



Customer Billing Education Package

**BellSouth®
Dedicated Ring Service
(SMARTRing® Service)**

 **BELLSOUTH®**



Service Description

- SMARTRing service is a SONET based, self-healing ring network in which the entire capacity is dedicated to a single customer.
- It is designed for the transport of Switched and Special Access service between customer designated hubbing locations; between multiple customer designated locations and BST central offices.
- The level of redundancy / diversity is designed to limit a single event from interrupting service. Fiber is routed via primary and alternate protection facility paths.
- Continually monitoring service quality and detects any failure within the system.
- Automatically self-heals itself around a point of failure to ensure the continuity of services between locations within the ring network.
- SMARTRing service is offered in capacities of:
 - OC-1 (overlay only) , OC-3, OC-3+, OC-12, OC-48, OC-48+, OC-192



Basic Components

- **NODE**: the entry and exit point on all rings
- **CUSTOMER NODE (CN)**: customer premise, POP. Provides ring switching at a customer designated premise location.
- **CENTRAL OFFICE NODE (CON)**: BST central office. Provides ring switching at a Telephone Company central office that are a part of a SMARTRing service arrangement.

- **LOCAL CHANNEL (LC)**: communications path (local loop) between the customer premise and their serving wire center.
 - Billed in quarter mile increments from the customer location to the serving wire center
 - 1HVXX
- **ALTERNATE CENTRAL OFFICE CHANNEL (ACOC)**: communications path (local loop) between the customer premise and an alternate central office. Used for the purpose of alternate central office routing for the protect path. Provisioned at customer request.
 - Billed in quarter mile increments from the customer location to the alternate serving wire center
 - 1HAAX
- **INTERNODAL CHANNEL (INC)**: communications path directly connecting two customer premises.
 - Billed in quarter mile increments from customer premise to customer premise
 - 1HNZX



Basic Components (cont.)

- **INTEROFFICE CHANNEL (IOC):** communications path directly connected Telephone Company central offices located on a SMARTRing service.
 - Billed in quarter mile increments
 - There is a fixed and a per quarter mile charge
 - 1HXFX
 - Interoffice Channels may be any two combinations of serving wire centers, pass-thru central offices or central office nodes.
 - A SMARTRing configuration may include multiple IOCs.

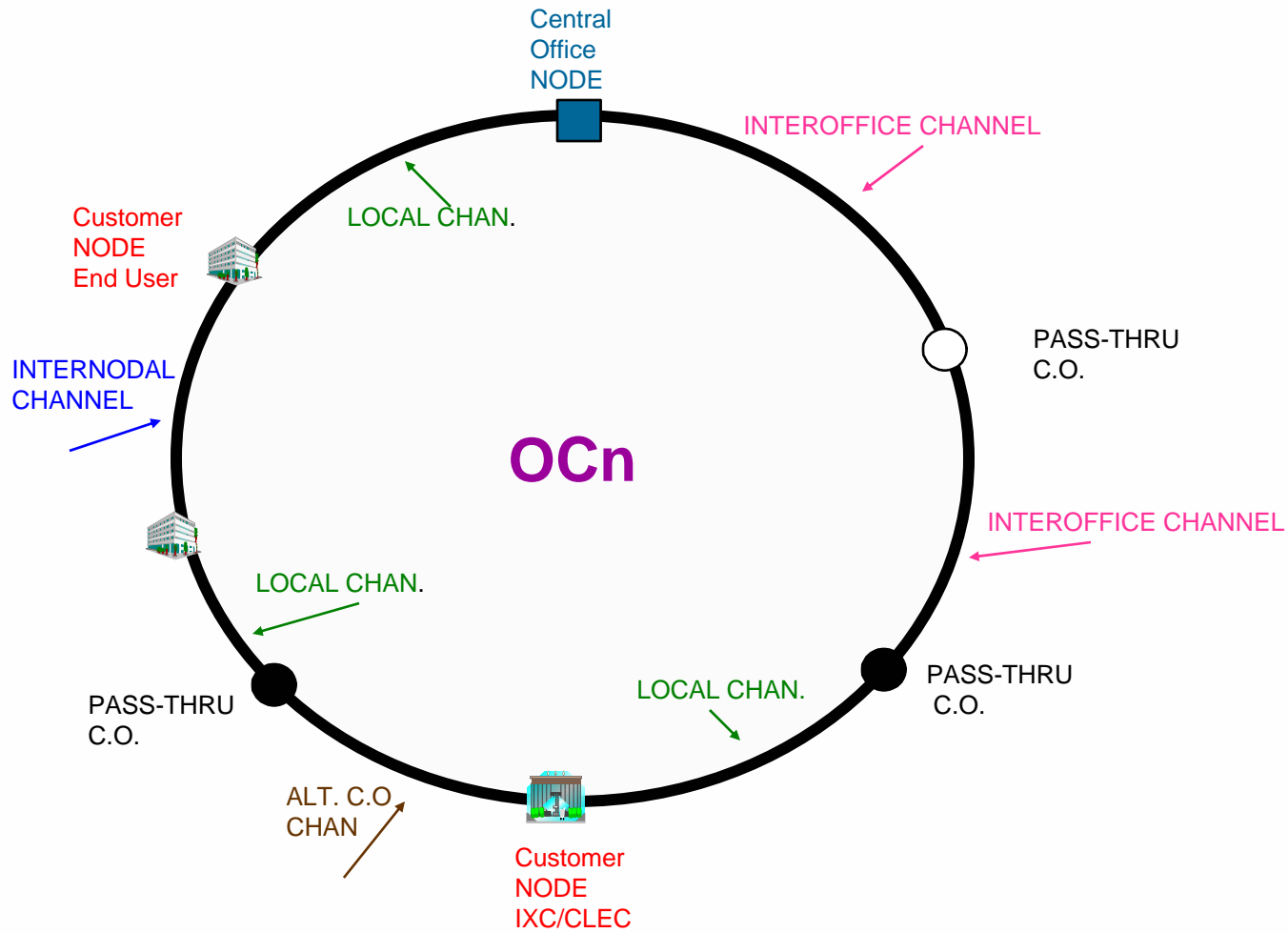
- **INTERFACES** – electrical or optical interface that can be activated to originate and terminate anywhere on the Ring that has been designated as a node.
 - Customer Channel Interface (CUCI): DS1, DS3, STS-1(electrical channelization) and / or OC-3, OC-12, OC-48 (optical channelization) at each Customer Node of a ring arrangement.
 - Central Office Channel Interface (COCI): DS1, DS3, STS-1(electrical channelization) and / or OC-3, OC-12, OC-48 (optical channelization) at each Central Office Node of a ring arrangement.



SMARTRing Service Mileage Calculations

- Mileage is calculated on the airline distance between the locations involved.
- V & H coordinates are derived from each customer location through the use of longitude and latitude measurements. Using the V & H coordinate method set forth in NECA 4, the mileage is calculated and then converted to quarter miles. Fractions of a quarter mile will always round up to the next quarter mile before determining the mileage and applying the correct rate.
- **Local Channel Mileage is calculated per quarter airline mile from the customer premise to the serving wire center**
 - The serving wire center associated with a customer premise is the central office from which the customer premise would normally obtain a dial tone.
- **Alternate Central Office Channel Mileage is calculated per quarter airline mile from the customer premise to the alternate serving wire center in lieu of the wire center from which the customer would normally obtain dial tone.**
- **Interoffice Channel Mileage is calculated per quarter airline mile between two directly connected central offices on the ring.**

>> SMARTRing Service – Basic Components Diagram



>> SMARTRing Service Rate Elements

	Special Access USOC	Switched Access USOC	Element	Rule
CHANNEL USOCs				
	1HVXX	1HSLC	Local Channel	Applies per local channel, per quarter mile
	1HAXX	1HSAC	Alternate Central Office Channel	Applies per Alternate CO channel, per quarter mile
	1HNXX	1HSSC	Internodal Channel (Same Wire Center)	Applies per Internodal channel, per quarter mile, for contiguous SWC
	1HNZX	1HSCC	Internodal Channel (Contiguous WCs)	Applies per Internodal channel, per quarter mile, for contiguous SWC
	1HXXF	1HS1C	Interoffice Channel:OC-3+/OC-12,OC-48/OC48+ or OC192	Applies per interoffice channel, per quarter mile
NODE USOCs				
	SHNC4	SHSC4	OC-1 Customer Node	OC-1 Capacity, at Customer premise
	SHNC3	SHSC3	OC-3 Customer Node	OC-3 Capacity, at Customer premise
	SHNN5	SHSN5	OC-3+ Customer Node	OC-3+ Capacity, at Customer premise
	SHNC1	SHSC1	OC-12 Customer Node	OC-12 Capacity, at Customer premise
	SHNN8	SHSN8	OC-48 Customer Node	OC-48 Capacity, at Customer premise
	SHNN9	SHSN9	OC-48+ Customer Node	OC-48+ Capacity, at Customer premise
	SHNN2	SHSC2	OC-192 Customer Node	OC-192 Capacity, at Customer premise
	SHNH4	SHSH4	OC-1 Central Office Node	OC-1 Capacity, at CO
	SHNH3	SHSH3	OC-3 Central Office Node	OC-3 Capacity, at CO
	SHNH5	SHSH5	OC-3+ Central Office Node	OC-3+ Capacity, at CO
	SHNH1	SHSH1	OC-12 Central Office Node	OC-12 Capacity, at CO
	SHNH8	SHSH8	OC-48 Central Office Node	OC-48 Capacity, at CO
	SHNH9	SHSH9	OC-48+ Central Office Node	OC-48+ Capacity, at CO
	SHNH6	SHSH2	OC-192 Central Office Node	OC-192 Capacity, at CO
INTERFACE USOCs				
	SHNBB	SHSBB	DS1 Customer Channel Interface (CUCI)	Applies per DS1 at a Customer Node
	SHNZT	SHSZT	DS3 Customer Channel Interface (CUCI)	Applies per DS3 at a Customer Node
	SHN13	SHS13	STS-1 Customer Channel Interface (CUCI)	Applies per STS-1 at a Customer Node
	SHN1C	SHS1C	OC-1 Customer Channel Interface (CUCI)	Applies per OC-1 at a Customer Node
	SHN1D	SHS1D	OC-3 (2 Fiber) Customer Channel Interface (CUCI)	Applies per OC-3 at a Customer Node
	SHN15	SHS15	OC-3 (4 Fiber) Customer Channel Interface (CUCI)	Applies per OC-3 at a Customer Node
	SHN1F	SHS1F	OC-12 (2 Fiber) Customer Channel Interface (CUCI)	Applies per OC-12 at a Customer Node
	SHN19	SHS19	OC-12 (4 Fiber) Customer Channel Interface (CUCI)	Applies per OC-12 at a Customer Node
	SHN1A	SHS1A	OC-48 (2 Fiber) Customer Office Channel Interface (CUCI)	Applies per OC-48 at a Customer Node
	SHN1B	SHS1B	OC-48 (4 Fiber) Customer Office Channel Interface (CUCI)	Applies per OC-48 at a Customer Node



SMARTRing Service Rate Elements, (cont.)

Special Access USOC	Switched Access USOC	Element	Rule
SHNBS	SHSBS	Per DS1 within STS-1 Asymmetrical Arrangement (CUCI)	Applies at Customer Node
SHN1T	SHS1T	Per DS3 (Asymmetrical with DS1) (CUCI)	Applies at Customer Node
SHNCB	SHSCB	DS1 C.O. Channel Interface (COCI)	Applies per DS1 at a CO Node
SHNW8	SHSW8	28 DS1 C.O. Channel System - DS3 (COCI)	Applies per 28 DS1 Chan System (DS3) at a CO Node
SHNCA	SHSCA	DS1 C.O. Channel Interface on 28 DS1 Chan System - DS3 (COCI)	Applies per DS1 on a 28 DS1 Chan System (DS3) at a CO Node
SHNCS	SHSCS	28 DS1 C.O. Channel System - STS-1 (COCI)	Applies per 28 DS1 Chan System (STS-1) at a CO Node
SHNCG	SHSCG	DS1 C.O. Channel Interface on 28 DS1 Chan System - STS-1 (COCI)	Applies per DS1 on a 28 DS1 Chan System (STS-1) at a CO Node
SHNYT	SHSYT	DS3 Central Office Channel Interface (COCI)	Applies per DS3 at a CO Node
SHNO2	SHSO2	STS-1 Central Office Channel Interface (COCI)	Applies per STS-1 at a CO Node
SHNCC	SHSCC	OC-1 Central Office Channel Interface (COCI)	Applies per OC-1 at a CO Node
SHNCD	SHSCD	OC-3 (2 Fiber) Central Office Channel Interface (COCI)	Applies per OC-3 at a CO Node
SHNO4	SHSO4	OC-3 (4 Fiber) Central Office Channel Interface (COCI)	Applies per OC-3 at a CO Node
SHNCF	SHSCF	OC-12 (2 Fiber) Central Office Channel Interface (COCI)	Applies per OC-12 at a CO Node
SHNC9	SHSC9	OC-12 (4 Fiber) Central Office Channel Interface (COCI)	Applies per OC-12 at a CO Node
SHNCJ	SHSCJ	OC-48 (2 Fiber) Central Office Channel Interface (COCI)	Applies per OC-48 at a CO Node
SHNCK	SHSCK	OC-48 (4 Fiber) Central Office Channel Interface (COCI)	Applies per OC-48 at a CO Node
SHNCH	SHSCH	Per DS1 within STS-1 Asymmetrical Arrangement (COCI)	Applies per DS1 at CO Node
SHNCT	SHSCT	Per DS3 (Asymmetrical with DS1) (COCI)	Applies per DS3 at CO Node
CUSTOMER NETWORK MANAGEMENT			
SHNSN		OC1, OC3, OC3+, OC12 Surveillance, Per Node	Applies Per Node
SHNS4		OC48/OC48+ Surveillance, Per Node	Applies Per Node
SHNS9		OC192 Surveillance, Per Node	Applies Per Node
SHNRC		OC3, OC3+, OC12, OC48, OC48+ Reconfiguration, Per SMARTRing COCI/CUCI	Applies Per Channel Interface
SHRBC		Channel Interface Capacity Reallocation, Per Node, Per Occurrence	Applies per Node, Per Occurrence
SHNRR		Service Rearrangement - Surveillance, Per Node, Per Ring	Applies per Node, Per Ring
SHNR1		Service Rearrangement - Reconfiguration, Per STS-1, Per Node	Applies per STS-1, Per Node



Special Access DS1 Riding a SMARTRing Service DS3, CSR (Example of a COCI)

770 N01 xxxx xxx *CSR* *LIVE* CLS 38.HCGS.xxxxxx..SB XXX 1

---S&F

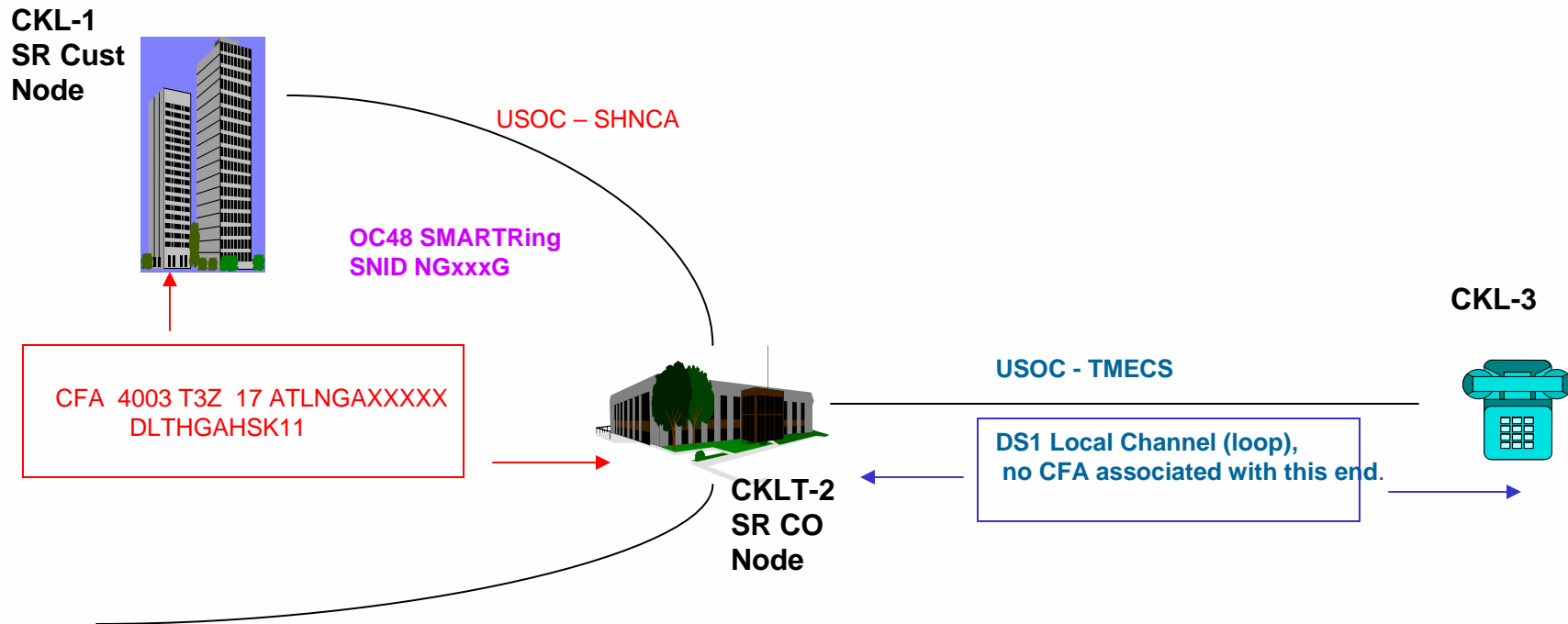
SVC	QTY	CODE	DESCRIPTION	AMOUNT	ACTDTE
010920		CLS 38.HCGS.xxxxxx..SB/NC	HCE-/CKR 34. ATLN.101317.US/SNID NGxxxG/SSP/PIU 100/TAX B,C		020930
010920	1	XDH1X /SED 09-20-01			020411
020411		CKL 1-2 CONCOURSE PKWY NE, ATL, GA/LSO	770 391/ZNEA/NCI 04DS6.44/ CFA 4003 T3Z 17 ATLN GADZAMD DLTHGAH SK11 /ACTL 2/TAR 000,701		020411
010920	1	HTN /SED 09-20-01			020411
020411		CKLT 2 -DLTHGAHS/TAR 019,704			020411
020930	1	SHNCA /RLFS Y/MSAI ATL/SED 09-30-02	/SPP TPP1/TA 72, 09-20-01/RD 12-06-02 INTER GA - EC 5192		020930
		{ 1 X 7.00 }		7.00	
020411		CKL 3 -7250 MC*GINNIS FERRY RD, SUWANEE, GA/LSO 770 476/NCI 04DU9.1SN/SN GE HITACHI HVB INC/TAR 000,858			020411
010920	1	TMECS /RZN 3/RLFS Y/MSAI ATL	/SED 09-20-01 INTER GA - EC 5192		020411
		{ 1 X 180.00 }		180.00	
010920	0	1L5XX /RZN 3/SED 09-20-01			020411
010920	1	CCOEF /SED 09-20-01			020411
010920	1	RJ48C /SED 09-20-01			020411
010920	24	S25EX /SED 09-20-01/EXR 4			020411

INTERSTATE SUBTOTAL	187.00
INTRASTATE SUBTOTAL	0.00
LOCAL SUBTOTAL	0.00
CIRCUIT SUBTOTAL	187.00



Special Access DS1 Riding a SMARTRing Service DS3, diagram

*** Explanation of a Chan Term charge riding a channelized (muxed) DS3.
The Chan Term charge applies to the Special Access DS1 circuit.



SHNCA- SMARTRing Service (a.k.a. BellSouth SPA Dedicated Ring), Central Office Channel Interface, per DS1 on 28 DS1 Channel System, DS3; also known as a **COCI**.

TMECS- Channel terminations per point of termination, 1.544 MBPS



Ring Network Identifiers (cont.)

- CLF**: Common Language Facility ID
 - Assigned to each node to node segment on the Ring.
 - Example: 1001 OC12 CLLINODEA CLLINODEB

- CLS**: Common Language Serial ID
 - Assigned to DS3s that originate and terminate at the customer premise or is cross-connecting at a central office node with a non-channelized DS3 off the Ring.
 - Examples: 60.HFGS.123456..SB; A3.HFGS.123456..SC

- CKL**: Circuit Location
 - The address of the central office where a circuit is cross-connected.



SMARTRing Service CABS Bill Sample

Ring Level Circuit ID

BILL PAGE 38/575 - SECTION 1/2

305 N10 XXXX XXX 12/04/02 14:54:49

ACCT
CMND

BDT 11/10/02 INV 0001

BILL NO 305 N10-XXXX XXX
INVOICE NO N10XXXXXXXX-XXXXX
BILL DATE NOV 10,2002
ACNA XXX PAGE 38

*** DETAIL OF OTHER CHARGES AND CREDITS ***

BIP AMOUNT
— —

OCT 11 02 SO CQXXXXXX PON XXXXXXXXXXXX
ACCESS SERVICE GROUP 004001 PIU 100
FACILITY IDENTIFICATION **501 OC48 CLLINODEA CLLINODEB**
CIRCUIT LOCATION 0001
CHARGE FOR ACCESS SERVICE ADDED
FROM OCT 11 02 THRU NOV 09 02

SHNH8 1 **SMARTRING** (AKA BELLSOUTH SPA DEDICATED
RING) 48 - **CENTRAL OFFICE NODE**, PER
NODE 48 DS3 CAPACITY
TPP1, TA 061 10-11-02,RD 09-23-02

PIU 100

RATCHET FACTOR 99.85119%
INTERSTATE - FL - EC 5191

3,388.07



SMARTRing Service CABS Bill Sample (cont.)

Ring Level Circuit ID

CHARGE FOR ACCESS SERVICE ADDED
FROM OCT 11 02 THRU NOV 09 02
1HXFX 20 **SMARTRING** -(AKA BELLSOUTH SPA DEDICATED RING)
INTEROFFICE CHANNEL MILEAGE PER CHANNEL
-3, 12 OR 24 DS3 CAPACITY
TPP1, TA 061 10-11-02,RD 09-23-02
PIU 100
RATCHET FACTOR 99.85119%
INTERSTATE - FL - EC 5191 556.95

CIRCUIT LOCATION 0002 PIU 100
CHARGE FOR ACCESS SERVICE ADDED
FROM OCT 11 02 THRU NOV 09 02
1HXFX 12 **SMARTRING** -(AKA BELLSOUTH SPA DEDICATED RING)
INTEROFFICE CHANNEL MILEAGE PER CHANNEL
-3, 12 OR 24 DS3 CAPACITY
TPP1, TA 061 10-11-02,RD 09-23-02
PIU 100
RATCHET FACTOR 99.85119%
INTERSTATE - FL - EC 5191 379.35



SMARTRing Service CABS Bill Sample (cont.)

Ring Level Circuit ID

BILL PAGE 38/575 - SECTION 2/2

305 N10 XXXX XXX 12/04/02 14:56:11

ACCT
CMND

BDT 11/10/02 INV 02314

CIRCUIT LOCATION 0003 PIU 100

CHARGE FOR ACCESS SERVICE ADDED

FROM OCT 11 02 THRU NOV 09 02

1HXFX 32 **SMARTRING** -(AKA BELLSOUTH SPA DEDICATED RING)

INTEROFFICE CHANNEL MILEAGE PER CHANNEL

-3, 12 OR 24 DS3 CAPACITY

TPP1, TA 061 10-11-02,RD 09-23-02

PIU 100

RATCHET FACTOR 99.85119%

INTERSTATE - FL - EC 5191

823.37

CIRCUIT LOCATION 0004 PIU 100

CHARGE FOR ACCESS SERVICE ADDED

FROM OCT 11 02 THRU NOV 09 02

1HXFX 18 **SMARTRING** -(AKA BELLSOUTH SPA DEDICATED RING)

INTEROFFICE CHANNEL MILEAGE PER CHANNEL

-3, 12 OR 24 DS3 CAPACITY

TPP1, TA 061 10-11-02,RD 09-23-02

PIU 100

RATCHET FACTOR 99.85119%

INTERSTATE - FL - EC 5191

512.55

NET EFFECT OF SO CQXXXXXX

PON XXXXXXXXXXXX

PER MONTH

FRACTIONAL

ONE-TIME

BILLED AMOUNT

TOTAL - FL - EC 5191

5,855.28

5,660.29

0.00

5,660.29



SMARTRing Service CABS Bill Sample - Activating DS3 on existing ring

BILL PAGE 14/117 - SECTION 1/3
615 N01 XXXX XXX 12/03/02 14:10:25

ACCT
CMND

BDT 11/01/02 INV 00001

BILL NO 615 N01-XXXX XXX
INVOICE NO N01XXXXXXXX-XXXXX
BILL DATE NOV 01,2002
ACNA XXX PAGE 14

*** DETAIL OF OTHER CHARGES AND CREDITS ***

	BIP	AMOUNT
	—	—
OCT 07 02 SO C9XXXXXX CIRCUIT NUMBER T4.HFGS.XXXXXX.SC PIU 100 CIRCUIT LOCATION 0001 CHARGE FOR ACCESS SERVICE ADDED FROM OCT 07 02 THRU OCT 31 02	PON XXXXXXXXXXXXX	
SHNZT 1 SMARTRING (AKA BELLSOUTH SPA DEDICATED RING)- CUSTOMER CHANNEL INTERFACE , PER CUSTOMER NODE, PER DS3, ON 3 DS3 SVC TPP1, TA 012 10-07-02,RD 09-11-02 PIU 100 INTERSTATE - TN - EC 5185		108.00
CIRCUIT LOCATION 0002 PIU 100 CHARGE FOR ACCESS SERVICE ADDED FROM OCT 07 02 THRU OCT 31 02		
SHNYT 1 SMARTRING (AKA BELLSOUTH SPA DEDICATED RING)- CENTRAL OFFICE CHANNEL INTERFACE , PER CENTRAL OFFICE NODE, PER DS3, ON 3 DS3 SVC TPP1, TA 012 10-07-02,RD 09-11-02 PIU 100 INTERSTATE - TN - EC 5185		68.00
NET EFFECT OF SO C9XXXXXX PER MONTH FRACTIONAL TOTAL - TN - EC 5185 220.00	PON XXXXXXXXXXXXX ONE-TIME 00.00	BILLED AMOUNT 176.00



SMARTRing Service Quick Facts

- SMARTRing Service is available in the Interstate (FCC) and Intrastate (E) Access Tariffs.
- Rates and Charges found in Section 7.5.14 (A) of FCC #1 Tariff and Section E7.5 of Intrastate Access Tariffs.
- When SMARTRing Service has both Special and Switched Access services on the SMARTRing system, both the special and switched access USOCS will be represented (displayed) on the invoice / CSR. The appropriate levels (%) of the special and switched access rates will bill.
- Upon receipt of a Firm Order, signed contract, the Account Team will issue a Service Inquiry within the BST network organization for the implementation process to begin.
- SMARTRing Service must have a minimum of 3 Nodes
- In an overlay arrangement, the 3 node minimum applies only to the Host Ring.
- The limitation for Host and Overlay nodes is 16.
- Shared Network Arrangements are prohibited between:
 - Host Rings & Ring Overlays
 - Ring Level & DS3s/STS-1s
 - SMARTRing service at the ring level



SMARTRing Service Quick Facts (cont.)

- SMARTRing Service is not provided cross Exchange Company boundaries. Meet Point Billing will not apply and these type requests require Special Assembly.
- OC-3 or OC-1 Ring overlay network activations are available on OC-12, OC-48 and OC-48+ Host Rings only.
- An OC-3 or OC-12 SONET SMARTRing Service is not considered an upgrade from an OC-24 Asynchronous SMARTRing Service.
- Channelization from a DS3 or DS1 level service will be provided at Central Office Nodes only.
- Non-channelized SMARTRing Service DS3s cannot be provisioned beyond the Host Ring.
- SMARTRing Service rate elements billed on a month to month basis carry a 12 month minimum billing period.
- SMARTRing systems under a contract payment plan will experience Termination Liability Charges, should a disconnect occur prior to the minimum period of the contract plan being served. Example: 37 month contract, has a 12 month minimum, if disconnect occurs after 12 months served, there will be no Termination Liability. (FCC#1, 7.4.14.(A)(3).
- SMARTRing Service rate elements at ring level, are provided under the same payment plan with the same service period.