

# MEDIATION: Overview

CDG's Mediation is a state-of-the-art solution for conquering the challenges associated with collecting unending streams of data from multiple sources using different formats, protocols, and time frames, and then processing and consolidating that data into files for invoicing, accounting, auditing, archiving, and reporting. Our Mediation system can help you filter, process, track, analyze, audit, and distribute your data with confidence.

## OVERVIEW

Mediation is a critical tool in billing wisely. Your goal is to consolidate and correlate an unending stream. CDG's Mediation ensures that usage information is collected effectively and prepared for downstream distribution, so tasks like billing can be initiated and completed in a timely manner, with dependable accuracy and clarity.

Mediation receives data from switches and other network systems and converts the information to manageable formats for billing, auditing, and reporting purposes. Mediation filters out irrelevant data and correlates and organizes your call report data. Billing is easily reconciled and disputes are settled without delay. Mediation also generates reports that describe call volume, origin, types of service, and other vital details to use for planning and allocation and provides custom usage search and easy-to-use query features for detailed tracking and analysis.

Billing wisely is a basic requirement for successful business practices. And at CDG, helping your telecom to bill wisely is what we do. Mediation is available for online or licensed delivery and can be fully integrated with CDG's BDS-I and MBS consumer billing products.

## FEATURES

**Flexible Business Rules** Mediation allows for the customization of business rules used to filter, edit, and rate call detail records.

**Event Notification** Provide system-generated messages about job statuses, potential processing issues, and general information to selected personnel.

**Data Warehousing** Multiple usage data warehousing options with data mining and analytics tools.

## Automated Input Validation System

- The input file scanner agent wakes at adjustable time intervals to scan for available inputs and schedules them to be processed.
- The anomaly file scanner agent wakes at adjustable time intervals to scan for files which have not been recognized as valid inputs by the input scanner. The agent then alerts the appropriate personnel to a possible issue.
- The file verification agent wakes at adjustable time intervals to verify that all inputs have been received and processed. If an expected input has not been received, the appropriate personnel are alerted.

## Switch Compatibility

- Traditional switches, such as Northern, Lucent, Siemens, and Mitel.
- Soft switches, such as Taqua, GENBAND, Metaswitch, REDCOM, Siemens, and Centile.
- VOD Servers, such as Myrio, Motorola, and Conklin.

## Data Format Compatibility

- Automatic Message Accounting (AMA)
- Automatic Message Accounting Data Networking Systems (AMADNS)
- Exchange Message Interface (EMI)
- A variety of Call Detail Records (CDRs), including Toly Digital, Level 3 GTO, Powernet, XCast Labs, TNCI, Zone Telecom, Spirit Telecom, Telehop, Bell Canada, Dialog, and DMS-MTX.
- Transcend Daily Call Detail (Verizon)
- Standard Daily Extract (CenturyLink)
- Lucent Flexent/AUTOPLEX Executive Call Processor
- Comma-delimited (.csv) transaction files for VoIP
- Comma-delimited (.csv) transaction files for VOD

**Process Scheduling** Processing automation for each Mediation function ranges from full intervention mode (manually starting processes) to full automation mode (processes that start when thresholds or other specific criteria are met). The system scheduling manager provides easy access to all processing needs.

FEATURES (CONTINUED)

**Fraud Detection and Monitoring** Create and manage factors used to evaluate and determine when fraud alerts are triggered. Define rules around call numbers, call type, usage type, and other factors. Exclusions can also set up be for all fraud rules, or specific rule IDs. View logs that are created for each fraud event.

**File Tracking** Audit IDs are assigned to every file for tracking records in the system (Fig. 1).

**Reporting and Studies**

- Trending reports highlight and identify anomalies.
- Audit reports verify that transactions are accountable.
- Warning reports identify any issues associated with the transaction being processed.
- Comma-delimited (.csv) files can be generated to be used internally or sent to consultants and can import data into applications such as MS Excel to generate additional specialized reporting.

**Merge Input Files - DEMOMBS - Mozilla Firefox**

Selection Criteria

Processing Status:  Released for Processing,  Merged,  Files in Error,  Bypassed or Hold,  Loaded,  Files Being Processed

Date:  All Dates,  Last 7 Days,  Last 30 Days,  Between, From Date: 03-03-2016, Thru Date: 04-09-2019

Schedule ID:  Any,  Between, From: 0, To: 9999999

File Audit ID:  Any,  Between, From: 0, To: 9999999

File ID: -Any-

Dataset Name	Processing Status	File Type	Record Format	Usage Category	Merge Audit Key	File ID	File Format	Phase 1 Schedule ID	File Audit ID	Usage F
da0225-20180307-3431193.emi	Complete	Standard	Raw	EMI	18030738308800001SP	11	F360-FTP Input - 360-Byte Recs- V1	178773	252834	02-27-2018
tol0225-20180307-3431193.emi	Complete	Standard	Raw	EMI	180307383139000001SP	12	F360-FTP Input - 360-Byte Recs- V1	178773	252835	03-02-2018
da544A-20180307-3431194.emi	Complete	Standard	Raw	EMI	180307383187000001SP	13	F360-FTP Input - 360-Byte Recs- V1	178773	252836	03-02-2018
MP.PROD.EMI.10178742.A000252792.EMRG	Complete	Billables	Usage Master	EMI	180307130730000001GB	2	REMH-Rated EMI Home Usage- V1	178743	252792	03-05-2018

**MBS - Daily Rating Input Files - DEMOMBS - Mozilla Firefox**

Selection Criteria

Processing Status:  Released for Processing,  Files Being Processed,  Reformatted and Rated,  Bypassed or Hold,  Reformatted / Staged For Rating,  Completed / Staged For Merge

Date:  All Dates,  Last 7 Days,  Last 30 Days,  Between, From Date: 03-03-2016, Thru Date: 04-09-2019

Schedule ID:  Any,  Between, From: 0, To: 9999999

File Audit ID:  Any,  Between, From: 0, To: 9999999

File ID: -Any-

Company ID	File ID	File Audit ID	Dataset Name	Processing Status	Usage Category	Audit Key	Schedule ID	Beginning Seq. No.	Ending Seq. No.	Usage From
210	2	252792	VA42303072018.bit	Completed / Staged for Merge	EMI		178742	7	7	03-05-2018
210	4	252774	2018-03-06_orig_cdr_11061.csv	Completed / Staged for Merge	EMI		178724	0	0	03-05-2018
210	15	252775	020001.030001.01443.01.2	Completed / Staged for Merge	EMI		178724	1443	1443	03-06-2018
210	15	252776	020001.030001.01444.01.2	Completed / Staged for Merge	EMI		178724	1444	1444	03-06-2018
210	19	252738	calix_usage_2018-03-07-08.05.22.csv	Completed / Staged for Merge	EMI		178686	0	0	03-06-2018
210	4	252554	2018-03-05_orig_cdr_11061.csv	Completed / Staged for Merge	EMI		178578	0	0	03-04-2018
210	2	252541	VA42303062018.bit	Completed / Staged for Merge	EMI		178565	6	6	03-04-2018
210	15	252523	020001.030001.01441.01.2	Completed / Staged for Merge	EMI		178544	1441	1441	03-05-2018

**Daily Rating Input File**

File Information: File Audit ID: 252792, Beginning Seq No.: 7, Ending Seq No.: 7, Usage From Time: 03-05-2018 13:13:11, Usage Thru Time: 03-07-2018 08:07:03

Reformatting Stage: Records (Input: 47, Dropped: 15, Total Processed: 32), CABS (Created: 0, Processed: 0, Passed to Merge: 0), End User (Created: 0, Processed: 32, Passed to Rating: 32)

Rating Stage: Reformatting Input: 32, Recycled: 0, Dropped: 0, Passed to Merge: 32

Warehouse Information: Warehouse Totals (CABS Warehouse Option: No Warehousing, CABS Records Loaded: 0, CABS Duplicates not Loaded: 0, End User Warehouse Option: No Warehousing, End User Records Loaded: 0, End User Duplicates not Loaded: 0)

Fig. 1: Audit IDs allow you to track your records through every step.

ANALYSIS TOOLS

• **AMA Search**

- Filter based on a single criterion or combinations of preset AMA fields.
- Multiple optional report presentation options.
- Details of individual records and overall totals.

• **EMI Search**

- Filter based on single or combinations of preset EMI fields.
- Filter based on positional parameter with user criteria.
- Results presented on three optional report presentations.
- Results placed in two EMI industry file formats or CDG internal formats.
- Details of individual records and overall totals.

• **Usage Search**

- Create custom profiles to search master or work files for messages and charge records (**Fig. 2**).

• **Custom Queries and Dashboards**

- Create custom queries and dashboards for reporting and auditing through QRT (Query Reporting Tool) module.

DELIVERY METHODS

- License
- Online

HARDWARE

- IBM System i (AS400)
- IBM System p (RS6000)

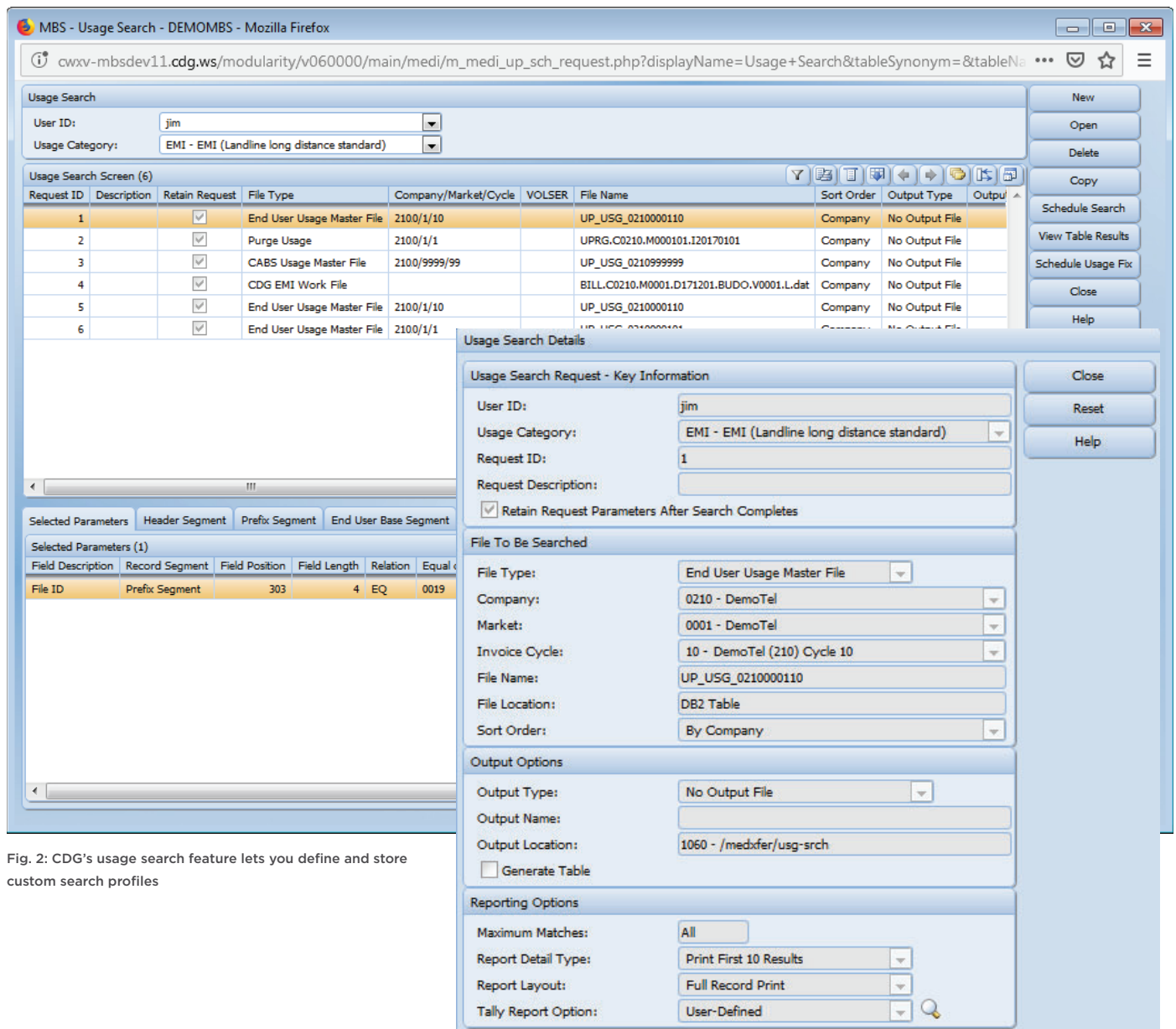


Fig. 2: CDG's usage search feature lets you define and store custom search profiles

## RATE CALCULATIONS

Mediation offers stand-alone integrated standard rating for non-tiered/non-bulk plans, or advanced rating options when combined with the MBS billing solution.

### Rate Packages (control pricing of daily usage transactions)

- Pass through usage with predetermined price.
- Use alternate charge (modules, etc.).
- Utilize rate plan code to determine rate.

### Rate Plans

- Based on location and/or specific dates
- Rate banding by distance, locations, etc.
- Rate period differentiation
- Holiday rating
- Units vs. transaction rating
- Initial and overtime rating units
- Application of surcharges

### Processing Priority

Ensures that appropriate rates are applied consistently and accurately when multiple rate packages, allowances, and discounts/miscellaneous charges are applicable.

### Rate Packages (Available when integrated with MBS)

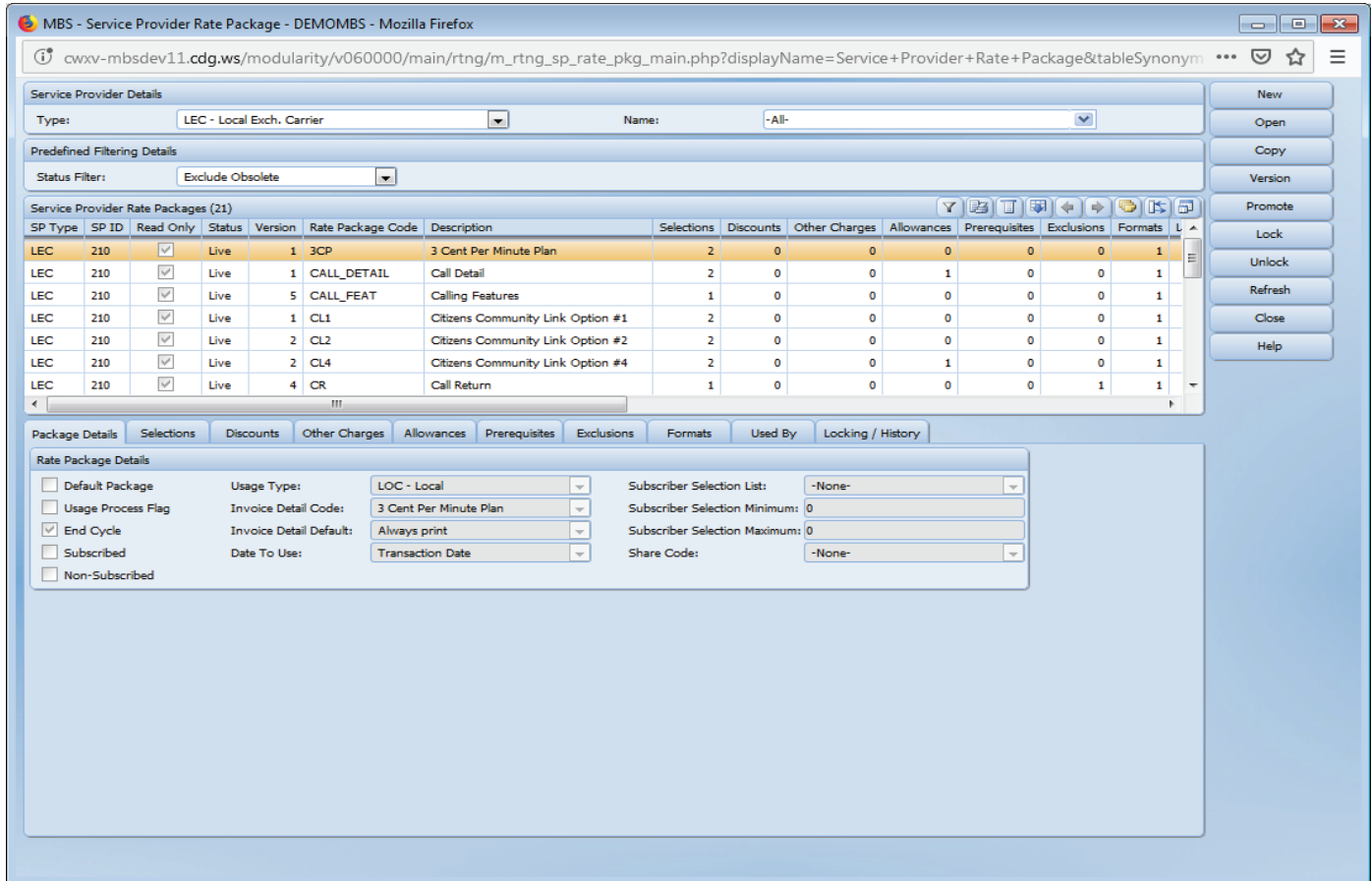
Utilize any combination of rate plans, allowances, and discount and miscellaneous charges. (Fig. 3).

### Discounts and Miscellaneous Charges

- Can be based on selection criteria for usage (type, subtype, method, rules, etc.).
- Can be based on selection criteria for non-usage (type, item type, item sub-type, etc.).
- Selected items can be used as qualifying or eligible items, and can be limited to debits, credits, or both.
- Step and volume tier structures are supported.
- Percentage rating, flat rating (charges only).

### Allowances

- Can exclude pre-defined amounts of usage (minutes/transactions) from normal pricing.
- Can define an override rate applicable to usage within specific rate period(s).
- Can be based on usage selection criteria (type, sub-type, method, rules, etc.).
- Can be applied on a per transaction basis.
- Can be based on dynamic quantity (incrementing allowance based on specific transactions).
- Includes a pooling option (a sharing of allowance among services).
- Includes a pre-pooling option (a chronological application of the pooled allowance).
- Proration, charge quantity and inheritance functions.
- Use qualifying items to assess a minimum charge.



The screenshot displays the 'MBS - Service Provider Rate Package - DEMOMBS' application in a Mozilla Firefox browser. The main area features a table titled 'Service Provider Rate Packages (21)'. The table has the following columns: SP Type, SP ID, Read Only, Status, Version, Rate Package Code, Description, Selections, Discounts, Other Charges, Allowances, Prerequisites, Exclusions, and Formats. The data rows include:

SP Type	SP ID	Read Only	Status	Version	Rate Package Code	Description	Selections	Discounts	Other Charges	Allowances	Prerequisites	Exclusions	Formats
LEC	210	<input checked="" type="checkbox"/>	Live	1	3CP	3 Cent Per Minute Plan	2	0	0	0	0	0	1
LEC	210	<input checked="" type="checkbox"/>	Live	1	CALL_DETAIL	Call Detail	2	0	0	1	0	0	1
LEC	210	<input checked="" type="checkbox"/>	Live	5	CALL_FEAT	Calling Features	1	0	0	0	0	0	1
LEC	210	<input checked="" type="checkbox"/>	Live	1	CL1	Citizens Community Link Option #1	2	0	0	0	0	0	1
LEC	210	<input checked="" type="checkbox"/>	Live	2	CL2	Citizens Community Link Option #2	2	0	0	0	0	0	1
LEC	210	<input checked="" type="checkbox"/>	Live	2	CL4	Citizens Community Link Option #4	2	0	0	1	0	0	1
LEC	210	<input checked="" type="checkbox"/>	Live	4	CR	Call Return	1	0	0	0	0	1	1

Below the table, the 'Package Details' tab is selected, showing various configuration options:

- Default Package
- Usage Process Flag
- End Cycle
- Subscribed
- Non-Subscribed
- Usage Type: LOC - Local
- Invoice Detail Code: 3 Cent Per Minute Plan
- Date To Use: Transaction Date
- Subscriber Selection List: -None-
- Subscriber Selection Minimum: 0
- Subscriber Selection Maximum: 0
- Share Code: -None-

Fig. 3: CDG's versatile rate packages are the hub of all daily and end-of-month rating activity.