

## Colocator Data Tables

**V1: 01/05/2018**

The colocator platform acquires location fixes from remote sensors and mobile phones. The stream of raw latitude and longitudes from the devices are processed by the system to power a number of features including real time monitoring, geo targeted messaging and event analytics. Data from each of these features is valuable for post event analysis. For this purpose we have designed a set of datatables that can be generated after the event and downloaded as csv files.

The final data products from the platform can be categorized into four main areas: (i) Integration (ii) Regions, (iii) Events and (iv) Messages. In total there are 15 datatables. This document describes each of the tables and specifies each of the columns.

### Table List

#### **Integration Tables:**

- AliasTable

#### **Region Tables:**

- RegionTable
- RegionVisitTable
- RegionAttendanceTable
- RegionAttendanceSummaryTable
- RegionOccupancySummaryTable
- RegionIngressEgressTable

#### **Event Tables:**

- EventTable
- EventVisitTable
- EventAttendanceTable
- EventAttendanceSummaryTable

#### **Message Tables:**

- MessageTable
- MessagedTable
- MessagedTimeTable
- MessagedSummaryTable

### Table Description

This section gives a brief overview of the 15 datatables. Most of the datatables are limited by a Start Time and an End Time.

#	Table Name	Description	Parameters
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1	AliasTable	This table gives aliases (e.g. GC Id) for CC device Id e.g. to integrate with other systems.	None
2	RegionTable	This table gives a row for each region.	None
3	RegionVisitTable	This table gives a row for each visit a device makes to a region.	Start Time, End Time
4	RegionAttendanceTable	This table gives the time spent by each device in each region.  Between a start and end time the durations of all the visits (from RegionVisitTable) are added up for each device.	Start Time, End Time
5	RegionAttendanceSummaryTable	This tables gives the total aggregate time spent in each region (i.e. the sum of all devices)	Start Time, End Time
6	RegionOccupancySummaryTable	This table gives the average occupancy for each region for a series of time bins between the StartTime and EndTime with a BinWidth.  The default BinWidth values are 900000, 3600000 and 86400000 which are 15 minutes, one hour and 24 hours respectively in milliseconds.	Start Time, End Time
7	RegionIngressEgressSummaryTable	Buckets time between a start time and an end time with a BinWidth. This table gives the number of entries and the number of exits into/out of the region for each time bucket.	Start Time, End Time
8	EventTable	This table gives the schedule of events	Start Time, End Time
9	EventVisitTable	This table gives a row for each visit a device makes to an event.	Start Time, End Time

10	EventAttendanceTable	Derived from the EventVisitTable. This table gives a row for each device that has attended an event. The table gives the total time each device spent at each event.	Start Time, End Time
11	EventAttendanceSummaryTable	Derived from the EventAttendanceTable. This table gives the number of unique devices and the aggregated total time spent at each event. (i.e. for all devices summed)	Start Time, End Time
12	MessageTable	This table gives the list of messages, their subject and text etc from the CC system.	Start Time, End Time
13	MessagedTable	This table gives a row for each device that the CC system attempted to send a message.	Start Time, End Time
14	MessagedSummaryTable	This table gives the number of unique devices that the CC system attempted to send a message (for each message).	Start Time, End Time
15	MessagedTimeTable	Buckets time between the Start Time and the End Time with a BinWidth. The table gives the number of unique devices that the CC system attempted to send a message to in each time bucket.	StartTime, EndTime

### **Table Specification**

This section specifies the detail of each of the columns in the 15 datatables. It gives the name of each column, the data type and where necessary a brief comment describing the column.

### **AliasTable**

Column Name	Data Type	Comment
DeviceId	UUID	CC ID for the App install.
AliasKey	STRING	The name of the linking key that enables integrations with other systems
AliasValue	STRING/UUID	The value of the identifier that is used in the external system.

### **Region Table**

Column Name	Data Type	Comment
RegionId	UUID (universally unique identifier)	
RegionName	STRING	
RegionTypeName	STRING	

### **RegionVisitTable**

Column Name	Data Type	Comment
RegionId	UUID	Key from the RegionTable
DeviceId	UUID	
Weight	FLOAT	Weight to take account of the changing population of devices.
RegionName	STRING	Column from Region table.
RegionTypeName	STRING	Column from Region table.
VisitStartStamp	BIGINT	Timestamp of the start of the visit. Timestamps are given by the number of milliseconds since 1 Jan 1970 00:00 UTC.
VisitEndStamp	BIGINT	Timestamp of the end of the visit. Timestamps are given by the number of milliseconds since 1 Jan 1970 00:00 UTC.

VisitDuration	BIGINT	The difference between the VisitEndStamp and VisitStartStamp. VisitDuration is in milliseconds.
VisitStartDateTimeOnSite	DATETIME	Local time on site at region given in a DATETIME format
VisitEndDateTimeOnSite	DATETIME	Local time on site at region given in a DATETIME format

### **RegionAttendanceTable**

Column Name	Data Type	Comment
RegionId	UUID	
DeviceId	UUID	
Weight	FLOAT	Weight to take account of the changing population of devices.
RegionName	STRING	Column from Region table.
RegionTypeName	STRING	Column from Region table.
TimeSpent	BIGINT	
WeightedTimeSpent	FLOAT	Sum of (Visit Duration x Weight from RegionVisit table) over all visits of device

### **RegionAttendanceSummaryTable**

Column Name	Data Type	Is Weighted?	Comment
RegionId	UUID	-NA-	
RegionName	STRING	-NA-	Column from Region table.
RegionTypeName	STRING	-NA-	Column from Region table. Avoids having to make a join.
NumberOfUniqueDevices	INT	N	Count of the number of unique device UUIDs that visited the region
NumberOfVisits	INT	N	Count of the number of individual visits made to the

			region. A single device can make multiple visits to a region.
TotalTimeSpent	BIGINT	N	The total time spent in the region across all of the devices.
AverageVisitTime	FLOAT	N	TotalTimeSpent / NumberOfVisits
AverageTimeSpent	FLOAT	N	TotalTimeSpent / NumberOfUniqueDevices
EffectiveNumberOfVisits	FLOAT	Y	Sum of the Weights from the RegionVisitTable. This quantity is weighted to take account of the changing population of devices.
TotalWeightedTimeSpent	FLOAT	Y	Sum of the WeightedTimeSpent from the RegionAttendanceTable. This is the total time spent in the region adjusted by the weights to account for the changing population of devices.
EffectiveNumberOfDevices	FLOAT	Y	TotalWeightedTimeSpent / AverageTimeSpent. This is the effective number of devices that would be required if each was sensing for the AverageTimeSpent. It can be higher or lower than the NumberOfUniqueDevices.

### **RegionOccupancySummaryTable**

Column Name	Data Type	Is Weighted?	Comment
RegionId	UUID	-NA-	
StartStamp	BIGINT	-NA-	Timestamp of the start of the time bin
EndStamp	BIGINT	-NA-	Timestamp of the end of the time bin
BinWidth	BIGINT	-NA-	The duration of the time bin. The default BinWidth values are 900000, 3600000 and 86400000

			which are 15 minutes, one hour and 24 hours respectively in milliseconds.
StartDateTimeOnSite	DATETIME	-NA-	Local time on site at the region for the start of the time bin
EndDateTimeOnSite	DATETIME	-NA-	Local time on site at the region for the end of the time bin
RegionName	STRING	-NA-	Column from Region table.
RegionTypeName	STRING	-NA-	Column from Region table.
NumberOfUniqueDevices	INT	N	Count of the number of unique device UUIDs in the region in the time bin.
TotalTimeSpent	FLOAT	N	Sum of TimeSpent from RegionOccupancyTable
AverageTimeSpent	FLOAT	N	TotalTimeSpent / NumberOfUniqueDevices
TotalWeightedTimeSpent	FLOAT	Y	Sum of WeightedTimeSpent from the RegionOccupancyTable. This is the total time spent in the region and the time bin adjusted by the weights to account for the changing population of devices.
EffectiveNumberOfDevices	FLOAT	Y	TotalWeightedTimeSpent / AverageTimeSpent. This is the effective number of devices that would be required if each was sensing for the AverageTimeSpent for the time bin.
AverageOccupancy	FLOAT	Y	Sum over device (Weight * BinFraction) from RegionOccupancyTable. This is the best estimate of the device occupancy in the region for the time bin adjusted for the changing population of devices.

**RegionIngressEgressSummaryTable**

Column Name	Data Type	Is Weighted?	Comment
RegionId	UUID	-NA-	
RegionName	STRING	-NA-	Column from Region table.
RegionTypeName	STRING	-NA-	Column from Region table.
StartStamp	BIGINT	-NA-	Timestamp of the start of the time bin
EndStamp	BIGINT	-NA-	Timestamp of the end of the time bin
BinWidth	BIGINT	-NA-	The duration of the time bin. The default BinWidth values are 900000, 3600000 and 86400000 which are 15 minutes, one hour and 24 hours respectively in milliseconds.
StartDateTimeOnSite	DATETIME	-NA-	Local time on site in the region for the start of the time bin
EndDateTimeOnSite	DATETIME	-NA-	Local time on site in the region for the end of the time bin
NumberOfEntries	INT	N	An entrance is when a visit starts in the time bin. i.e: VisitStartStamp > StartStamp & VisitStartStamp < EndStamp
NumberOfExits	INT	N	An exit is when a visit end in the time bin. i.e: VisitEndStamp > StartStamp & VisitEndStamp < EndStamp
EffectiveNumberOfEntries	FLOAT	Y	EffectiveNumberOfEntries = Sum of Weights from RegionVisitTable (that meet the entrance criteria)
EffectiveNumberOfExits	FLOAT	Y	EffectiveNumberOfExits = Sum of Weights from RegionVisitTable (that meet the exit criteria)

### **EventTable**

Column Name	Data Type	Comment
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EventId	UUID	
EventName	STRING	
RegionId	UUID	
RegionName	STRING	Column from Region table.
EventStartStamp	BIGINT	Timestamp of the start of the event
EventEndStamp	BIGINT	Timestamp of the end of the event
EventDuration	FLOAT	Duration of the event in milliseconds
EventStartDateTimeOnSite	DateTime	Time of start of event on site
EventEndDateTimeOnSite	DateTime	Time of end of event on site

### **EventVisitTable**

Column Name	Data Type	Comment
EventId	UUID	
EventName	STRING	Column from Event table.
RegionId	UUID	
RegionName	STRING	Column from the RegionTable
RegionTypeName	STRING	Column from the RegionTable
DeviceId	UUID	
Weight	FLOAT	Weight to take account of the changing population of devices.
VisitStartStamp	BIGINT	Timestamp of the start of the visit to the event
VisitEndStamp	BIGINT	Timestamp of the end of the visit to the event
VisitDuration	BIGINT	Duration of the visit to the event
VisitStartDateTimeOnSite	DATETIME	Local time of the start of the visit
VisitEndDateTimeOnSite	DATETIME	Local time of the end of the visit

### **EventAttendanceTable**

Column Name	Data Type	Comment
EventId	UUID	
DeviceId	UUID	
RegionId	UUID	
BinFraction	FLOAT	TimeSpent / EventDuration
Weight	FLOAT	WeightedTimeSpent / TimeSpent
EventName	STRING	Column from EventTable
RegionName	STRING	Column from RegionTable
RegionTypeName	STRING	Column from RegionTable
TimeSpent	BIGINT	
WeightedTimeSpent	FLOAT	Sum of (Weight x VisitDuration) from EventVisitTable.

### **EventAttendanceSummaryTable**

Column Name	Data Type	Is Weighted?	Comment
EventId	UUID	-NA-	
EventName	STRING	-NA-	Column from Event table.
RegionId	UUID	-NA-	
RegionName	STRING	-NA-	Column from RegionTable
RegionTypeName	STRING	-NA-	Column from RegionTable
NumberOfUniqueDevices	INT	N	
NumberOfVisits	INT	N	
TotalTimeSpent	BIGINT	N	
AverageVisitTime	FLOAT	N	TotalTimeSpent / NumberOfVisits

AverageTimeSpent	FLOAT	N	TotalTimeSpent / NumberOfUniqueDevices
EffectiveNumberOfVisits	FLOAT	Y	Sum of the weights from the EventVisitTable.
TotalWeightedTimeSpent	FLOAT	Y	Sum of the WeightedTimeSpent from the EventAttendanceTable
EffectiveNumberOfDevices	FLOAT	Y	TotalWeightedTimeSpent / AverageTimeSpent
AverageOccupancy	FLOAT	Y	Sum of (Weight * BinFraction) from the EventAttendanceTable

### **MessageTable**

Column Name	Data Type	Comment
MessageId	UUID	
MessageName	STRING	
MessageState	STRING	
MessageSubject	STRING	
MessageText	STRING	
ExtendedText	STRING	

### **MessageTable**

Column Name	Data Type	Comment
MessageId	UUID	
MessageName	STRING	
DeviceId	UUID	
SentTimestamp	BIGINT	
SendDateTimeOnSite	DATETIME	

### **MessageSummaryTable**

Column Name	SQL Data Type	Comment
MessageId	UUID	
MessageName	STRING	
NumberOfUniqueDevices	INT	

### **MessageTimeTable**

Column Name	SQL Data Type	Comment
MessageId	UUID	
MessageName	STRING	
StartStamp	BIGINT	Timestamp of the start of the time bin
EndStamp	BIGINT	Timestamp of the end of the time bin
BinWidth	BIGINT	Duration of the time bin
StartDateTimeOnSite	DATETIME	Local time of the start of the bin
EndDateTimeOnSite	DATETIME	Local time of the end of the bin
NumberOfUniqueDevices	INT	