Notes

David Balchen

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Contents

1 Statement of Principals

- *Mathematics is a language with no ambiguity.*
- *A successful man made system will closely resembles some natural system.*
- *A Powerpoint presentation is like smoking a cigar, only the person doing it likes it.*
- *Probability from a point.*
  - $a(i) = 1 - \frac{i}{n}$ where $0 <= i < n$ and $n > 0$

2 Usage Overview

An event that gets rated in the system is called usage and is why we have a billing system in the first place.

2.1 Supported Switch Types for Postpaid

The following switch types are first converted into the **UFF** CDR format:

1. **SMSC Server** - Both **Motorola** and **Acatel-Lucent SMS** records that can be either a *Mobile Originating or Terminating* record type.
2. **AAA Server** - Produces one record for each complete data session.
   - **PGW** - P-Gateway **LTE** data usage
   - **ECS** - ECS **3G and lower** data usage.
   - **AAA** - Raw AAA usage found on the CallDump only.
3. **VALI** - *Premium SMS (Valista)* pre-rated records one record per event.
4. **MMSC** - Used for both pictures and picture messaging text only (treated as an **SMS** message in the system). Produces both *Mobile Originating and Terminating* records with a possible one to many relationships (multiple recipients).

Voice

1. **Alcatel Lucent (APLX)** - The **Alcatel Lucent APLX** switch record are found mostly in the Maine market. This switch produces both *Mobile Originating and Mobile Terminated* records.
2. **Nortel (NTI)** - The **NORTEL NTI** switch record is the most common voice record format and since an NTI record contains both the *originating and terminating features* certain call types may result in a record being generated.

3. **GSM Roaming** - Voice and data recotrds from our customers who are roaming in Europe and other **GSM** countries.

4. **CIBER** - For *InCollect and OutCollect* processing we do not convert to **UFF**, instead the **CIBER** record format is used.

2.2 Pre-Pay and Data Roaming

In addition to **Post-Pay** we also handle **Pre-Pay** which follows a different flow using the diameter interface. The **Diameter interface** is described as follows:

- **Diameter** is a **AAA** protocol, a type of computer networking protocol for authentication, authorization and accounting, and is a successor to **RADIUS**. **Diameter** controls communication between the authenticator (Secure Ticket Authority, STA) and any network entity requesting authentication. **Diameter Applications** extend the base protocol by adding new commands and/or attributes, such as those for use of the Extensible Authentication Protocol (**EAP**).

2.3 Guide By Criteria

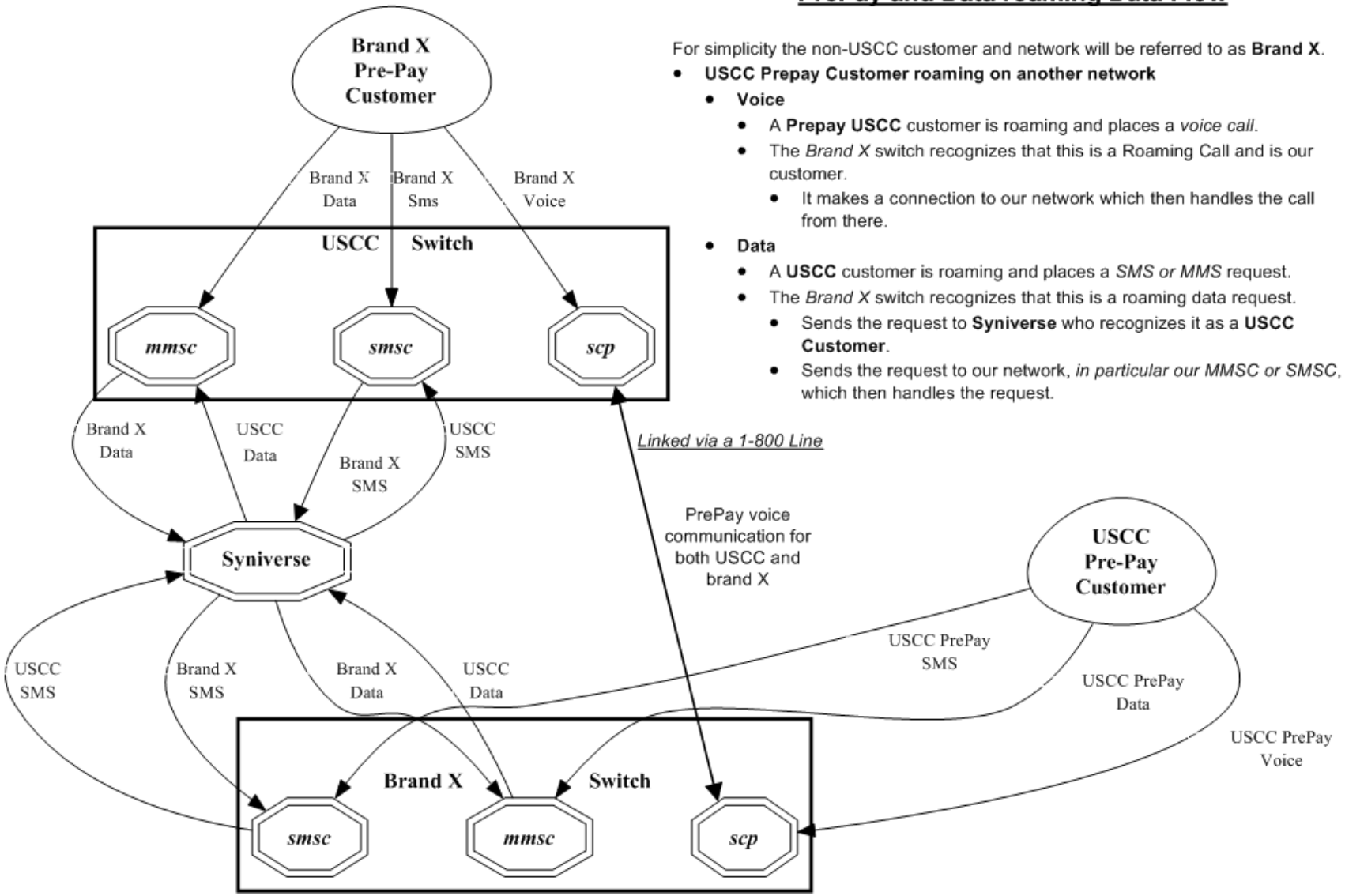
Data Types	Guide By
voice	MSID
GSM	**IMSI**
SMS	MDN
VOLTE	IMSI
PMG/PTX	MSID
AAA	MSID
PGW/LTE	**MDN/IMSI**
Vali	MDN

2.4 Usage Time Zones

Usage Type	TimeZone
AAA	GMT
PGW/LTE	GMT
PMG/PTX	GMT
MOT/ALU	EST
Voice/Volte	Switch Location
CIBER	Switch Location
GSMD	UTC

Usage Flow Diagram

2.5 Pre-Pay and Data Roaming



PrePay and Data roaming Data Flow

For simplicity the non-USCC customer and network will be referred to as **Brand X**.

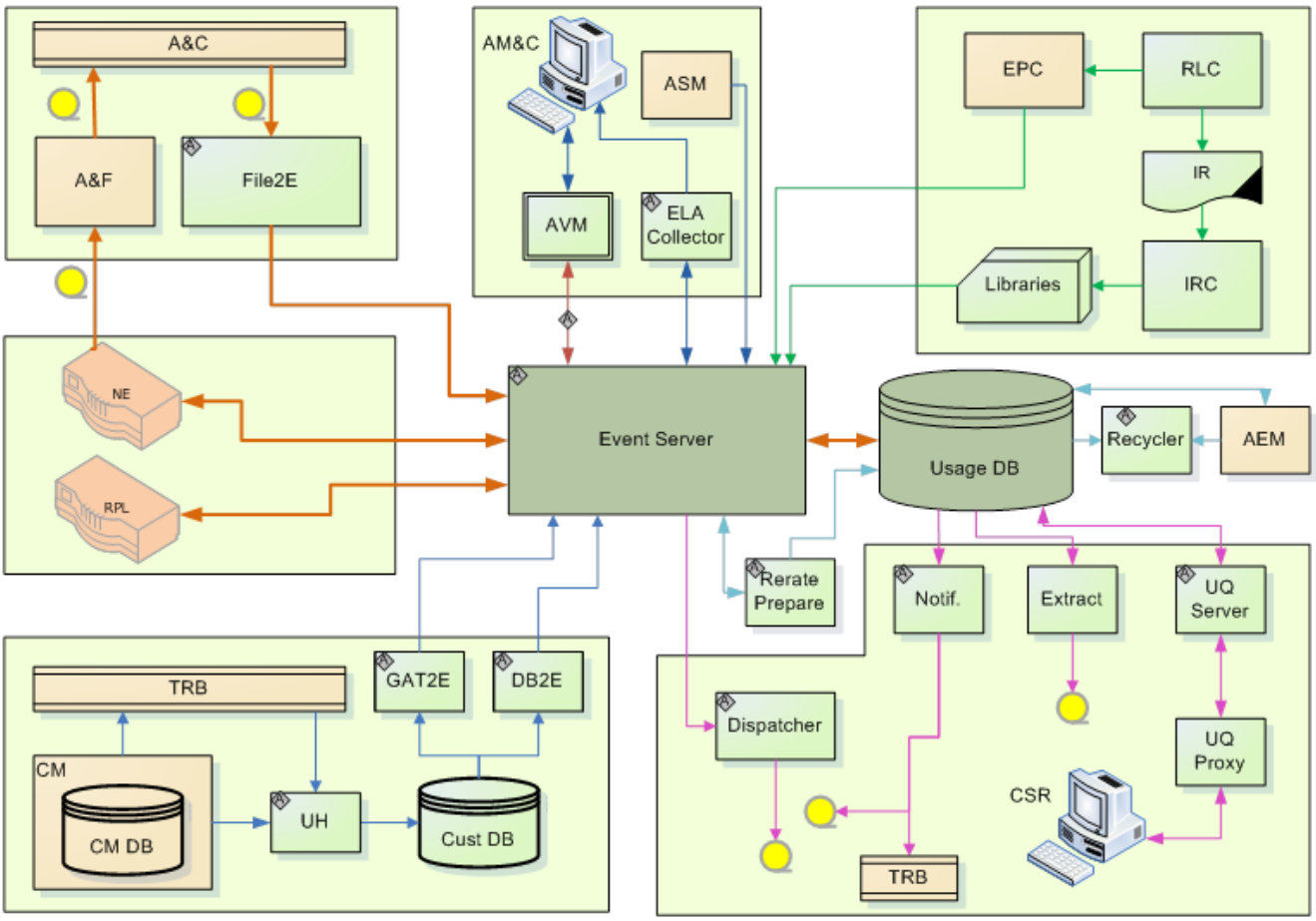
- **USCC Prepay Customer roaming on another network**
  - **Voice**
    - A **Prepay USCC** customer is roaming and places a *voice call*.
    - The *Brand X* switch recognizes that this is a Roaming Call and is our customer.
      - It makes a connection to our network which then handles the call from there.
  - **Data**
    - A **USCC** customer is roaming and places a *SMS or MMS* request.
    - The *Brand X* switch recognizes that this is a roaming data request.
      - Sends the request to **Syniverse** who recognizes it as a **USCC Customer**.
      - Sends the request to our network, *in particular our MMSC or SMSC*, which then handles the request.

3 TOPS Usage Processing Operations

3.1 Acquisition and Formating (A&F)

A&F is to the new system what **MAF and RBMS** was to the old. Since the majority of rules will be moved to **INTEC, A&F's** primary function in the **post-TOPS** world will be to move the data from the **UFF** to the usage record[1]. If an **A&F** error does occur the record will be dumped into a file to be later processed by the **AEM** *(Amdocs Error Manager)*.

3.2 TurboCharging



Though the overall architecture seems to be the same, with some name changes like **MAF** is now A&F[2], as **CARES** the major change has been the addition of the new real-time rater which **Amdocs** calls **Turbo Charging** that can handle both PRE and POST pay customers.

- All interaction is done through the network interface.
- All tables are now in memory to improve performance.
- We can re-rate continuously by running re-rating in daemon mode.
- We can rate in other units beside minutes like **Content, Volume, Qos**.

[1] **CIBER** - InCollect processing is still handled by **A&F** and **RBMS**
[2] Acquisitions and Formatting

- Rating can be by step or tiered.
- **Event flow:**
  1. An event comes in to via a network element
  2. Transforms data into a conical form which also includes the network element.
  3. Gets Rated
     - For **Pre-Pay** the HLR[3]. is handled by the **SCP**
  4. The response is sent back to the calling network element.
- **International Calls** are rated to the country not the individual city/town.
- Find that in **LD_COUNTRY_RATES** table.
- For **Pre-Pay** roaming customers still get a record which needs to go through **CIBER** process.
- Major problem for **CCMI**. It was decided to remove it but the **LERG** does not give us the granularity that we might need.
- For **Pre-Pay MMS** we will not charge each recipient only the sender.
- We convert everything to the **Home SID time** for bill presentment.
- Limiting or *choking* usage can be handled by **Diameter** for real-time and **Turbo-Charging** for **Post-Pay**

3.2.1 RLC (Rating Logic configurator)

- The **RLC** has a repository that keeps it rules as an **XML** string in a *database column*.
- Though they are stored as **XML** you can view them as **Product Catalog UI**.
  - **Customer** defines set of attributes possibly having different values for different **customers/subscribers**.These attributes are further used in qualification criteria to define guiding to service functionality, and in event handlers to personalize pricing logic for specific customer/subscriber
  - **Performance Indicator** defines set of attributes (counters) to keep accumulated usage for some specific pricing item Its attributes are used and modified by the event handlers logic.
  - **Item Parameters** define a set of attributes that are the parameters of the Pricing Item Type Their values are set in the Product Catalog UI tool while creating a Pricing Item based on a given Pricing Item Type

[3]Home Location Register

  - **External record** defines a set of attributes associated with a specific extract record layout.
  - **Variables** define a set of attributes (variables) are used by handlers statements.

- **PIT** *Pricing Item Type*
- We can define a number of different **Rating roles** and rating events.
- Incoming calls are not dropped but instead are zero rated.
- Configuration Tools
  The tool is a split screen application. On the left side contains all the rating schemes which are then dragged and dropped to create a tree structure on the right side.
  - **RLC - Rating Logic configurator** *Used to configure the rating engine*
  - Uses the **EPC** to create the rating logic, not the price plans. Once your finished with the configurator you the compile with the **ICC (Implementation Compiler configurator)** which then creates C++ code thats added to the rater.
  - **TCC (Turbo-Charging configurator)** - Used to configure the Turbo-Charging rater.
  - **Replenishment Manager** - Used for **Pre-Pay**.

3.3 Production Servers/EpsMonitors

- **Batch1 - kprl1batch.uscc.com (10.176.177.177)**
  - /pkgbl01/inf/aimsys/prdwrk1/eps/monitors
- **Batch2 - kprl2batch.uscc.com (10.176.177.178)**
  - /pkgbl02//inf/aimsys/prdwrk2/eps/monitors
- **Batch3 - kprl3batch.uscc.com (10.176.177.179)**
  - /pkgbl03/inf/aimsys/prdwrk3/eps/monitors
- **Batch4 – kprl6batch.uscc.com (10.176.181.123)**
- **Event1 – kprl1event.uscc.com (10.176.181.116)**
- **Event2 – kprl2event.uscc.com (10.176.181.117)**
- **Event3 – kprl3event.uscc.com (10.176.181.118)**
- **Event4 – kprl4event.uscc.com (10.176.181.119)**
- **Event5 – kprl5event.uscc.com (10.176.181.120)**
- **Event6 – kprl6event.uscc.com (10.176.181.121)**
- **APRM - kprl1batch.uscc.com (10.176.177.179)**
  - /inf_nas/apm1/prod/aprmoper/eps/monitors\

3.4 Event Servers

There are multiple Event Servers which coresspond to bill cycle and run on the event servers. Their status can be viewed using the following query on the **PRDAF** database.

```
SELECT * FROM ADJ3_JOBS_INST_CTRL WHERE JOB_NAME = 'ADJ1EVENTSRV';
```

From the output if the column **event status = Y** then that particular server is in use. If your job requires an event server that is already in use you can change it to one that is not by using **SQL** below on the **PRDCUST** database logged in as **PRDOPRC**.

In this example we are setting the job rec to run using the **ES_EOC1045** event server

```
Update OP_APP_DATA set data = 'ES_EOC1045'
       where JOB_REC = '{Your Job Rec}' and field_seq_num = 1
       and table_NAME IN ('ADJ1EVENTSRV');
```

3.5 Rerate Servers

There are three **Rerate Servers** they are:

1. **RRP_EOC1056**
2. **RRP_EOC1068**
3. **RRP_EOC1192**

3.6 OutCollect Operational Jobs (CIBER Processing)

CIBER files are a collection of roaming records, these can be either a foreign carrier on our network or one of our customers on another network. More succinctly there are two types of roaming scenarios.

1. **OutCollects**
   Non-USCC customers using our network, eventually the records created become part of the **OutCollect** process.

2. **InCollects**
   USCC customers roaming on another carriers network. These records are sent to Syniverse which in turn sends them to us and become part of our **InCollect** process. All though InCollects come pre-rated they are still re-rated according to their plan.

The OutCollect process runs twice a day **1:00 a.m/p.m.**

- **OUTCOL**
  Extracts from the **APE1_RATED_EVENT** table and creates files for **MAS**.
- **ADJ9MAS OUTCOL**
  Creates files for **SPL1**.
- **SPL1** - *Daemon*
  Processes files as it sees them and creates files for **RGD**.

- **RGD** - *Daemon*
  Processes files as it sees them and creates files for **APP**.

- **APP** - *Daemon*
  Processes files in RD after 12 hours of the last files processed. Output files for **Syniverse**.

- **MF9FTDTAX**
  Loads data into **MF9_OUTCOL_TAXES** table

- **AR9OUTCLTAX**
  End-day after **MF9FTDTAX**.

3.6.1 OutCollect Files

These are the file that are created by **TOPS** that will be sent to **Syniverse**.

- **aprout (OutCollect Directory)**

/pkgbl02/inf/aimsys/prdwrk2/var/usc/projs/apr/interfaces/output

3.6.2 Operational Tables

- **AC1_CONTROL**
  The Outbound Syniverse files

```
select * from ac1_control
where nxt_pgm_name = 'CBRRPT'
and cur_pgm_name = 'APP'

FILE_NAME
---------
CIBER_CIBER_20130917090101_1312027_0001.dat
CIBER_CIBER_20131012092425_1237215_0013.dat
CIBER_CIBER_20130927090046_1027159_0012.dat
...
CIBER_CIBER_20131011211952_1237215_0012.dat
```

- **MF1_CIBER_BATCH_SEQ**
  Contain the CIBER batch sequence numbers *(See Database Section)*.

3.7 Overage Protection

Overage notifications are detected on an event by event basis. As events are processed by **TC** and added to the **APE1_ACCUMULATORS** table a check is made against the **L9_FIRST_THRESHOLD/L9_SECOND_THRESHOLD** fields. If an overage is detected the ***FIELD*** CTN is added to file (segregated by unique **TC** file?) in the NTF directory. MFT then pulls these files and delivers to DMI for distribution. A note is added to the NOTIFICATION_HUB.SMS_NOTIFICATION table (ODS) indicating the message was sent by DMI.

3.7.1 Overage process flow

3.7.2 Output Location

```
select notif_desc, file_path from CM9_NOTIFICATION_DEF
where  FILE_PATH = '$ABP_APR_ROOT/interfaces/output/NTF'
and FILE_ALIAS = 'SMSNTF'
```

NOTIF_DESC	FILE_PATH
Overage cap notification on group level	$ABP_APR_ROOT/interfaces/output/NTF
Disclaimer notification on group level	$ABP_APR_ROOT/interfaces/output/NTF
Bucket notification on group level	$ABP_APR_ROOT/interfaces/output/NTF

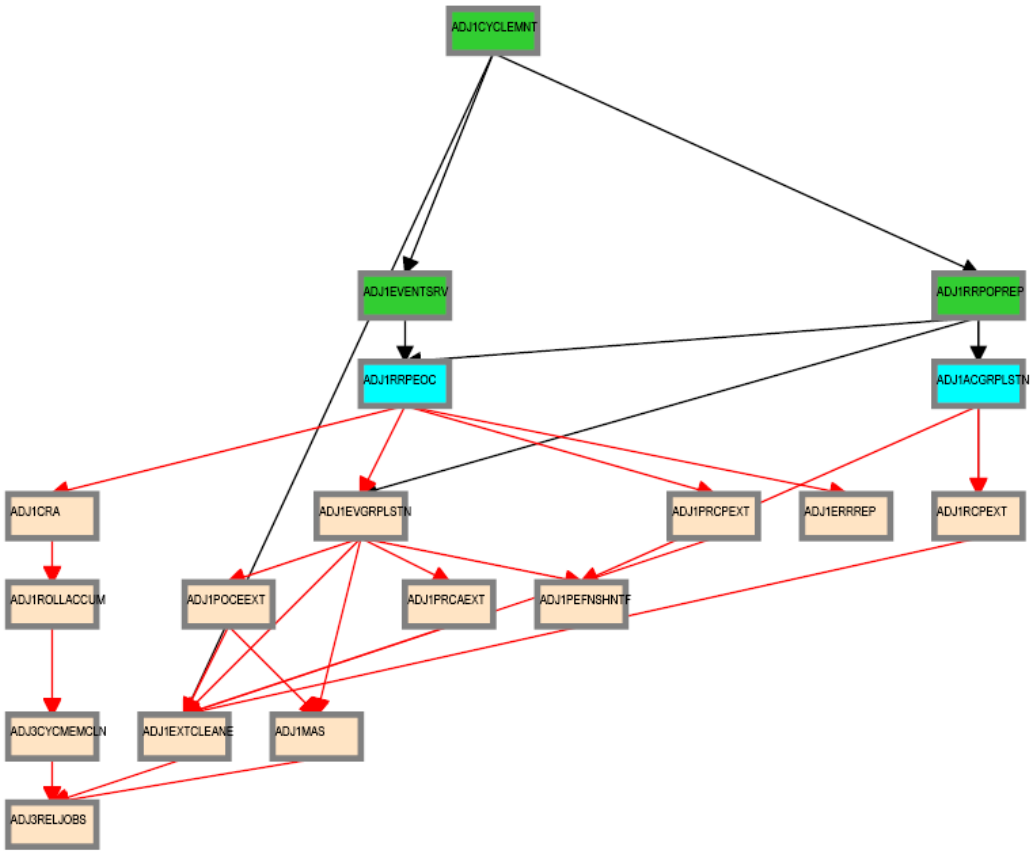
prdwrk1@kprl1batch:/pkgbl01/inf/aimsys/prdwrk1/var/usc/projs/apr/interfaces/output/NTF

3.7.3 Fields of Interest

S - SMS, M - MMS, V - Voice, D - Data, L - LTE => L3_CALL_SOURCE

3.8 Billing Process

The billing process follows a map which is created by the job **ADJ3_APR_CycleBillRun_Sh**. If it completes successfully it will create a billing map that will look something like the following:



3.9 Log File Location

3.9.1 Batch 1

- cdlog - /pkgbl01/inf/aimsys/prdwrk1/var/usc/log
- A&F | ssh prdwrk2@kpr02batch | MF1_MD_MD_USC
- F2E | ssh prdwrk4@kpr02batch | ADJ1_File2E_Daemon_Shell_Sh_F2E

3.10 Alias

- **cdlog** - cd to the logfile directory.
- **cdswitch (Batch1 Only)** - cd to the switch directory.
- **aprout** - cd to the **CIBER** out directories.

3.11 Operational Terms and Definitions

- **Front-end Processes**
  - **CRM:** Customer Relationship Manager
    - **Smart Client Designer**
    - **ASCF Designer - Amdocs Smart Client Designer**
    - **APM - Amdocs Process manager**
  - **RIM:** Retail Interaction Manager
    - **POS:** Point of sale provided by **Microtelecom**
    - **Pricing Studio**
    - **ASM Amdocs Security Module**
- **Provisioning**
  - **AM or AAM - Activation Manager:** Provision Tool
    - **APM:** The Gui front end to **AM**
- **Usage Acquisition and Rating**
  - **A&F** Acquisition and formatting
  - **Turbo-Charging** Real-time rater
    - **SCP** - Session Control Protocol
  - **MAF now called Acquisition and Formatting**
  - **AMC - Amdocs Monitoring and control**
  - **AEM - Amdocs Error Manager** *replaces EMS*
  - **RLC** - Rating Logic Configurator
- **Billing**
  - **Billing Configurator**
  - **Invoicing Configurator**
  - **Replenishment Manager**
  - **Designer Studio** *for bill layout*
  - **Pooling** - Everyone brings there services to be shared within everyone in the pool. Pooling is customization.
  - **Sharing** - A finite set of resources are set-up and everyone can use it.
  - **MRC - Monthly Recurring Charge**
- **Integration sub-systems**

- **AIF - Amdocs Integration Framework**
- **ASM - Amdocs Security Manager**
- **APM - Amdocs Process Manager**
- **MMI - Multimedia Integrator**
- **OM - Order Manager**
- **OMS - Order Management System**

4 TC Oncall Daily Duties:

4.1 Check the Monitors

4.1.1 Batch Tab

- Open Remedy against Amdocs - Tier 2 Billing to restart the scripts when any of the Batch1, Batch2, Batch3, or APRM columns are missing indicating they are down.
- Open Remedy against Amdocs - Tier 2 Billing to restart the script when any of these scripts are red indicating they are down.
  Batch 1 APPS

Aged_reject_to_close_prdcust	Up	Jul23
AnFReport	Up	Jul23
BillingTasks	Up	Jul26
cpni_auto	Up	Jul23
ovpDmiRejectsWA	Up	Jul26
ovpMonitorAuto	Up	Jul24

Batch 2 APPS

af_fixer	Up	Jul27
auto_error_handle_PRDUSG1	Up	Jul27
auto_error_handle_PRDUSG2	Up	Jul27
auto_error_handle_PRDUSG3	Up	Jul27
auto_error_handle_PRDUSG4	Up	Jul27
large_charge	Up	Jul27
Log_Monitoring	Up	14:19
pseudoCron	Up	Jul27
pseudoCron1day	Up	Jul27

Batch 2 Filesystem

Folder	Size	Used	Available	Used
/var	1.9G	267M	1.6G	15%
/tmp	5.7G	1.8G	3.6G	34%
/af	9.4T	2.1T	7.4T	23%
/JP_FS	5.9T	2.8T	3.2T	47%

4.1.2 Event Tab

- Open Remedy against Amdocs - Tier 2 Billing to restart the scripts when any of the Event1 through Event6 columns are missing indicating they are down.
- Open Remedy against Amdocs - Infra Environments to investigate available space when any of the File system % Used sections are red.

4.1.3 AC1 Control Tab

- Open Remedy against Amdocs for AF and stuck in IU or RD files when creation date and is less than current date.
- Use the A&F monitor report for <MM/DD/YYYY> and APRM monitor report for <MM/DD/YYYY> emails as supporting evidence, which run every hour.

4.1.4 AEM Tab

- Ignore – monitor was turn off due a conflict with prepaid event transactions.

4.1.5 Other Tab

- Open Remedy against Amdocs - Tier 2 Billing to check on going rerating when rows are in red for more than one day.

4.2 Check Overage Protection Monitor.

- Go to the MPS mailbox and look for the Overage Notification Count for <MM-DD-YYYY> email.
  When received with counts similar to these there are no issues.

```
Total Files: 42987
Total Records: 154323
75%: 84418
100%: 69830
Disclaimer: 60
Balance: 15
```

- When count are significantly low open a Sev 3 ticket against Amdocs.

```
Total Files: 2607
Total Records: 9458
75%: 5365
100%: 4092
Disclaimer: 0
Balance: 1
```

- Open a Sev 2 ticket against Amdocs when Overage Notification Count FAILED for <MM-DD-YYYY>! is received.
  - Call IS Support at 608-828-5812 to inform them of a Sev 2 or above ticket.
  - Escalate ticket in Remedy, call Amdocs T2.5 on call at 217-766-1979.
  - Email applicable teams the ticket number and description.

```
To:  GSSUSCCTier25RA@amdocs.com
Cc:  USCDLISOps-BillingandAROperations@uscellular.com; MPS@uscellular.com
```

4.3 Check .LOG file monitor.

- Go to the MPS mailbox and look for the Log Monitoring Count for <MM-DD-YYYY> ! email
- When received with No LOG files where found for <MM-DD-YYYY> there are no issues.
- When received with "Log files found for <MM-DD-YYYY> Total Log Files: <XXXXXX> open a sev 3 Remedy ticket against Amdocs.
  - Escalate ticket in Remedy, call Amdocs T2.5 on call at 217-766-1979.
  - Email applicable teams the ticket number and description.

```
To:  GSSUSCCTier25RA@amdocs.com
     Cc:  USCDLISOps-BillingandAROperations@uscellular.com; MPS@uscellular.com
```

4.4 Check AC1_CONTROL Fixer Status.

- Go to the MPS mailbox and look for the AC1_CONTROL Fixer Status emails. There are two. One at ~12:04AM and on at ~4:03AM.
- The output is similar to what is shown below. The only action needed is when a Sid is removed other than **SIDS** 45696, 49697, and 49698. When a Sid other than the aforementioned **SIDS** is removed open a Sev 4 Remedy against Inter-carrier Services, email the ticket number, description, and details to Zachary.Gutter@uscellular.com asking him to validate the Sid.

```
Results for the AC1_CONTROL Fixer:

Fixed /pkgbl02/inf/aimsys/prdwrk2/var/usc/projs/up/physical/
      switch/DIRI/SDIRI_FCIBER_ID000069_T20150802185115.DAT
and replaced it with /pkgbl02/inf/aimsys/prdwrk2/var/usc/projs
      /up/physical/switch/DIRI/SDIRI_FCIBER_ID000069_T20150802185199

Sid:  was removed

There were 0 CIBER AF files with wr_rec_quantity of 2

There were 0 out of sequence CIBER files

There were 0 OutColllects files stuck IU and set to RD

There were 0 File2E stuck IU/AF files and set to RD

There were 0 Files stuck FR files and set to RD

There were 21 ORG records updated at prdusg1c.ape1_subscriber_rerate
from num_of_rerate_tries=3 to 1

There were 14 ORG records updated at prdusg2c.ape1_subscriber_rerate
from num_of_rerate_tries=3 to 1

There were 28 ORG records updated at prdusg3c.ape1_subscriber_rerate
from num_of_rerate_tries=3 to 1

There were 28 ORG records updated at prdusg4c.ape1_subscriber_rerate
from num_of_rerate_tries=3 to 1
```

4.5 Check Large Charge monitor.

- Go to the MPS mailbox and look for the Large Charge email.
- When the subject line is other than Large Charge Not Detected - No Action Required open a sev 3 Remedy against Amdocs.
  - Escalate ticket in Remedy, call Amdocs T2.5 on call at 217-766-1979.
  - Email applicable teams the ticket number and description.

```
To:  GSSUSCCTier25RA@amdocs.com
     Cc:  USCDLISOps-BillingandAROperations@uscellular.com; MPS@uscellular.com
```

4.6 Check out of sequence CIBER records monitor.

- Go to the MPS mailbox and look for the out of sequence CIBER records email.
- When the subject line is other than No out of sequence CIBER records for <YYYYMMDD> open a sev 4 Remedy against Amdocs.
  - Email applicable teams the ticket number and description.

```
To:  GSSUSCCTier25RA@amdocs.com
Cc:  USCDLISOps-BillingandAROperations@uscellular.com; MPS@uscellular.com
```

4.7 When Notified Nonfictions.

- kpr01ebiap maintenance.
  - Login to the EBI server with your LAN ID and password.
  - Check if AEM and KPI scripts are running.

```
[md1dsmi1@kpr01ebiap eps]$ ps -ef | grep perl | grep md1dsmi1 | grep -v grep
md1dsmi1   16566       1  0 Jul30 ?        00:00:00 perl ./aem_purge_trending_split.pl 1 0
md1dsmi1 2345044       1  0 Jul28 ?        00:00:00 perl ./aem_error_trending_auto.pl
md1dsmi1 2345048       1  0 Jul28 ?        00:00:00 perl ./aem_purge_trending_auto.pl
md1dsmi1 2345050       1  0 Jul28 ?        00:00:00 perl ./em1_errors_trending_auto.pl
md1dsmi1 2345052       1  0 Jul28 ?        00:00:00 perl ./em1_errors_write_off_auto.pl
md1dsmi1 2345053       1  0 Jul28 ?        00:00:00 perl ./remedy_reports_auto.pl
md1dsmi1 2345054       1  0 Jul28 ?        00:00:43 perl ./tc_kpi_auto.pl 2 2 1 1
md1dsmi1 2345055       1  0 Jul28 ?        00:00:02 perl ./tc_kpi_datain_auto.pl 2 2 1 1
```

- Check if Business Report scripts are running.

```
[md1dsmi1@kpr01ebiap eps]$ ps -ef | grep MainLoop | grep -v grep
md1dsmi1 2188567       1  0 Jul28 ?        00:00:00 HS1H MainLoop - next:
md1dsmi1 2188568       1  0 Jul28 ?        00:00:00 CancelLineIL MainLoop - next:
md1dsmi1 2188569       1  0 Jul28 ?        00:00:00 MADISON MainLoop - next:
md1dsmi1 2188570       1  0 Jul28 ?        00:00:00 CancelLineWI MainLoop - next:
md1dsmi1 2188571       1  0 Jul28 ?        00:00:00 daily_counts MainLoop - next:
```

4.8 Restart AEM and KPI scripts.

- Login to the EBI server with your LAN ID and password.
- cd to /home/common/eps/das
- Run from the command line nohup ./StartAllErrorAndKPI.sh &

4.9 Restart Business Report scripts.

- Login to the EBI server with your LAN ID and password.
- cd to /home/common/eps/reports
- Run from the command line nohup ./StartAllReportCron.sh &

Note all scripts use Dave Smith's LAN ID password and when the failure is due to the password being expired please notify him immediately and if he is out of the office wait until he returns to the office to reset his password and update the scripts.

5 Voice Overview

One major undertaking in the transition to **TOPS** is moving most of the voice mediation to the **INTEC** platform. To help facilitate this move, the current rules system **(RBMS)** was studied and documented. The following provides a brief overview of the processes used.

5.1 Call Types

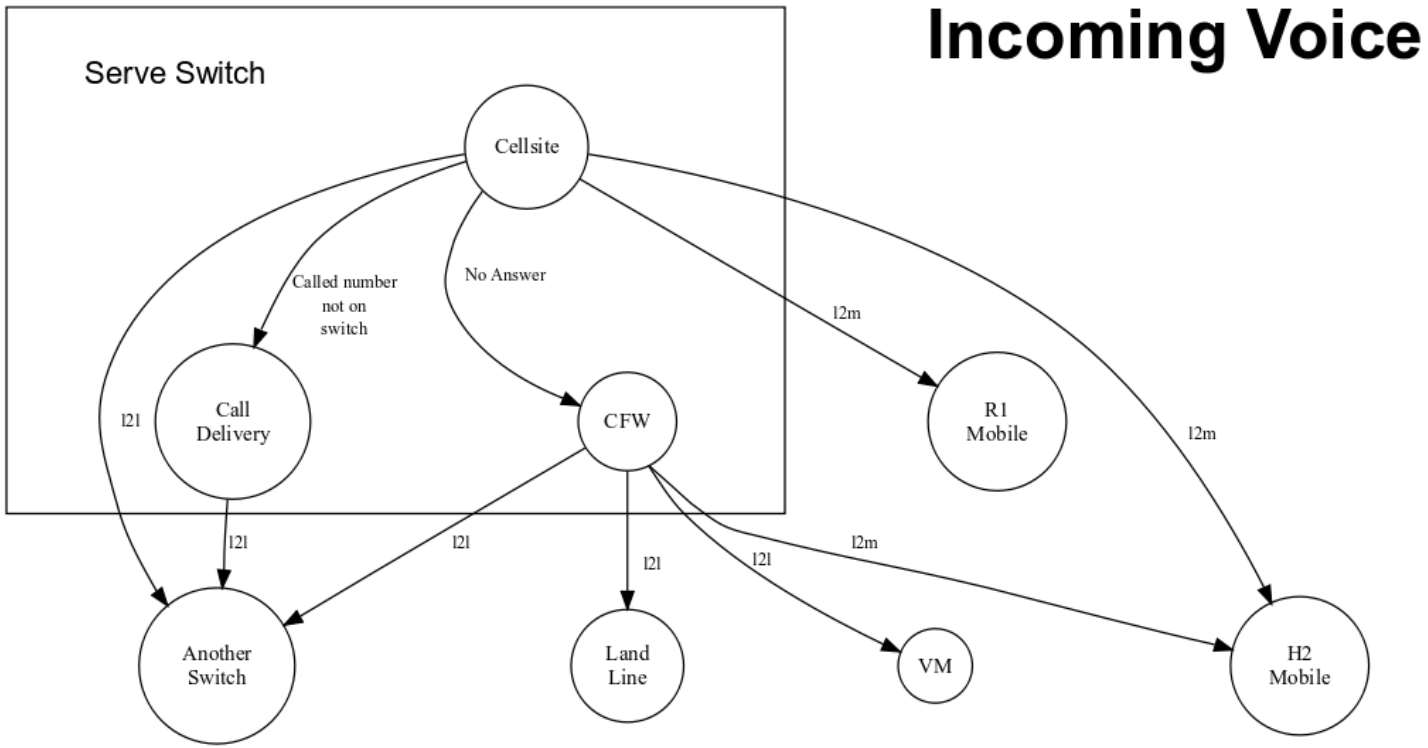
1. **M-M** - Mobile to Mobile
2. **M-L** - Mobile to Land Line
3. **L-M** - Land Line to Mobile
4. **L-L** - Land Line to Land Line

The call records can come in four possible states.

1. Mobile Terminating (Incoming)
2. Mobile Originating (Outgoing)
3. **NTI ONLY**
   - **Both**
     (NTI Mobile to Mobile) in which for every voice event, two records are created, a **Mobile Originated** and **Mobile Terminated** record. For **APLX** this is taken care of automatically. In the case of an **NTI** switch, depending on the call scenario, it is up to the mediation platform to create one if needed.
   - **Neither**
     (per example **L-L**)

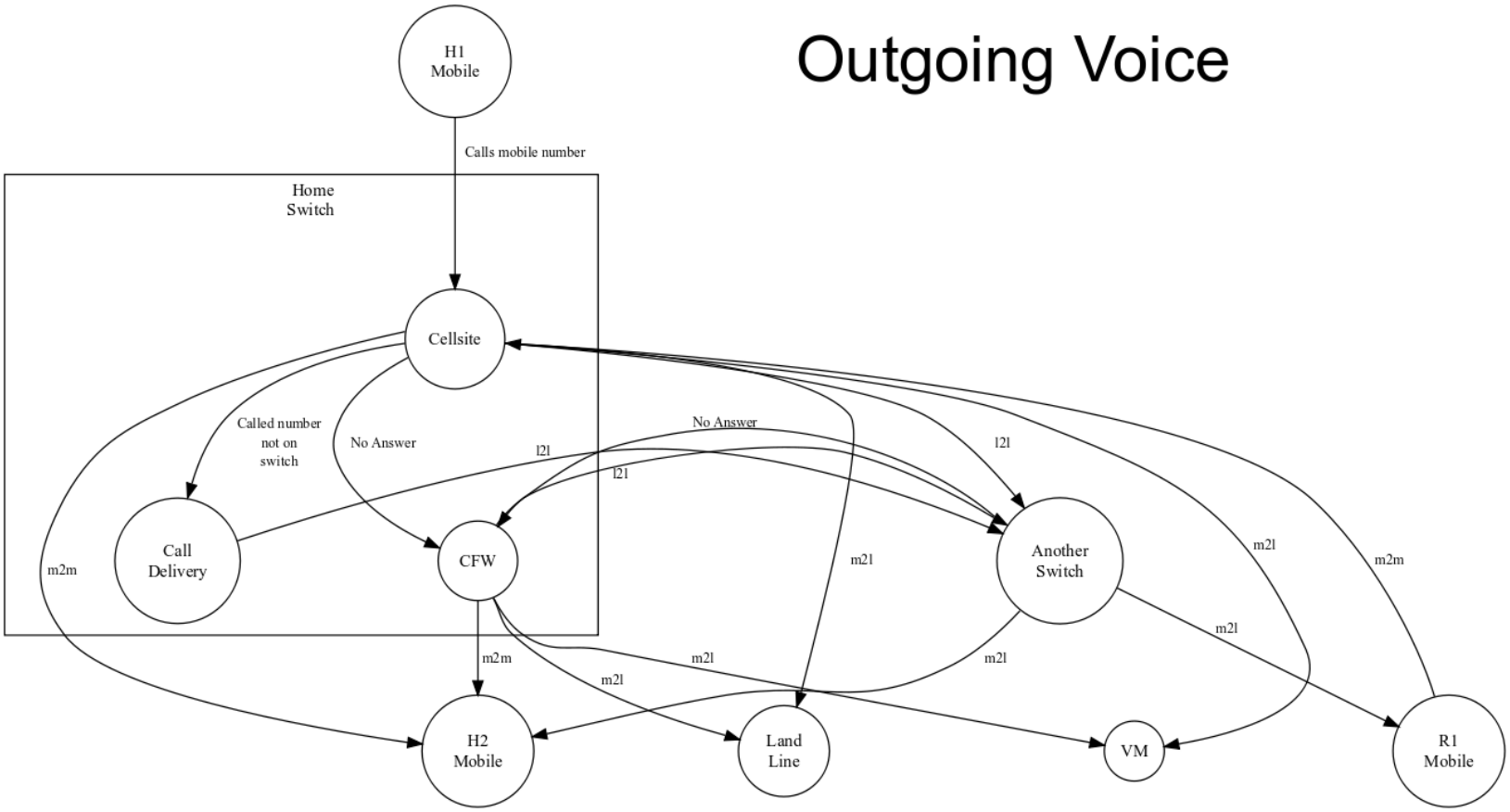
5.2 Incoming

An **Incoming** call is a *mobile terminated* call where one of our customers receives a call from some caller to a **USCC** switch. **The diagram below shows the data flow for an incoming call:**



5.3 Outgoing

An **outgoing** call is a *mobile originating* call from a **USCC** customer in which the following can occur.
The diagram below shows the data flow for an outgoing call:



6 CIBER File Format

6.1 Ciber Record Types

The **Ciber** standard defines the following record Types:

- **01** Header
- **22** Voice (main Record type)
- **32** Data *Need more info*
- **52** One time charge
- **98** Trailer

6.2 CIBER 01 Record

Field	Position	Description
Record Type	1-2	
Batch Creation Date	3-8	
Batch Sequence Number	9-11	
Sending Carrier SID/BID	12-16	
Receiving Carrier SID/BID	17-21	
CIBER Record Release Number	22-23	
Original/Return Indicator	24-24	
Currency Type	25-26	
Settlement Period	27-32	
Clearinghouse ID	33-33	
CIBER Batch Reject Reason Code	34-35	
Batch Contents	36-36	
Local Carrier Reserved	37-56	
System Reserved Filler	57-200	

6.3 CIBER 22 Record

FIELD NAME	POSITION	Description
Record Type	1-2	
Return Code	3-3	
CIBER Record Return Reason Code	4-5	
Invalid Field Identifier	6-8	
Home Carrier SID/BID	9-13	
MSID Indicator	14-14	
MSID	15-29	
MSISDN/MDN Length	30-31	
MSISDN/MDN	32-46	
ESN/UIMID/IMEI/MEID Indicator	47-47	0 = NA 1 = ESN 2 = IMEI 3 = MEID 4 = pESN
ESN/UIMID/IMEI/MEID	48-66	
Serving Carrier SID/BID	67-71	
Total Charges and Taxes	72-81	
System Reserved Filler	82-82	
Total State/Province Taxes	83-92	

Continued on next page

FIELD NAME	POSITION	Description
System Reserved Filler	93-93	
Total Local/Other Taxes	94-103	
System Reserved Filler	104-104	
Call Date	105-110	
Call Direction	111-111	
Call Completion Indicator	112-112	
Call Termination Indicator	113-113	
Caller ID Length	114-115	
Caller ID	116-130	
Called Number Length	131-132	
Called Number Digits	133-147	
Location Routing Number Length Indicator	148-149	
Location Routing Number	150-164	
TLDN Length	165-166	
TLDN	167-181	
Currency Type	182-183	
System Reserved Filler	184-185	
Original Batch Sequence Number	186-188	
Initial Cell Site	189-199	
Time Zone Indicator	200-201	
Daylight Savings Indicator	202-202	
Message Accounting Digits	203-212	
Air Connect Time	213-218	
Air Chargeable Time	219-224	
Air Elapsed Time	225-230	
Air Rate Period	231-232	
Air Multi-Rate Period	233-233	
Air Charge	234-243	
System Reserved Filler	244-244	
Other Charge No. 1 Indicator	245-246	
Other Charge No. 1	247-256	
System Reserved Filler	257-257	
System Reserved Filler	258-270	
Printed Call	271-285	
Fraud Indicator	286-287	
Fraud Sub-Indicator	288-288	
Special Features Used	289-293	
Called Place	294-303	
Called State/Province	304-305	
Called Country	306-308	
Serving Place	309-318	
Serving State/Province	319-320	
Serving Country	321-323	
Toll Connect Time	324-329	
Toll Chargeable Time	330-335	
Toll Elapsed Time	336-341	
Toll Tariff Descriptor	342-343	
Toll Rate Period	344-345	
Toll Multi-Rate Period	346-346	
Toll Rate Class	347-347	
Toll Rating Point Length Indicator	348-349	
Toll Rating Point	350-359	
Toll Charge	360-369	
System Reserved Filler	370-370	
Toll State/Province Taxes	371-380	
System Reserved Filler	381-381	
Toll Local Taxes	382-391	
System Reserved Filler	392-392	

Continued on next page

FIELD NAME	POSITION	Description
Toll Network Carrier ID	393-397	
Local Carrier Reserved	398-472	
System Reserved Filler	473-547	

6.4 CIBER 32 Record

Field	Position	Description
Record Type	1-2	
Return Code	3-3	
CIBER Record Return Reason Code	4-5	
Invalid Field Identifier	6-8	
Home Carrier SID/BID	9-13	
MSID Indicator	14-14	
MSID	15-29	
MSISDN/MDN Length	30-31	
MSISDN/MDN	32-46	
ESN/UIMID/IMEI/MEID Indicator	47-47	
ESN/UIMID/IMEI/MEID	48-66	
Serving Carrier SID/BID	67-71	
Total Charges and Taxes	72-81	
System Reserved Filler	82-82	
Total State/Province Taxes	83-92	
System Reserved Filler	93-93	
Total Local Taxes	94-103	
System Reserved Filler	104-104	
Call Date	105-110	
Call Direction	111-111	
Call Completion Indicator	112-112	
Call Termination Indicator	113-113	
Caller ID Length	114-115	
Caller ID	116-130	
Called Number Length	131-132	
Called Number Digits	133-147	
Location Routing Number Length Indicator	148-149	
Location Routing Number	150-164	
TLDN Length	165-166	
TLDN	167-181	
Currency Type	182-183	
System Reserved Filler	184-185	
Original Batch Sequence Number	186-188	
Initial Cell Site	189-199	
Time Zone Indicator	200-201	
Daylight Savings Indicator	202-202	
Message Accounting Digits	203-212	
Charge No. 1 Indicator	213-214	
Charge No. 1 Connect Time	215-220	
Charge No. 1 Chargeable Time	221-226	
Charge No. 1 Elapsed Time	227-232	
Charge No. 1 Rate Period	233-234	
Charge No. 1 Multi-Rate Period	235-235	
Charge No. 1 Tax/Surcharge Indicator	236-236	
Charge No. 1	237-246	
System Reserved Filler	247-247	
Charge No. 2 Indicator	248-249	
Charge No. 2 Connect Time	250-255	
Charge No. 2 Chargeable Time	256-261	
Charge No. 2 Elapsed TIme	262-267	
Charge No. 2 Rate Period	268-269	

Continued on next page

Field	Position	Description
Charge No. 2 Multi-Rate Period	270-270	
Charge No. 2 Tax/Surcharge Indicator	271-271	
Charge No. 2	272-281	
System Reserved Filler	282-282	
Charge No. 3 Indicator	283-284	
Charge No. 3 Connect Time	285-290	
Charge No. 3 Chargeable Time	291-296	
Charge No. 3 Elapsed Time	297-302	
Charge No. 3 Rate Period	303-304	
Charge No. 3 Multi-Rate Period	305-305	
Charge No. 3 Tax/Surcharge Indicator	306-306	
Charge No. 3	307-316	
System Reserved Filler	317-317	
Charge No. 4 Indicator	318-319	
Charge No. 4 Connect Time	320-325	
Charge No. 4 Chargeable Time	326-331	
Charge No. 4 Elapsed Time	332-337	
Charge No. 4 Rate Period	338-339	
Charge No. 4 Multi-Rate Period	340-340	
Charge No. 4 Tax/Surcharge Indicator	341-341	
Charge No. 4	342-351	
System Reserved Filler	352-352	
Blank Fill Serving Place	353-362	
Serving State/Province	363-364	
Serving Country	365-367	
Special Features Used	368-372	
Other Charge No. 1 Indicator	373-374	
Other Charge No. 1	375-384	
System Reserved Filler	385-385	
System Reserved Filler	386-398	
Printed Call	399-413	
Fraud Indicator	414-415	
Fraud Sub-Indicator	416-416	
Features Used After Handoff Indicator	417-417	
Local Carrier Reserved	418-492	
System Reserved Filler	493-567	

6.5 CIBER 52 Record

FIELD	POSITION	Description
Return Code	3-3	
CIBER Record Return Reason Code	4-5	
Invalid Field Identifier	6-8	
Home Carrier SID/BID	9-13	
MSID Indicator	14-14	
MSID	15-29	
MSISDN/MDN Length	30-31	
MSISDN/MDN	32-46	
ESN/UIMID/IMEI/MEID Indicator	47-47	
ESN/UIMID/IMEI/MEID	48-66	
Serving Carrier SID/BID	67-71	
Total Charges and Taxes	72-81	
System Reserved Filler	82-82	
Total State/Province Taxes	83-92	
System Reserved Filler	93-93	
Total Local Taxes	94-103	
System Reserved Filler	104-104	
OCC Charge/Start Date	105-110	

Continued on next page

FIELD	POSITION	Description
Connect Time	111-116	
OCC End Date	117-122	
OCC Interval Indicator	124-133	
OCC Charge	134-134	
System Reserved Filler	135-159	
OCC Description Currency Type	160-161	
System Reserved Filler	123-123	
Original Batch Sequence Number	164-166	
Initial Cell Site	167-177	
Time Zone Indicator	178-179	
Daylight Savings Indicator	180-180	
Message Accounting Digits	181-190	
Record Use Indicator	191-191	
Serving Place	192-201	
Serving State/Province	202-203	
Serving Country	204-206	
Other Charge No. 1 Indicator	207-208	
Other Charge No. 1	209-218	
System Reserved Filler	219-219	
System Reserved Filler	220-232	
Fraud Indicator	233-234	
Fraud Sub-Indicator	235-235	
Record Create Date	236-241	
System Reserved Filler	220-232	
Fraud Indicator	233-234	
Fraud Sub-Indicator	235-235	
Record Create Date	236-241	

6.6 CIBER 98 Record

FIELD	POSITION	Description
Record Type	1-2	
Batch Creation Date	3-8	
Batch Sequence Number	9-11	
Sending Carrier SID/BID	12-16	
Receiving Carrier SID/BID	17-21	
Total Number Records in Batch	22-25	
Batch Total Charges & Taxes	26-37	
Settlement Period	38-43	
Clearinghouse ID	44-44	
System Reserved Filler	45-49	
Original Total Number of Records	50-53	
Original Total Charges & Taxes	54-65	
System Reserved Filler	66-73	
Currency Type	74-75	
Local Carrier Reserved	76-95	
System Reserved Filler	96-200	

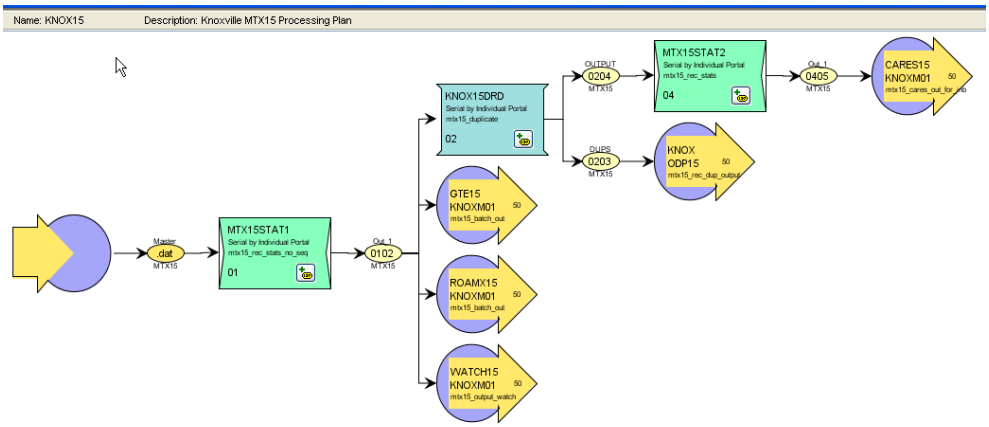
6.7 US Territories

These calls are identified as international but are charged domestic rates.

Country Code	Area Code	ISO Country Code	Description
1	340	VIR	United States Virgin Islands
1	670	MNP	Northern Mariana Islands
1	671	GUM	Guam
1	684	ASM	American Samoa
1	787/939	PRI	Puerto Rico

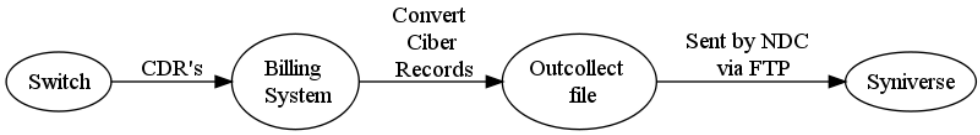
6.8 Interfaces

6.8.1 Roamex/Fraudex



- **Business Process -** Mediation
- **Type -** Batch
- **Category -** Batch Redesign
- **Service -** On all **Nortel** switches switch records are copied to **mad1rom1**. Then through out the day **Syniverse** comes in and finds all the roaming records and runs it against there **Fraudx** application to find evidence of fraud.
- **Thoughts and other random musings**
  For the most part the process is a black box and everything is handled by **Syniverse**. The file that is sent is raw switch data and at this time only **NTI (Nortel)** is supported. For all NDC processes the source, compilation and processing occur on the NDC machines where the base language is C.
- **Questions**
  - ☐ What are the names of the NDC machines.
  - ☐ Where is the source code kept.
- **Contacts**
  - Kyle Matte
  - Roberto Amezcua

6.8.2 OutCollects



- **Business Process -** Mediation
- **Type -** Batch

- **Category -** Batch Redesign
- **Service -** Send OutCollect data to **Syniverse**.
- **Process Flow**
  1. Switch records are passed through the billing system and any record that does not belong to a customer gets placed into a file.
  2. Twice a day the *Ciber_Create* job is run which takes these files and converts them to CIBER records.
  3. Five times a day **NDC** starts a job which sends these files to **Syniverse**.
  4. It also when it looks for CIBER files coming back from **Syniverse** of our customers who are roaming on other networks.
- **Thoughts and other random musings**
  A pretty simple batch interface it is here where we can use the new batch standards to make sure the transfer is complete.
- **Contacts**
  - Kyle Matte
  - Roberto Amezcua

6.9 CIBERNET - Specification/Reference

https://www.one1clear.net/mxp/Login.asp

- Mobile-X Code: USA-MPS-0001
- Login: Skeup/SyFAGh

```
<\\chil-data1\Share\Common\TOPS\outcollects>
```

7 Unified File Format (UFF)

In **TOPs** system all **CDRs**, excluding **InCollect/OutCollect CIBER**, will be reformatted into a *Unified File Format* (**UFF**). This format will be a standard **Unix/ASCII** formatted **CSV** file using '|' **(pipe)** as the delimiter.

7.1 UFF File Record Format

Field	Field Name	Description
1	Record Type	HR - Header Record DR - Data Record TR - Trailer Record
2	Service Type	Initial record type of Usage Record **MOT, PTX, ALU, QIS, AAA, TPC, APLX, NTI, PMG, PGW**
3	Record sequence Number	A unique numeric identifier for the record.
4	File Number	A unique identifier that shows the original file that the record came in from. *(ex. ID044803)*
5	Record Disposition	The disposition shows the destination of the record in the Mediation process. 0 = Rated 1 = Dropped 2 = Error
6	Record Code	The Drop or Error code. The drop and error codes will be defined using present day **AMDOCS** codes as a template. (presently a 3 digit integer but will bump to 5 for extra growth)
7	Source System	Switch identifier (See Switch Name and type tab for a complete listing) (Possible Voice values include: madi, scha etc.) (Data values can include aaa1, vali etc.
8	Start Date	Start date for this event {YYYYMMDD}
9	Start Time	Start Time for this event {HHMMSSss}
10	Start TimeZone	Offset in seconds from **GMT**
11	Home Sid	Home Switch ID
12	Serve SID	Serving Switch ID
13	Originating Cell Trunk	Initial cell trunk
14	Terminating Cell Trunk	Termination Cell trunk
15	BSID	Broadcast Station ID
16	Carrier ID	The carrier that handled the events identification symbol. Mostly USCC but may contain others especially in data roaming situations.
17	Protocol	**EVDO, LTE, CDMA**
18	Event Type	**QIS** event type used for reporting and drop logic
19	Call Direction	One of two types: **Mobile Originating (MO)** or **Mobile Terminating (MT)**.
20	Originating MSID	10-Digit Mobile Identification Number 16 digits for possible future use/Blanks if mobile terminated
21	Identity	MEID/ESN
22	Originating MDN	In a Mobile Originating call It's the originating callers phone number.
23	Originating Address	IP or Email
24	Terminating MSID	Called MSID this is on Mobile to Mobile records only.
25	Terminating Number	Normalized number *(example 6085551212 instead of 411*
26	Dialed Digits	The untranslated dialed number *(e.g. 441 instead of 555-1212)*
27	Terminating Address	IP Address/Email Name Client IP for **PMG**
28	Termination Code	**SMS.CALL_TERMINATION_CODE**
29	Service Feature	MPS Service feature codes
30	Call Forwarding Ind	If the call has been forwarded than true, false otherwise. 0 = False 1 = True

Continued on next page

Field	Field Name	Description
31	Call Delivery Ind	If the call has been through call delivery than true, false otherwise 0 = False 1 = True 2 = CDLX
32	Call Waiting Ind	If the call has been through call waiting than true, false otherwise 0 = False 1 = True
33	3 way Calling Ind	If the call has been through 3 way calling, false otherwise 0 = False 1 = True
34	Call Answered Ind	If the call has been answered than true, false otherwise. 0 = False 1 = True
35	Ring Time	Total ring time in seconds
36	Call Duration	Call duration minus ring-time in seconds. Includes the duration in seconds of the data session
37	Roaming Ind	Data roaming indicator 0 = False 1 = True
38	Session ID	Primary Key for AAA, Transaction ID for PSMS AAA.SESSION_ID <= 64 Chars PSMS.TRANS_ID <= 50 Chars QIS.EVENT_ID <= 50 chars Used to find the charge code
39	Session Type	For QIS 0 = Charge (only) For PSMS there are two possible values: 0 = Charge 1 = Adjustment For **PTX** and **SMS** we can have the following values: **SMSTXT and SMSEMIL**
40	Bytes In	Total of incoming bytes associated this event can also be negative. Using this field and the "Bytes Out" field we can derive the total bytes.
41	Bytes Out	Total of outgoing bytes associated with this event contains a signed byte (+-) Using this field and the "Bytes In" field we can derive the total bytes.
42	Application ID	QIS = Part ID AAA = AppID PSMS = Short Code
43	Application Type	QIS = (Download or Subscription) PSMS = (One-Off or Subscription)
44	Application Name	
45	Purchase Category Code	Used by PSMS
46	Application Description	Will be used for both QIS and PSMS for QIS it will come from the AE field directly on the record for PSMS it will be a combination of the <short code> <description> <content provider> if it is a "Subscription", "Subscription -" is displayed. If it is a one-off, it is not presented in the invoice line item.
47	Content Amount	Combines Pre-rated usage amount for QIS and PSMS
48	Orig_trans_ID	Orig Trans ID PSMS.TRANS_ID
49	Network Flag	Used by QIS to calculate the charge code. 0 = not a 1 = is a network application.. Default is 0
50	Femto-cell-ringtime	Will not be needed until after **TOPS** implementation
51	Femto-cell-ringpluse	Will not be needed until after **TOPS** implementation
52	LTE Handoff	This maybe needed after the move to LTE, so is just used as a placeholder
53	Market/Sub-market	The Market and Sub-market for a customer this can also be blank. This field is populated by using a MSID against the MIN_LR
54	Originating IMSI	The IMSI assigned to the SIM card originating a LTE or eHRPD data session. This can be a routing parameter

Continued on next page

Field	Field Name	Description
		for LTE or eHRPD traffic.
55	Adjustment Reason Code	The Adjustment Reason Code for a PSMS adjustment
56	External Reference ID	The External Reference ID for a PSMS record
57	Partner ID	The Partner ID for PSMS record
58	Campaign ID	The Campaign ID for a PSMS record
59	Initiator Type	The Initiator Type for PSMS record
60	Initiator ID	The Initiator ID for PSMS record

7.2 Header

Field	Field Name	Description	Data Type
1	Record Type	The record type for Header is HR	4 character alpha-numeric
2	File Number	file Identifier A unique identifier that shows the original file that the record name in from. (ex. ID044803)	alpha-numeric <= 24 chars and have the pattern IDxxxxxxx.. Where xxxx is a number that's no greater then 16 char
3	Source System	Switch identifier (See Switch Name and type tab for a complete listing) (Possible Voice values include: madi, scha etc.) (Data values can include aaa1, vali etc.	alpha-numeric <= 16 characters
4	Start Date	Start date of file creation {YYYYMMDD}	Event Date YYYYMMDD 1900 <= YYYY <=9999 01 <= MM <= 12 01 <= DD <= 31
5	Start Time	Start Time for file creation {HHMMSSss}	Switch Time HHMMSSss 00 <= HH <= 23 00 <= MM <= 59 00 <= SS <= 59 00 <= ss <= 59

7.3 Trailer

Field	Field Name	Description	Data Type
1	Record Type	The record type for Trailer is TR	4 character alpha-numeric
2	File Number	File Identifier A unique identifier that shows the original file that the record came in from. (ex. ID044803)	alpha-numeric <= 24 chars and have the pattern IDxxxxxxx.. Where xxxx is a number that's no greater then 16 char
3	Source System	Switch identifier (See Switch Name and type tab for a complete listing) (Data values can include aaa1, vali etc.	alpha-numeric <= 16 chars
4	End Date	End date of file creation {YYYYMMDD}	Event Date YYYYMMDD 1900 <= YYYY <=9999 01 <= MM <= 12 01 <= DD <= 31
5	End Time	End Time of file creation {HHMMSSss}	Switch Time HHMMSSss 00 <= HH <= 23 00 <= MM <= 59 00 <= SS <= 59 00 <= ss <= 59
6	Total Records	Total number of records in this file	numeric <= 100000000 (Including Header and trailers)

7.4 Service Feature Codes

Description	Code
(NTI Only) - Automatic Roaming	ARM
Call Delivery Interconnect	CDLX
Call Forward Immediate	CFW
Call Forward Busy	CFB
Call Forward No Answer Transfer	CFWTRN
(NTI Only) - Calls to/from hotline	HT
(NTI Only) -Inter system hand-off	ISH
Operator assisted call	OPA
(NTI Only) - Vertical feature flag	VFF
Voice-mail delivery	VMD
Voice-mail retrieval	VMR
Caller ID Restriction (ID block)	CIR

7.5 Drop Reason Codes

See the Drop Reasons Code spreadsheet

8 Databases

USERNAME	PASSWORD	DB_INSTANCE	Description
PRDAFC	con8af8	PRDAF	Reference Tables
PRDCUSTC	con8cst8	PRDCUST	Customer
PRDRPLC	con8rpl8	PRDRPL	Replenishment Manager
PRDOPRC	con8opr8	PRDCUST	Operations
PRDUSG1C	con8usg18	PRDUSG1	Usage
PRDUSG2C	con8usg28	PRDUSG2	Usage
PRDUSG3C	con8usg38	PRDUSG3	Usage
PRDUSG4C	con8usg48	PRDUSG4	Usage

8.1 Usage DB by cycle

CycleCode	Database	Description
2	PRDUSG1	General Cycle close on the 1st
4	PRDUSG4	General Cycle close on the 3rd
6	PRDUSG4	General Cycle close on the 5th
8	PRDUSG1	General Cycle close on the 7th
10	PRDUSG3	General Cycle close on the 9th
12	PRDUSG2	General Cycle close on the 11th
14	PRDUSG4	General Cycle close on the 13th
16	PRDUSG3	General Cycle close on the 15th
18	PRDUSG2	General Cycle close on the 17th
20	PRDUSG1	General Cycle close on the 19th
22	PRDUSG2	General Cycle close on the 21st
24	PRDUSG3	General Cycle close on the 23rd
26	PRDUSG4	General Cycle close on the 25th
28	PRDUSG3	General Cycle close on the 27th
77	PRDUSG1	Dropped events cycle
80	PRDUSG3	Rejected events cycle
99	PRDUSG2	Reserved for OutCollect Cycle close on the 31th
1002	PRDUSG2	Reseller Cycle close on the 1st
1004	PRDUSG1	Reseller Cycle close on the 3rd
1006	PRDUSG1	Reseller Cycle close on the 5th
1008	PRDUSG3	Reseller Cycle close on the 7th
1010	PRDUSG2	Reseller Cycle close on the 9th
1012	PRDUSG4	Reseller Cycle close on the 11th
1014	PRDUSG1	Reseller Cycle close on the 13th
1016	PRDUSG2	Reseller Cycle close on the 15th
1018	PRDUSG4	Reseller Cycle close on the 17th
1020	PRDUSG3	Reseller Cycle close on the 19th
1022	PRDUSG3	Reseller Cycle close on the 21st
1024	PRDUSG1	Reseller Cycle close on the 23rd
1026	PRDUSG4	Reseller Cycle close on the 25th
1028	PRDUSG2	Reseller Cycle close on the 27th

8.2 DB Preparation

For each DB instance, except ODS and SIT, You need to alter the session before you can use it.
For example for usage 1 type

```
ALTER SESSION SET CURRENT_SCHEMA=PRDUSG1C
```

8.3 Production Database Tables

Table Name	Database*	Description
AC1_CONTROL	PRDCUST	Check both PRDCUST
AC1_CONTROL_HIST	PRDAF	and PRDAF
SERVICE_AGREEMENT	PRDCUST	
CSM_OFFER	PRDCUST	
SUBSCRIBER	PRDCUST	
CM1_AGREEMENT_PARAM	PRDCUST	Used for data cap issues.
APE1_RATED_EVENT	PRDUSG(1-4)	
APE1_REJECTED_EVENT	PRDUSG(1-4)	
APE1_ACCUMULATORS	PRDUSG(1-4)	
AC_PHYSICAL_FILES	PRDUSG(1-4)	
AC_SOURCE	PRDCUST	
AGD1_RESOURCES	PRDAF	
ADJ1_CYCLE_STATE		
APR1_NOTIFICATIONS_CTL		
AUH1_CTRL		
APE1_SUBSCRIBER_RERATE	PRDUSG(1-4)	
APE1_SUBSCR_DATA	PRDUSG(1-4)	*See the BPT*
APE1_SUBSCR_OFFERS	PRDUSG(1-4)	*for the definition*
APE1_SUBSCR_PARAMS	PRDUSG(1-4)	*of these tables*
APE1_CUST_CYCLE_HISTORY	PRDUSG(1-4)	
APE3_EPCEXT_OFFER_DETAILS	PRDCUST	

8.3.1 CM1_AGREEMENT_PARAM

In the PRDCUST database used for data cap and overage protection investigations.

Name	Data Type	Description
AGREEMENT_KEY	NUMBER (9)	
AGREEMENT_NO	NUMBER (10)	Is equal to the subscriber number
PARAM_SEQ_NO	NUMBER (10)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER (9)	
APPLICATION_ID	CHAR (6 Byte)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
PARAM_NAME	VARCHAR2 (255 Byte)	
PARAM_VALUES	VARCHAR2 (4000 Byte)	
EFFECTIVE_DATE	DATE	
EXPIRATION_DATE	DATE	
AGR_LEVEL	CHAR (1 Byte)	
SOURCE_AGR_NO	NUMBER (10)	
TRX_ID	NUMBER (10)	
INS_TRX_ID	NUMBER (10)	
EFF_ISSUE_DATE	DATE	
EXP_ISSUE_DATE	DATE	
CONV_RUN_NO	NUMBER (10)	
OFFER_INSTANCE_ID	NUMBER (10)	

8.3.2 AC1_CONTROL (-HIST)

Similar to **ac_processing_accounting** there are two tables with the same name but in different databases, **PRDAF** (Usage) and **PRDCUST** (AR).

Column Name	Data Type	Description
IDENTIFIER	NUMBER(15,0)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
FILE_NAME	VARCHAR2(200 BYTE)	
FILE_PATH	VARCHAR2(512 BYTE)	
FILE_SEQ_NO	NUMBER(6,0)	
HOST_NAME	VARCHAR2(50 BYTE)	
DATA_GROUP	VARCHAR2(64 BYTE)	
FILE_CREATE_DATE	DATE	

Continued on next page

Column Name	Data Type	Description
FILE_STATUS	VARCHAR2(2 BYTE)	
ORIGIN_FILE_IDENT	NUMBER(15,0)	
PHY_FILE_IDENT	NUMBER(15,0)	
CUR_PGM_NAME	VARCHAR2(32 BYTE)	
CUR_FILE_ALIAS	VARCHAR2(10 BYTE)	
NXT_PGM_NAME	VARCHAR2(32 BYTE)	
NXT_FILE_ALIAS	VARCHAR2(10 BYTE)	
FILE_FORMAT	VARCHAR2(10 BYTE)	
FILE_GROUP	CHAR(1 BYTE)	
FILE_TYPE	CHAR(2 BYTE)	
REPRO_IND	CHAR(1 BYTE)	
SOURCE_TYPE	CHAR(10 BYTE)	
SOURCE_FILE_TYPE	CHAR(10 BYTE)	
FILE_DELETED_IND	CHAR(1 BYTE)	
SYSTEM_ID	CHAR(5 BYTE)	
ABP_VAR	VARCHAR2(512 BYTE)	
PRIORITY	CHAR(1 BYTE)	
WR_REC_QUANTITY	NUMBER(9,0)	
WR_TIME_QUANTITY	NUMBER(13,2)	
WR_MONEY_QUANTITY	NUMBER(13,2)	
WR_EURO_QUANTITY	NUMBER(13,2)	
IN_REC_QUANTITY	NUMBER(9,0)	
IN_TIME_QUANTITY	NUMBER(13,2)	
IN_MONEY_QUANTITY	NUMBER(13,2)	
IN_EURO_QUANTITY	NUMBER(13,2)	
GN_REC_QUANTITY	NUMBER(9,0)	
GN_TIME_QUANTITY	NUMBER(13,2)	
GN_MONEY_QUANTITY	NUMBER(13,2)	
GN_EURO_QUANTITY	NUMBER(13,2)	
DR_REC_QUANTITY	NUMBER(9,0)	
DR_TIME_QUANTITY	NUMBER(13,2)	
DR_MONEY_QUANTITY	NUMBER(13,2)	
DR_EURO_QUANTITY	NUMBER(13,2)	
PROCESSED_REC_NO	NUMBER(9,0)	
REJECTED_REASON_CD	CHAR(3 BYTE)	
OWNER_NAME	VARCHAR2(50 BYTE)	
TABLE_ALIAS	NUMBER(5,0)	
NXT_PROCESS_ID	NUMBER(9,0)	
NXT_PROCESS_START_TIME	DATE	
CUR_PROCESS_ID	NUMBER(9,0)	
MAX_EVENT_TIME	DATE	
LOGICAL_FILE_IDENT	NUMBER(15,0)	
TABLE_ISSUE_CODE	NUMBER(9,0)	
EXTERNAL_ID	VARCHAR2(32 BYTE)	
DEST_ROUT_CRTRIA	VARCHAR2(24 BYTE)	
STATUS_CATEGORY	VARCHAR2(20 BYTE)	
STATUS_CODE	VARCHAR2(200 BYTE)	
APPLICATION_CODE	VARCHAR2(50 BYTE)	
FILE_SIZE	NUMBER(15,0)	
RECYCLE_COUNTER	NUMBER(15,0)	
GROUP_SEQUENCE	NUMBER(15,0)	
OUT_REQ_QUANTITY	NUMBER(9,0)	
BULK_ID	NUMBER(9,0)	
STORE_MODE	CHAR(2 BYTE)	
SESSION_ID	NUMBER(15,0)	
TARGET_FILE_PATH	VARCHAR2(512 BYTE)	
TARGET_HOST	VARCHAR2(50 BYTE)	
EXT_IDENTIFIER	NUMBER(9,0)	
EXT_ORIG_IDENT	NUMBER(9,0)	
ADDITIONAL_ATTR	VARCHAR2(300 BYTE)	
GROUP_SIZE	NUMBER(4,0)	
MONITOR_DATA	VARCHAR2(50 BYTE)	
WR_VOLUME_QUANTITY	NUMBER(15,2)	
IN_VOLUME_QUANTITY	NUMBER(15,2)	
GN_VOLUME_QUANTITY	NUMBER(15,2)	
DR_VOLUME_QUANTITY	NUMBER(15,2)	
END_PROCESS_TIME	DATE	
FR_TIME	DATE	
ENG_PRIORITY	NUMBER(1,0)	

8.3.3 APE1_RATED_EVENT

Where all the rateable events are contained. Most data inquires usually wind up here.

Column Name	Data Type	Description
CYCLE_CODE	NUMBER (4)	See usage DB by Cycle for complete list.
CYCLE_INSTANCE	NUMBER (2)	cycle month
CUSTOMER_SEGMENT	NUMBER (4)	
CUSTOMER_ID	NUMBER (10)	
EVENT_ID	NUMBER (18)	
SUBSCRIBER_ID	NUMBER (10)	
START_TIME	DATE	
EVENT_TYPE_ID	NUMBER (9)	The event type Voice - 62 Data - 51 LTE - 69 SMS - 54 MMS - 60 *See wiki table for complete list*
TARGET_CYCLE_CODE	NUMBER (4)	
CYCLE_YEAR	NUMBER (4)	
BILLING_ARRANGEMENT	NUMBER (18)	
SOURCE_ID	NUMBER (15)	
EVENT_STATE	CHAR (1 Byte)	
EVENT_STATE_REASON_CODE	CHAR (5 Byte)	
RERATE_TYPE	CHAR (1 Byte)	
ORIGINAL_EVENT_ID	NUMBER (18)	
RESOURCE_VALUE	VARCHAR2 (63 Byte)	
RESOURCE_TYPE	VARCHAR2 (16 Byte)	0 - MDN 19 - MIN 21 - OutCollects 23 - imsi
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER (9)	
APPLICATION_ID	CHAR (6 Byte)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
UPDATE_ID	NUMBER (9)	
VERSION_ID	NUMBER (9)	
NETWORK_START_TIME	DATE	
EVENT_STATUS	CHAR (1 Byte)	
EVENT_COUNTERS	NUMBER (20)	
TOKEN_ID	NUMBER (20)	
L3_ACCOUNT	NUMBER	
L3_ADDITIONAL_CHG_AMT	NUMBER	
L3_AIRTIME_CHG_AMT	NUMBER	
L3_BASIC_SERVICE_CODE	VARCHAR2 (2 Byte)	
L3_CALLING_COUNTRY_CODE	VARCHAR2 (3 Byte)	
L3_CALL_CATEGORY	VARCHAR2 (1 Byte)	Volte = 'V'
L3_CALL_DIRECTION	VARCHAR2 (1 Byte)	1 = incoming 2 = outgoing
L3_CALL_SOURCE	VARCHAR2 (4 Byte)	
L3_CHARGE_AMOUNT	NUMBER	The amount charged
L3_CHARGE_CODE	VARCHAR2 (15 Byte)	
L3_CHG_AMT_INC_FREE_ALLOW	NUMBER	
L3_CUSTOMER_OFFER_CURRENCY	VARCHAR2 (3 Byte)	
L3_DISCOUNT_AMOUNT	NUMBER	
L3_DURATION	NUMBER	
L3_IMSI	VARCHAR2 (15 Byte)	
L3_OFFER_ID	NUMBER	The price plan the event was rated against.
L3_ORIGINAL_CHARGE_AMOUNT	NUMBER	
L3_PAYMENT_CATEGORY	VARCHAR2 (4 Byte)	
L3_PAY_CHANNEL	NUMBER	
L3_PHYSICAL_FILE_ID	NUMBER	
L3_PRICING_ITEM_ID	NUMBER	
L3_ROUNDED_UNIT	NUMBER	
L3_SPECIAL_NUMBER_GROUP	VARCHAR2 (10 Byte)	
L3_STARTING_PERIOD	VARCHAR2 (10 Byte)	

Continued on next page

Column Name	Data Type	Description
L3_TARGET_CUSTOMER_ID	NUMBER	
L3_UNAPPLIED_AMOUNT	NUMBER	
L3_UOM	VARCHAR2 (1 Byte)	
L3_VOLUME	NUMBER	
SERVICE_FILTER	VARCHAR2 (15 Byte)	
L9_CALL_TAX_INDICATOR	VARCHAR2 (2 Byte)	
L9_ORIGINATING_CELL_ID	VARCHAR2 (16 Byte)	
L9_NUMBER_OF_RECIPIENTS	NUMBER	
L9_CROSS_TOLL_PERIOD_IND	VARCHAR2 (1 Byte)	
L9_CHARGE_TYPE	VARCHAR2 (4 Byte)	
L9_FILE_NUMBER	VARCHAR2 (24 Byte)	
L9_AIR_TAX	NUMBER	
L9_SURCHARGE_INDICATOR	VARCHAR2 (1 Byte)	
L9_SPECIAL_FEATURES_USED	VARCHAR2 (2 Byte)	
L9_ORIGINAL_TOLL_CHARGE	NUMBER	
L9_CALLED_NUMBER	VARCHAR2 (256 Byte)	
L9_ORIGINATING_CATEGORY	VARCHAR2 (6 Byte)	
L9_VOLUME_TYPE	VARCHAR2 (2 Byte)	
L9_TOLL_TYPE_INDICATOR	VARCHAR2 (2 Byte)	
L9_ORIGINAL_ADD_CHRG_AMT	NUMBER	
L9_TERMINATION_REASON	VARCHAR2 (8 Byte)	
L9_TOLL_CHRG_AMT_INC_ALWNCE	NUMBER	
L9_AIR_RERATE_IND	VARCHAR2 (1 Byte)	
L9_NETWORK_FLAG	VARCHAR2 (1 Byte)	
L9_CALLED_PLACE	VARCHAR2 (10 Byte)	
L9_SURCHARGE_TYPE	VARCHAR2 (1 Byte)	
L9_SPECIAL_NUMBER_TYPE	VARCHAR2 (32 Byte)	
L9_PERIOD_NAME	VARCHAR2 (10 Byte)	
L9_CORRELATION_ID	VARCHAR2 (14 Byte)	
L9_ADDITIONAL_RATE_OFFER_ID	NUMBER	
L9_CROSS_PERIOD_IND	VARCHAR2 (1 Byte)	
L9_PRICE_PLAN_OFFER_ID	NUMBER	
L9_TOLL_RERATE_IND	VARCHAR2 (1 Byte)	
L9_SERVING_PLACE	VARCHAR2 (26 Byte)	
L9_ORIGINAL_TAX	NUMBER	
L9_TOLL_OFFER_INSTANCE	NUMBER	
L9_TERMINATING_CELL_ID	VARCHAR2 (16 Byte)	
L9_VISITOR_INDICATOR	VARCHAR2 (1 Byte)	
L9_BAND_CODE	VARCHAR2 (1 Byte)	
L9_VALIDITY_TIME	NUMBER	
L9_TOLL_OFFER_ID	NUMBER	
L9_ROUNDED_TOLL_DURATION	NUMBER	
L9_CARRIER_ID	VARCHAR2 (16 Byte)	
L9_SPECIAL_NUMBER	VARCHAR2 (32 Byte)	
L9_TOLL_CHARGE_AMOUNT	NUMBER	
L9_TOLL_DURATION	NUMBER	
L9_AIR_TIME_IND	VARCHAR2 (1 Byte)	
L9_EVENT_TYPE_NAME	VARCHAR2 (50 Byte)	
L9_RECORD_SEQUENCE_NUMBER	NUMBER	
L9_SERVE_SID	VARCHAR2 (5 Byte)	
L9_DOWNLINK_VOLUME	NUMBER	
L9_CALLING_NUMBER	VARCHAR2 (256 Byte)	
L9_CALL_COMPLETION_CODE	NUMBER	
L9_UPLINK_VOLUME	NUMBER	
L9_DIALED_DIGITS	VARCHAR2 (32 Byte)	
L9_TOLL_RATE_CLASS	VARCHAR2 (1 Byte)	
L9_EHA_INDICATOR	VARCHAR2 (1 Byte)	
L9_RING_TIME	NUMBER	
L9_TOLL_TAX	NUMBER	
L9_CURRENCY_TYPE	VARCHAR2 (2 Byte)	
L9_CALLING_STATE	VARCHAR2 (2 Byte)	
L9_TOLL_ITEM_ID	NUMBER	
L9_CUSTOMER_SUB_TYPE	VARCHAR2 (15 Byte)	
L9_APPLICATION_ID	VARCHAR2 (64 Byte)	Used for Brew
L9_ORIG_TRANS_ID	VARCHAR2 (64 Byte)	
L9_CALL_ANSWERED_INDICATOR	VARCHAR2 (1 Byte)	
L9_DESTINATION_CATEGORY	VARCHAR2 (6 Byte)	
L9_SURCHARGE_AMOUNT	NUMBER	
L9_DESTINATION_STATE_CODE	VARCHAR2 (2 Byte)	
L9_REDIRECT_NUMBER	VARCHAR2 (32 Byte)	
L9_TOLL_CHARGE_CODE	VARCHAR2 (15 Byte)	
L9_CUSTOMER_TYPE	VARCHAR2 (1 Byte)	
L9_HOME_SID	VARCHAR2 (5 Byte)	
L9_STARTING_CALL_TOLL_PERIOD	VARCHAR2 (10 Byte)	

Continued on next page

Column Name	Data Type	Description
L9_CALLED_COUNTRY	VARCHAR2 (3 Byte)	
L9_AIR_ELAPSED_TIME	NUMBER	
L9_ORIGINATING_ADDRESS	VARCHAR2 (26 Byte)	Orig Address from UFF
L9_ADDITIONAL_CHARGE_TAX	NUMBER	
L9_DESTINATION_CITY_NAME	VARCHAR2 (30 Byte)	
L9_MEDIA_TYPE	VARCHAR2 (1 Byte)	
L9_TOLL_PERIOD_NAME	VARCHAR2 (10 Byte)	
L9_CALL_TYPE	VARCHAR2 (1 Byte)	1 = International L= Local (SMS Only)
L9_RERATE_INDICATOR	VARCHAR2 (1 Byte)	
L9_NT_ROAMING_IND	VARCHAR2 (1 Byte)	
L9_OFFER_INSTANCE	NUMBER	
L9_DAILY_SURCHARGE_IND	VARCHAR2 (1 Byte)	
L9_INCOLLECT_INDICATOR	VARCHAR2 (1 Byte)	If true then its an InCollect.
L9_SESSION_IDENTIFIER	VARCHAR2 (128 Byte)	
L9_FREE_UNIT	NUMBER	
L9_EXT_TRX_ID	VARCHAR2 (18 Byte)	
L9_ROAMING_IND	VARCHAR2 (1 Byte)	Used for Data 2 = Roaming
L9_BALANCE_EXP_DATE	DATE	
L9_ORIG_ADDITIONAL_CHG_TAX	NUMBER	
L9_METHOD	VARCHAR2 (50 Byte)	
L9_RECHARGE_ID	NUMBER	
L9_ANNOUNCEMENT_PARAM	VARCHAR2 (50 Byte)	
L9_REASON	VARCHAR2 (10 Byte)	
L9_ACTIVITY_AMOUNT	NUMBER	
L9_CHANNEL	VARCHAR2 (100 Byte)	
L9_BLOCKED_NUMBER_IND	VARCHAR2 (1 Byte)	
L9_REMAINING_BALANCE_AMT	NUMBER	
L9_MIN	VARCHAR2 (10 Byte)	MSID
L9_EQUIPMENT_ID	VARCHAR2 (32 Byte)	PostPaid = ESN PrePaid = 0
L9_THRESHOLD_AMOUNT	NUMBER	
L9_SERVICE_FEATURE	VARCHAR2 (128 Byte)	
L9_ORIGINAL_AIR_TIME_CHG_AMT	NUMBER	
L9_BE	NUMBER	
L9_CHARG_BEYOND_CAP	NUMBER	
L9_IS_ONLINE	VARCHAR2 (1 Byte)	Y = **Pre-Pay**
L9_VOLUME_PER_TYPE	VARCHAR2 (512 Byte)	
L9_UNITS_BEYOND_CAP	NUMBER	
L9_VOLUME_COMPLEX	VARCHAR2 (512 Byte)	
L9_M2M_IND	VARCHAR2 (2 Byte)	Mobile to Mobile
L9_BALANCE_AMOUNT	NUMBER	
L9_CALLING_AREA_NAME	VARCHAR2 (50 Byte)	
L9_TOLL_FREE_IND	VARCHAR2 (1 Byte)	Y = Toll Free
L9_PARTNER_ID	VARCHAR2 (64 Byte)	
L9_EXT_REF_ID	VARCHAR2 (64 Byte)	
L9_CAMPAIGN_ID	VARCHAR2 (64 Byte)	
L9_APPLICATION_TYPE	VARCHAR2 (64 Byte)	
L9_APPLICATION_DESCRIPTION	VARCHAR2 (193 Byte)	
L9_CHARGE_CODE_DESCRIPTION	VARCHAR2 (193 Byte)	
L9_SYSTEM_SERVICE	VARCHAR2 (4 Byte)	
L9_INITIATOR_ID	VARCHAR2 (64 Byte)	
L9_ADJ_REASON_CD	VARCHAR2 (64 Byte)	
L9_INITIATOR_TYPE	VARCHAR2 (19 Byte)	

8.3.4 APE1_ACCUMULATORS

The accumulation tables this is what is presented on the bill.

Column Name	Data Type	Description
CYCLE_CODE	NUMBER(4,0)	
CYCLE_INSTANCE	NUMBER(2,0)	
CUSTOMER_SEGMENT	NUMBER(4,0)	
CUSTOMER_ID	NUMBER(10,0)	
ACCUM_TYPE_ID	NUMBER(9,0)	
OWNER_ID	NUMBER(10,0)	
OWNER_TYPE	CHAR(1 BYTE)	
ITEM_ID	NUMBER(9,0)	
OFFER_INSTANCE	NUMBER(10,0)	
DIMENSION_ID	NUMBER(5,0)	

Continued on next page

Column Name	Data Type	Description
CYCLE_YEAR	NUMBER(4,0)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
UPDATE_ID	NUMBER(9,0)	
VERSION_ID	NUMBER(9,0)	
GLOBAL_ACCUM_IND	CHAR(1 BYTE)	
CROSS_CYCLE_IND	CHAR(1 BYTE)	
ACCUM_ID	NUMBER(9,0)	
RERATE_TYPE	CHAR(1 BYTE)	
ACCOUNT	NUMBER	
ACCUM_CHARGE	NUMBER	
ACCUM_CHG_INCL_FREE_ALLW	NUMBER	
ACCUM_FREE_UNIT	NUMBER	
ACCUM_UNIT	NUMBER	
BILLING_ARRANGEMENT	NUMBER	
CURRENCY_CODE	VARCHAR2(3 BYTE)	
FIRST_EVENT_DATE	DATE	
L3_BALANCE_AMOUNT	NUMBER	
L3_BALANCE_STATUS	VARCHAR2(1 BYTE)	
LAST_EVENT_DATE	DATE	
NUMBER_OF_EVENTS	NUMBER	
NUMBER_OF_FREE_EVENTS	NUMBER	
NUMBER_OF_ROLLED_CYCLES	NUMBER	
OFFER_ID	NUMBER	
PI_ROLE	NUMBER	
PI_STATUS	NUMBER	
QUOTA	NUMBER	
QUOTA_PER_PERIOD	VARCHAR2(512 BYTE)	
REMAINING_QUOTA_PER_PERIOD	VARCHAR2(512 BYTE)	
REMAIN_QUOTA_PER_MONTH_PERIOD	VARCHAR2(512 BYTE)	
ROLLED_PREVIOUS_CYC_PER_PERIOD	VARCHAR2(512 BYTE)	
ROLLED_QUOTA_FROM_PREVIOUS_CYC	NUMBER	
UOM	VARCHAR2(1 BYTE)	
UTILIZED_QUOTA_PER_PERIOD	VARCHAR2(512 BYTE)	
UTILIZE_QUOTA_PER_MONTH_PERIOD	VARCHAR2(512 BYTE)	
BILLING_RESOURCE_TYPE	VARCHAR2(16 BYTE)	
BILLING_RESOURCE_ID	VARCHAR2(63 BYTE)	
TOLL_TAX	NUMBER	
L9_ACCUM_CHG_INCL_ALLW_CMPLX	VARCHAR2(512 BYTE)	
L9_ACCUM_CREDIT	NUMBER	
L9_ACCUMULATED_CHG_CMPLX	VARCHAR2(512 BYTE)	
L9_OVERAGE_CAP	NUMBER	
L9_ACCUM_FREE_UNIT_CMPLX	VARCHAR2(512 BYTE)	
L9_NUMBER_OF_EVENTS_CMPLX	VARCHAR2(512 BYTE)	
L9_NUMBER_FREE_EVENTS_CMPLX	VARCHAR2(512 BYTE)	
L9_ACCUM_UNIT_CMPLX	VARCHAR2(512 BYTE)	
L9_CAP_EXCEED	VARCHAR2(1 BYTE)	
L9_NUMBER_OF_CREDIT_EVENTS	NUMBER	
AIR_TAX	NUMBER	
L9_TOT_UNITS_ABOVE_CAP	VARCHAR2(512 BYTE)	
ACCUM_DURATION	NUMBER	
L9_CALL_DIRECTION	VARCHAR2(1 BYTE)	
L9_ROAMING_IND	VARCHAR2(1 BYTE)	
L9_TAX_CHANGE_DATE	VARCHAR2(25 BYTE)	
L9_SERVE_SID	VARCHAR2(5 BYTE)	
L9_EHA_INDICATOR	VARCHAR2(1 BYTE)	
L9_PAY_CHANNEL	NUMBER	
L9_CUSTOMER_SUB_TYPE	VARCHAR2(15 BYTE)	
L9_BE	NUMBER	
L9_CUSTOMER_TYPE	VARCHAR2(1 BYTE)	
L9_CALLED_COUNTRY	VARCHAR2(3 BYTE)	
L9_PAYMENT_CATEGORY	VARCHAR2(4 BYTE)	
L9_BILLING_ARRANGEMENT	NUMBER	
L9_VOLUME_ACCUMULATION	NUMBER	
L9_OFFER_LEVEL	VARCHAR2(1 BYTE)	
L9_FULL_CAP	NUMBER	
L9_CHARGE_TYPE	VARCHAR2(3 BYTE)	
L9_PREV_ADD_CHG_CMPLX2	VARCHAR2(512 BYTE)	
L9_PREV_ADD_CHG_CMPLX1	VARCHAR2(512 BYTE)	
L9_PREV_ADD_CHG_CMPLX3	VARCHAR2(512 BYTE)	

Continued on next page

Column Name	Data Type	Description
L9_PREV_ADD_CHG_CMPLX	VARCHAR2(4000 BYTE)	
L9_ACC_USAGE_BEFORE_EOM	NUMBER	
L9_ACC_USAGE_AFTER_EOM	NUMBER	
L9_MSISDN	VARCHAR2(256 BYTE)	
L9_CAP_TO_BE_USED	NUMBER	
L9_CHARGE_CODE	VARCHAR2(15 BYTE)	
L9_OFFER_TYPE	VARCHAR2(255 BYTE)	
L9_ACCUM_CHG_BEYO_CAP_CMPLX	VARCHAR2(512 BYTE)	
L9_CTN	VARCHAR2(10 BYTE)	
L9_MEDIA_TYPE	VARCHAR2(1 BYTE)	
L9_UTILIZED_QUOTA_CMPLX	VARCHAR2(512 BYTE)	
L9_FIRST_THRESHOLD_SENT_IND	VARCHAR2(1 BYTE)	
L9_REMAIN_QUOTA_CMPLX	VARCHAR2(512 BYTE)	
L9_USED_QUOTA	NUMBER	
L9_LAST_THRESHOLD_SENT	NUMBER	
L9_CHARGE_REV_CODE	VARCHAR2(2 BYTE)	
L9_IS_NEW_SCALE	VARCHAR2(1 BYTE)	
L9_IS_FIRST_NOTIF	VARCHAR2(1 BYTE)	
L9_NOTIFIED_CTN	VARCHAR2(32 BYTE)	
L9_UNLIMITED_IND	VARCHAR2(1 BYTE)	
PRORATION_FACTOR	NUMBER	
L9_CURR_LEG	NUMBER	
L9_NUM_OF_PERIOD	NUMBER	
L9_IS_NOTIF_SENT	VARCHAR2(1 BYTE)	
L9_PERIOD_NAME	VARCHAR2(255 BYTE)	
L9_VOLUME_PER_LEG	VARCHAR2(4000 BYTE)	
L9_CYCLE_START_DATE_CMPLX	VARCHAR2(512 BYTE)	
DISABLE_NOTIF_IND	VARCHAR2(1 BYTE)	
L9_NOTIF_ELIG	VARCHAR2(1 BYTE)	
L9_IS_SECOND_NOTIF	VARCHAR2(1 BYTE)	
L9_LIMIT_QUOTA_CHANGE_CMPLX	VARCHAR2(512 BYTE)	
AGR_LEVEL_OFFER_INST	VARCHAR2(512 BYTE)	
L9_LAST_NOTIF_INDEX	NUMBER	
L9_SECOND_NOTIF_THRESH	NUMBER	
OFFER_EXP_DATE	DATE	
L9_SECOND_THRESHOLD	NUMBER	
L9_ACCUM_FREE_UNTS_BEYO_CAP	NUMBER	
OFFER_EFF_DATE	DATE	
L9_FIRST_THRESHOLD	NUMBER	
L9_SECOND_THRESHOLD_SENT_IND	VARCHAR2(1 BYTE)	
L9_LIMIT_QUOTA_CMPLX	VARCHAR2(512 BYTE)	
L9_FIRST_NOTIF_THRESH	NUMBER	
L9_REMAINING_BUCKET	NUMBER	
L9_CLASS_CODE	VARCHAR2(12 BYTE)	
L9_IVR_ANN_CODE	VARCHAR2(50 BYTE)	
L9_ACCUM_ADD_TAX_AMT	NUMBER	
L9_ACCUM_TAX_AMT	NUMBER	
L9_DAYS_OF_DAILY_DATA	NUMBER	
L9_CALLING_AREA_NAME	VARCHAR2(50 BYTE)	
EXPIRATION_DATE	DATE	
L9_DISCLAIMER_SENT	VARCHAR2(1 BYTE)	
L9_IS_ROAM_DATA_SPEED_NOTIF	VARCHAR2(1 BYTE)	
L9_GEOCODE	VARCHAR2(10 BYTE)	
L9_IS_TOTAL_DATA_SPEED_NOTIF	VARCHAR2(1 BYTE)	
L9_ROAM_VOLUME_ACCUMULATION	NUMBER	
L9_ROAM_SPEED_LIMIT	NUMBER	
L9_INDICATOR	VARCHAR2(1 BYTE)	
L9_CHARGE_ACCUMULATION	NUMBER	
L9_PP_CHANGED_IND	VARCHAR2(1 BYTE)	
L9_FIRST_LEVEL	VARCHAR2(512 BYTE)	
L9_GRP_LEVEL_OFFER_INST	NUMBER	
L9_GROUP_OFFER_ID	NUMBER	

8.3.5 AGD1_RESOURCES

Column Name	Data Type	Description
RESOURCE_SEGMENT	NUMBER(4,0)	
RESOURCE_VALUE	VARCHAR2(63 BYTE)	
RESOURCE_TYPE	NUMBER(4,0)	0 - MDN 19 - MIN 21 - OutCollects 23 - TIMSI

Continued on next page

Column Name	Data Type	Description
EFFECTIVE_DATE	DATE	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
UPDATE_ID	NUMBER(18,0)	
EXPIRATION_DATE	DATE	
SUBSCRIBER_ID	NUMBER(10,0)	
SUB_STATUS	CHAR(1 BYTE)	
ROUTING_POLICY_ID	NUMBER(9,0)	
PAYMENT_CATEGORY	CHAR(4 BYTE)	
CUSTOMER_ID	NUMBER(10,0)	
BILL_CYCLE	NUMBER(4,0)	
NEW_BILL_CYCLE	NUMBER(4,0)	
CHG_CYC_REQ_DATE	DATE	
LARGE_CUST_IND	CHAR(1 BYTE)	
RESOURCE_HASH_VALUE	NUMBER(10,0)	
SUBSCRIBER_HASH_VALUE	NUMBER(10,0)	
LOAD_IND	CHAR(1 BYTE)	

- Subscriber Table Status
  - A = Active
  - C = Canceled
  - S = Suspended
  - U = Collection Suspend
  - L = Collection Canceled
  - D = Collection Suspend

8.3.6 AC_PHYSICAL_FILES

Provides information for the physical files that were processed

Column Name	Data Type	Description
IDENTIFIER	NUMBER(15,0)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
FILE_NAME	VARCHAR2(200 BYTE)	
HOST_NAME	VARCHAR2(50 BYTE)	
FILE_PATH	VARCHAR2(512 BYTE)	
SERIAL_NUMBER	VARCHAR2(8 BYTE)	
SYSTEM_RCV_DATE	DATE	
FSRC_SRC_TYPE	CHAR(10 BYTE)	
FSRC_TYPE_ID	CHAR(10 BYTE)	
RCRDNG_START_DATE	DATE	
RCRDNG_END_DATE	DATE	
TRLR_RECORD_COUNT	NUMBER(9,0)	
TRLR_BLOCK_COUNT	NUMBER(9,0)	
TRLR_L_FILE_COUNT	NUMBER(9,0)	
PGM_L_FILE_COUNT	NUMBER(9,0)	
PGM_TRACER_IND	CHAR(1 BYTE)	
DUPL_ENTRY_IND	CHAR(1 BYTE)	
ENTRY_STATUS	CHAR(2 BYTE)	
OLD_AGE_IND	CHAR(1 BYTE)	
END_OF_TREE_SEQ	NUMBER(9,0)	
BALANCE_DATE	DATE	

8.3.7 AC_SOURCE

Column Name	Data Type	Description
SOURCE_TYPE	CHAR(10 BYTE)	
FILE_TYPE	CHAR(10 BYTE)	
SWITCH_ID	VARCHAR2(32 BYTE)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
FILE_SEQ_NO	NUMBER(6,0)	
MAX_FILE_SEQ_NO	NUMBER(6,0)	
MAX_TIME	NUMBER(10,0)	
MIN_TIME	NUMBER(10,0)	
LAST_CYCLE_PROCD	DATE	
NEXT_CYCLE_EXPECT	DATE	
STATUS_IND	CHAR(2 BYTE)	
DUPL_ENTRY_IND	CHAR(1 BYTE)	
HO_FROM_TIME	DATE	
HO_FROM_SEQ	NUMBER(6,0)	
DAYS_BFR_PHY_CLN	NUMBER(4,0)	
GAP_PERMITTED	NUMBER(6,0)	

8.3.8 APE1_SUBSCRIBER_RERATE

Customers in this table are scheduled to be re-rated. Then they should be removed once re-rating is complete.

Column Name	Data Type	Description
CYCLE_CODE	NUMBER (4)	
CYCLE_INSTANCE	NUMBER (2)	
CUSTOMER_SEGMENT	NUMBER (4)	
CUSTOMER_ID	NUMBER (10)	
SUBSCRIBER_ID	NUMBER (10)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER (9)	
APPLICATION_ID	CHAR (6 Byte)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
CYCLE_YEAR	NUMBER (4)	
RERATE_SOURCE	VARCHAR2 (20 Byte)	
MARK_TYPE	NUMBER (1)	
STATUS	CHAR (2 Byte)	
ACTIVITY_SOURCE	VARCHAR2 (20 Byte)	
NUM_OF_RERATE_TRIES	NUMBER (2)	

Once re-rating starts you can check the progress with the following query:

```
select * from ape1_rerate_population
 where cycle_code=2 and cycle_instance=5
 and cycle_year=2014 and activity_source='R3'
```

8.3.9 MF1_CIBER_BATCH_SEQ

Column Name	Data Type	Description
APPLICATION_ID	CHAR (6 Byte)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
HOME_SID	CHAR (5 Byte)	
LOCKED_SID	NUMBER (10)	
OPERATOR_ID	NUMBER (9)	
SEQ_NO	NUMBER (3)	
SERVE_SID	CHAR (5 Byte)	
STATUS_IND	CHAR (2 Byte)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	

9 BPT Tables

The **Business Process Tables** are the Tops equivalent to the reference tables in **CARES**. The following is the list of all **BPT** tables that we are responsible for:

9.1 ADJ1_OUTCOL_PROVIDER

A list of all vendors we have an agreement with for out-collects.

Column Name	Data Type	Description
PROVIDER_ID	NUMBER(18,0)	
CUSTOMER_ID	NUMBER(10,0)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
CYCLE_CODE	NUMBER(4,0)	
GROUP_ID	NUMBER(9,0)	
MIN_TIME_TO_SEND	NUMBER(4,0)	
MAX_RECS_IN_FILE	NUMBER(9,0)	
SEND_EMPTY_NOTIF	CHAR(1 BYTE)	
EXPIRATION_DATE	DATE	
EFFECTIVE_DATE	DATE	
PROVIDER_DESC	VARCHAR2(256 BYTE)	
RESOURCE_TYPE	NUMBER(4,0)	

9.2 ADJ9_TIME_ZONE_REF

Time zone parameters.

9.3 AGD1_RESOURCES_REF

Lists **TOPS** resources used by Turbo charging very important to map **SIDS** to there offers.

Column Name	Data Type	Description
RESOURCE_SEGMENT	NUMBER(4,0)	
RESOURCE_VALUE	VARCHAR2(63 BYTE)	
RESOURCE_TYPE	NUMBER(4,0)	
EFFECTIVE_DATE	DATE	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
UPDATE_ID	NUMBER(18,0)	
EXPIRATION_DATE	DATE	
SUBSCRIBER_ID	NUMBER(10,0)	
SUB_STATUS	CHAR(1 BYTE)	
ROUTING_POLICY_ID	NUMBER(9,0)	
PAYMENT_CATEGORY	CHAR(4 BYTE)	
CUSTOMER_ID	NUMBER(10,0)	
BILL_CYCLE	NUMBER(4,0)	
NEW_BILL_CYCLE	NUMBER(4,0)	
CHG_CYC_REQ_DATE	DATE	
LARGE_CUST_IND	CHAR(1 BYTE)	
RESOURCE_HASH_VALUE	NUMBER(10,0)	
SUBSCRIBER_HASH_VALUE	NUMBER(10,0)	

9.4 APE1_SUBSCR_DATA_REF

List subscriber reference data. (Customer data)

Column Name	Data Type	Description
CYCLE_CODE	NUMBER(4,0)	
CUSTOMER_SEGMENT	NUMBER(4,0)	
SUBSCRIBER_ID	NUMBER(10,0)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
UPDATE_ID	NUMBER(18,0)	
CUSTOMER_ID	NUMBER(10,0)	
BE	NUMBER(9,0)	
CURRENCY_ID	CHAR(3 BYTE)	
SUBSCRIBER_HASH_VALUE	NUMBER(10,0)	

9.5 APE1_SUBSCR_OFFERS_REF

List subscriber offers. (Customer data)

Column Name	Data Type	Description
CYCLE_CODE	NUMBER(4,0)	
CUSTOMER_SEGMENT	NUMBER(4,0)	
SUBSCRIBER_ID	NUMBER(10,0)	
OFFER_ID	NUMBER(9,0)	
OFFER_INSTANCE	NUMBER(10,0)	
OFFER_EFF_DATE	DATE	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
UPDATE_ID	NUMBER(18,0)	
OFFER_EXP_DATE	DATE	
SOURCE_OFFER_AGR_ID	NUMBER(10,0)	
SOURCE_OFFER_INSTANCE	NUMBER(10,0)	
EFF_ACT_CODE_PROR	VARCHAR2(25 BYTE)	
EXP_ACT_CODE_PROR	VARCHAR2(25 BYTE)	

9.6 M19_MIN_LR

Contains the **USCC** MIN (MSID) block ranges and there **SID** code. The Block Ranges are listed in the **Technical Data Sheet** from **Syniverse**. This only contains **USCC** MINS only. For foreign carriers see the **VISITOR_MIN_LR**.

Column Name	Data Type	Description
MIN_BLK	NUMBER(6,0)	
FROM_LINE_RANGE	NUMBER(4,0)	
TO_LINE_RANGE	NUMBER(4,0)	
EFFECTIVE_DATE	DATE	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
NPA_TYPE	CHAR(1 BYTE)	C = Postpaid T = Prepaid
SIDS	VARCHAR2(5 BYTE)	
EXPIRATION_DATE	DATE	

9.7 VISITOR_MIN_LR

This table is created via a program and contains all of our roaming partners MIN/SID block ranges. It is located on the **BRMPRD** database.

9.8 MI1_STLMNT_CONTRACT

The Settlement Contracts table contains one record for each contract. A contract is defined as the entity to which a group of **SIDS** belongs, whose common attribute is the clearinghouse-related Net Settlement bank account. This usually means that all the **SIDS** that belong to a settlement contract are part of one operating company.

9.9 MF1_OUTCOL_DESTINATION

This table includes detailed information on every destination. A destination represents a target of Out-collect calls (such as a clearinghouse). The destination of every roamer call is determined according to the Home **SID** value of that call.

9.10 MF1_OUTCOL_SID_PAIR

Defines out-collect roaming agreement between **SID** pair. Originating category is retrieve from the table that is used later on for service filter determination. **INCOL_SID_PAIR** and **SID** tables are also used by Acquisition & Formatting.

Column Name	Data Type	Description
SERVE_SID	CHAR(5 BYTE)	
HOME_SID	CHAR(5 BYTE)	
EFFECTIVE_DATE	DATE	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
OPERATOR_ID	NUMBER(9,0)	
APPLICATION_ID	CHAR(6 BYTE)	
DL_SERVICE_CODE	CHAR(5 BYTE)	
DL_UPDATE_STAMP	NUMBER(4,0)	
EXPIRATION_DATE	DATE	
OUTCOL_DEST_CD	CHAR(6 BYTE)	
CRE_DAILY_SURCG_IND	CHAR(1 BYTE)	
DAILY_SURCHARGE_AMT	NUMBER(18,3)	
MISC_SCHG_IND	CHAR(1 BYTE)	
MISC_SCHG_RATE	NUMBER(18,3)	
MISC_SCHG_MEASURE_IND	CHAR(1 BYTE)	
MISC_DESCRIPTOR	CHAR(2 BYTE)	
MISC_SCHG_DESC	VARCHAR2(50 BYTE)	
CYCLE_CODE	NUMBER(4,0)	
PRIORITY	NUMBER(5,0)	
NUM_OF_REC_TO_COMMIT	NUMBER(9,0)	
PARTITION_ID	NUMBER(4,0)	
GROUP_ID	NUMBER(4,0)	
AGREEMENT_ID	NUMBER(9,0)	

9.11 MI1_RETURN_RRC

Used for **InCollect CIBER** processing. Contains the various reasons why an **InCollect** file can be returned.

9.12 MI1_REJECT_RRC

Used for **InCollect CIBER** processing. Contains the various reasons why an **InCollect** file can be rejected.

9.13 MI9_NA_CONV

This maybe another version of the **ADJ9_TIME_ZONE_REF** table, very similar.

9.14 EPC Tables

These tables are included in the **EPC** dump which happens once or twice a month, no hotfix is needed unless needs to be in production right away.

9.14.1 PC9_SID

One of the most important reference tables used, contains all the information for all the **SIDS**[4] for all the companies we have a contract with.

Column Name	Data Type	ID	Description
CINDEX	NUMBER(9,0)	1	
SIDS	VARCHAR2(5 BYTE)	2	
EFFECTIVE_DATE	DATE	3	
SID_DESC	VARCHAR2(50 BYTE)	4	
SID_COMMERCIAL_NAME	VARCHAR2(50 BYTE)	5	
TIME_ZONE_CODE	VARCHAR2(2 BYTE)	6	
SETLMNT_CONTRACT_CD	VARCHAR2(3 BYTE)	7	
INTRACOMP_IND	VARCHAR2(3 BYTE)	8	
SID_STATE	VARCHAR2(2 BYTE)	9	
SID_COUNTRY	VARCHAR2(3 BYTE)	10	
SID_CITY	VARCHAR2(30 BYTE)	11	
SID_LOCATION_CD	CHAR(1 BYTE)	12	
OUTCOL_DEST_CD	VARCHAR2(6 BYTE)	13	
CURRENCY_CODE	VARCHAR2(2 BYTE)	14	
BAND_CODE	CHAR(1 BYTE)	15	
GEO_CODE	VARCHAR2(9 BYTE)	16	
ORIGINATING_CATEGORY	VARCHAR2(6 BYTE)	17	
EXPIRATION_DATE	DATE	18	
INCORPORATE_IND	CHAR(1 BYTE)	19	

9.14.2 PC9_SID_LIST

A description of each **SID** found in the **PC9_SID** table. When the **SID** table is updated this table needs to be updated as well.

9.14.3 PC9_SPECIAL_NUMBER

Contains a list of all the special numbers, numbers that can be dropped (no charge), toll or air time free.

[4]Switch Identifiers forgot about this:

Column Name	Data Type	ID	Description
SPECIAL_NUMBER	VARCHAR2(10 BYTE)	1	
CALL_DIRECTION	CHAR(1 BYTE)	2	1 = Incoming 2 = Outgoing 5 = both
HOME_ROAM_IND	CHAR(1 BYTE)	3	1 = Home 2 = Roam 3 = Both
CALL_SOURCE	VARCHAR2(4 BYTE)	4	V = Voice
EFFECTIVE_DATE	DATE	5	
AIR_TIME_IND	CHAR(1 BYTE)	6	N = Air Time is free
TOLL_SPECIAL_NUMBER_GROUP	VARCHAR2(255 BYTE)	7	
DROP_CALL_IND	CHAR(1 BYTE)	8	Y = This record Will be dropped
SPECIAL_NUMBER_TYPE	CHAR(1 BYTE)	9	
SERVICE_FILTER	VARCHAR2(15 BYTE)	10	
TOLL_FREE_IND	CHAR(1 BYTE)	11	Y = No Toll will be charged
BL_CALL_DEST_STATE	VARCHAR2(2 BYTE)	12	
BL_CALL_DEST_CITY	VARCHAR2(30 BYTE)	13	
AUTOMATICALLY_AUTHORIZED	CHAR(1 BYTE)	14	
DESCRIPTION	VARCHAR2(50 BYTE)	15	
EXPIRATION_DATE	DATE	16	

9.14.4 PC9_SERVE_AREA_TO_SID

Maps the service area to (*all maybe to strong a term*) supported **SIDS**.

Column Name	Data Type	Description
SERVE_AREA	VARCHAR2(50 BYTE)	
SIDS	VARCHAR2(5 BYTE)	
EFFECTIVE_DATE	DATE	
EXPIRATION_DATE	DATE	

9.14.5 PC9_COUNTRY_CODE

List of country code, country description, NANP indicator.

Column Name	Data Type	Description
CINDEX	NUMBER(9,0)	
COUNTRY_CODE	VARCHAR2(3 BYTE)	
DESCRIPTION	VARCHAR2(30 BYTE)	
NANP_IND	CHAR(1 BYTE)	

9.14.6 PC9_INCOL_SID_PAIR

Defines **InCollect** roaming agreement between **SID** pair. Originating category is retrieve from the table that is used later on for service filter determination. INCOL_SID_PAIR and **SID** tables are also used by Acquisition & Formatting.

Column Name	Data Type	Description
SERVE_SID	VARCHAR2(5 BYTE)	
HOME_SID	VARCHAR2(5 BYTE)	
EFFECTIVE_DATE	DATE	
ORIGINATING_CATEGORY	VARCHAR2(6 BYTE)	
INCOL_NOT_VALID_ACT	CHAR(1 BYTE)	
AGR_PEAK_RATE	NUMBER(18,3)	
AGR_OFF_PEAK_RATE	NUMBER(18,3)	
AGR_SCHG_AMT	NUMBER(18,3)	
TOLL_AGR_TYPE	CHAR(1 BYTE)	
AGR_TOLL_RATE	NUMBER(18,3)	
INCOL_TL_NVALID_AC	CHAR(1 BYTE)	
DAILY_SURCHARGE_INDICATION	CHAR(1 BYTE)	
EXPIRATION_DATE	DATE	

9.14.7 PC9_CELL_SITE_TO_CELL_ID

Cell site name to number ID.

9.14.8 PC9_SERVICE_FILTER

This table as well and **PC3_SERVICE_FILTER_LIST** are used by the **RLC**.

Column Name	Data Type	Description
BE	NUMBER(2,0)	
CALL_SOURCE	VARCHAR2(4 BYTE)	
SERVICE_TYPE	CHAR(1 BYTE)	
ORIGINATING_CATEGORY	VARCHAR2(5 BYTE)	
DESTINATION_CATEGORY	VARCHAR2(5 BYTE)	
CALL_DIRECTION	CHAR(1 BYTE)	
EFFECTIVE_DATE	DATE	
SERVICE_FILTER	VARCHAR2(15 BYTE)	
DESCRIPTION	VARCHAR2(30 BYTE)	
EXPIRATION_DATE	DATE	

9.14.9 PC3_SERVICE_FILTER_LIST

This table as well and **PC3_SERVICE_FILTER** are used by the **RLC**.

Column Name	Data Type	Description
SERVICE_INDEX	NUMBER(9,0)	
SERVICE_FILTER	VARCHAR2(15 BYTE)	
DESCRIPTION	VARCHAR2(50 BYTE)	

9.14.10 PC9_DEST_CATEGORY

Lists all the possible destination categories.

Column Name	Data Type	Description
CINDEX	NUMBER(9,0)	
DESTINATION_CATEGORY	VARCHAR2(6 BYTE)	
DESCRIPTION	VARCHAR2(101 BYTE)	

9.14.11 PC9_NUMBER_ANALYSIS

Used to analyze telephone prefix's. Mostly used to determine International calls.

Column Name	Data Type	Description
PREFIX	VARCHAR2(30 BYTE)	
STATION_TYPE	VARCHAR2(30 BYTE)	
EFFECTIVE_DATE	DATE	
DESTINATION_CATEGORY	VARCHAR2(6 BYTE)	
AUTOMATICALLY_AUTHORIZED	CHAR(1 BYTE)	
ROAMING_DEST_CATEGORY	VARCHAR2(6 BYTE)	
DROP_IND	CHAR(1 BYTE)	
COUNTRY_CODE	VARCHAR2(3 BYTE)	
DESCRIPTION	VARCHAR2(30 BYTE)	
NETWORK_CALL_TYPE	CHAR(1 BYTE)	
EXPIRATION_DATE	DATE	

9.14.12 PC9_ORIG_CATEGORY

List all possible originating categories.

Column Name	Data Type	Description
CINDEX	NUMBER(9,0)	
ORIGINATING_CATEGORY	VARCHAR2(6 BYTE)	
DESCRIPTION	VARCHAR2(101 BYTE)	

9.14.13 PC9_ROAMING_DEST_CATEGORY

List all roaming destination categories.

Column Name	Data Type	Description
CINDEX	NUMBER(9,0)	
ROAMING_DEST_CATEGORY	VARCHAR2(6 BYTE)	
DESCRIPTION	VARCHAR2(101 BYTE)	

9.14.14 PC1_CHARGE_CODE

Lists and describes the supported charge codes.

Column Name	Data Type	Description
CHARGE_CODE_SEQ	NUMBER(5,0)	
CHARGE_CODE	VARCHAR2(15 BYTE)	
DESCRIPTION	VARCHAR2(4000 BYTE)	
CHARGE_ENTITY	VARCHAR2(60 BYTE)	
REVENUE_TYPE	CHAR(2 BYTE)	

9.14.15 PC9_NANP_NPA_LIST

The NPA (Area Code) and the country description.

9.14.16 PC9_LOCAL_TOLL_FREE_AREA

Lists the relationship between **SIDS** and NPA ranges where the toll is free.

9.14.17 PC9_IP_ADDR_LIST

This needs to updated periodically.

Column Name	Data Type	Description
CINDEX	NUMBER(9,0)	
ADDRESS	VARCHAR2(256 BYTE)	I.P Address
DESCRIPTION	VARCHAR2(101 BYTE)	

9.15 Hot Fix Procedures

1. Develop, test the **SQL** to affect the change.
   - #{Defect}.sql *sql script*
   - #{Defect}BO.sql *backout script*
   - #{Defect}VV.sql *verify script*
2. If not part of an **EPC Dump**
   (a) Update the **BPT Master List**
   (b) Send **SQL** and test results to **Yogesh** and request a hot fix
   (c) Update **BPT Hot Fix Tracking** spreadsheet
   (d) Contact Carolyn/Sandeep/Sali tell them to apply the Hot Fix.
3. Update all databases in the **DMZ** with the changes
4. Create a **SMART Ticket**.
   (a) Create **Install Plan**
   (b) Create **Test Plan** *use email to Yogesh*
   (c) Create **Backout Plan** *point to Install plan*
   (d) Just add the following sections.
      - Risk
      - Business reason
      - Impact assessment

5. If not part of an **EPC Dump** Email John Kelly with the Install plan and all SQL.

6. If part of an EPC dump. Notify the EPC team so they can include your **Smart Ticket** with their hot fix.

7. Represent the change in the **Change Control Meeting**

9.16 SID Updates

SID'S or Switch IDentifiers is a unique 5 digit number that correlates to switch. It is with the **SID** that **TOPS** defines the all mediation and rating logic and is the first enrichment step on a call record.

9.16.1 BPT Tables and Process

When a **SID** is added or changes there is a possibility that the following tables need to be changed:

1. PC9_SID
2. PC9_SID_LIST
3. PC9_SERVE_AREA_TO_SID
4. AGD1_RESOURCES_REF
5. MI1_STLMNT_CONTRACT
6. MF1_OUTCOL_SID_PAIR
7. PC9_INCOL_SID_PAIR
8. APE1_SUBSCR_DATA_REF
9. APE1_SUBSCR_OFFERS_REF

9.16.2 New SID Contract Rates

All **SIDS** changes start with the **SID** table and depending on what needs to be done there determines what needs to be done to the other 7 tables. For example if it is a brand new **SID** all 8 tables need to be updated with the most complicated part setting up InCollect and OutCollect processing for a **SIDS** contract. The following explains in details on what needs to be done:

1. Find the entry in the **PC9_INCOL_SID_PAIR** where the **SERVE SID** is the contract number and the **HOME SID** = '175' *(USCC contract number).*
   (a) Expire the date for when you want the new rate to take affect.
   (b) Use the above row as a template for an insert statement.
   (c) *For outcollecs do the same as above except use SERVE SID = '175'*

2. Create an Insert statement for the **PC9_INCOL_SID_PAIR** with the new rates.

3. For the OutCollect side find all **SIDS** that that have the **Settlement Contract Code**, *(In this example we trying to find all *SIDS* with settlement contract code = 287)*

```
SELECT SIDS FROM PC9_SID WHERE SETLMNT_CONTRACT_CD = '287';
```

4. For each **SID** found add '175' to the end and use that as the resource value for the table **AGD1_RESOURCES_REF** then create an insert if it don't exists.

Column	Value
RESOURCE_SEGMENT	**ResourceSegmentCalc_Sh**
RESOURCE_VALUE	SID + '175'
RESOURCE_TYPE	21 (for OutCollect)
SUBSCRIBER_ID	sequential number *(1, 2, 3,...)*
SUB_STATUS	A (default)
ROUTING_POLICY_ID	0 (for Postpaid)
PAYMENT_CATEGORY	POST (default)
CUSTOMER_ID	1 + SID
BILL_CYCLE	99
LARGE_CUST_IND	'N'
RESOURCE_HASH_VALUE	**ResourceSegmentCalc_Sh**
SUBSCRIBER_HASH_VALUE	**SubsriberHashValueCalc_Sh**

5. For each **SID** found add a '1' in front which will get you the **customer_id** then do a query against the **APE1_SUBSCR_DATA_REF** to get the subscriber_id *(Using the above as an example)*

Column	Value
CYCLE_CODE	99
CUSTOMER_SEGMENT	**CustomerSegmentCalc_Sh**
SUBSCRIBER_ID	Sequential number *(1, 2, 3,...)*
CUSTOMER_ID	1 + SID
SUBSCRIBER_HASH_VALUE	**SubscriberHashCalculator**

6. Once you have the subscriber you need to point each entries offer ID's from the **APE1_SUBSCR_OFFERS_REF** table to the correct air and toll charge. *(Again using the above example)* To find a suitable offer ID search the **CSM_OFFER** table, if you cannot find one have the **EPC** group create one. (*In this example we are looking for a offer ID with the Air and Toll charge of 0.3*)

```
SELECT * FROM CSM_OFFER WHERE SOC_NAME LIKE '%_0.03_Air_0.03_Toll_PP%';
```

Column	Value
CYCLE_CODE	99
CUSTOMER_SEGMENT	*CustomerSegmentCalc_Sh
SUBSCRIBER_ID*	sequential number *(1, 2, 3,...)*
OFFER_ID	SOC_ID
OFFER_INSTANCE	Subscriber ID
SUBSCRIBER_HASH_VALUE	**SubsriberHashValueCalc_Sh**

9.16.3 Hash Creation Programs

Some tables require that a unique hash value be created to create those values use these programs:

```
~/abp_home/core/bin/SubsriberHashValueCalc_Sh  <SUBSCRIBER_ID>

~/abp_home/core/bin/ResourceSegmentCalc_Sh     <Resource Type> 21 = (OutCollects)
                                               <Resource Value>
                                               <Resource value length>

~/abp_home/core/bin/CustomerSegmentCalc_Sh     <CUSTOMER_ID>
```

10 Production Support - SUP1

10.1 Support Databases

USERNAME	PASSWORD	DB_INSTANCE	Description
PRDAFC	PRDAFC	SUPAF	Reference Tables
PRDCUSTC	PRDCUSTC	SUPCUST	Customer
PRDRPLC	PRDRPLC	SUPRPL	Replenishment Manager
PRDUSG1C	PRDUSG1C	SUPUSG1	Usage
PRDUSG2C	PRDUSG2C	SUPUSG2	Usage
PRDUSG3C	PRDUSG3C	SUPUSG3	Usage
PRDUSG4C	PRDUSG4C	SUPUSG4	Usage
PRDSELC	PRDSELC	SUPAPRM	APRM

10.2 Support Server

Accessed from Putty in **TOPS** Production Support Applications. Should be able to login on with LAN ID and password (which is same as your LAN ID).

SERVER NAME
Ksr01omsap.uscc.com
ksr01bmrim.uscc.com
ksr01csmap.uscc.com
ksr01batch.uscc.com
ksr01tiger.uscc.com
ksr01aprma.uscc.com
ksr01mcsap.uscc.com
ksr01ebiap.uscc.com
msr01esadm.uscc.com
msr01esb01.uscc.com
msr01esb02.uscc.com
msr01wladm.uscc.com
msr01wls01.uscc.com
msr01wls02.uscc.com
msr01web01.uscc.com
msr01web02.uscc.com

10.3 Development Servers

Environment	IP	Hostname	UserID	Password
Development	10.106.10.9	mdr01bld01	md1dbal1	*password*
Testing	10.106.10.9	mdr01bld01	d_medap	Henry*123
CallDump	10.176.179.3	kpr01scdap	calldmp	Henry*128

11 Accounts Receivable

Handles Finance, Payments and credits as well Collections.

11.1 AR Basics

- **Root Directory** - $ABP_AR_ROOT on kpr01batch
- **Collection Interface** - /pkgbl01/inf/aimsys/prdwrk1/var/usc/projs/cl/interfaces

11.2 AR Jobs

11.2.1 AR1JRNLEXT

The Journal Extract process extracts to an output file all financial activities that occurred since the last run of this process.

- **LOG FILE** - AR1JRNLEXT.<SYS_DATE>.log
- **Output File** -
- **Script Name** - ar1_JrnlExtract_Sh

11.3 End of Month

11.3.1 Email List for Revenue Accounting

```
Tabano-lucero Glayn <Glayn.Tabano-lucero@uscellular.com>;
Rizwan, Muhammad <Muhammad.Rizwan@uscellular.com>;
Vann, John <John.Vann@uscellular.com>;
Revenue Accounting <RevenueAccounting@uscellular.com>
```

11.3.2 Revenue Not confirmed for cycles 24,26 and 28

```
select sum(amount),bcc.cycle_year,bcc.cycle_instance,bcc.cycle_code
 from bl1_inv_charge_rel bicr
  inner join bl1_cycle_control bcc on bicr.cycle_seq_no=bcc.cycle_seq_no
  inner join bl1_cyc_payer_pop bcpp on bcpp.period_key=bicr.period_key
  and bcpp.customer_key=bicr.customer_key and bcpp.ba_no=bicr.ba_no
where bcpp.status<>'CN' and bicr.period_key=20 and bcc.cycle_year=2015
 and bcc.cycle_instance=8 and bcc.cycle_code in (24,26,28)
 group by bcc.cycle_year,bcc.cycle_instance,bcc.cycle_code
 order by bcc.cycle_year,bcc.cycle_instance,bcc.cycle_code;
```

11.3.3 Null GeoCodes

```
select s_customer_id, s_fa_id, contact_id, cust.*, fa_rl.*, fa.*,con.*
 from sa.table_customer cust
  inner join sa.table_con_fin_accnt_role fa_rl
        on fa_rl.fa_role2customer = cust.objid
  inner join sa.table_fin_accnt fa on fa_rl.fin_accnt_role2fin_accnt=fa.objid
  inner join sa.table_contact con on fa_rl.con_accnt_role2contact=con.objid
 where s_fa_id='851316127';
```

- Query for the EOM

```
select  distinct account_id,L9_GEO_CODE from ar1_account where account_id
in (select account_id from prdcustc.geo_code_09012014 where GEO_CODE in ('0','00'))
```

11.4 Payment File

Once in a while payment files break due to either bad sequence numbers or format issues. For the most part you should tell Amdocs to put the file in CN status and have **Payment Control** to resend. If the file is also out of sequence have payment control send it with a new sequence number. If the whole file fails, not just records, then have Payment Control send a new file with a new sequence number.

```
PaymentControl-ImportPaymentFiles@uscellular.com>
```

11.5 AR Reports

- **LockBox**
  - *File Location* : $ABP_AR_ROOT/interfaces/input/lockbox/MELL_PYM.*.csv
- **AGTCASH**
  - *File Location* : $ABP_AR_ROOT/interfaces/input/lockbox/ACP_PYM*.csv
- **IMPCOL**
  - *File Location* : $ABP_AR_ROOT/interfaces/input/lockbox/IMPCOL.PAY*.csv
- **IMPEFT**
  - *File Location* : $ABP_AR_ROOT/interfaces/input/lockbox/IMPEFT.PAY.*csv
- **IMPPAY**
  - *File Location* : $ABP_AR_ROOT/interfaces/input/lockbox/IMPPAY.PAY.*.csv
- **Autopay Reports**
  Both of these reports are derived after the above files have been processed.
  - **Autopay_PostPaid**
    - Run both the expected and actual **SQL**
  - **Autopay_PrePaid**
    - Run prepaid expected **SQL**
- **ACH extract file**
  Check to see if the output report and **SQL** match.
  - *File Location* : $ABP_AR_ROOT/interfaces/output/ACH.ar.DD_OUT*

11.6 AR Tables

11.6.1 AR1_ACCOUNT

Column Name	Data Type	Description
ACCOUNT_ID	NUMBER (12)	The Financial ID
ACCOUNT_STATUS	VARCHAR2 (4 Byte)	
ACCOUNT_TIMESTAMP	NUMBER (19)	
ACCT_BAL_POLICY	CHAR (1 Byte)	
APPLICATION_ID	CHAR (6 Byte)	
AR_ACCOUNT_SUB_TYPE	CHAR (4 Byte)	
AR_ACCOUNT_TYPE	CHAR (1 Byte)	
AR_BALANCE	NUMBER (18,2)	
AR_EXCEPTION_ACC_IND	CHAR (1 Byte)	
BALANCE_UPD_DATE	DATE	
BE	NUMBER (9)	
CANDIDATE_FILE_EXTRACT_DATE	DATE	
CM_ACCOUNT_NUMBER	VARCHAR2 (12 Byte)	
COLL_IND_UPD_DATE	DATE	
COLLECTION_INDICATOR	CHAR (1 Byte)	
CURRENCY	CHAR (3 Byte)	
CUSTOMER_NO	NUMBER (10)	
DEPOSIT_BALANCE	NUMBER (18,2)	
DISPUTE_BALANCE	NUMBER (18,2)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
DOCUMENT_TYPE	CHAR (6 Byte)	
L3_AGREEMENT_ID	NUMBER (9)	
L3_BOD_BALANCE	NUMBER (18,2)	
L3_CREDIT_LIMIT_IND	CHAR (1 Byte)	
L3_NEW_INVOICE_IND	CHAR (1 Byte)	
L3_SEND_BALANCE	NUMBER (18,2)	
L9_GEO_CODE	VARCHAR2 (10 Byte)	
LAST_ACTIVITY_STATUS_DATE	DATE	
LPC_WAVING_IND	CHAR (1 Byte)	
OPERATOR_ID	NUMBER (9)	
PARTITION_ID	NUMBER (5)	
PENDING_CREDIT_BALANCE	NUMBER (18,2)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
UNAPPLIED_AMOUNT	NUMBER (18,2)	
WRITE_OFF_STATUS	CHAR (1 Byte)	

11.6.2 AR1_INVOICE

Column Name	Data Type	Description
ACCOUNT_ID	NUMBER (12)	
APPLICATION_ID	CHAR (6 Byte)	
AR_INVOICE_NUMBER	VARCHAR2 (60 Byte)	
BILL_SEQ_NO	NUMBER (12)	
BILLING_ARRANGEMENT_ID	NUMBER (12)	
BILLING_INVOICE_NUMBER	VARCHAR2 (180 Byte)	
CREDIT_AMOUNT	NUMBER (18,2)	
CREDIT_NET_AMOUNT	NUMBER (18,2)	
CREDIT_TAX_AMOUNT	NUMBER (18,2)	
CYCLE_CODE	NUMBER (4)	
CYCLE_MONTH	NUMBER (2)	
CYCLE_YEAR	NUMBER (4)	
DISCOUNT_AMOUNT	NUMBER (18,2)	
DISCOUNT_NET_AMT	NUMBER (18,2)	
DISCOUNT_TAX_AMT	NUMBER (18,2)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
FINALISE_DATE	DATE	
FINALISE_TRANS_ID	NUMBER (12)	
INVOICE_AMOUNT	NUMBER (18,2)	
INVOICE_BALANCE	NUMBER (18,2)	
INVOICE_CREATION_DATE	DATE	
INVOICE_ID	NUMBER (12)	
INVOICE_STATUS	VARCHAR2 (6 Byte)	
INVOICE_STATUS_CHANGE_DATE	DATE	
INVOICE_TYPE	VARCHAR2 (6 Byte)	
L3_CRD_EXTRACT_IND	CHAR (1 Byte)	

Continued on next page

Column Name	Data Type	Description
OPERATOR_ID	NUMBER (9)	
PARTITION_ID	NUMBER (5)	
PERIOD_KEY	NUMBER (5)	
REVERSAL_DATE	DATE	
REVERSAL_TRANS_ID	NUMBER (12)	
SUB_BILL_SEQ_NO	NUMBER (12)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
TAX_AMOUNT	NUMBER (18,2)	
TRANSACTION_ID	NUMBER (12)	

11.6.3 AR1_CHARGE_CODE

11.6.4 AR1_CHARGE_GROUP

11.6.5 AR1_CUSTOMER_CREDIT

Column Name	Data Type	Description
ACCOUNT_ID	NUMBER (12)	
AMOUNT	NUMBER (18,2)	
APPLICATION_ID	CHAR (6 Byte)	
BALANCE_IMPACT_CODE	CHAR (1 Byte)	
BE	NUMBER (9)	
BILL_SEQ_NO	NUMBER (12)	
BILLING_ARRANGEMENT_ID	NUMBER (12)	
BILLING_CHARGE_SEQ_NO	NUMBER (12)	
CHARGE_CODE	VARCHAR2 (25 Byte)	
CHG_REVENUE_CODE	CHAR (6 Byte)	
CR_ATTRIB_NAME	VARCHAR2 (30 Byte)	
CREDIT_DATE	DATE	
CREDIT_ID	NUMBER (12)	
CREDIT_LEVEL_CODE	CHAR (3 Byte)	
CREDIT_REASON	VARCHAR2 (10 Byte)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
FINALISE_DATE	DATE	
FINALISE_TRANS_ID	NUMBER (12)	
INVOICE_ID	NUMBER (12)	
INVOICE_REVERSAL_NUMBER	NUMBER (12)	
L9_CANCEL_IND	VARCHAR2 (2 Byte)	
L9_DF_ACTIVITY	VARCHAR2 (3 Byte)	
L9_DF_INDICATOR	VARCHAR2 (3 Byte)	
L9_DF_PERIOD	VARCHAR2 (3 Byte)	
L9_EVENT_ID	NUMBER (18)	
L9_IS_DISCOUNT	VARCHAR2 (1 Byte)	
L9_LINE_COUNT	NUMBER (5)	
L9_LOCATION	VARCHAR2 (15 Byte)	
L9_LT_AMOUNT	NUMBER (18,2)	
L9_ORIG_CHARGE_TYPE	VARCHAR2 (3 Byte)	
L9_ORIG_CHG_SEQ_NO	NUMBER (12)	
L9_REV_LOCATION	VARCHAR2 (15 Byte)	
L9_REV_SALES_CHANNEL	VARCHAR2 (15 Byte)	
L9_SALES_CHANNEL	VARCHAR2 (15 Byte)	
L9_ST_AMOUNT	NUMBER (18,2)	
OPERATOR_ID	NUMBER (9)	
PARTITION_ID	NUMBER (5)	
PERIOD_KEY	NUMBER (5)	
RESTRICTED_CHARGE_ID	NUMBER (12)	
RESTRICTED_INVOICE_NUMBER	NUMBER (12)	
REVERSAL_BILL_SEQ_NO	NUMBER (12)	
REVERSAL_DATE	DATE	
REVERSAL_REASON	VARCHAR2 (10 Byte)	
REVERSAL_SUB_BILL_SEQ_NO	NUMBER (12)	
REVERSAL_TRANS_ID	NUMBER (12)	
SUB_BILL_SEQ_NO	NUMBER (12)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
TAX_AMOUNT	NUMBER (18,2)	
TRANSACTION_ID	NUMBER (12)	
WRITE_OFF_ID	NUMBER (12)	

11.6.6 AR1_TAX_ITEM

11.6.7 AR1_REFUND_REQUEST

Column Name	Data Type	Description
ACCOUNT_ID	NUMBER (12)	
ACTIVITY_DATE	DATE	
AMOUNT	NUMBER (18,2)	
APPLICATION_ID	CHAR (6 Byte)	
APPLICATION_METHOD	VARCHAR2 (5 Byte)	
CREDIT_ID	NUMBER (12)	
CRITERIA_ID	NUMBER (12)	
DEBIT_ID	NUMBER (12)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
EXTRACT_TO_AP_DATE	DATE	
L9_BUY_BACK_PREPAID	VARCHAR2 (2 Byte)	
L9_CITY	VARCHAR2 (35 Byte)	
L9_CUSTOMER_NAME	VARCHAR2 (50 Byte)	
L9_LOCATION	VARCHAR2 (15 Byte)	
L9_MERCHANT_REFERENCE_CODE	NUMBER (8)	
L9_POSTAL_CODE	VARCHAR2 (10 Byte)	
L9_REGION	VARCHAR2 (3 Byte)	
L9_REQUEST_ID	VARCHAR2 (26 Byte)	
L9_REV_LOCATION	VARCHAR2 (15 Byte)	
L9_REV_SALES_CHANNEL	VARCHAR2 (15 Byte)	
L9_SALES_CHANNEL	VARCHAR2 (15 Byte)	
L9_STREET	VARCHAR2 (35 Byte)	
MANUAL_REFUND_IND	CHAR (1 Byte)	
OPERATOR_ID	NUMBER (9)	
PARTITION_ID	NUMBER (5)	
REFUND_ID	NUMBER (12)	
REFUND_METHOD	VARCHAR2 (3 Byte)	
REFUND_REASON	VARCHAR2 (10 Byte)	
REFUND_STATUS	CHAR (1 Byte)	
REVERSAL_CREDIT_ID	NUMBER (12)	
REVERSAL_DATE	DATE	
REVERSAL_REASON	VARCHAR2 (10 Byte)	
REVERSAL_TRANS_ID	NUMBER (12)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
TRANSACTION_ID	NUMBER (12)	

11.6.8 AR1_DEPOSIT_REQUEST

Column Name	Data Type	Description
ACCOUNT_ID	NUMBER (12)	
APPLICATION_ID	CHAR (6 Byte)	
CANCEL_DATE	DATE	
CANCEL_REASON	VARCHAR2 (6 Byte)	
CANCELLED_AMOUNT	NUMBER (18,2)	
DEBIT_ID	NUMBER (12)	
DEPOSIT_DESIGNATION	VARCHAR2 (20 Byte)	
DEPOSIT_ID	NUMBER (12)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
DUE_DATE	DATE	
EXTERNAL_DEPOSIT_ID	VARCHAR2 (20 Byte)	
GROUP_ID	VARCHAR2 (20 Byte)	
INTEREST_AMOUNT	NUMBER (18,2)	
L9_AP_ID	VARCHAR2 (10 Byte)	
L9_EXT_CHG_ID	NUMBER (12)	
L9_LOCATION	VARCHAR2 (15 Byte)	
L9_SALES_CHANNEL	VARCHAR2 (15 Byte)	
OPERATOR_ID	NUMBER (9)	
PAID_DATE	DATE	
PARENT_DEPOSIT_ID	NUMBER (12)	
PARTITION_ID	NUMBER (5)	
PYMT_TRIGGERED	CHAR (1 Byte)	
RELEASE_DATE	DATE	
RELEASE_METHOD	VARCHAR2 (6 Byte)	

Continued on next page

Column Name	Data Type	Description
RELEASE_REASON	VARCHAR2 (6 Byte)	
RELEASED_AMOUNT	NUMBER (18,2)	
REQUEST_AMOUNT	NUMBER (18,2)	
REQUEST_DATE	DATE	
REQUEST_REASON	VARCHAR2 (6 Byte)	
REVERSAL_TRANS_ID	NUMBER (12)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
TRANSACTION_ID	NUMBER (12)	

11.6.9 AR1_PAYMENT

Column Name	Data Type	Description
ACCOUNT_ID	NUMBER (12)	
ACTIVITY_DATE	DATE	
ACTIVITY_INDICATOR	CHAR (5 Byte)	
AMOUNT	NUMBER (18,2)	
APPLICATION_ID	CHAR (6 Byte)	
BILL_SEQ_NO	NUMBER (12)	
CONVERSION_RATE	NUMBER (11,9)	
CREDIT_ID	NUMBER (12)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
L9_DEP_REL	CHAR (1 Byte)	
L9_LOCATION	VARCHAR2 (15 Byte)	
L9_SALES_CHANNEL	VARCHAR2 (15 Byte)	
OPERATOR_ID	NUMBER (9)	
ORIGINAL_AMOUNT	NUMBER (18,2)	
ORIGINAL_CONVERTED_AMOUNT	NUMBER (18,2)	
PARTITION_ID	NUMBER (5)	
PAYMENT_ID	NUMBER (12)	
PERIOD_KEY	NUMBER (5)	
PYMDT_PARTITION_ID	NUMBER (5)	
PYMDT_PERIOD_KEY	NUMBER (5)	
REVERSAL_TRANS_ID	NUMBER (12)	
SUB_BILL_SEQ_NO	NUMBER (12)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
TRANSACTION_ID	NUMBER (12)	

11.6.10 AR1_PAYMENT_DETAILS

Column Name	Data Type	Description
ACCOUNT_ID	NUMBER (12)	
AMOUNT	NUMBER (18,2)	
APPLICATION_ID	CHAR (6 Byte)	
BANK_ACCOUNT_NUMBER	VARCHAR2 (255 Byte)	
BANK_BRANCH_NUMBER	VARCHAR2 (20 Byte)	
BANK_CODE	VARCHAR2 (20 Byte)	
BATCH_LINE_NUMBER	NUMBER (6)	
BATCH_NUMBER	NUMBER (5)	
BILLING_ARRANGEMENT	NUMBER (12)	
BILLING_INVOICE_NUMBER	VARCHAR2 (180 Byte)	
CC_AUTHORISATION_CODE	VARCHAR2 (8 Byte)	
CC_EXPIRY_DATE	VARCHAR2 (6 Byte)	
CHECK_DRAWER_NAME	VARCHAR2 (30 Byte)	
CHECK_NO	VARCHAR2 (15 Byte)	
CONFIRMATION_NO	VARCHAR2 (20 Byte)	
CREDIT_CARD_NUMBER	VARCHAR2 (255 Byte)	
CURRENCY	CHAR (3 Byte)	
DEPOSIT_DATE	DATE	
DEPOSIT_DESIGNATION	VARCHAR2 (20 Byte)	
DIRECT_DEBIT_VOUCHER	NUMBER (12)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
FILE_GENERATION_DATE	DATE	
FILE_SEQ_NO	NUMBER (5)	
FILE_SOURCE_ID	VARCHAR2 (8 Byte)	
FILE_SOURCE_TYPE	VARCHAR2 (4 Byte)	
L9_AUTHORIZATION_CODE	VARCHAR2 (7 Byte)	

Continued on next page

Column Name	Data Type	Description
L9_CTN	NUMBER (10)	
L9_EXT_PYM_ID	VARCHAR2 (32 Byte)	
L9_LOCATION	VARCHAR2 (15 Byte)	
L9_MERCHANT_ID	VARCHAR2 (30 Byte)	
L9_MERCHANT_REFERENCE_CODE	NUMBER (8)	
L9_ORIG_ACCOUNT	NUMBER (12)	
L9_ORIG_CHECK_AMT	NUMBER (18,2)	
L9_ORIGINATOR	VARCHAR2 (20 Byte)	
L9_ORIGINATOR_LOCATION	VARCHAR2 (20 Byte)	
L9_PAYMENT_RECURRANCE	CHAR (1 Byte)	
L9_REQUEST_ID	VARCHAR2 (26 Byte)	
L9_SALES_CHANNEL	VARCHAR2 (15 Byte)	
MEMO_ID	NUMBER (12)	
OPERATOR_ID	NUMBER (9)	
PARTITION_ID	NUMBER (5)	
PAYMENT_ID	NUMBER (12)	
PAYMENT_METHOD	CHAR (3 Byte)	
PAYMENT_SOURCE_ID	VARCHAR2 (15 Byte)	
PAYMENT_SOURCE_TYPE	VARCHAR2 (3 Byte)	
PAYMENT_SUB_METHOD	VARCHAR2 (3 Byte)	
PAYMENT_TYPE	CHAR (1 Byte)	
PERIOD_KEY	NUMBER (5)	
RECALL_NUMBER	VARCHAR2 (15 Byte)	
REJECTION_CODE	VARCHAR2 (4 Byte)	
REVERSAL_REASON	VARCHAR2 (10 Byte)	
SUBSCRIBER_NUMBER	VARCHAR2 (11 Byte)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
TRANSACTION_ID	NUMBER (12)	

11.6.11 AR1_PAYMENT_ACTIVITY

Used in the **Paid and Prepaid** reports.

Column Name	Data Type	Description
ACCOUNT_ID	NUMBER (12)	
ACTIVITY_DATE	DATE	
ACTIVITY_TYPE	CHAR (5 Byte)	
AMOUNT	NUMBER (18,2)	
APPLICATION_ID	CHAR (6 Byte)	
BILL_SEQ_NO	NUMBER (12)	
CREDIT_ID	NUMBER (12)	
DL_SERVICE_CODE	CHAR (5 Byte)	
DL_UPDATE_STAMP	NUMBER (4)	
FUNDS_TRANSFER_IND	VARCHAR2 (6 Byte)	
FUNDS_TRANSFER_REASON	VARCHAR2 (10 Byte)	
L9_BATCH_LINE_NUMBER	NUMBER (7)	
L9_BATCH_NUMBER	NUMBER (6)	
L9_FILE_NAME	VARCHAR2 (50 Byte)	
L9_LOCATION	VARCHAR2 (15 Byte)	
L9_SALES_CHANNEL	VARCHAR2 (15 Byte)	
MEMO_ID	NUMBER (12)	
OPERATOR_ID	NUMBER (9)	
PARENT_CREDIT	NUMBER (12)	
PARTITION_ID	NUMBER (5)	
PAYMENT_ACTIVITY_ID	NUMBER (12)	
PAYMENT_PERIOD_KEY	NUMBER (5)	
PERIOD_KEY	NUMBER (5)	
REASON_CODE	VARCHAR2 (10 Byte)	
REVERSAL_DATE	DATE	
REVERSAL_REASON	VARCHAR2 (10 Byte)	
REVERSAL_TRANS_ID	NUMBER (12)	
SUB_BILL_SEQ_NO	NUMBER (12)	
SYS_CREATION_DATE	DATE	
SYS_UPDATE_DATE	DATE	
TRANSACTION_ID	NUMBER (12)	
TRANSFER_ACCOUNT	NUMBER (12)	

11.7 Credit Cards

11.7.1 AR9_CC_AUTH_LOG

Credit card transactions from the **TOPS** side.

11.7.2 CTLOG

Database from the microtelecom side.

11.8 GL Tables

11.8.1 ar1_gl_detailed_data_info_v

11.8.2 ar1_gl_data_info_v

11.8.3 ar1_transaction_log

11.8.4 ar1-JGL-control

11.9 Operational SQL

All of these scripts would be good monitor scripts.

- Checks to see if all payment files have been processed.(**PRDAF**)

```
select  identifier, nxt_pgm_name, file_status, file_format, file_name, file_path,  a.*
 from ac1_control a
 where nxt_pgm_name like 'AR1PYM%'
 --and file_name like '%_181_%'
 and file_status <> 'CO'
 order by sys_creation_date desc
```

- Gateway Listener (**PRDCUST**)

```
select * from ar3_gwls_file_status
 where sys_creation_date > (sysdate -6)
 and file_process_state <> 'CO'
 order by sys_creation_date desc
```

- More General stuff (**PRDCUST**)

```
select  trunc(sys_creation_date), period_key, record_type ,
 decode(record_type, 'PNR' , 'DONE' , 'LNR' , 'IN PROGRESS', 'NNR', 'PENDING') status
 ,count(*) from ar1_jgl_control
where financial_activity_type is null
 and sys_creation_date > to_date('20150826','yyyymmdd')
 group by  trunc(sys_creation_date), period_key , record_type
 order by 1, 2, 3
```

- Query for Batch Payments

```
select count(1),sum(amount),trunc(sys_creation_date),deposit_date,payment_source_id,
 file_seq_no from ar1_payment_details
where payment_source_id in ( 'LOCKBOX', 'AGTCASH', 'IMPCOL', 'IMPEFT', 'IMPPAY'
 ,'CERLBX') and sys_creation_date like '05-AUG-15%'
 and payment_type='P'
group by  trunc(sys_creation_date), deposit_date, payment_source_id, file_seq_no
order by  trunc(sys_creation_date), deposit_date, payment_source_id, file_seq_no
```

12 CallDump

12.1 Data Directories

- **/m04/switchb/ecs** - **(aaa1)** 3G or lower data usage guide by **19**.
- **/m06/switch/MMS** - Picture Messaging
- **/m06/switch/MMSText** - Picture Messaging Text only.
- **/m06/switch/sms_nsn** - SMS Motorola
- **/m06/switchb/sms_alu** - SMS ALU
- **/m04/switch/lte** - **(aaa3)** P-Gateway 4G usage
- **/m04/switchb/valista** - Premium SMS
- **/m05/switch/brew** - Brew and Brew data **(aaa2)**
- **/m01/switchb/tas** - Volte

13 Telephone Numbers

Name	Cell
Vanessa	608-441-7106
Alex	608-219-7641
Dexter	608-219-5832
Dr. Smith	608-263-7500
Chuck	630-710-5201
Cindy	608-516-4539
Deb	312-810-1111
DC Operations	865-777-8771
Escalate Ticket	217-766-1979
Steve	608-222-5222
Ron W	651-734-8230
Paul Volpe	773-216-5606
Aunt Patty	256-772-7512
Help Desk:	608-828-5889
Soly	630-285-8386
Traci	630-285-8447