Report Data Extraction

DRAFT
06/13/2001

CONTENTS

Introduction 3

Process Measurement 3

Process Flow 4

What to Measure 4

Status_Log 9

Task_Log 10

Example 12

Report Format 13

Columns 13

Rows/Deals 15

Output File Name 15

Output File Format 15

Introduction

Formal reports are not provided as a part of the Contract Management Tool. Instead, the metric data is extracted from the database in a format that provides direct input to an Excel spreadsheet. The user can then create reports as required and can also “mine” the data in ad-hoc ways that could not be anticipated in a more formal reporting design.

This document explains how to change the report database extraction program when the State Transition Diagram changes.

Process Measurement

The Contract Management Tool (CMT) automates the pre-sale and post-sale workflow for Standard Tariff and Generic Contract Tariff (GCT) deals. Workflow automation begins when the Data Network Account Executive (DNAE) first determines a qualifying opportunity for a sale. Workflow automation continues through pre-sale tasks and post-sales tasks ending with the Authority to Proceed (ATP) when the customer circuit is implemented and billing begins. Each step, inside and outside of CMT, is subject to measurement by calculation based on a preceding and following timestamp.

Process Flow

For metrics, the contracting process is broken up into task-oriented steps. Timestamps are recorded at each CMT process so that the elapsed time for "outside CMT" steps can determined based on the preceding and following CMT timestamps.

The DNAE starts a deal with Customer/MCN validation. The first timestamp is taken when the "deal" is created in the *Qualifying Opportunity* status. The last timestamp is taken when the "deal" reaches Authorization to Proceed (*ATP*) or *Canceled* status. Some of the steps that can be tracked are listed below.

- The time the DNAE spends until passing on the task.

  The DNAE works with the deal in several states. The total is measured together.

- The time it takes Contract Management to resolve conflicts

  One of two states processed by a single role (CM) and measured separately.

- The time it takes an FMM to approve/disapprove an FMM GCT
- The time it takes the DNAE from the generation of documents to customer signature
- The time it takes for CPM approval/rejection
- The time it takes for Contract Management approval/rejection

  One of two states processed by a single role (CM) and measured separately.

- The time it takes for biller loading

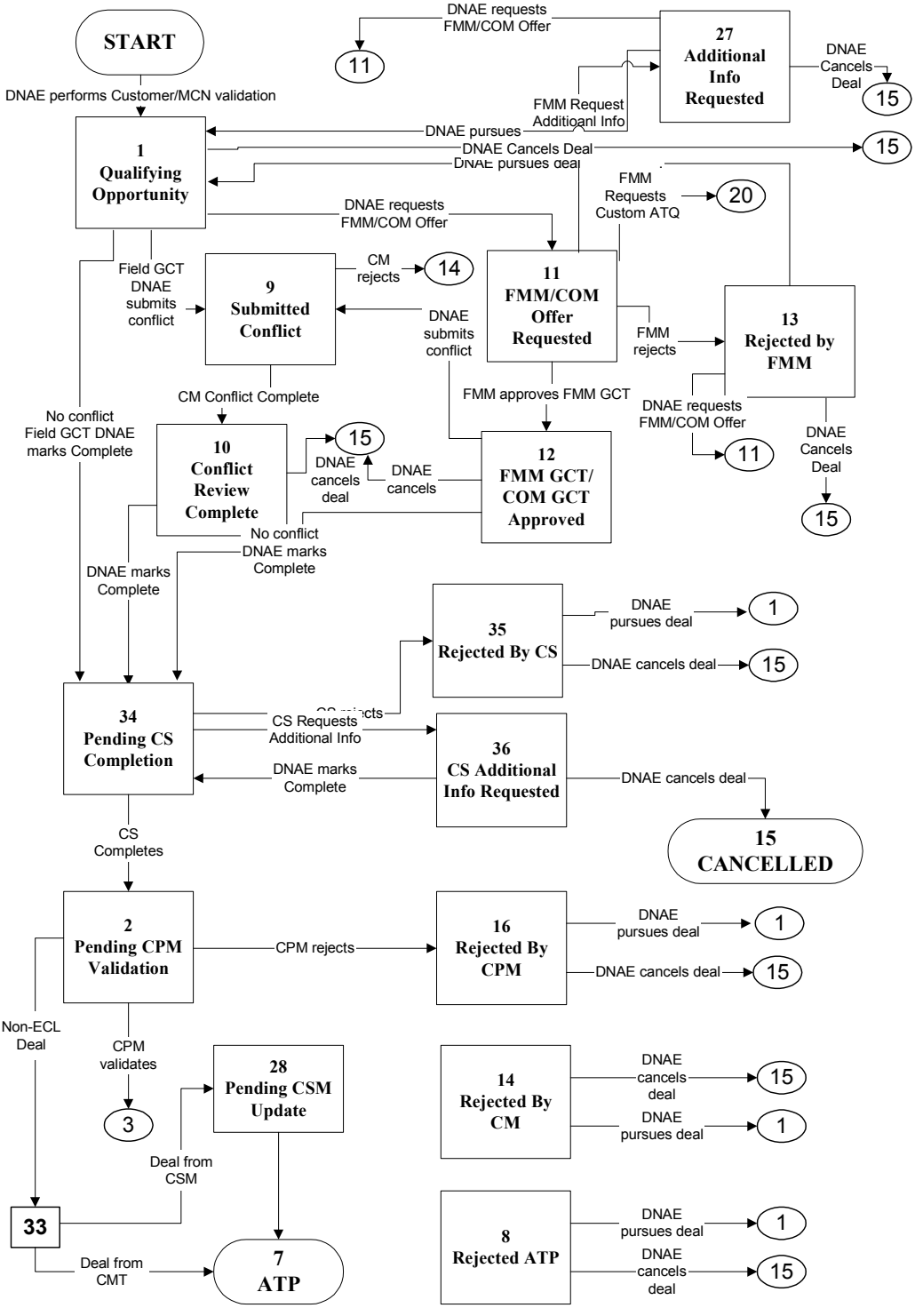
  Measured separately for automatic and manual processing on each biller.

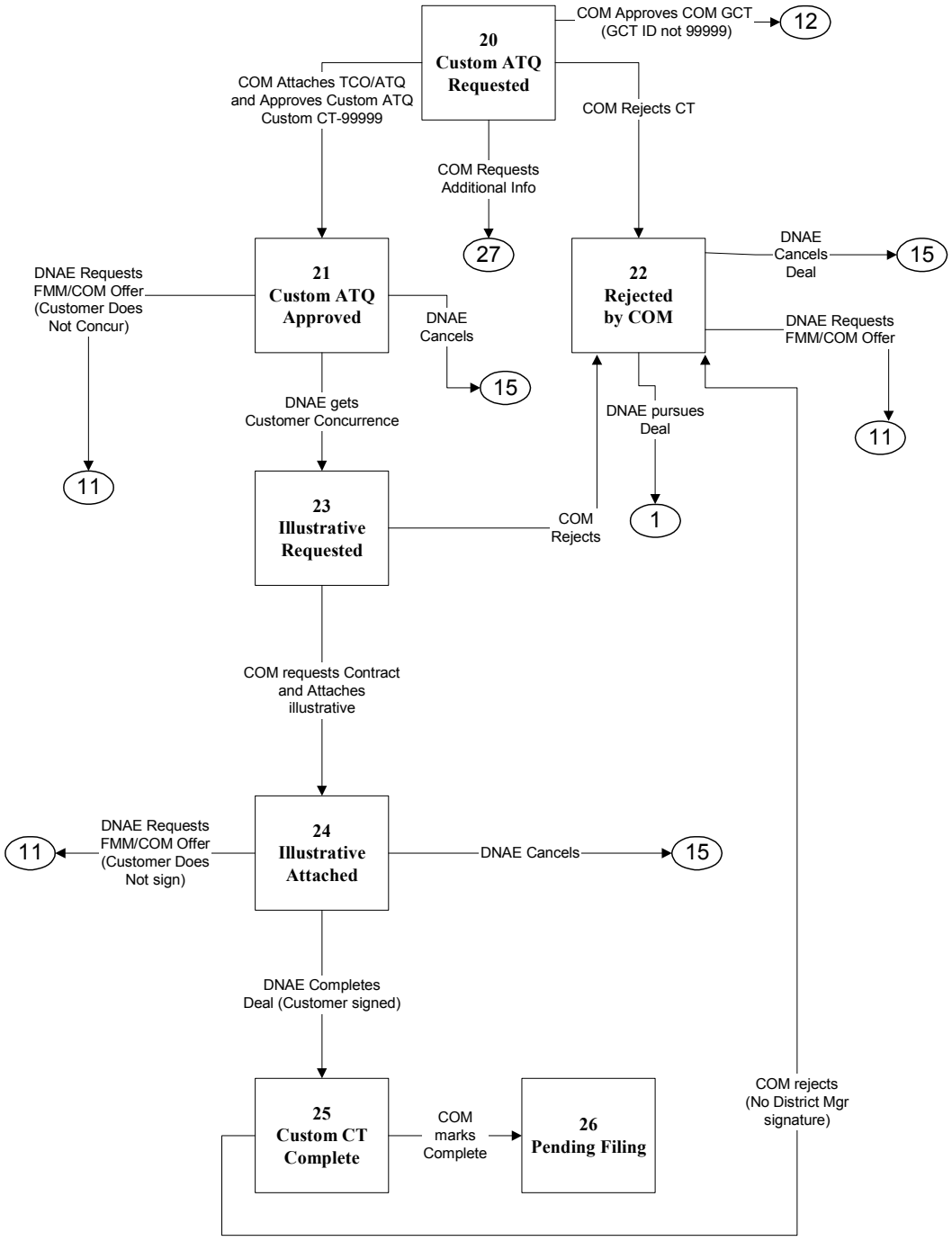
- The total time for the deal

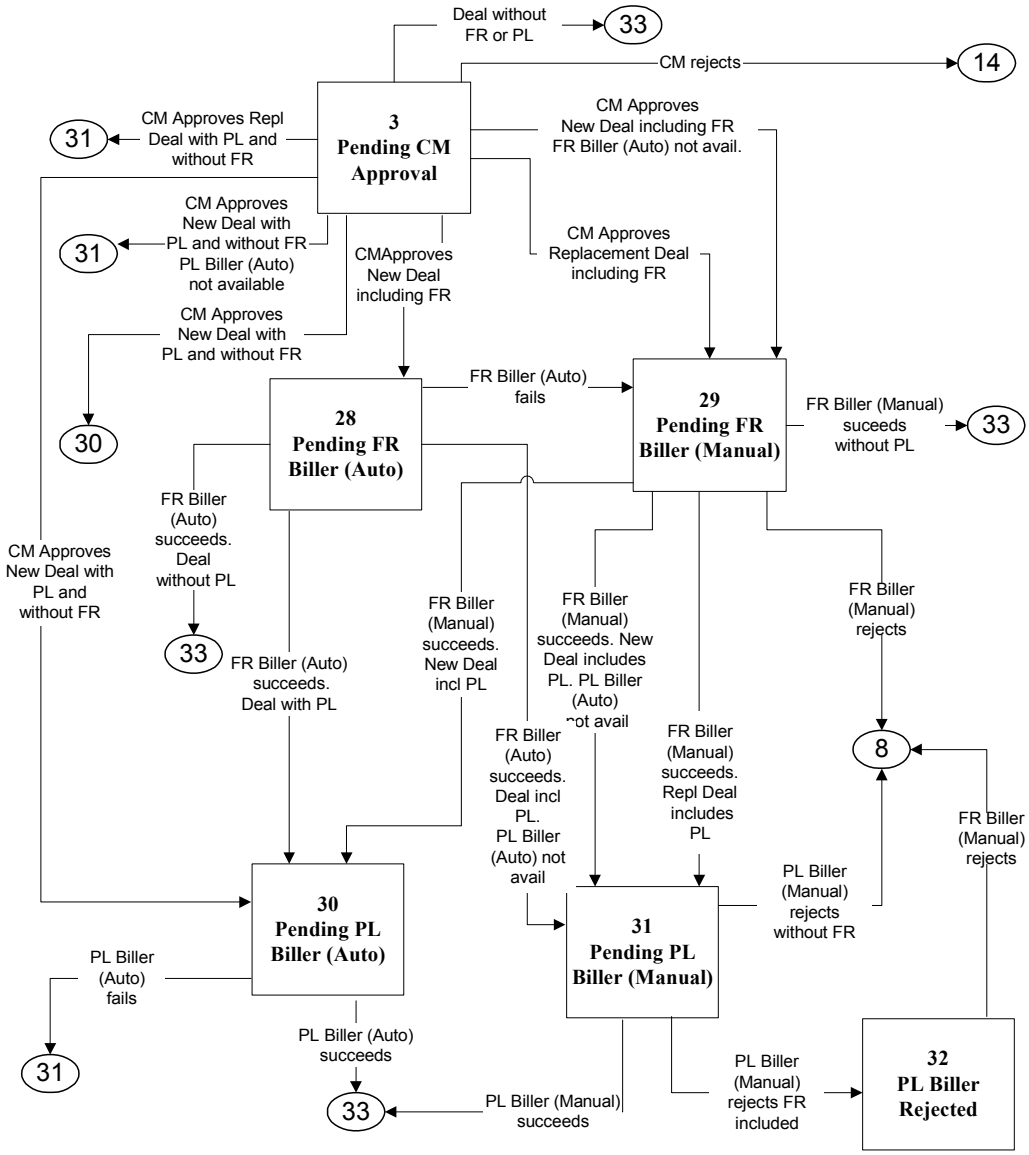
Several of these tasks may be repeated more than once while processing a single contract. Each iteration of each task can be measured.

What to Measure

The easiest way to understand which tasks can be measured is to look at the most recent State Transition Diagram. The State Transition Diagram shown on the following three pages is for CMT-DATA 2001.03, which is the latest one I have available. When the State Transition Diagram changes, follow the same steps shown here to update the report database extraction program.


START
DNAE performs Customer/MCN validation
1 Qualifying Opportunity
DNAE requests FMM/COM Offer
11
27 Additional Info Requested
DNAE Cancels Deal
15
FMM Request Additional Info
DNAE pursues
DNAE Cancels Deal
15
DNAE pursues deal
FMM Requests Custom ATQ
20
DNAE requests FMM/COM Offer
Field GCT DNAE submits conflict
9 Submitted Conflict
CM rejects
14
DNAE submits conflict
11 FMM/COM Offer Requested
FMM rejects
13 Rejected by FMM
CM Conflict Complete
FMM approves FMM GCT
DNAE requests FMM/COM Offer
11
DNAE Cancels Deal
15
No conflict Field GCT DNAE marks Complete
10 Conflict Review Complete
15
DNAE cancels deal
DNAE cancels
12 FMM GCT/ COM GCT Approved
No conflict DNAE marks Complete
DNAE marks Complete
35 Rejected By CS
DNAE pursues deal
1
DNAE cancels deal
15
34 Pending CS Completion
CS Requests Additional Info
36 CS Additional Info Requested
DNAE marks Complete
DNAE cancels deal
15 CANCELLED
CS Completes
2 Pending CPM Validation
CPM rejects
16 Rejected By CPM
DNAE pursues deal
1
DNAE cancels deal
15
Non-ECL Deal
CPM validates
3
28 Pending CSM Update
Deal from CSM
14 Rejected By CM
DNAE cancels deal
15
DNAE pursues deal
1
33
Deal from CMT
7 ATP
8 Rejected ATP
DNAE pursues deal
1
DNAE cancels deal
15


20
Custom ATQ
Requested
COM Approves COM GCT
(GCT ID not 99999)
12
COM Attaches TCO/ATQ
and Approves Custom ATQ
Custom CT-99999
COM Rejects CT
COM Requests
Additional Info
27
21
Custom ATQ
Approved
22
Rejected
by COM
DNAE
Cancels
Deal
15
DNAE Requests
FMM/COM Offer
(Customer Does
Not Concur)
DNAE
Cancels
15
DNAE Requests
FMM/COM Offer
11
DNAE gets
Customer Concurrence
DNAE pursues
Deal
11
23
Illustrative
Requested
COM
Rejects
1
COM requests Contract
and Attaches
illustrative
24
Illustrative
Attached
11
DNAE Requests
FMM/COM Offer
(Customer Does
Not sign)
DNAE Cancels
15
DNAE Completes
Deal (Customer signed)
25
Custom CT
Complete
COM
marks
Complete
26
Pending Filing
COM rejects
(No District Mgr
signature)


Deal without FR or PL
33
CM rejects
14
3 Pending CM Approval
CM Approves Repl Deal with PL and without FR
31
CM Approves New Deal including FR FR Biller (Auto) not avail.
CM Approves New Deal with PL and without FR PL Biller (Auto) not available
31
CM Approves Replacement Deal including FR
CMApproves New Deal including FR
CM Approves New Deal with PL and without FR
30
28 Pending FR Biller (Auto)
FR Biller (Auto) fails
29 Pending FR Biller (Manual)
FR Biller (Manual) suceeds without PL
33
FR Biller (Auto) succeeds. Deal without PL
33
CM Approves New Deal with PL and without FR
FR Biller (Auto) succeeds. Deal with PL
FR Biller (Manual) succeeds. New Deal incl PL
FR Biller (Manual) succeeds. New Deal includes PL. PL Biller (Auto) not avail
FR Biller (Manual) rejects
8
FR Biller (Auto) succeeds. Deal incl PL. PL Biller (Auto) not avail
FR Biller (Manual) succeeds. Repl Deal includes PL
FR Biller (Manual) rejects
PL Biller (Manual) rejects without FR
30 Pending PL Biller (Auto)
31 Pending PL Biller (Manual)
PL Biller (Auto) fails
31
PL Biller (Auto) succeeds
33
PL Biller (Manual) succeeds
PL Biller (Manual) rejects FR included
32 PL Biller Rejected

- Each rectangular box is a wait state where processing of the deal stops until some external event occurs.
    - The deal proceeds when the role user takes some action by clicking on the screen. In some cases, wait states are for synchronization with other systems, and the event is the response (or timeout) from the other system.
    - Each rectangular box has a STATUS_LOG record associated with it. The STATUS_LOG record for the deal is created and time stamped when the deal enters the wait state. It includes the deal ID and the status ID.
- Each line connecting boxes represents the code for implementing a possible screen click or event by a user.
    - One line for each possible action leads from the current box to the next box.
    - There is a time stamped TASK_LOG record generated each time a line (code block) is traversed by a deal. It includes the deal ID and a task ID (TK###).

It would seem obvious: “to measure any state, get the time stamp when the deal entered the state, get the time stamp when the deal entered the next state, subtract them, and the result is the duration.” Exactly this information is available in the STATUS_LOG.

However, using the TASK_LOG allows you to break the data down even further according to how the deal entered the state, and how the deal left the state. The problem was that nobody knew how the data would be used before the report was created, so the most versatile method was used as a contingency. It turns out that the most recent requests from the users have been for some of this level of detail, so the decision was correct.

Unfortunately, using the TASK_LOG is harder than using the STATUS_LOG because instead of one-record-on-state-entry and one-record-on-state-exit, there are multiple-possible-records-on-state-entry (each line leading into the box) and multiple-possible-records-on-state-exit (each line leading out of the box).

The strategy for measuring each box becomes:

- Look at the task ID. Find the first line coming into the box and take it’s time stamp as the start time.
- Look at the task ID. Find the first line going out of the box and take it’s time stamp as the end time.
- Output start time, stop time, duration, start task name, end task name.
- Filter by task pairs to include desired data.
- Average duration by number of deals or deals in date range.

Note that a deal can be in the same state more than once. The user may want this totaled by deal or separated by task pairs.

Note that the same role may process more than one state. The user may want this totaled by role or separated by state.

Status_Log

As of CMT-Data 2000.03

It's fairly easy to associate the states with the Status_ID. They have the same numbers and names as the boxes on the State Transition Diagrams. The actual states shown below include some states that were on previous State Transition Diagrams but no longer exist. The numbers cannot be reused without making it impossible to interpret older deals.

```
SQL> select status, status_name from status order by
status;

STATUS          STATUS_NAME
--------------- ----------------------------------------
ST001           Qualifying Opportunity
ST002           Pending CPM Validation
ST003           Pending CM Approval
ST004           Pending ATP
ST005           In Progress (ATP) - CM Online Complete
ST006           In Progress (ATP) - CT Online Complete
ST007           ATP
ST008           Rejected (ATP)
ST009           Submitted Conflict
ST010           Conflict Review Complete
ST011           FMM/COM Offer Requested
ST012           FMM GCT/COM GCT Approved
ST013           Rejected by FMM
ST014           Rejected by CM
ST015           Canceled
ST016           Rejected by CPM
ST017           Pending CT Auto
ST018           Pending CM Auto
ST019           In Progress (ATP) - CM Online Rejected
ST020           Custom ATQ Requested
ST021           Custom ATQ Approved
ST022           Rejected by COM
ST023           Illustrative Requested
ST024           Illustrative Attached
ST025           Custom CT Complete
ST026           Pending Filing - End of CMT
ST027           Additional Info Requested
ST028           Pending FR Biller(Auto)
ST029           Pending FR Biller(Manual)
ST030           Pending PL Biller(Auto)
ST031           Pending PL Biller(Manual)
ST032           PL Biller Rejected
ST033           Pending CSM Update
ST034           Pending CS Completion
```

```
ST035           Rejected By CS
ST036           CS Additional Info Requested
```

Task_Log

As of CMT-Data 2000.03

The major problem is associating the lines on the State Transition Diagram with the Task_ID. You have to guess which task IDs go with which lines by matching the task_label with the line description. The tasks shown below include some tasks that were on previous State Transition Diagrams but no longer exist. The numbers cannot be reused without making it impossible to interpret older deals.

```
TASK_ TASK_LABEL
----- ------------------------------
TK001 ROLE_OPEN_DEAL
TK002 ROLE_FIRST_ENTRY_DEAL
TK003 DNAE_CREATE_NEW_DEAL
TK004 DNAE_QUALIFY
TK005 DNAE_SAVE_DEAL
TK006 DNAE_SAVE_EXIT_DEAL
TK007 DNAE_EXIT_DEAL
TK008 DNAE_SELECT_GCT
TK009 FMM_SELECT_GCT
TK010 DNAE_GENERATE_CONTRACT_DOC
TK011 ROLE_OPEN_CTOF
TK012 ROLE_OPEN_CT
TK013 ROLE_OPEN_ATQ
TK014 ROLE_OPEN_MP
TK015 ROLE_OPEN_FAX
TK016 ROLE_REOPEN_CTOF
TK017 ROLE_REOPEN_CT
TK018 ROLE_REOPEN_ATQ
TK019 ROLE_REOPEN_MP
TK020 ROLE_REOPEN_FAX
TK021 DNAE_REQUEST_CONFLICT_ADVICE
TK022 CM_COMPLETE_CONFLICT_ADVICE
TK023 CM_REJECT_CONFLICT
TK024 DNAE_REQUEST_FMM_GCT_CUSTOM_ATQ
TK025 FMM_SAVE_DEAL
TK026 FMM_SAVE_EXIT_DEAL
TK027 FMM_EXIT_DEAL
TK028 FMM_APPROVE_FMM_GCT
TK029 FMM_REJECT_FMM_GCT
TK030 DNAE_COMPLETE_INVALID_MCN
TK031 DNAE_COMPLETE_DEAL
TK032 CPM_APPROVE_DEAL
TK033 CPM_REJECT_DEAL
TK034 CM_SAVE_DEAL
TK035 CM_SAVE_EXIT_DEAL
TK036 CM_EXIT_DEAL
TK037 CM_REJECT_DEAL
TK038 CM_APPROVE_DEAL
```

TK039 CM_ONLINE_COMPLETE_DEAL
TK040 CT_ONLINE_COMPLETE_DEAL
TK041 CM_ONLINE_REJECT_DEAL
TK042 CT_ONLINE_REJECT_DEAL
TK043 CM_ONLINE_SAVE_DEAL
TK044 CM_ONLINE_SAVE_EXIT_DEAL
TK045 CM_ONLINE_EXIT_DEAL
TK046 CT_ONLINE_SAVE_DEAL
TK047 CT_ONLINE_SAVE_EXIT_DEAL
TK048 CT_ONLINE_EXIT_DEAL
TK049 DNAE_CANCEL_DEAL
TK050 CM_BILLER_ENTER_CAPN TK051 DNAE_PURSUE_DEAL
TK052 CPM_APPROVE_NON_ECL_DEAL
TK053 CPM_SAVE_DEAL
TK054 CPM_SAVE_EXIT_DEAL
TK055 CPM_EXIT_DEAL
TK056 CM_APPROVE_REPL_NON_FR/PL_DEAL
TK057 CM_APPROVE_REPL_PL_DEAL
TK058 CM_APPROVE_REPL_FR_DEAL
TK059 CM_APPROVE_NEW_NON_FR/PL_DEAL
TK060 CM_APPROVE_NEW_FR_DEAL
TK061 CM_APPROVE_NEW_FR_DEAL_NO_CM_AUTO
TK062 CM_APPROVE_NEW_PL_DEAL
TK063 CM_APPROVE_NEW_PL_DEAL_NO_CT_AUTO
TK064 CT_ONLINE_AUTO_COMPLETE_NON_FR_DEAL
TK065 CT_ONLINE_AUTO_COMPLETE_FR_DEAL
TK066 CT_ONLINE_AUTO_COMPLETE_FR_DEAL_NO_CM_AUTO
TK067 CT_ONLINE_AUTO_FAIL
TK068 CT_ONLINE_COMPLETE_NEW_FR_DEAL
TK069 CT_ONLINE_COMPLETE_NEW_FR_DEAL_NO_CM_AUTO
TK070 CT_ONLINE_COMPLETE_REPL_FR_DEAL
TK071 CT_ONLINE_COMPLETE_NON_FR_DEAL
TK072 CM_ONLINE_REJECT_NON_PL_DEAL
TK073 CM_ONLINE_REJECT_PL_DEAL
TK074 CM_ONLINE_AUTO_FAIL
TK075 CM_ONLINE_AOTO_COMPLETE
TK076 FMM_REQUEST_ADDITIONAL_INFO
TK077 FMM_REQUEST_CUSTOM_ATQ
TK078 COM_APPROVE_CUSTOM_GCT
TK079 COM_REJECT_CT
TK080 COM_REQUEST_ADDITIONAL_INFO
TK081 COM_APPROVE_CUSTOM_ATQ
TK082 COM_REJECT
TK083 COM_ATTACH_ILLUSTRATIVE_CT
TK084 COM_COMPLETE_CUSTOM_CT
TK085 COM_REJECT_CUSTOM_ATQ
TK086 COM_SELECT_GCT
TK087 COM_SAVE_DEAL
TK088 COM_SAVE_EXIT_DEAL
TK089 COM_EXIT_DEAL
TK090 COM_REJECT_COM_GCT
TK091 DNAE_ENTER_CUSTOMER_CONCURRED
TK092 DNAE_COMPLETE_CUSTOM_CT
TK093 FMM_GENERATE_CONTRACT_DOC
TK094 COM_GENERATE_CONTRACT_DOC
TK095 CM_ONLINE_AUTO_COMPLETE_NON_PL_DEAL
TK096 CM_ONLINE_AUTO_COMPLETE_PL_DEAL

```
TK097 CM_ONLINE_AUTO_COMPLETE_PL_DEAL_NO_CT_AUTO
TK098 CM_ONLINE_COMPLETE_NEW_PL_DEAL
TK099 CM_ONLINE_COMPLETE_NEW_PL_DEAL_NO_CT_AUTO
TK100 CM_ONLINE_COMPLETE_REPL_PL_DEAL
TK101 CM_ONLINE_COMPLETE_NON_PL_DEAL
TK102 CT_ONLINE_REJECT_NON_FR_DEAL
TK103 CT_ONLINE_REJECT_FR_DEAL
TK104 CT_ONLINE_AUTO_COMPLETE
TK105 UPDATE_CSM_ONLY
TK106 CPM_APPROVE_CSM_NON_ECL_DEAL
TK107 CM_ONLINE_COMPLETE_CSM_DEAL
TK108 CM_APPROVE_REPL_CSM_NON_FR_PL_DEAL
TK109 CM_APPROVE_NEW_CSM_NON_FR_PL_DEAL
TK110 CM_ONLINE_AUTO_COMPLETE_CSM_NON_PL_DEAL
TK111 CM_ONLINE_COMPLETE_CSM_NON_PL_DEAL
TK112 CT_ONLINE_AUTO_CSM_COMPLETE
TK113 CT_ONLINE_COMPLETE_CSM_DEAL
TK114 CS_REJECT_DEAL
TK115 CS_MOREINFO_DEAL
TK116 CS_COMPLETE_DEAL
TK117 CS_SAVE_DEAL
TK118 CS_SAVE_EXIT_DEAL
TK119 CS_EXIT_DEAL
```

Example

Report Format

Formal reports are not provided as a part of the Contract Management Tool. Instead, the metric data is extracted from the database in a format that provides direct input to an Excel spreadsheet. The user can then create reports as required and can also “mine” the data in ad-hoc ways that could not be anticipated in a more formal reporting design.

Columns

Col	Column Heading	Source Data	Comment
A	Customer	Company_name	
B	Status	Status_name	
C	DNAE	Dnae_name	
D	Branch	Branch_name	
E	MCN	Lead_MCN	
F	New MCN	New_MCN_created	
G	Address	Bill_street_address_all	
H	City	Bill_city	
I	State	Bill_state	
J	Zip	Bill_zip	
K	Sales Office	Soc	
L	Bill Group	Bill_group	
M	Bill Cycle	Bill_cycle	
N	CAPN	Capn	
O	DNAE Start	Create_timestamp	Convert timestamp to characters in format: ‘MM/DD/YYYY HH:MI:SS PM’
P	Date in Queue	Status_change_timestamp	Convert timestamp to characters in format: ‘MM/DD/YYYY HH:MI:SS PM’
Q	Offer Type	Request_special_gct	
R	GCT Name	Gct_id	
S	Term	Term	Add “ Months” to the term with leading zeros suppressed

Col	Column Heading	Source Data	Comment
T	MMRC T4	T4_mmrc	
U	MMRC T9	T9_mmrc	
V	MMRC T11	T11_mmrc	
W	Promotions	Promotions	Remove new-line or return characters used as separators
X	Existing Contract	Conflict_contract	
Y	Competitor	Competitor	Remove any "|" characters used as separators
Z	ATT Premium	Premium_add	
AA	CISD	Cisd	
AB	Customer Signature Date	Customer_signature_date	
AC	Frame Plus Sold?	Frame_relay_plus_sold_ind	
AD	Rule Reg ID	CAPN_rule_reg_id	
AE	CAPN Disposition	DNAE_CAPN_active_flag	
The following fields are subject to user request.			
AF	FMM Cycle*	Fmm_metric(deal.deal_id)	(start, stop, duration)
AG	Conflict Cycle*	conflict_metric(deal.deal_id)	(start, stop, duration)
AH	CPM Cycle*	cpm_metric(deal.deal_id)	(start, stop, duration)
AI	CM Cycle*	cm_metric(deal.deal_id)	(start, stop, duration)
AJ	CM-Online/CT-Online Cycle*	cmocto_metric(deal.deal_id)	(start, stop, duration)
AK	ATQ Cycle*	ATQ_metric(deal.deal_id)	(start, stop, duration)
AL	Illustrative Cycle*	illust_metric(deal.deal_id)	(start, stop, duration)
AM	Custom Complete Cycle*	custom_metric(deal.deal_id)	(start, stop, duration)

Rows/Deals

One row is produced for each deal in the CMT Data system except those deals that have *Cancelled* ('ST015') status.

Fields are selected from the DEAL object, or from:

- GCT_GROUP1_SELECT where:
  GCT_GROUP1_SELECT.deal_id = DEAL.Deal_id
- BRANCH where: BRANCH.Branch_id = DEAL.Branch_id
- STATUS where STATUS.Status = DEAL.Status

Each row ends with the "\n" character.

Output File Name

The output file name should be: CMTWeeklyRptMM_DD_YYYY.txt where "MM_DD_YYYY" is the current date (run date) in the CMT system.

Output File Format

The output file is in CSV text format. Column headings are separated by pipes (|) and values are separated by commas. Rows are separated by "\n" characters.