

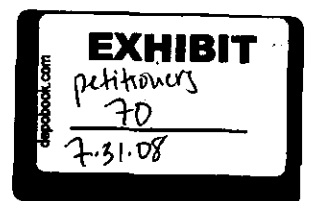
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STATE OF SOUTH DAKOTA
PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE PETITION OF)	
SANTEL COMMUNICATIONS)	Docket No. TC07-115
COOPERATIVE, INC. FOR)	
ARBITRATION PURSUANT TO THE)	REBUTTAL TESTIMONY
TELECOMMUNICATIONS ACT OF 1996)	
TO RESOLVE ISSUES RELATED TO)	OF
THE INTERCONNECTION)	
AGREEMENT WITH ALLTEL, INC.)	LARRY D. THOMPSON
)	
)	

**REBUTTAL TESTIMONY OF LARRY THOMPSON
ON BEHALF OF
SANTEL COMMUNICATIONS COOPERATIVE, INC.**

- 1 **Q1. Please state your name, employer, business address and telephone number.**
2
3 A1. My name is Larry Thompson. I am the Chief Executive Officer of Vantage Point
4 Solutions, Inc. ("Vantage Point"). My business address is 2211 North Minnesota
5 Street, Mitchell, South Dakota, 57301.
- 6 **Q2. On whose behalf are you testifying?**
7
8 A2. I am testifying on behalf of Santel Communications Cooperative, Inc. ("Santel").
- 9 **Q3. Have you previously filed testimony in this case?**
10
11 A3. Yes. On March 24, 2008, I filed direct testimony on behalf of Santel in docket
12 TC07-115.



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1 **Q4. What is the purpose of your rebuttal testimony?**

2
3 A4. To respond to some of the technical and regulatory issues that rose in the direct
4 testimony of Ron Williams on behalf of Alltel Communications, LLC. (“Alltel”)
5 in these proceedings. My rebuttal will be primarily focused on Mr. Williams’
6 testimony regarding Issue 2, “What is the appropriate Percent of InterMTA Use
7 Factor to be applied to IntraMTA traffic exchanged between the parties.”

8 **Q5. Have you read the pre-filed direct testimony of Mr. Williams in these**
9 **proceedings?**

10
11 A5. Yes, I have.

12 **Q6. Do you have any general comments regarding Mr. Williams’ testimony**
13 **before you begin?**

14
15 A6. Yes. Traffic studies are common in the telecommunications industry. Since the
16 beginning of this industry, it has been necessary to be able to measure and analyze
17 call records for both network engineering and billing purposes. This is true for
18 both wireline and wireless carriers. Both types of carriers need this information to
19 perform necessary operations, such as their own end-user billing. Mr. Williams’
20 testimony would like the reader to believe that traffic analysis, such as InterMTA
21 analysis is unreasonable and burdensome. It is my belief that Alltel is making
22 arguments against performing an interMTA analysis because they do not *want* to
23 do it as they do not like the results, not that they *cannot* complete the analysis.

24

1 **Q7. Mr. Williams lists three reasons why “negotiated estimates” are used for the**
2 **exchanged traffic that is compensable as interMTA traffic. For the first**
3 **reason he states, “no standard methods, labeling, or systems exist in the**
4 **industry for classification or identification of interMTA traffic”¹. Do you**
5 **agree with his first reason? Please explain.**
6

7 **A7. No, the classification of interMTA traffic is a simple process defined by the FCC**
8 **in its First Report and Order, paragraph 1044². The LEC is capable of performing**
9 **this analysis, with the exception that the initial cell site at the start of the call is**
10 **not available to the LEC unless it is provided to the LEC by the CMRS carrier.**
11 **The initial cell site is available to the CRMS carrier. One common switch in**
12 **many wireless carriers’ networks is the Nortel MTX. Exhibit LT-R-1 is a few**
13 **pages from the Nortel manual showing that the initial cell site at the start of the**
14 **call is part of the call detail records available on the CMRS carrier’s network.**
15 **Since there is no field in the SS7 message in which to pass the information**
16 **regarding the initial cell site at the start of the call, the CMRS carrier would have**
17 **to provide this information to the LEC as part of their billing records or as part of**
18 **a special study. In the past, Alltel has provided call detail records (CDRs) that**
19 **included the initial cell site information for Vantage Point to perform interMTA**
20 **analysis. A typical process used to process the wireless CDRs can be seen in**
21 **Exhibit LT-R-2. The exchange of billing records between carriers is not**
22 **uncommon in the industry. In fact, the LEC often relies on billing records from**
23 **other carriers to perform their end-user and inter-carrier billing processes. In**
24 **instances where the CMRS carrier is unwilling to provide the billing records,**

¹ Mr. Williams Direct Testimony, Page 5, Lines 13-14.

² See the FCC First Report and Order, at paragraph 1044.

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1 there are proxies that can be used to provide a reasonable estimate of the
2 interMTA traffic. One such method is referred to as the telephone numbers
3 method. Using the telephone numbers method, Vantage Point is able to calculate
4 an estimate of interMTA traffic terminated to the Santel network from Alltel. If
5 Alltel would provide the CDRs that include the cell site locations, Santel could
6 refine its study with the cell site information, and determine a more accurate
7 estimate of the interMTA factor.

8 **Q8. Mr. Williams lists his second reason why “negotiated estimates” are used for**
9 **the exchanged traffic that is compensable as interMTA traffic as “it is**
10 **generally difficult to accurately measure interMTA traffic since locations of**
11 **wireless users are dynamic”³. Do you agree with his second reason? Please**
12 **explain.**

13
14 **A8.** No, I do not agree. The fact that the wireless caller location is “dynamic” is
15 irrelevant in the determination of an interMTA factor. The FCC recognized the
16 fact that the wireless customer was mobile, which is why the FCC in its First
17 Report and Order⁴, stated that the location of the wireless caller was to be
18 determined by the initial cell site of the wireless caller at the start of the call,
19 therefore it does not matter if the wireless users are “dynamic”.

20 **Q9. In regards to Santel’s proposed interMTA factor, Mr. Williams states,**
21 **“Petitioner based this figure on very limited October 2005 traffic data, using**
22 **a method that was acknowledged to be flawed”⁵. Do you agree with his**
23 **statement? Please explain.**

24
25 **A9.** If Mr. Williams is arguing that everything that is not perfect is flawed, then I
26 would have to agree. However, this would lead to the conclusion that every

³ Mr. Williams Direct Testimony, Page 5, Lines 14-16.

⁴ See the FCC First Report and Order, at paragraph 1044.

⁵ Mr. Williams Direct Testimony, Page 7, Lines 15-16.

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1 estimate, no matter how good the estimate may be, is flawed. This is another one
2 of Mr. Williams' red herrings. Just because an estimate of the traffic is not
3 perfect, does not mean that it does not provide a reasonable amount of accuracy to
4 adequately estimate the actual traffic for billing purposes. In Vantage Point's
5 telephone numbers method, the originating NPA-NXXs of the Alltel customer
6 were assigned a state and an MTA based on the rate center where the NPA-NXX
7 was assigned. It should be noted that Vantage Point's interMTA analysis only
8 included Alltel traffic that was terminated to Santel over either direct or indirect
9 connection with Alltel and excluded any traffic that was delivered to Santel via an
10 IXC. Each of the calls were categorized into interMTA/interstate,
11 interMTA/intrastate, or IntraMTA using the NPA-NXX of the Alltel customer as
12 a proxy for the location of the Alltel customer and the rate center of the Santel
13 customer as a proxy of the location of the Santel customer. Exhibit LT-R-3
14 shows South Dakota and the surrounding MTAs that were used in the study.
15 Vantage Point then calculated the minutes of use (MOU) that originated in all
16 MTAs that were different than the MTA of the landline customer and divided this
17 by the total MOU terminated by Alltel to Santel to determine the interMTA
18 factor. This interMTA study for Santel was completed using SS7 records for
19 October 1-15, 2004 traffic that terminated to a Santel exchange over the Qwest
20 trunk groups and excluded traffic terminated via an IXC. Vantage Point believes
21 that the telephone numbers method results in a reasonably accurate estimate to the
22 actual interMTA factor. However, a more accurate analysis of the interMTA

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1 factor could be achieved if Alltel would provide the location of the initial cell site
2 at the start of the call for each of the call records in the analysis.

3 Using traffic analysis to determine a billing percentage such as an InterMTA
4 factor is not unique in the industry. There are many instances in the
5 telecommunications industry where we use estimated factors for billing purposes.
6 One example of such factor would be the Percent Interstate Usage (PIU) factor.
7 This is used to bill terminating records to IXC's if the jurisdiction is not available
8 on the billing record. The goal of estimating the interMTA factor, as with
9 estimating any traffic factor, would be to arrive at a factor that is a reasonably
10 accurate estimate of the actual traffic.

11 **Q10. Do you believe that the 2004 study is representative of the interMTA traffic**
12 **being terminated to the Alltel network today?**

13
14 A10. I have no reason to believe that they are not reasonably accurate today. The
15 Wireless carrier can make changes to their network and routing that could
16 influence the actual interMTA delivered to Santel. I am not aware of any changes
17 that Alltel has made that would significantly change the interMTA factor. It has
18 been my experience that the interMTA factor tends to increase with time as the
19 wireless carrier network becomes larger. As the wireless carriers networks
20 expand, they interconnect their switches with Intermachine Trunks (IMTs). These
21 IMTs are used to transport calls over larger and larger geographic areas so that the
22 calls can be delivered to the landline customer without having to use an IXC for
23 the delivery. This results in a higher interMTA factor. Exhibit LT-R-4A shows a
24 diagram of a wireless network without IMTs and Exhibit LT-R-4B shows a
25 wireless network using IMTs.

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1 **Q11. In regards to Santel's proposed interMTA factor, Mr. Williams also states,**
2 **"and purported to examine only interMTA traffic sent from Alltel's network**
3 **to the Petitioner network but ignored all traffic from the Petitioner network**
4 **to Alltel customers"⁶. Do you agree with his statement? Please explain.**
5

6 A11. No, the real problem is that Alltel is terminating access traffic (toll traffic) to
7 Santel either directly or indirectly over trunks that are intended for local traffic.
8 Because of this, it is necessary to determine that amount of toll traffic that Alltel
9 delivers to Santel intermingled with the local traffic so that Santel can be properly
10 compensated for this traffic. When Santel routes traffic to Alltel, Santel
11 determines if the call is local or toll using the landline local calling scope rules (as
12 it does with all carriers) and properly routes toll traffic to an IXC for delivery to
13 Alltel. Exhibit LT-R-5 illustrates the local and toll calling scopes for a landline
14 company. Alltel is misrouting the interMTA traffic, as this toll traffic is being
15 delivered over the local trunks instead of by an IXC. If Alltel interMTA traffic
16 was routed to an IXC, there would not be an interMTA issue as Santel would be
17 able to bill the appropriate access for this toll traffic to an IXC.

18 **Q12. In regards to Mr. Williams above two comments regarding the**
19 **determination of Santel's interMTA factor, he states, "The utilization of a**
20 **factor developed in this manner would be inappropriate as it is both**
21 **misrepresentative and asymmetric."⁷ Do you agree with his statement?**
22 **Please explain.**
23

24 A12. No, I do not agree with Mr. Williams' statement. As stated previously, the goal
25 of an interMTA analysis is to determine the amount of toll traffic that is delivered
26 by Alltel to Santel that is delivered using direct or indirect connections, without
27 the use of an IXC. The fact is that since toll/interMTA traffic is sent

⁶ Mr. Williams Direct Testimony, Page 7, Lines 16-18.

⁷ Mr. Williams Direct Testimony, Page 7, Lines 18-20.

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1 inappropriately to Santel on local trunks from Alltel and Santel does not send
2 toll/interMTA traffic to Alltel on local trunks but to an IXC. Therefore, one
3 would naturally expect that the interMTA factor would be asymmetric.

4 **Q13. Mr. Williams states, "To my knowledge the Petitioner has not attempted to**
5 **study or account for the level of interMTA traffic that is sent from their**
6 **network to Alltel network."⁸ Has Santel completed such a study? Please**
7 **explain why or why not.**

8
9 A13. As explained previously, this is another red herring. All toll traffic originated
10 from a landline Santel customer is delivered to an IXC, who in turn, is responsible
11 for delivery of the traffic to Alltel. However, if a mobile Alltel Parkston customer
12 traveled to California and a Santel landline customer in Parkston called that Alltel
13 Parkston number, Santel would hand the call off to Alltel over the local trunks
14 rather than sending to an IXC. Alltel may try to argue that this is an interMTA
15 call which was delivered on a local basis. However, it should be understood that
16 there are several reasons why this is the appropriate method for routing the traffic.
17 First of all, all land to mobile routing is based on the calling scope of the landline
18 customer placing the call. If the telephone number of the person being called is
19 within the local calling area, the call is delivered on a local basis. If the telephone
20 number is outside of the local calling area, the call is routed to an IXC. It would,
21 in fact, not be possible for Santel to route these calls to an IXC, since Santel does
22 not have access to the wireless carrier's database to determine the location of the
23 wireless customer being called. Furthermore, delivering this call to an IXC would
24 result in long distance charges to the landline Santel customer, which would lead

⁸ Mr. Williams Direct Testimony, Page 7, Lines 23-24.

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1 to significant customer confusion, since the customer dialed the number as a local
2 number and would not anticipate any charges for the call.

3 **Q14. In regards to a land to mobile study, as mentioned above, Mr. Williams states**
4 **that “[If the results] showed that an equivalent amount of interMTA traffic is**
5 **sent from Petitioner to Alltel, the appropriate net interMTA factor should be**
6 **zero.”⁹ Do you agree with Mr. Williams’ statement? Please explain why or**
7 **why not.**

8
9 **A14. As stated above, traffic that originates with a Santel customer and terminates to a**
10 telephone number outside of the local calling area are delivered to an IXC. Even
11 if Santel were to send an “equal” amount of interMTA traffic to Alltel, this would
12 not offset Santel’s cost to terminate Alltel’s interMTA traffic as Mr. Davis
13 describes in his rebuttal testimony.

14 **Q15. Mr. Williams states that “in a 2003 arbitration case the South Dakota RLEC**
15 **witness, Larry Thompson, submitted surrebutal testimony reflecting his**
16 **opinion that RLEC originated interMTA traffic was between 10 and 58% of**
17 **traffic sent to Alltel phone numbers. Obviously, if the volume of land to**
18 **mobile traffic exceeded mobile to land traffic then Alltel would be owed net**
19 **compensation.”¹⁰ Do you agree with Mr. Williams’ statement? Please**
20 **explain why or why not.**

21
22 **A15. Just to clarify, the statement that Mr. Williams references was made in my**
23 supplement rebuttal testimony not surrebutal testimony. Mr. Williams is pulling
24 some numbers out of context and is, in fact, comparing apples with oranges and
25 consequently arrives at a false conclusion. The referenced percentages were
26 determined by analyzing all of the land to mobile traffic, which included all traffic
27 sent to an IXC. The purpose of this study was to further analyze the LEC’s land-
28 to-mobile (L-M) traffic “in an effort to better estimate the expected InterMTA

⁹ Mr. Williams Direct Testimony, Page 7, Line 25 and Page 8, Lines 1-2.

¹⁰ Mr. Williams Direct Testimony, Page 8, Lines 2-6.

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1 mobile-to-land (M-L) traffic.”¹¹ As stated previously, traffic sent to an IXC is
2 ignored in an interMTA study. Also, Santel routes all traffic outside of the local
3 calling area, including traffic destined for customers with telephone numbers
4 outside of the local calling area, to an IXC.

5 **Q16. Mr. Williams states that “The Petitioner proposed factor does not recognize**
6 **any land to mobile traffic even though simple logic indicates that it exists.**
7 **Clearly such logic and study is fatally flawed.”¹² Do you agree with Mr.**
8 **Williams’ statement? Please explain why or why not.**

9
10 A16. No, I do not agree with Mr. Williams’ statement for reasons I have stated
11 previously. The fact remains that Alltel is inappropriately routing interMTA
12 traffic to Santel and the parties should therefore have an interMTA factor that is
13 representative of the actual traffic.

14 **Q17. Mr. Williams states that “Carriers have attempted to estimate interMTA**
15 **traffic using different study methods and then extrapolating those study**
16 **methods to fit a specific situation. The study methods vary in accuracy and**
17 **in the expense required to perform the study. In my experience interMTA**
18 **factors are usually negotiated between parties without the use of a formal**
19 **study.”¹³ Do you agree with Mr. Williams’ statement? Please explain why or**
20 **why not.**

21
22 A17. No, as the goal of any interMTA factor, regardless of negotiations, is to arrive at
23 factors representative of the actual traffic. The negotiations should represent
24 reality not fantasy. Any negotiated factor should clearly be determined with
25 actual patterns for a starting basis of the negotiations. Pulling a number out of the
26 air is not the way any traffic negotiations should begin. With the state of South

¹¹ In The Matter Of the Petition For Arbitration On Behalf Of WWC License L.L.C. With Certain Independent Local Exchange Companies, Docket No. Tc02-176, Pre-Filed Supplemental Rebuttal Testimony Of Larry Thompson, Page 1, Lines 11-12.

¹² Mr. Williams Direct Testimony, Page 8, Lines 6-8.

¹³ Mr. Williams Direct Testimony, Page 8, Lines 11-15.

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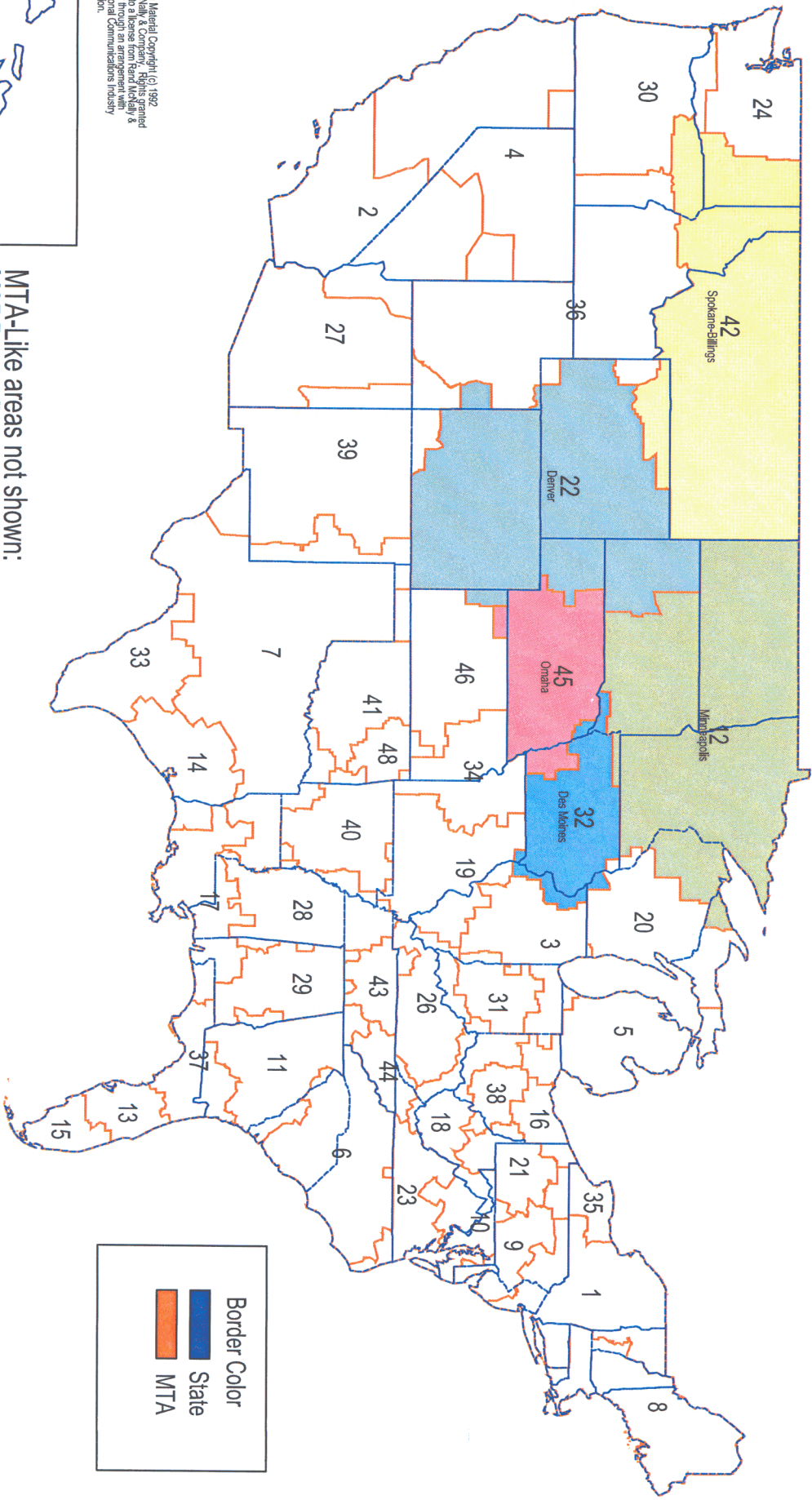
1 Dakota being included in three (3) different MTAs, its' LECs are likely to have
2 higher interMTA factors as compared to other states with fewer MTA boundaries.
3 With the interMTA boundaries and the complexity of networks, a study would
4 likely be required to determine the interMTA factor. The MTAs in the United
5 States with the MTAs near South Dakota highlighted can be seen in Exhibit
6 LT-R-6.

7 **Q18. Does that conclude your rebuttal testimony?**

8 A18. Yes. However, I wish to reserve the opportunity to supplement this rebuttal
9 testimony in the future, if necessary.

The 51 Major Trading Areas (MTAs)

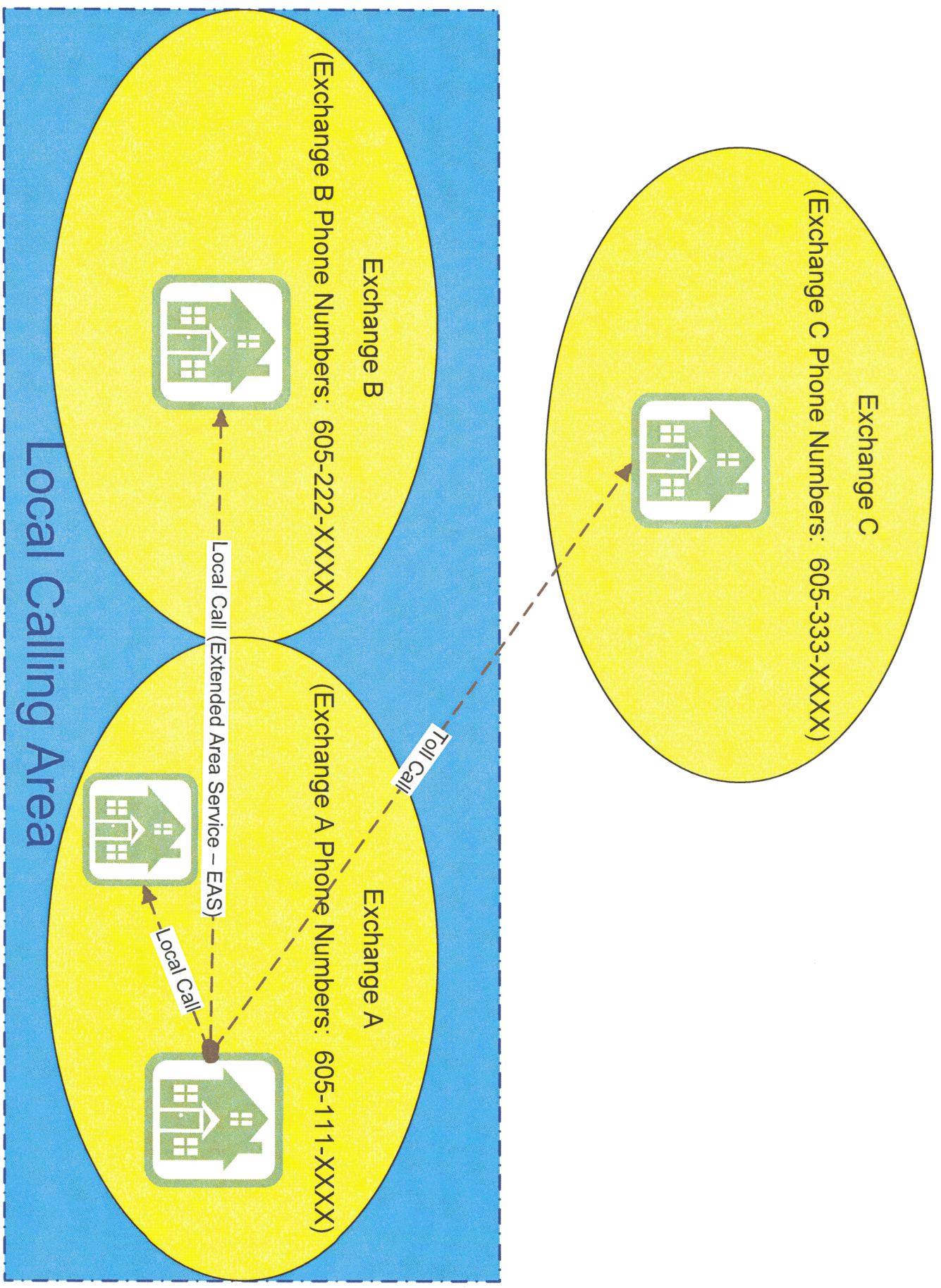
With South Dakota Neighboring MTAs Highlighted



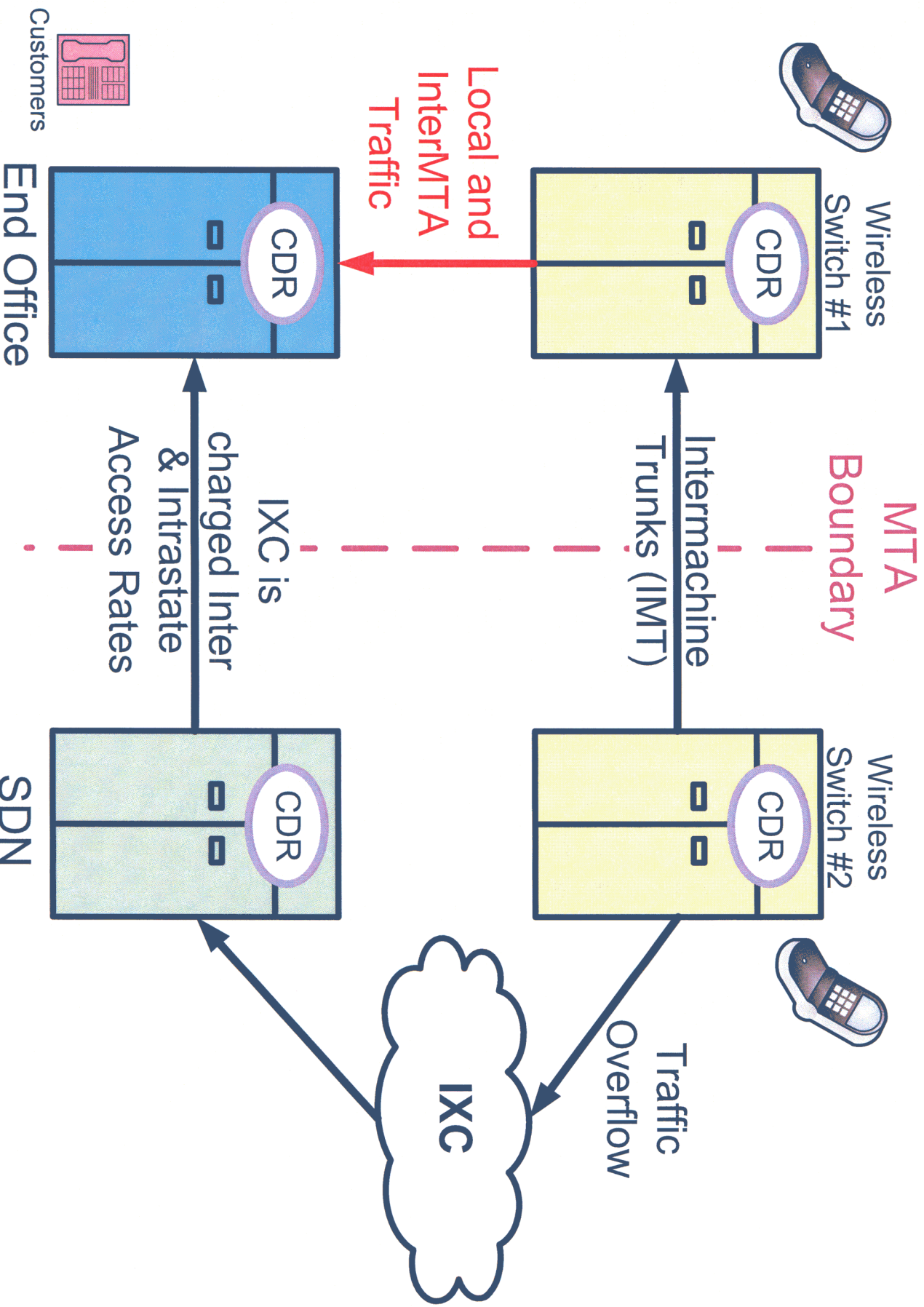
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The Personal Communications Industry
Association.

MTA-Like areas not shown:
M25 Puerto Rico & US Virgin Islands
M49 Alaska
M50 Guam and Northern Mariana Islands
M51 American Samoa



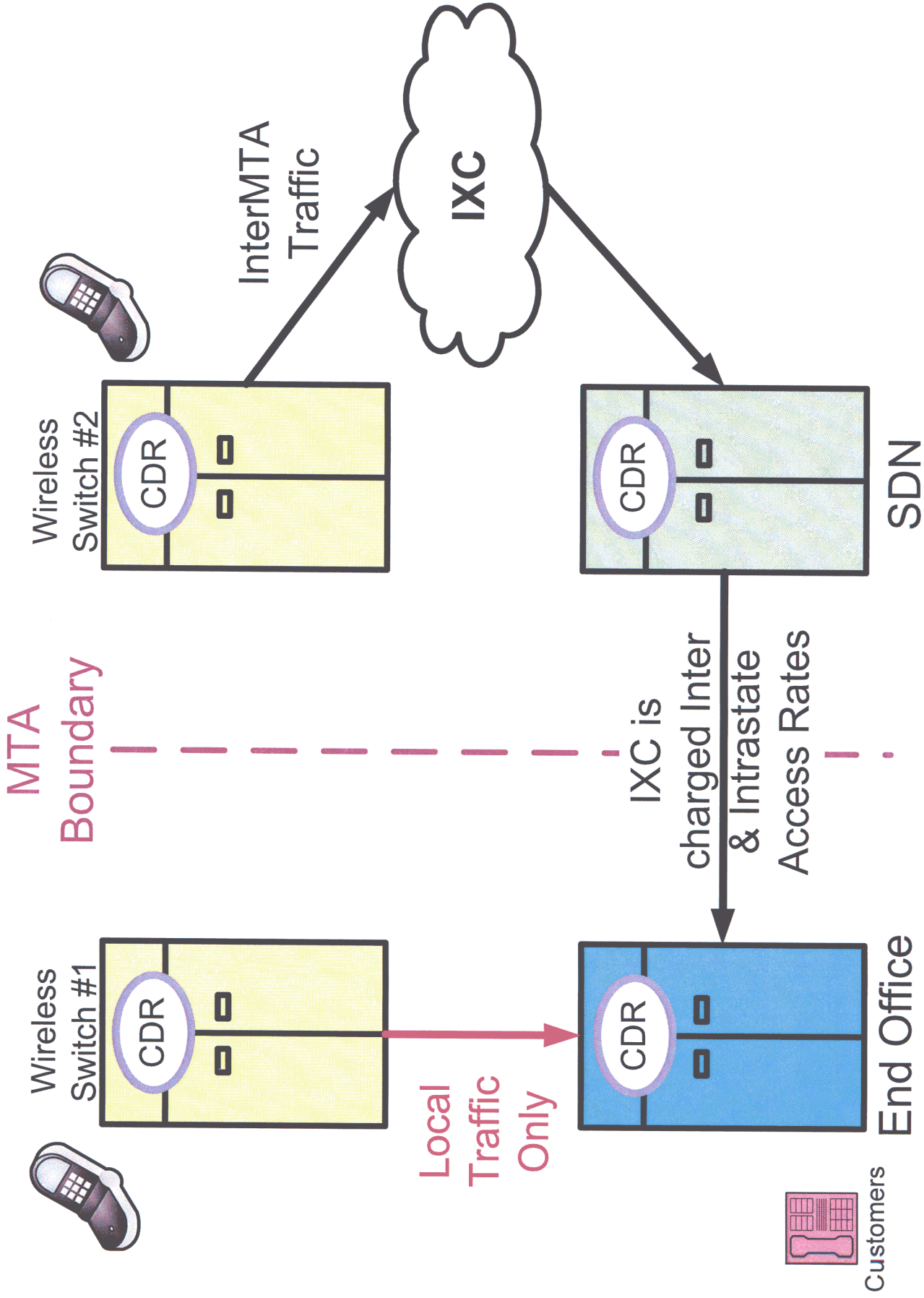


Wireless Traffic Routing (with IMT)

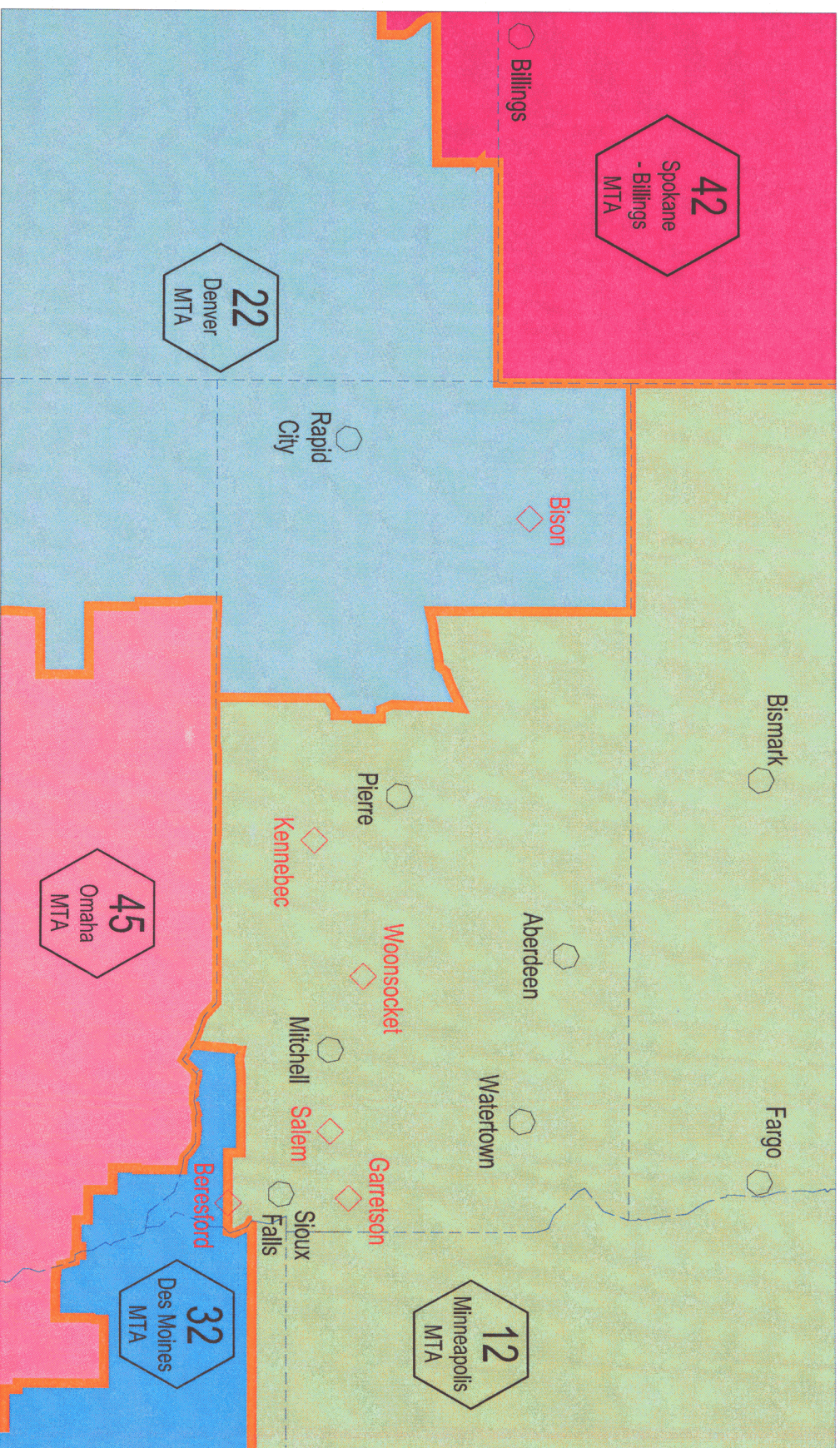


Wireless Traffic Routing (No IMT)

Exhibit LT-R-4A



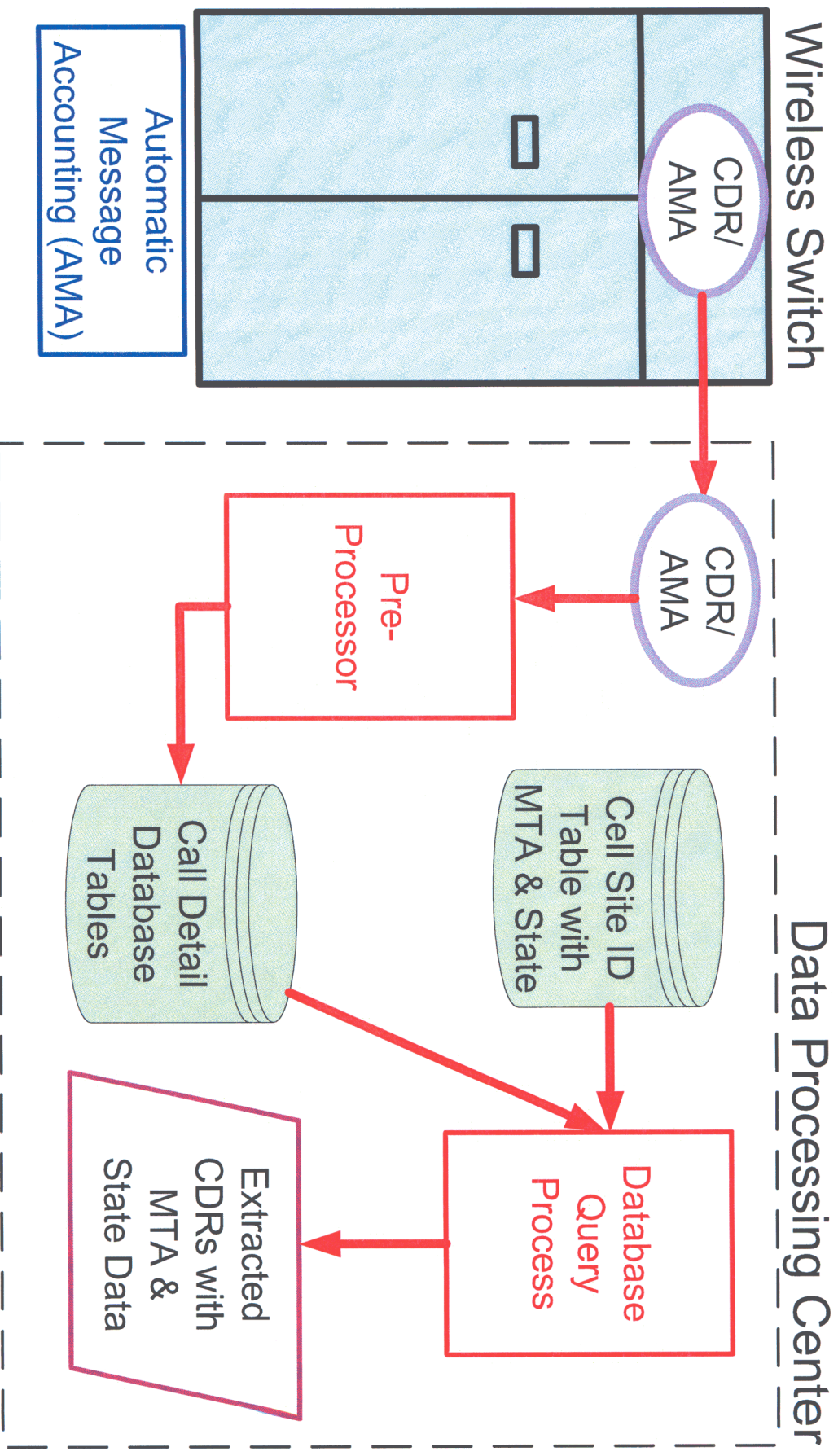
South Dakota Surrounding MTA Calling Scenarios



Exchanges Color		Border Color	
	Qwest		State
	RLEC		MTA



Extracting InterMTA CDRs



Automatic Message Accounting (AMA)

411-2131-204

Wireless Solutions

DMS-MTX

DMS-MTX CDMA/TDMA Billing Management Manual

MTX12 Standard 11.11 February 2004

NORTEL
NETWORKS™

- The TMTXCT field is captured for a non-bridged three way call, if the call is answered, when the controller disconnects to perform a call transfer.
- The TMXCT field is captured for call waiting notification to a mobile terminator once it is determined call waiting is allowed and audible ringing is applied to the originator.
- The TMTXCT field is captured for all voice calls terminating on a MTX trunk.
- The TMTXCT field is captured for 1xRTT packet data calls when the Office Parameter MTX_CDR_FOR_3G_DATA_CALLS is set to 'Y'.
- The TMXCT field is captured for call waiting repage when re-ringing is applied to the controller.

First Originating Trunk CLLI

See [Table 6-68](#) for information related to the first originating trunk CLLI.

Table 6-68
First originating trunk CLLI

SYMBOLIC FIELD NAME	FORGCLLI (AMPS/TDMA)	FORGCLLI (CDMA)
FIELD POSITION IN CDR	43	43
FIELDVALUE RANGE	0000 to 8191	0000 to 7FF3
FIELD TYPE	BCD	HEX
FIELD SIZE IN NIBBLES	4	4
FIELD MEANING	AMPS/TDMA: Trunk CLLI on which the originator began the call	CDMA: cell and partition in which the originator began the call

Interpretation of Field Data

The first originating trunk CLLI field is captured for all calls on the DMS-MTX. The data captured in the FORGCLLI field remains constant throughout the duration of the call, regardless of whether any handoffs occur.

For AMPS/TDMA calls, the FORGCLLI field denotes the trunk CLLI on which the originator began the call. The field contents may indicate a voice trunk for mobile originators, a 2 way trunk, incoming trunk or outgoing trunk for land line originators, or a NWK trunk for a mobile who performed a handoff or call delivery.

When the FORGCLLI field displays a NWK trunk, this indicates a mobile terminator has done an intersystem handoff to this switch. This is only possible in a network using NT proprietary messaging (IS-41P), where it is

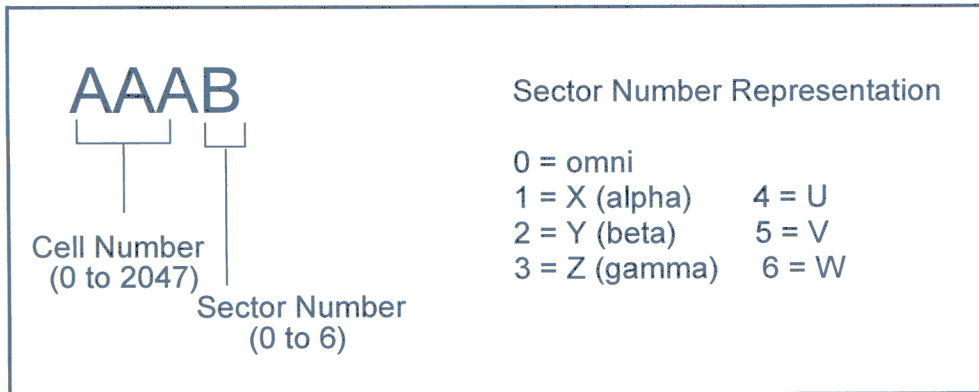
possible to determine that the mobile was a terminator. In a network using IS-41 messaging (IS-41A, IS-41B), the mobile is assumed to be the originator, and the FORGCLLI field always displays the mobile's voice trunk following the handoff. In this case of IS-41 networking, the NWK trunk is always captured in the FTRMCLLI.

For an AMPS/TDMA system, the CLLI name is displayed in this field in the CDR logs, as it is datafilled in table CLLI. The corresponding CLLI number (or cell number/partition) is displayed in the hex AMA file.

To correlate the CLLI names and numbers, a C2C2 record can be generated. See Data Group Records and Format of Data Group Records for details on the C2C2 data group records.

For CDMA systems, the FORGCLLI field indicates the cell and partition in which the originator is located at the time the call began. The data in this field is formatted in the AMA record as follows, where each letter represents a nibble in the AMA hex dump (see .

Figure 6-16
CDMA Cell/Sector Number representation



The first 3 nibbles represent the cell number in BCD, while the last nibble represents the sector number. For example, the cell number 123X would be represented in the AMA record as #1231, the cell number 98Z would be represented in the AMA record as #0983, and so on. In the CDR log, the actual cell number and partition is displayed in this field and preceded by the text "CELL" e.g. CELL98Z.

Related Fields and Parameters

First originating trunk member-The CLLI and member fields are always captured together as a trunk identifier and the individual CLLI and member values are extracted from this information.