



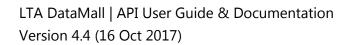
API User Guide & Documentation

Version 4.4 16 Oct 2017



Document Change Log

Version	Change Details	Release Date
No.		
1.1	First release of document, reflecting specifications for each dataset.	04 Jun 2014
1.2	Amended attributes for all datasets, and added the update frequency for	15 Jun 2014
	each dataset in specification section.	
1.3	Inserted notes to denote fields that are new and upcoming; not yet	26 Jun 2014
	available on the data feed.	
1.4	Minor revisions (typo errors).	10 Mar 2015
1.5	Revisions to names of datasets, and removed listing for certain attributes	07 Apr 2015
	that are redundant at this point.	
2.0	Revised document for newly revamped DataMall.	13 Apr 2015
	- New Categorisation of Datasets	
	- Moved Park & Ride Location, Premium Bus Service, and Carpark Rates	
	to Static Datasets listed on MyTransport.SG.	
2.1	Corrected reference notes for Carpark Availability and ERP Rates.	14 Apr 2015
2.2	Added Bus Arrival, and Taxi Availability APIs	19 Apr 2015
2.2.1	Amended Update Freqs for Bus Arrival and Taxi Availability	03 Jun 2015
3.0	Bus Arrival API is now enhanced! Latest *beta* release includes:	12 Dec 2015
	- Additional 3 rd set of ETA information	
	- Estimated location (coordinates) of buses	
	Look out for blue-highlights!	
3.1	Public-Transport (Bus) Related APIs are enhanced (version 2)!	08 Mar 2016
	- Bus Services and Bus Routes are now consolidated across	
	Operators, e.g. SBST routes and SMRT routes in 1 single API	
	- Attributes are renamed to be more meaningful	
	- Bus Stops now include location (lat/long) coordinates	
	Bug for Bus Arrival #VisitNumber fixed.	
3.2	Changes to Traffic Related APIs:	31 Mar 2016
	- URLs changed to point to version 2 of the APIs.	
	- VCCType renamed to VehicleType (ERP Rates)	
	- EstimatedTime renamed to EstTime (Estimated Travel Times)	
	- RoadID renamed to EventID (Road Openings and Road Works)	
	- ImageURL renamed to ImageLink (Traffic Images)	
	- Band renamed to SpeedBand (Traffic Speed Bands)	
3.3	Changes to API Response Size:	08 Aug 2016
	- Taxi Availability API now returns 500 records per call.	
	- Traffic Images API now returns 70 records per call.	
	- Changes are reflected on Page 6, and on respective API URLs.	
3.4	Changes to API authentication – now requiring only AccountKey.	01 Nov 2016
3.5	Updated attribute description for location coordinates of Bus Arrival	23 Nov 2016
	API.	





3.6	Traffic Images API now returns all records per call.	14 Dec 2016
3.7	Updated guide to making API calls, using Postman.	05 Apr 2017
4.0	Bus Arrival API is now enhanced! Latest release includes:	28 Jul 2017
	- New Attribute – Bus Type	
	- Inclusion of Short Working Trip (SWT) Supplementary Services	
	- Relegation of OriginCode and DestinationCode to vehicle level	
	- Removal of entire response structure from API during non-	
	operating hours	
	- Removal of Status Attribute	
	- Renaming of values for Load Attribute	
	- Renaming of SubsequentBus and SubsequentBus3 subset tags	
	- Renaming of BusStopID Parameter to BusStopCode	
	- Removal of SST Parameter. Timestamps are now in SST by default.	
	- Rehashed advisement on Front-End Implementation for clarity.	
4.1	Minor revisions to sample Bus Arrival API response.	08 Sep 2017
4.2	Announcement on Changes to API Response Size is reflected on Page 6.	15 Sep 2017
4.3	Deployment date has postponed for the increase of API Response Size.	06 Oct 2017
	Please refer to Page 6 for the latest announcement.	
4.4	Response Size for all APIs (except Bus Arrival API) have been increased	16 Oct 2017
	to 500 records per call.	
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1. MAKING API CALLS

API calls need to be made programmatically in regular intervals to obtain the constant stream of data for your respective development or research needs. For illustration purposes, the API call below is being made via a third-party application – Postman.

Steps to making an API call:

- 1. Download and install the Postman from https://www.getpostman.com/. Fire it up!
- 2. Make sure Http method is set to GET.
- 3. Enter the URL (refer to subsequent pages in this document) in the field **request URL**.
- 4. Enter your AccountKey under **Headers**.
- 5. **(OPTIONAL STEP)** The "accept" header allows you to specify the response format of your API call. Default is JSON. Specify "application/atom+xml" for XML.
- 6. Click on the **Send** button.



Figure 2-1

Figure 2-2 on the next page shows the JSON response of an API call made for the Traffic Incidents dataset.



Figure 2-2: API (JSON) Response as shown on Postman.

With the exception of the following Bus Arrival API listed below (see Table 1), API responses returned are limited to 500 records of the dataset per call. This number may be adjusted from time to time.

To retrieve subsequent records of the dataset, you need to append the **\$skip operator** to the API call (URL). For example, to retrieve the next 500 records (501st to the 1000th), the API call should be:

http://datamall2.mytransport.sg/ltaodataservice/BusRoutes? \$skip = 500

To retrieve the following set of 500 records, append '**?***skip=1000', and so on. Just remember, each URL call returns only a max of 500 records!

API	Response Size	
Bus Arrival	N.A. Depends on parameter supplied.	

Table 1: API Response Size



Here's an example of how you can retrieve the data programmatically. This example is coded in Python 2.7. As mentioned previously, this API call only returns the first 500 records.

```
import json
import urllib
from urlparse import urlparse
import httplib2 as http #External library
if name ==" main ":
    #Authentication parameters
   headers = { 'AccountKey' : '6HsAmPleOR/EkEYWOcjKg==',
                'accept' : 'application/json'} #this is by default
   #API parameters
   uri = 'http://datamall2.mytransport.sg/' #Resource URL
   path = '/ltaodataservice/BusRoutes?'
   #Build query string & specify type of API call
   target = urlparse(uri + path)
   print target.geturl()
   method = 'GET'
   body = ''
   #Get handle to http
   h = http.Http()
    #Obtain results
    response, content = h.request(
       target.geturl(),
       method,
       body,
       headers)
    #Parse JSON to print
    jsonObj = json.loads(content)
   print json.dumps(jsonObj, sort keys=True, indent=4)
   #Save result to file
   with open("bus routes.json", "w") as outfile:
        #Saving jsonObj["d"]
        json.dump(jsonObj, outfile, sort keys=True, indent=4,
ensure ascii=False)
```



2. API DOCUMENTATION

The following lists all real-time / dynamic datasets that are refreshed at regular intervals and served out via APIs. Specification for each API can be found in the rest of this document.

	Public-Transport Related (Total 5)	Description
1	Bus Arrival	Returns real-time Bus Arrival information for Bus Services at a queried Bus Stop, including: Estimated Time of Arrival (ETA), Estimated Location, Load info (i.e. how crowded the bus is).
2	Bus Services	Returns detailed service information for all buses currently in operation, including: first stop, last stop, peak / offpeak frequency of dispatch.
3	Bus Routes	Returns detailed route information for all services currently in operation, including: all bus stops along each route, first/last bus timings for each stop.
4	Bus Stops	Returns detailed information for all bus stops currently being serviced by buses, including: Bus Stop Code, location coordinates.
5	Taxi Availability	Returns location coordinates of all Taxis that are currently available for hire. Does not include "Hired" or "Busy" Taxis.
	Traffic Related (Total 10)	Description
6	Carpark Availability	Returns no. of available lots for carparks in major shopping malls and developments within Orchard, Marina, HarbourFront, Jurong Lake District.
7	ERP Rates	Returns ERP rates of all vehicle types across all timings for each zone.
8	Estimated Travel Times	Returns estimated travel times of expressways (in segments).
9	Faulty Traffic Lights	Returns alerts of traffic lights that are currently faulty, or currently undergoing scheduled maintenance.
10	Road Openings	Returns all planned road openings.
11	Road Works	Returns all road works being / to be carried out.
12	Traffic Images	Returns links to images of live traffic conditions along expressways and Woodlands & Tuas Checkpoints.
13	Traffic Incidents	Returns incidents currently happening on the roads, such as Accidents, Vehicle Breakdowns, Road Blocks, Traffic Diversions etc.
14	Traffic Speed Bands	Returns current traffic speeds on expressways and arterial roads, expressed in speed bands.
15	VMS / EMAS	Returns traffic advisories (via variable message services) concerning current traffic conditions that are displayed on EMAS signboards along expressways and arterial roads.



2.1 BUS ARRIVAL

URL	http://datamall2.mytrans	port.sg/ltaodatas	ervice/BusArrivalv2
Description	Returns real-time Bus Arrival information of Bus Services at a queried Bus Stop, including Est. Arrival Time, Est. Current Location, Est. Current Load.		
Update Freq	1 minute		
	Req	uest	
Parameters	Description	Mandatory	Example
BusStopCode	Bus stop reference code	Yes	83139
ServiceNo	Bus service number	No	15
	Resp	onse	
Attributes	Description		Example
ServiceNo	Bus service number		15
Operator	SBST (for SBS TransSMRT (for SMRT Co	Public Transport Operator Codes: SBST (for SBS Transit) SMRT (for SMRT Corporation) TTS (for Tower Transit Singapore)	
NextBus	Structural tags for all bus	level attributes^ c	of the next 3 oncoming buses.
NextBus2	Note that if there is only o		
NextBus3	attributes values in NextB	us2 and NextBus3	will be empty / blank.
^ OriginCode	Reference code of the first bus stop where this bus started its service		77009
^ DestinationCode	Reference code of the last bus stop where this bus will terminate its service		77131
^ EstimatedArrival	Date-time of this bus' estimated time of arrival, expressed in the UTC standard, GMT+8 for Singapore Standard Time (SST)		2017-04-29T07:20:24+08:00
^ Latitude	Current estimated location	n coordinates of	1.42117943692586
^ Longitude	this bus at point of publish	ned data	103.831477233098
^ VisitNumber		Ordinal value of the n^{th} visit of this vehicle at this bus stop; $1=1^{st}$ visit, $2=2^{nd}$ visit	
^ Load	Current bus occupancy / crowding level: SEA (for Seats Available) SDA (for Standing Available) LSD (for Limited Standing)		SEA
^ Feature	Indicates if bus is wheel-chair accessible: • WAB • (empty / blank)		WAB
^ Type	Vehicle type: SD (for Single Deck) DD (for Double Deck) BD (for Bendy)		SD

Please note that Bus Arrival data (i.e. all attribute-value pairs above) will only appear on the API when the buses are in service (i.e. on the roads). When not in operation, OR when the API service is undergoing maintenance and temporarily unavailable, there will be no response returned on the API (not even the attribute tags). Please refer to Advisement Pt. 1 in following section for more.



SAMPLE API CALL & RESPONSE

```
API Call:
http://datamall2.mytransport.sg/ltaodataservice/BusArrivalv2?BusStopCode=83139
API Response:
    "odata.metadata":
"http://datamall2.mytransport.sg/ltaodataservice/$metadata#BusArrivalv2/@Element",
    "BusStopCode": "83139",
    "Services": [
            "ServiceNo": "15",
            "Operator": "GAS",
            "NextBus": {
                 "OriginCode": "77009",
                 "DestinationCode": "77009",
                 "EstimatedArrival": "2017-06-05T14:46:27+08:00",
                 "Latitude": "1.3143508333333334", 
"Longitude": "103.906379",
                 "VisitNumber": "1",
                 "Load": "SDA",
                 "Feature": "WAB",
                 "Type": "SD"
            "NextBus2": {
                 "OriginCode": "77009",
                 "DestinationCode": "77009",
                 "EstimatedArrival": "2017-06-05T14:57:09+08:00",
                 "Latitude": "1.334717"
                 "Longitude": "103.90723483333333",
                 "VisitNumber": "1",
                 "Load": "SDA",
                 "Feature": "WAB"
                 "Type": "SD"
             "NextBus3": {
                 "OriginCode": "77009",
                 "DestinationCode": "77009",
                 "EstimatedArrival": "2017-06-05T15:00:20+08:00",
                 "Latitude": "1.3370036666666667", 
"Longitude": "103.913939",
                 "VisitNumber": "1",
                 "Load": "SEA",
                 "Feature": "WAB"
                 "Type": "SD"
            }
        },
            "ServiceNo": "150",
            "Operator": "SBST",
            "NextBus": {
                 "OriginCode": "82009",
                 "DestinationCode": "82009".
                 "EstimatedArrival": "2017-06-05T14:54:06+08:00",
                 "Latitude": "1.319458"
                 "Longitude": "103.9012405",
                 "VisitNumber": "1",
                 "Load": "SEA",
                 "Feature": "WAB"
                 "Type": "SD"
                 "NextBus2": {
                 "OriginCode": "82009"
                 "DestinationCode": "82009",
                 "EstimatedArrival": "2017-06-05T15:04:49+08:00",
                 "Latitude": "0".
                 "Longitude": "0"
                 "VisitNumber": "1",
```



```
"Load": "SEA",
              "Feature": "WAB"
              "Type": "SD"
         "NextBus3": {
              "OriginCode": "82009",
              "DestinationCode": "82009",
              "EstimatedArrival": "2017-06-05T15:19:49+08:00",
             "Latitude": "0",
"Longitude": "0"
              "VisitNumber": "1",
              "Load": "SEA",
              "Feature": "WAB"
              "Type": "SD"
         }
    },
         "ServiceNo": "155",
         "Operator": "SBST",
         "NextBus": {
              "OriginCode": "52009",
              "DestinationCode": "84009",
              "EstimatedArrival": "2017-06-05T14:55:12+08:00",
             "Latitude": "1.3184713333333333", 
"Longitude": "103.89202066666667",
              "VisitNumber": "1",
              "Load": "SEA",
              "Feature": "WAB"
             "Type": "SD"
         "NextBus2": {
              "OriginCode": "52009",
              "DestinationCode": "84009",
              "EstimatedArrival": "2017-06-05T15:02:41+08:00",
             "Latitude": "1.3186606666666667",
"Longitude": "103.88303666666667",
              "VisitNumber": "1",
              "Load": "SEA",
              "Feature": "WAB"
              "Type": "SD"
         "NextBus3": {
              "OriginCode": "52009",
              "DestinationCode": "84009",
              "EstimatedArrival": "2017-06-05T15:20:22+08:00",
              "Latitude": "1.3360038333333333",
              "Longitude": "103.87798466666666",
              "VisitNumber": "1",
              "Load": "SEA",
              "Feature": "WAB"
              "Type": "SD"
         }
    }
]
```



ADVISEMENT ON FRONT-END IMPLEMENTATION (BUS APPS)

1. [EstimatedArrival] Display of Advisement Messages when there is NO Bus Arrival Data

In the event where data is not available (be it in partial or in full) on the API, you may want to display some form of 'status texts' to advise your app users on what's going on, as far as bus service availability is concerned. To do this, you will need to take reference from two data points – (1) the presence or **absence** of Arrival data itself, and (2) the **bus service operating hours at each bus stop** which you need to obtain via the **Bus Routes API**.

With those two data points gathered, you will arrive at the following possible scenarios:

#	Operation Status	Data Availability	Advisement Message
a.	Bus is in operation	Arrival data is available	(none required)
b.	Bus is in operation	Arrival data is NOT available	"No Est. Available"
C.	Bus is NOT in operation	Arrival data is NOT available	"Not In Operation"
d.	Bus is NOT in operation	Arrival data is available	(none required)

For scenarios (b) and (c), you may display advisement messages like those suggested in the table above, or any other user-friendly and appropriate variants at your discretion.

Next, you should note that Arrival data may be available on the API even when bus services are supposedly NOT in operation (as per scheduled operating hours) – reflected as scenario (d) in the table above. This happens,

- a. before first bus(es) begin their service from Bus Interchanges / Depots in the mornings, and,
- b. when last bus(es) at night are running behind schedule; slightly past operating hours.

Therefore, the general logic to be applied, is to always <u>first</u> display the Arrival data if it's available on the API, irrespective of the scheduled operating hours. Advisement messages like "No Est. Available" and "Not In Operation" are applicable ONLY when there is no Arrival data on the API.



2. [EstimatedArrival] Rounding of Seconds

All derived bus arrival duration should be rounded down to the nearest minute.

Derived duration: 3:49 mins
Display duration: "3 min"

Derived duration: 2:07 mins
Display duration: "2 min"

Derived duration: 1:59 mins
Display duration: "1 min"

Derived duration: 0:59 mins
Display duration: "Arr"

3. [Load] Colour Scheme Adoption

You may adopt this colour scheme to serve as visual indicators for the various loading values:

- [<mark>Green</mark>] Seats Available
- [Amber] Standing Available
- [Red] Limited Standing

You are given the flexibility for the manner in which you display the colours, i.e. colour bars, coloured timings, and accompanied with legends where appropriate and/or necessary.

4. [Feature] Wheelchair Accessible Buses

You are given the flexibility to display any symbols or labels ξ to denote oncoming buses that are wheelchair accessible.

ADDITIONAL NOTE ON LOOP SERVICES THAT RUNS BOTH DIRECTIONS

Please note that some Loop Services are appended with 'G' or 'W' to denote their direction of travel. You should account for and display these services individually – 225G, 225W, 243G, 243W, 410G, 410W.



2.2 BUS SERVICES

URL	http://datamall2.mytransport.sg/ltaodataservice/BusServices		
Description	Returns detailed service information for all buses currently in operation, including: first stop, last stop, peak / offpeak frequency of dispatch.		
Update Freq	Ad-Hoc		
	Response		
Attributes	Description	Sample	
ServiceNo	The bus service number	107M	
Operator	Operator for this bus service	SBST	
Direction	The direction in which the bus travels (1 or 2), loop services only have 1 direction	1	
Category	Category of the SBS bus service: EXPRESS, FEEDER, INDUSTRIAL, TOWNLINK, TRUNK, 2 TIER FLAT FEE, FLAT FEE \$1.10 (or \$1.90, \$3.50, \$3.80)	TRUNK	
OriginCode	Bus stop code for first bus stop	64009	
DestinationCode	Bus stop code for last bus stop (similar as first stop for loop services)	64009	
AM_Peak_Freq	Freq of dispatch for AM Peak 0630H - 0830H (range in minutes)	14-17	
AM_Offpeak_Freq	Freq of dispatch for AM Off-Peak 0831H - 1659H (range in minutes)	10-16	
PM_Peak_Freq	Freq of dispatch for PM Peak 1700H - 1900H (range in minutes)	12-15	
PM_Offpeak_Freq	Freq of dispatch for PM Off-Peak after 1900H (range in minutes)	12-15	
LoopDesc	Location at which the bus service loops, empty if not a loop service.	Raffles Blvd	



2.3 BUS ROUTES

URL	http://datamall2.mytransport.sg/ltaodataservice/BusRoutes		
Description	Returns detailed route information for all services currently in operation, including: all bus stops along each route, first/last bus timings for each stop.		
Update Freq	Ad-Hoc		
	Response		
Attributes	Description	Sample	
ServiceNo	The bus service number	107M	
Operator	Operator for this bus service	SBST	
Direction	The direction in which the bus travels (1 or 2), loop services only have 1 direction	1	
StopSequence	The i-th bus stop for this route	28	
BusStopCode	The unique 5-digit identifier for this physical bus stop	01219	
Distance	Distance travelled by bus from starting location to this bus stop (in kilometres)	10.3	
WD_FirstBus	Scheduled arrival of first bus on weekdays	2025	
WD_LastBus	Scheduled arrival of last bus on weekdays	2352	
SAT_FirstBus	Scheduled arrival of first bus on Saturdays	1427	
SAT_LastBus	Scheduled arrival of last bus on Saturdays	2349	
SUN_FirstBus	Scheduled arrival of first bus on Sundays	0620	
SUN_LastBus	Scheduled arrival of last bus on Sundays	2349	



2.4 BUS STOPS

URL	http://datamall2.mytransport.sg/ltaodataservice/BusStops		
Description	Returns detailed information for all bus stops currently being serviced by buses, including: Bus Stop Code, location coordinates.		
Update Freq	Ad-Hoc		
	Response		
Attributes	Description	Sample	
BusStopCode	The unique 5-digit identifier for this physical bus stop	01012	
RoadName	The road on which this bus stop is located	Victoria St	
Description	Landmarks next to the bus stop (if any) to aid in identifying this bus stop	Hotel Grand Pacific	
Latitude	Location coordinates for this bus ston	1.29685	
Longitude	Location coordinates for this bus stop	103.853	



2.5 TAXI AVAILABILITY

URL	http://datamall2.mytransport.sg/ltaodataservice/Taxi-Availability			
Description	Returns location coordinates of all Taxis that are currently available for hire. Does not include "Hired" or "Busy" Taxis.			
Update Freq	1 min			
	Response			
Attributes	Description	Sample		
Latitude	Latitude location coordinates.	1.35667		
Longitude	Longitude location coordinates.	103.93314		



2.6 CARPARK AVAILABILITY

URL	http://datamall2.mytransport.sg/ltaodataservice/CarParkAvailability		
Description	Returns no. of available lots for carparks in major shopping malls and developments within Orchard, Marina, HarbourFront, Jurong Lake District. (Note: list of carparks available on this API is subset of those listed on One.Motoring and MyTransport Portals)		
Update Freq	1 minute		
	Response		
Attributes	Description	Sample	
CarParkID	A unique code for this carpark	1	
Area	Area of development / building: - Orchard - Marina - Harbfront - JurongLakeDistrict	Marina	
Development	Shopping mall or major landmark where carpark is located	Suntec City	
Latitude	Latitude map coordinates.	1.29375	
Longitude	Longitude map coordinates.	103.85718	
Lots	Number of lots available at point of data retrieval.	352	



2.7 ERP RATES

URL	http://datamall2.mytransport.sg/ltaodataservice/ERPRates	
Description	Returns ERP rates of all vehicle types across all timings for each zone.	
Update Freq	Ad-Hoc	
	Response	
Attributes	Description Sample	
VehicleType DayType	Classification types: - Passenger Cars - Motorcycles - Light Goods Vehicles - Heavy Goods Vehicles - Very Heavy Goods Vehicles - Taxis Available types: - Weekdays	Passenger Cars/Light Goods Vehicles/Taxis Weekdays
StartTime	- Saturdays Start time for this ERP rate	08:00
EndTime	End time for this ERP rate	08:05
ZoneID	Zone for this ERP rate	AY1
ChargeAmount	Chargeable amount	0.5
EffectiveDate	Rate is effective as of this date (in YYYY-MM-DD format)	2016-02-01



2.8 ESTIMATED TRAVEL TIMES

URL	http://datamall2.mytransport.sg/ltaodataservice/EstTravelTimes		
Description	Returns estimated travel times of expressways (in segments).		
Update Freq	5 minutes		
	Response		
Attributes	Description Sample		
Name	Expressway	AYE	
Direction	Direction of travel:	1	
	1 – Travelling from east to west, or south to north.2 – Travelling from west to east, or north to south.		
FarEndPoint	The final end point of this whole expressway in current direction of travel	TUAS CHECKPOINT	
StartPoint	Start point of this current segment	AYE/MCE INTERCHANGE	
EndPoint	End point of this current segment	TELOK BLANGAH RD	
EstTime	Estimated travel time in minutes	2	



2.9 FAULTY TRAFFIC LIGHTS

URL	http://datamall2.mytransport.sg/ltaodataservice/FaultyTrafficLights	
Description	Returns alerts of traffic lights that are <u>currently</u> faulty, or <u>currently</u> undergoing scheduled maintenance.	
Update Freq	2 minutes – whenever there are updates	
	Response	
Attributes	Description	Sample
AlarmID	Technical alarm ID	GL703034136
NodeID	A unique code to represent each unique traffic light node	703034136
Туре	Type of the technical alarm - 4 (Blackout) - 13 (Flashing Yellow)	13
StartDate	YYYY-MM-DD HH:MM:SS.ms	2014-04-12 01:58:00.0
EndDate	YYYY-MM-DD HH:MM:SS.ms (empty field if this is not a scheduled maintenance)	
Message	Canning Message	(23/1)8:58 Flashing Yellow at Bedok North Interchange/Bedok North Street 1 Junc.



2.10 ROAD OPENINGS

URL	http://datamall2.mytransport.sg/ltaodataservice/RoadOpenings	
Description	Returns all planned road openings.	
Update Freq	24 hours – whenever there are updates	
	Response	
Attributes	Description	Sample
EventID	ID for this road opening event	RMAPP-201603-0900
StartDate	Start date for works to be performed for this road opening (in YYYY-MM-DD format)	2016-03-31
EndDate	End date for works to be performed for this road opening (in YYYY-MM-DD format)	2016-09-30
SvcDept	Department or company performing this road work	SP POWERGRID LTD - CUSTOMER PROJ (EAST)
RoadName	Name of new road to be opened	AH SOO GARDEN
Other	Additional information or messages	For details, please call 62409237



2.11 ROAD WORKS

URL	http://datamall2.mytransport.sg/ltaodataservice/RoadWorks	
Description	Returns all road works being / to be carried out.	
Update Freq	24 hours – whenever there are upd	lates
	Response	
Attributes	Description Sample	
EventID	ID for this road work	RMAPP-201512-0217
StartDate	Start date for the works performed for this road work (in YYYY-MM-DD format)	2015-12-14
EndDate	End date for works performed for this road work (in YYYY-MM-DD format)	2016-07-31
SvcDept	Department or company performing this road work	SP POWERGRID LTD - REGIONAL NETWORK CENTRAL
RoadName	Name of road where work is being performed.	ADAM DRIVE
Other	Additional information or messages.	For details, please call 67273085



2.12 TRAFFIC IMAGES

URL	http://datamall2.mytransport.sg/ltaodataservice/Traffic-Images		
Description	Returns links to images of live traffic conditions along expressways and Woodlands & Tuas Checkpoints.		
Update Freq	1 to 5 minutes	1 to 5 minutes	
		Response	
Attributes	Description	Sample	
CameraID	A unique ID for this camera	5795	
Latitude	Latitude map coordinates	1.326024822	
Longitude	Longitude map coordinates	103.905625	
ImageLink	Link for downloading this image.	https://s3-ap-southeast- 1.amazonaws.com/mtpdm/2016-03-29/18- 32/5795_1822_20160329182706_c3e176.jpg	



2.13 TRAFFIC INCIDENTS

URL	http://datamall2.mytransport.sg/ltaodataservice/TrafficIncidents		
Description	Returns incidents <u>currently</u> happening on the roads, such as Accidents, Vehicle Breakdowns, Road Blocks, Traffic Diversions etc.		
Update Freq	2 minutes – whenever there are up	2 minutes – whenever there are updates	
	Response		
Attributes	Description Sample		
Туре	Incident Types: - Accident - Road Works - Vehicle Breakdown - Weather - Obstacle - Road Block - Heavy Traffic - Misc Diversion - Unattended Vehicle	Vehicle Breakdown	
Latitude	Latitude map coordinates for the start point of this road incident	1.30398068448214	
Longitude	Longitude map coordinates for the start point of this incident	103.919182834377	
Message	Description message for this incident	(29/3)18:22 Vehicle breakdown on ECP (towards Changi Airport) after Still Rd Sth Exit. Avoid lane 3.	



2.14 TRAFFIC SPEED BANDS

URL	http://datamall2.mytransport.sg/ltaodataservice/TrafficSpeedBands Returns current traffic speeds on expressways and arterial roads, expressed in speed bands.			
Description				
Update Freq	5 minutes			
	Response			
Attributes	Description Sample			
LinkID	Unique ID for this stretch of road	103046935		
RoadName	Road Name	SERANGOON ROAD		
RoadCategory	A – Expressways B – Major Arterial Roads C – Arterial Roads D – Minor Arterial Roads E – Small Roads F – Slip Roads G – No category info available Speed Band Information. Total: 4	B 2		
эрсеавана	1 – indicates speed range from 0 < 20 2 – indicates speed range from 20 < 40 3 – indicates speed range from 40 < 60 4 – indicates speed range > 60	2		
MinimumSpeed	Minimum speed in KM/H	20		
MaximumSpeed	Maximum speed in KM/H	39		
Location	Latitude and Longitude map	1.3220591510051254		
	coordinates for start and end	103.86246461405193		
	points for this stretch of road.	1.3215993547809128 103.86315591911669		



2.15 VMS / EMAS

URL	http://datamall2.mytransport.sg/ltaodataservice/VMS	
Description	Returns traffic advisories (via variable message services) concerning current traffic conditions that are displayed on EMAS signboards along expressways and arterial roads.	
Update Freq	2 minutes	
Response		
Attributes	Description	Sample
EquipmentID	EMAS equipment ID	amvms_v9104
Latitude	Latitude map coordinates of electronic signboard.	1.3927176306916775
Longitude	Longitude map coordinates of electronic signboard.	103.82618266340947
Message	Variable Message being displayed on the EMAS display.	VEH BREAKDOWN SH,AFT U.THOMSON