**Description of GTFS Data Currently Available for Accra’s TroTro Network**

The data described in this document and included in ‘gtfs\_accra\_26\_02\_16b.zip’ offers a general description of existing transport services in Accra. It consists of nine files used by Google[[1]](#footnote-1) to display schedule data. The information included in this data was collected in May and June of 2015 as part of a data collection campaign on Accra’s transport.

The data is based on a single trip for each trotro route that was part of the project. Since there are no fixed schedules, the stop timing indicated in ‘stop\_times.txt’ just represents the timing of stops on the trip when the data was collected rather than a time the trotro is scheduled to pass.

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| **GTFS data (gtfs\_accra\_26\_02\_16b.zip)** |

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| --- | --- | --- | --- |
| File Name | Description | GTFS Specifications | Accra Data |
| agency.txt | Information on different transit operators | Required | Available |
| calendar.txt | List of days included in assignment period | Required | Available |
| routes.txt | List of bus lines | Required | Available |
| stop\_times.txt | Arrival times at bus stops during data collection period | Required | Available |
| stops.txt | List of bus stops | Required | Available |
| trips.txt | List of trips | Required | Available |
| shapes.txt | Rules for drawing the linear shape of a bus line itinerary on a map | Optional | Available |
| fare\_attributes.txt | Fare information. | Optional | Available |
| fare\_rules.txt | Rules for applying fare information to trotro routes. | Optional | Available |

**Description of GTFS files**

The diagram below depicts the tables listed above and how they fit together within a larger database structure. There are also longer descriptions of each table in the pages that follow.



Source: STM, http://www.stm.info/en/about/developers/available-data-description

Each of the tables described below and displayed in the diagram represents a different file in the GTFS data. Most tables contain a field that uniquely identifies each record in the file (ie: that is dataset unique). This field is indicated by a ‘ \* ’ in the table descriptions below and in bold in the diagram.

Fields that are present in more than one file are used to link files together. For example, linking ‘stops.txt’ to ‘stop\_times.txt’ by the common ‘stop\_id’ field gives the set of stop names and coordinates for each stop along a trip. Tables that can be linked via a common field have a line connecting them in the diagram.

The ‘Codes used’ column noted below describes any codes used in the GTFS file. If there are only a few codes used in a field, a description of each code is given. If there are a greater number of codes used, a description of one code is given as an example. If no codes are used, the field is left blank.

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| **agency.txt** |

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| --- | --- | --- | --- |
| Field Name | Description | Codes used | GTFS specifications |
| agency\_id\* | Identifier of transit operator. Dataset unique. | ex:  1 = Abeka Lapaz Circle Accra Local of Abeka Branch of G.P.R.T.U | Optional |
| agency name | Name of transit operator |  | Required |
| agency url | Site address of operator group |  | Required |
| agency\_timezone | Time zone for Accra | Africa/Accra | Required |

**Extract from file:**

**agency\_id,agency\_name,agency\_url,agency\_timezone**

**1,Abeka Lapaz Circle Accra Local of Abeka Branch of G.P.R.T.U,**[**https://en.wikipedia.org/wiki/Ghana\_Private\_Road\_Transport\_Union**](https://en.wikipedia.org/wiki/Ghana_Private_Road_Transport_Union)**,Africa/Accra**

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| **calendar.txt** |

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Description | Codes used | GTFS specifications |
| service\_id\* | ID that uniquely identifies a set of dates when service is available for 1 or more routes. Dataset unique. | service\*\*=route available every day of the week (mon-sun) | Required |
| Monday | A binary value that indicates whether service is available for all Mondays in the date range. | 1=available  0=unavailable | Required |
| Tuesday | A binary value that indicates whether service is available for all Tuesdays in the date range. | 1=available  0=unavailable | Required |
| Wednesday | A binary value that indicates whether service is available for all Wednesdays in the date range. | 1=available  0=unavailable | Required |
| Thursday | A binary value that indicates whether service is available for all Thursdays in the date range. | 1=available  0=unavailable | Required |
| Friday | A binary value that indicates whether service is available for all Fridays in the date range. | 1=available  0=unavailable | Required |
| Saturday | A binary value that indicates whether service is available for all Saturdays in the date range. | 1=available  0=unavailable | Required |
| Sunday | A binary value that indicates whether service is available for all Sundays in the date range. | 1=available  0=unavailable | Required |
| start\_date | The start date for the service. |  | Required |
| end\_date | The end date for the service. |  | Required |

\*\*since there are no weekly schedules for the routes, each route is coded as available every day.

**Extract from file:**

**service\_id,monday,tuesday,wednesday,thursday,friday,saturday,sunday,start\_date,end\_date**

**service,1,1,1,1,1,1,1,20150520,20170531**

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| **routes.txt** |

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| --- | --- | --- | --- |
| Field Name | Description | Codes used | GTFS specifications |
| route\_id\* | ID that uniquely identifies a route. Dataset unique. | XXXA = route heading away from the CBD  XXXB = route heading toward the CBD | Required |
| route\_short\_name | The short name of the route. | XXXA = route heading away from the CBD  XXXB = route heading toward the CBD | Required |
| agency\_id | ID of the agency that operates the route (see agency.txt). | ex:  87 = Osu Trotro Branch of GPRTU | Optional |
| route\_long\_name | The full name of the route. |  | Required |
| route\_type | Type of transportation used on a route | 3 = Bus | Required |

**Extract from file:**

**route\_id,route\_short\_name,agency\_id,route\_long\_name,route\_type**

**385B,385B,15,37 Station to New Town Station,3**

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| **stop\_times.txt** |

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| --- | --- | --- | --- |
| Field Name | Description | Codes used | GTFS specification |
| trip\_id | ID that identifies a trip. (see trips.txt) | XXXA\_1 = first trip for route heading away from the CBD  XXXB\_1 = first trip for route heading toward the CBD | Required |
| arrival\_time | The arrival time at a stop on a specific trip on a route. | ex:  12:51:38 = 51 min, 38 sec past noon | Required |
| departure\_time | The departure time from a stop on a specific trip on a route. | ex:  12:51:38 = 51 min, 38 sec past noon | Required |
| stop\_sequence | Identifies the order of the stops for a particular trip. The values must increase along a trip. | ex:  1 = First stop of trip | Required |
| stop\_id | ID that uniquely identifies a stop. Multiple routes may use the same stop. (see stops.txt) | SXXX = Stop  TXXX = Terminal | Required |

**Extract from file:**

**trip\_id,arrival\_time,departure\_time,stop\_sequence,stop\_id**

**002A\_1,12:51:38,12:51:38,1,T5622**

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| **stops.txt** |

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| --- | --- | --- | --- |
| Field Name | Description | Codes used | GTFS specification |
| stop\_id\* | ID that uniquely identifies a stop. Multiple routes can use the same stop. Dataset unique. | SXXX = Stop  TXXX = Terminal | Required |
| stop\_name | Name of the stop or terminal. |  | Required |
| stop\_lat | Latitude of the stop (WGS 84 coordinate system). |  | Required |
| stop\_lon | Longitude of the stop (WGS 84 coordinate system). |  | Required |

**Extract from file:**

**stop\_id,stop\_name,stop\_lat,stop\_lon**

**S10,Manhean Junction,5.67904,-0.350009**

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| **trips.txt** |

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| --- | --- | --- | --- |
| Field Name | Description | Codes used | GTFS specification |
| route\_id | ID that uniquely identifies a route. (see routes.txt) | XXXA = route heading away from the CBD  XXXB = route heading toward the CBD | Required |
| service\_id | ID that uniquely identifies a set of dates when service is available for one or more routes. (see calendar.txt) | ‘service’=route available every day of the week (mon-sun) | Required |
| trip\_id\* | ID that uniquely identifies a trip. Dataset unique. | XXXA\_1 = first trip on route heading away from the CBD  XXXB\_1 = first trip on route heading toward the CBD | Required |
| shape\_id | ID that uniquely identifies the linear shape of a trip. (see shapes.txt) | 25001 = shape of the 1st trip on the 250th route | Required |

**Extract from file:**

**route\_id,service\_id,trip\_id,shape\_id**

**018A,service,018A\_1,1001**

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| **shapes.txt** |

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Description | Codes used | GTFS specification |
| shape\_id | ID that uniquely identifies the linear shape of a trip. (see trips.txt) | 25001 = shape of the 1st trip on the 250th route | Required |
| shape\_pt\_lat | Latitude of a point that composes the line (WGS 84 coordinate system). |  | Required |
| shape\_pt\_lon | Longitude of a point that composes the line (WGS 84 coordinate system). |  | Required |
| shape\_pt\_sequence | Number designating the sequence of a point along the line. | 3 = 3rd vertex along the line | Required |

**Extract from file:**

**shape\_id,shape\_pt\_lat,shape\_pt\_lon,shape\_pt\_sequence**

**25001,5.5526404,-0.2147177,3**

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| **fare\_attributes.txt** |

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| --- | --- | --- | --- |
| Field Name | Description | Codes used | GTFS specification |
| fare\_id\* | ID that uniquely identifies a fare class (see fare\_rules.txt) | fare\_00 = 1st fare class | Required |
| price | Price per trip. | ex: 0.5 | Required |
| currency\_type | Type of currency | CAD\*\* | Required |
| payment\_method | Indicates when the fare must be paid. | 0 = Fare is paid on board  1 = Fare must be paid before boarding | Required |
| transfers | The number of transfers permitted on this fare. | 0 = no transfers permitted | Required |
| transfer\_duration | The length of time in seconds before the transfer expires. | n/a | Optional |

\*\*The actual currency type is GHS (Ghanaian cedi), but CAD (Canadian dollar) was used to avoid triggering an error in the validation tool.

**Extract from file:**

**fare\_id,price,currency\_type,payment\_method,transfers,transfer\_duration**

**fare\_00,0.5,CAD,0,,**

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| --- |
| **fare\_rules.txt** |

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Description | Codes used | GTFS specification |
| route\_id | ID that uniquely identifies a route. (see routes.txt) | XXXA = route heading away from the CBD  XXXB = route heading toward the CBD | Optional |
| fare\_id | ID that uniquely identifies a fare class (see fare\_attributes.txt) | fare\_00 = 1st fare class | Required |
| origin\_id | Associates the fare ID with an origin zone ID. | n/a | Optional |
| destination\_id | Associates the fare ID with a destination zone ID. | n/a | Optional |
| contains\_id | Associates the fare ID with a zone ID. | n/a | Optional |

**Extract from file:**

**route\_id,fare\_id,contains\_id,destination\_id,origin\_id**

**002A,fare\_06,,,**

1. Google reference: https://developers.google.com/transit/gtfs/reference [↑](#footnote-ref-1)