
INTERVALS	OBTAINED BY 4/15/96	60 to 90 DAY INTERVAL	45 to 75 DAY INTERVAL	30 to 60 DAY INTERVAL	
VOLUME OF ACCOUNTS		25 to 50 INTERNAL TRIAL ACCOUNTS	50 to 100 INTERNAL TRIAL ACCOUNTS	100 to 1000 LIVE CUSTOMER ACCOUNTS	VOLUMES OF 1000 ORDERS/DAY GROWING TO 3000 ORDERS/DAY BY MID-YEAR 1997
AT&T REQUIRED TIMELINE		BEGINS 4/15/96	BEGINS 7/1/96	BEGINS 9/1/96	BEGINS 10/1/96
BEST CASE TIMELINE		BEGINS 4/15/96	BEGINS 6/15/96	BEGINS 8/1/96	BEGINS 9/1/96
WORST CASE TIMELINE		BEGINS 4/15/96	BEGINS 7/15/96	BEGINS 11/1/96	BEGINS 1/1/97

APRIL 10, 1996
JMB

Unbundled Network Function Combinations

	Service Now								Service Later			
	1	2	3	5	6	7	8	12	4	9	10	11
Loop Distribution	x	x	x	x			x	x*		x	x*	x*
Loop Concentrator	x	x	x				x					
Loop Feeder	x	x	x				x					
Local Switching	x	x			x	x			x	x	x	x
Common Transport	x	x			x	x	x	x	x	x	x	x
Dedicated Transport	x	x		x	x	x	x	x	x	x	x	x
Tandem Switching	x	x			x	x	x	x	x	x	x	x
Signal Transfer Port	x	x			x	x	x	x	x		x	x
Signaling Link	x	x			x	x	x	x	x		x	x
SCPs/Databases	x	x			x	x	x	x	x		x	x
Operator Systems	x										x	

* = NID Only

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Unbundled Network Function Combinations
Service Now

BSTPLATFORM	1	2	3	5	6	7	8	12
Loop		IDLC	IDLC				IDLC	NID
Switching		Routing			Routing	Routing		
Transport		Routing			Routing	Routing		
SS7 Signaling		Routing			Routing	Routing		
OPR/DA								
Databases								
AIN		Phase III			Phase III	Phase III		

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Unbundled Network Function Combinations
Service Later

BSTP LAT FOR M		4	9	10	11
	Loop		IDLC	NID	NID
	Switching	Routing	Routing	Routing	Routing
	Transport	Routing	Routing	Routing	Routing
	SS7 Signaling				
	OPR/DA				Routing
	Databases				
	AIN	Phase III	Phase III	Phase III	Phase III

Unbundled Network Function Combinations

	Service Now								Service Later			
Combination	1	2	3	5	6	7	8	12	4	9	10	11
Service Date **	11/1/96	11/1/96	11/1/96	11/1/96	11/1/96	11/1/96	11/1/96	11/1/96	TBD	TBD	TBD	TBD
Loop Distribution	x	x	x	x			x	x*		x	x*	x*
Loop Concentrator	x	x	x				x					
Loop Feeder	x	x	x				x					
Local Switching	x	x			x	x			x	x	x	x
Common Transport	x	x			x	x	x	x	x	x	x	x
Dedicated Transport	x	x		x	x	x	x	x	x	x	x	x
Tandem Switching	x	x			x	x	x	x	x	x	x	x
Signal Transfer Point	x	x			x	x	x	x	x		x	x
Signaling Link	x	x			x	x	x	x	x		x	x
SCPs/Databases	x	x			x	x	x	x	x		x	x
Operator Systems	x										x	

* = NID Only

** = Subject to Agreement on Gateway Interface

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Unbundled Network Function Combinations
Service Now

BST PLATFORM	Combination	1	2	3	5	6	7	8	12
	Loop		IDLC	IDLC				IDLC	NID
	Switching		Routing			Routing	Routing		
	Transport		Routing			Routing	Routing		
	SS7 Signaling								
	OPR/DA	Branding	Routing			Routing	Routing		
	Databases								
	AIN		Non-Mediated			Non-Mediated	Non-Mediated		

Unbundled Network Function Combinations
Service Later

Combination	4	9	10	11
Loop		IDLC	NID	NID
Switching	Routing	Routing	Routing	Routing
Transport	Routing	Routing	Routing	Routing
SS& Signaling				
OPR/DA				Routing
Databases				
AIN	Non-Mediated	Non-Mediated	Non-Mediated	Non-Mediated

BSTPLATFORM