

Phoenix, Arizona Testbed Network Input Files

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Identification Information

Citation

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Project: Analysis, Modeling and Simulation (AMS) Testbed Development and Evaluation to Support Dynamic Mobility Applications (DMA) and Active Transportation and Demand Management (ATDM) Programs

Title: Phoenix, Arizona Testbed Network Files

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Description

Abstract

The files provided in this repository represent the virtual simulation-based network files for the Phoenix Testbed in the AMS Project. The network files require specialized software to run and simulate specific scenarios as well as specific applications to connect to the network for their evaluation. A modified version of DTALite is required to run the files provided in this repository. DTALite is a mesoscopic traffic simulation software available as open source¹.

For additional details on the network, its geometry, calibration etc., users are encouraged to utilize the following documents:

1. Analysis Plan for Phoenix Testbed: FHWA-JPO-16-372
2. Calibration Report for Phoenix Testbed: FHWA-JPO-16-379
3. Evaluation Report for DMA Program: FHWA-16-383

This network was used to evaluate three different Dynamic Mobility Applications:

1. Enabling Advanced Traveler Information Systems (EnableATIS)²
2. Freight Advanced Traveler Information System Concept of Operations (FRATIS)³

¹ <https://sites.google.com/site/dtalite/home>

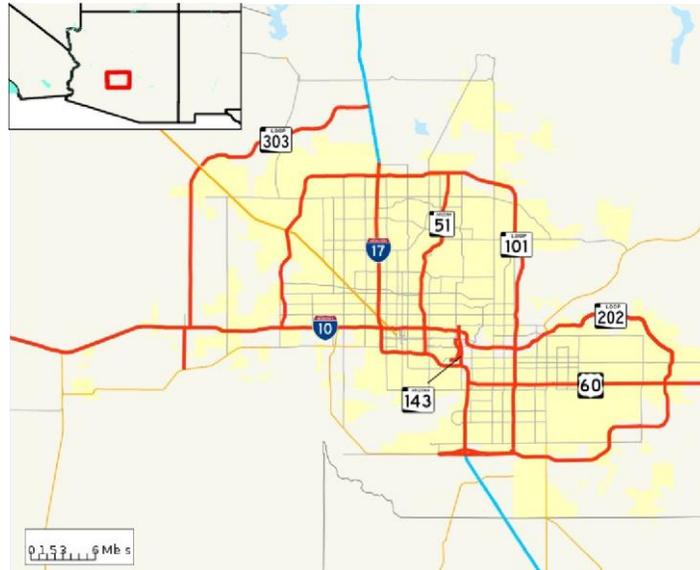
² <http://ntl.bts.gov/lib/52000/52600/52622/FHWA-JPO-14-113-v1.pdf>

³ <http://ntl.bts.gov/lib/54000/54100/54104/12-065.pdf>

3. Integrated Dynamic Transit Operations (IDTO)¹

This network was used to evaluate three Active Transportation Demand Management strategies:

1. Predictive Traveler Information and Dynamic Routing
2. Adaptive Ramp Metering
3. Dynamic Traffic Signal Control



Keywords

Theme

- Theme Keyword:** Dynamic Traffic Assignment
- Theme Keyword:** DTALite
- Theme Keyword:** HD-DTA
- Theme Keyword:** Adaptive Ramp Metering
- Theme Keyword:** Adaptive Traffic Signal Control
- Theme Keyword:** EnableATIS
- Theme Keyword:** FRATIS
- Theme Keyword:** IDTO
- Theme Keyword:** D-RIDE
- Theme Keyword:** T-DISP
- Theme Keyword:** Travel Time

Place

- Place Keyword:** SR 101, Price Freeway

¹ <http://ntl.bts.gov/lib/54000/54000/54067/12-083.pdf>

Place Keyword: I-10

Place Keyword: Tempe, Arizona

Place Keyword: Phoenix, Arizona

Folder Organization:

The simulation network files are all recognized as `.csv` spreadsheet format. The main folder contains the following set of network input files:

- 1) Input Node File
- 2) Input Node Control Type File
- 3) Input Link File
- 4) Input Link Type File
- 5) Input Zone File
- 6) Input Activity Location File
- 7) Input Demand File (97 sets)
- 8) Input Demand Metadata File
- 9) Input Demand Type File
- 10) Input Value of Time File
- 11) Input Vehicle Type File
- 12) Input Vehicle Emission Rate File
- 13) Input Pricing Type File
- 14) Input Scenario Settings File
- 15) Input MOE Settings File
- 16) Input Link Travel Time File
- 17) Input Scenario Count File
- 18) AMS Movement Phasing File

Data Quality Information

Attribute Accuracy: No accuracy assessment has been performed for the data set.

Completeness Report: The USDOT does not make any claims regarding data completeness. There may be gaps in the data provided.

Entity and Attribute Information

Description for DTA-Lite Node Input File

This file defines the nodes in the network with names, identification numbers, location/position, and characteristics. This file is named as 'input_node' and recognized as `.csv` file type.

Attribute

Attribute Label: [Node] (Column A)

Attribute Definition: This field contains the node identification number in ascending order in increments of 1.

Attribute Domain Values: Integer

Attribute

Attribute Label: node_id (Column B)

Attribute Definition: This field contains the node identification number in for each unique node.

Attribute Domain Values: Integer

Attribute

Attribute Label: control_type (Column C)

Attribute Definition: This field contains integer identification for intersection control type consistent with DYNASMART-P control type format. Values are left at '0' if not used.

Attribute Domain Values: Integer

Attribute

Attribute Label: control_type_name (Column D)

Attribute Definition: This field contains the name description of the control type in Column C.

Attribute Domain Values: String

Attribute

Attribute Label: x (Column E)

Attribute Definition: This field contains the longitude coordinate for the node location.

Attribute Domain Values: Double

Attribute

Attribute Label: y (Column F)

Attribute Definition: This field contains the latitude coordinate for the node location.

Attribute Domain Values: Double

Attribute

Attribute Label: geometry (Column G)

Attribute Definition: This field contains longitude and latitude coordinate for the node location in the following formal: <Point><coordinate>longitude, latitude</coordinate><Point> Attribute Domain Values: String

Description for DTA-Lite Node Input Control File

This file defines the control types (unknown control, no control, yield sign, 2-way stop sign, 4-way stop sign, pretimed signal, actuated signal, and roundabout). This file is required when using the network import tool and the control type field is read from node shape file. This file is labeled as 'input_node_control_type' and recognized as `.csv` file type.

Attribute

Attribute Label: control_type_name (Row 1)

Attribute Definition: This field lists the names of the intersection control type.

Attribute Domain Values: String

Attribute

Attribute Label: control_type (Row 2)

Attribute Definition: This field lists the integer identification associated with the control type used in the input_node.csv file. Attribute Domain Values:

Integer

Description for DTA-Lite Link Input File

This file defines all the links in the network, along with their corresponding characteristics and traffic flow model input data. This file is labeled as 'input_link' and recognized as `.csv` file type.

Attribute

Attribute Label: name (Column A)

Attribute Definition: This field contains name label assigned to link in current row used for visualization purposes in NeXTA and KML export. Attribute

Domain Values: Integer

Attribute

Attribute Label: link_id (Column B)

Attribute Definition: This field contains the link identification number.

Attribute Domain Values: Integer

Attribute

Attribute Label: count_sensor_id (Column C)

Attribute Definition: This field contains the identification where vehicle counters will be located within the network file. Default value is set to zero. If counter is present for data collection, the input for this attribute is formatted as follows: 'origin link' > 'destination link'.

Attribute Domain Values: String

Attribute

Attribute Label: from_node_id (Column D)

Attribute Definition: This field contains identification number corresponding to the node located at the beginning of the link. Attribute

Domain Values: Integer

Attribute

Attribute Label: to_node_id (Column E)

Attribute Definition: This field contains identification number corresponding to the node located at the end of the link. Attribute Domain

Values: Integer

Attribute

Attribute Label: link_type_name (Column F)

Attribute Definition: This field contains functional classification identification of the roadway modeled by the corresponding link.

Attribute Domain Values: String

Attribute

Attribute Label: direction (Column G)

Attribute Definition: This field contains the identification of the direction of travel on the link.

Attribute Domain Values: Integer

Attribute

Attribute Label: length (Column H)

Attribute Definition: This field contains information on the length of the link measured in miles.

Attribute Domain Values: Double

Attribute

Attribute Label: number_of_lanes (Column I)

Attribute Definition: This field contains the number of lanes on the corresponding link.

Attribute Domain Values: Integer

Attribute

Attribute Label: speed_limit (Column J)

Attribute Definition: This field contains the speed limit on the corresponding link measured in miles per hour. Attribute Domain Values: Integer

Attribute

Attribute Label: speed_at_capacity (Column K)

Attribute Definition: This field contains speed at capacity (critical speed) on the corresponding link measured in miles per hour. Attribute Domain

Values: Integer

Attribute

Attribute Label: lane_capacity_in_vhc_per_hr (Column L)

Attribute Definition: This field contains link capacity by lanes in for the corresponding link measured in vehicles per hour. Attribute

Domain Values: Integer

Attribute

Attribute Label: link_type (Column M)

Attribute Definition: This field contains the numerical identifier of the link type. Acceptable values correspond to the defined link type from the 'input_link_type.csv' file.

Attribute Domain Values: Integer

Attribute

Attribute Label: jam_density (Column O)

Attribute Definition: This field contains the roadway jam density reported in vehicles per mile per lane. Attribute Domain Values: Integer

Attribute

Attribute Label: wave_speed (Column P)

Attribute Definition: This field contains the wave speed reported in miles per hour

Attribute Domain Values: Integer

Description for DTA-Lite Link Type Input File

This file defines specific links types in the network, as long as the flag variables are correctly used to identify how the different link types are connected/related. Only one flag may be used for each link type. This file is labeled as 'input_link_type' and recognized as `.csv` file type.

Attribute

Attribute Label: link_type (Column A)

Attribute Definition: This field contains the numerical unique identifier for link types.

Attribute Domain Values: Integer

Attribute

Attribute Label: link_type_name (Column B)

Attribute Definition: This field contains the name label assigned to link type in the corresponding row. Attribute Domain Values: String

Attribute

Attribute Label: type_code (Column C)

Attribute Definition: This field contains a text character which identifies which type of link is mapped to the link type identification number. f = freeway, h = highway/expressway, a = arterial, c = connector, r = ramp, t = transit, w = walk. Attribute Domain Values: Character (f, h, a, c, r, t, w)

Attribute

Attribute Label: default_lane_capacity (Column D)

Attribute Definition: This field contains the link default lane capacity assigned by default to new links created in NeXTA. Attribute Domain Values: Integer

Attribute

Attribute Label: default_speed_limit (Column E)

Attribute Definition: This field contains the link default speed limit measured in miles per hour assigned to new links created in NeXTA.

Attribute Domain Values: Integer

Attribute

Attribute Label: default_number_of_lanes (Column F)

Attribute Definition: This field contains the default number of lanes assigned to links created in NeXTA. Attribute Domain Values: Integer

Attribute

Attribute Label: capacity_adjustment_factor (Column G)

Attribute Definition: This field contains the capacity adjustment factor used to adjust the link capacity by multiplying with the assigned base value.

Attribute Domain Values: Double

Attribute

Attribute Label: travel_time_bias_factor (Column H)

Attribute Definition: This field contains the bias factor towards different link types

(i.e. freeway, arterial, collector, local, etc.)

Attribute Domain Values: Float

Attribute

Attribute Label: saturation_flow_rate_in_vhc_per_hour_per_lane (Column I)

Attribute Definition: This field contains the link saturation flow rate

measured in vehicles per hour per lane. Attribute Domain Values: Integer

Description for DTA-Lite Zone Input File

This file defines the zones in the network that can be used for visualization in KML format. This file is labeled as 'input_zone' and recognized as `.csv` file type.

Attribute

Attribute Label: zone_id (Column A)

Attribute Definition: This field contains the unique numerical identification for each zone.

Attribute Domain Values: Integer

Attribute

Attribute Label: production (Column B)

Attribute Definition: This field contains the production factor used to scale the number of trips generated corresponding to the zone. Attribute

Domain Values: Float

Attribute

Attribute Label: attraction (Column C)

Attribute Definition: This field contains the attraction factor used to scale the number of trips attracted corresponding to the zone. Attribute

Domain Values: Float

Attribute

Attribute Label: geometry (Column D)

Attribute Definition: This field contains the geometry coordinates for the bounding edges of the zones in longitude and latitude for each point.

Attribute Domain Values: String

Description for DTA-Lite Activity Location Input File

This file is used to map nodes to zones, where multiple nodes may be associated with a zone. This file is labeled as 'input_activity_location' and recognized as `.csv` file type.

Attribute

Attribute Label: zone_id (Column A)

Attribute Definition: This field contains the unique numerical zone identifier.

Attribute Domain Values: Integer

Attribute

Attribute Label: node_id (Column B)

Attribute Definition: This field contains the unique numerical node identifier.

Attribute Domain Values: Integer

Description for DTA-Lite Input Demand File

This file is used to represent the time-dependent origin-destination matrix used by DTALite for traffic assignment. This file is labeled as 'input_demand_xx' and recognized as `.csv` file type. The designation 'xx' within the filename is replaced with the sequence of input_demand files.

Attribute

Attribute Label: from_zone_id (Column A)

Attribute Definition: This field contains the departure zone identification number. Attribute Domain Values: Integer

Attribute

Attribute Label: to_zone_id (Column B)

Attribute Definition: This field contains the arrival zone identification number.

Attribute Domain Values: Integer

Attribute

Attribute Label: number_of_trips_demand_type1 (Column C)

Attribute Definition: This field contains the number of vehicle trips for demand type 1.

Attribute Domain Values: Double

Description for Demand Metadata Input File

This file defines the characteristics of demand data. The file is used to define the proportion of demand in the network as a function of time. This file is labeled as 'input_demand_meta_data' and recognized as `.csv` file type.

Attribute

Attribute Label: scenario_no (Column A)

Attribute Definition: This field contains the unique numerical scenario identification. Value of '0' is present as a place holder.

Attribute Domain Values: Integer

Attribute

Attribute Label: file_sequence_no (Column B)

Attribute Definition: This field contains the file identification number. Value of '1' is present as a place holder. Attribute Domain Values: Integer

Attribute Label: file_name (Column C)

Attribute

Attribute Definition: This field contains the file name of the demand file.
Attribute Domain Values: String

Attribute

Attribute Label: format_type (Column D)
Attribute Definition: This field contains information on the input file format type. Attribute Domain Values: String

Attribute

Attribute Label: number_of_lines_to_be_skipped (Column E)
Attribute Definition: This field contains the number of lines to be skipped at the beginning of the demand file. Attribute Domain Values: Integer

Attribute

Attribute Label: loading_multiplier (Column F)
Attribute Definition: This field contains the local multiplication factor applied to the number of trips in the demand file. Attribute Domain Values: Float

Attribute

Attribute Label: subtotal_in_last_column (Column G)
Attribute Definition: This field contains the flag used for subtotal in last column of matrix demand file. Acceptable values are 0 for false and 1 for true. Attribute Domain Values: Boolean

Attribute

Attribute Label: start_time_in_min (Column H)
Attribute Definition: This field contains the demand loading start time, which is the time gap in minutes from time 0:00. Attribute Domain Values: Integer

Attribute

Attribute Label: end_time_in_min (Column I)
Attribute Definition: This field contains the demand loading end time, which is the time gap in minutes from time 0:00. Attribute Domain Values: Integer

Attribute

Attribute Label: apply_additional_time_dependent_profile (Column J)
Attribute Definition: This field contains the flag used to determine if time dependent profiles will be used. Attribute Domain Values: Boolean

Attribute

Attribute Label: number_of_demand_types (Column K)
Attribute Definition: This field contains the number of demand types stored in demand file.

Attribute Domain Values: Integer

Attribute Label: demand_type_1 (Column L)

Attribute

Attribute Definition: This field contains the identification number demand type 1. Attribute Domain Values: Integer

Description for Demand Type Input File

This file defines the characteristics for different demand types for the trips. This file is labeled as 'input_demand_type' and recognized as `.csv` file type.

Attribute

Attribute Label: demand_type (Column A)

Attribute Definition: This field contains the demand type identification number. Attribute Domain Values: Integer

Attribute

Attribute Label: demand_type_name (Column B)

Attribute Definition: This field contains the label name assigned to demand type in the same row used for visualization purposes in NexTA. Attribute Domain Values: String

Attribute

Attribute Label: average_VOT (Column C)

Attribute Definition: This field contains average value of time measured in units of dollars per hour assigned to the demand type in the same row. Attribute Domain Values: Float

Attribute

Attribute Label: pricing_type (Column D)

Attribute Definition: This field contains the pricing type identification number. Acceptable values are as follows: 1 for single-occupancy-vehicles, 2 for highoccupancy-vehicles, 3 for trucks. Attribute Domain Values: Integer

Attribute

Attribute Label: percentage_of_pretrip_info (Column E)

Attribute Definition: This field contains the percentage of vehicles with pre-trip travel time information. Acceptable value ranges from 0 to 100. Attribute Domain Values: Integer

Attribute

Attribute Label: percentage_of_enroute_info (Column F)

Attribute Definition: This field contains the percentage of vehicles with travel time information. Acceptable value ranges from 0 to 100. Attribute Domain Values: Integer

Attribute

Attribute Label: percentage_of_vehicle_type'#' (Column G to K)

Attribute Definition: This field contains the percentage of vehicles of a classified type. Vehicle type percentages are identified by numbers from 0 to 100.

Attribute

Vehicles types are as follows:

1- passenger car; 2- passenger truck; 3- light commercial truck; 4- single unit

short-haul truck; 5- combination long-haul truck
Attribute Domain Values: Integer

Description for Value of Time (VOT) Input File

This file defines the characteristics for different value of time distributions for different demand types. This file is labeled as 'input_VOT' and recognized as `.csv` file type.

Attribute

Attribute Label: demand_type (Column A)

Attribute Definition: This field contains the demand type identification number. Attribute Domain Values: Integer

Attribute

Attribute Label: VOT_dollar_per_hour (Column B)

Attribute Definition: This field contains the value of time in dollars per hour. Attribute Domain Values: Integer

Attribute

Attribute Label: percentage (Column C)

Attribute Definition: This field contains the percentage of travelers in a specified demand type with a specified value of time. Attribute Domain Values: Float

Description for Vehicle Type Input File

This file defines the different vehicle types for emissions analysis. This file is labeled as 'input_vehicle_type' and recognized as `.csv` file type.

Attribute

Attribute Label: vehicle_type (Column A)

Attribute Definition: This field contains the vehicle type identification number. Attribute Domain Values: Integer

Attribute

Attribute Label: vehicle_type_name (Column B)

Attribute Definition: This field contains the label name assigned to vehicle type in the corresponding row. Attribute Domain Values: String

Attribute

Attribute Label: rolling_term_a (Column C)

Attribute Definition: This field contains the vehicle rolling resistance caused by contact between the vehicle wheel and pavement measured in metric ton. Attribute Domain Values: Float

Attribute

Attribute Label: rotating_term_b (Column D)

Attribute Definition: This field contains the vehicle rotating resistance caused by the vehicle's internal rotating parts measured in metric ton per meter per second.

Attribute Domain Values: Float

Attribute

Attribute Label: drag_term_c (Column E)

Attribute Definition: This field contains the vehicle drag term measured in metric ton per meter squared per second squared. Attribute Domain Values: String

Attribute

Attribute Label: source_mass (Column F)

Attribute Definition: This field contains the vehicle mass measured in metric ton. Attribute Domain Values: Float

Attribute

Attribute Label: percentage_of_age_0 (Column G)

Attribute Definition: This field contains the percentage of vehicles age 0. Attribute Domain Values: Float

Attribute

Attribute Label: percentage_of_age_5 (Column H)

Attribute Definition: This field contains the percentage of vehicles age 5. Attribute Domain Values: Float

Attribute

Attribute Label: percentage_of_age_10 (Column I)

Attribute Definition: This field contains the percentage of vehicles age 10. Attribute Domain Values: Float

Attribute

Attribute Label: percentage_of_age_15 (Column J)

Attribute Definition: This field contains the percentage of vehicles age 15. Attribute Domain Values: Float

Description for Vehicle Emission Rate Input File

This file defines the lookup-table used for emissions analysis, mapping emissions rates, and energy use to each vehicle types and operating modes. This file is labeled as 'input_vehicle_emission_rate' and recognized as `.csv` file type.

Attribute

Attribute Label: vehicle_type (Column A)

Attribute Definition: This field contains the vehicle type identification number. Attribute Domain Values: Integer

Attribute

Attribute Label: opModelID (Column B)

Attribute Definition: This field contains the operating mode identification, associated with speed and vehicle weight. Attribute Domain Values: Integer

Attribute

Attribute Label: meanBaseRate_totalEnergy_(KJ/hr) (Column C)

Attribute Definition: This field contains the average base rate total energy from combustion associated with vehicle type and operating mode in the corresponding row.

Attribute Domain Values: Float

Attribute

Attribute Label: meanBaseRate_CO2_(g/hr) (Column D)

Attribute Definition: This field contains the average base rate carbon dioxide emission rate associated with vehicle type and operating mode in the corresponding row.

Attribute Domain Values: Float

Attribute

Attribute Label: meanBaseRate_NOX_(g/hr) (Column E)

Attribute Definition: This field contains the average base rate nitrogen oxides emission rate associated with vehicle type and operating mode in the corresponding row.

Attribute Domain Values: Float

Attribute

Attribute Label: meanBaseRate_CO_(g/hr) (Column F)

Attribute Definition: This field contains the average base rate carbon monoxide emission rate associated with vehicle type and operating mode in the corresponding row.

Attribute Domain Values: Float

Attribute

Attribute Label: meanBaseRate_HC_(g/hr) (Column G)

Attribute Definition: This field contains the average base rate hydrocarbon emission rate associated with vehicle type and operating mode in the corresponding row.

Attribute Domain Values: Float

Attribute

Attribute Label: age (Column H)

Attribute Definition: This field contains the age in years of the vehicle type in the corresponding row.

Attribute Domain Values: Float

Description for Pricing Type Input File

This file defines the pricing type in the simulation. This file is labeled as 'input_pricing_type' and recognized as `.csv` file type.

Attribute

Attribute Label: pricing_type (Column A)

Attribute Definition: This field contains the pricing type identification.
Attribute Domain Values: Integer

Attribute

Attribute Label: default_VOT (Column B)
Attribute Definition: This field contains the default value of time.
Attribute Domain Values: Integer

Description for Scenario Settings Input File

This file defines the scenario settings file which allows users to alter the characteristics of the scenarios being run, as well as create various traffic scenarios that can be run simultaneously. Each row can contain data for a separate scenario, allowing users to simultaneously run models with differing model attributes. This file is labeled as 'input_scenario_settings' and recognized as `.csv` file type.

Attribute

Attribute Label: scenario_no (Column A)
Attribute Definition: This field contains a discrete integer value assigned to a given scenario, and will be used as the scenario's unique identifier when the simulation is running in DTALite. Attribute Domain Values: Integer

Attribute

Attribute Label: scenario_name (Column B)
Attribute Definition: This field contains the identifier where the scenario will be displayed to the end user. Attribute Domain Values: String

Attribute

Attribute Label: number_of_assignment_days (Column C)
Attribute Definition: This field contains the number of days the scenario will run. Attribute Domain Values: Integer

Attribute

Attribute Label: number_of_statistics_reporting_days (Column D)
Attribute Definition: This field contains the number of days statistical analysis reporting will be performed. Attribute Domain Values: Integer

Attribute

Attribute Label: traffic_flow_model (Column E)
Attribute Definition: This field contains the integer identifier used to choose one of four traffic flow models. The possible values are as follows: 0 for Bureau of Public Roads; 1 for Point Queue Model; 2 for Spatial Queue Model; and 3 for Newell's N-Curve Model.
Attribute Domain Values: Integer

Attribute

Attribute Label: traffic_assignment_method (Column F)

Attribute Definition: This field contains the integer identifier used to choose one of four traffic assignment method. The possible values are as follows: 0 for method of Successful Average; 1 for Day-to-day learning; 2 for Gap-based switching rule for user equilibrium; and 3 for Gap-based switching rule and MSA step-size for user equilibrium. Attribute Domain Values: Integer

Attribute

Attribute Label: demand_multiplier (Column G)

Attribute Definition: This field contains the integer multiplier used to scale the travel demand.

Attribute Domain Values: Integer

Attribute

Attribute Label: random_seed (Column H)

Attribute Definition: This field contains the integer used for assigning the random seed used for pseudorandom number generator. Attribute Domain Values: Integer

Attribute

Attribute Label: ODME_start_iteration (Column I)

Attribute Definition: This field defines the first iterative assignment period to converge to the user equilibrium state, and could generate a sufficient number of paths for path flow adjustment. The iteration number also indicate that ODME will begin at the 21th iteration.

Attribute Domain Values: Integer

Attribute

Attribute Label: ODME_max_percentage_deviation_wrt_hist_demand (Column J)

Attribute Definition: This field defines the maximum percentage of demand deviation from base-line dynamic demand. Attribute Domain Values: Integer

Attribute

Attribute Label: ODME_step_size (Column K)

Attribute Definition: This field defines the moving size of each step in path flow adjustment algorithm. Attribute Domain Values: Float

Attribute

Attribute Label: calibration_data_start_time_in_min (Column L)

Attribute Definition: This field defines the start time window for ODME to use the sensor data.

Attribute Domain Values: Integer

Attribute

Attribute Label: calibration_data_end_time_in_min (Column M)

Attribute Definition: This field defines the end time window for ODME to use the sensor data.

Attribute Domain Values: Integer

Description for Link Travel Time Input File

This file defines the field travel time input file used to calibrate the network model and compare between simulated versus field data. This file is labeled as 'input_link_travel_time' and recognized as `.csv` file type.

Attribute Label: from_node_id (Column A)

Attribute

Attribute Definition: This field contains the origin node identification corresponding to the given travel time. Attribute Domain Values: Integer

Attribute

Attribute Label: to_node_id (Column B)
Attribute Definition: This field contains the destination node identification corresponding to the given travel time. Attribute Domain Values: Integer

Attribute

Attribute Label: day_no (Column C)
Attribute Definition: This field contains the day when the travel time was reported.
Attribute Domain Values: Integer

Attribute

Attribute Label: starting_time_in_min (Column D)
Attribute Definition: This field contains the start time in minutes when the corresponding travel time was reported. Attribute Domain Values: Integer

Attribute

Attribute Label: ending_time_in_min (Column E)
Attribute Definition: This field contains the end time in minutes when the corresponding travel time was reported. Attribute Domain Values: Integer

Attribute

Attribute Label: travel_time_in_min (Column F)
Attribute Definition: This field contains the travel time reported during the corresponding day and time range in minutes. Attribute Domain Values: Float

Description for Sensor Count Input File

This file defines the field vehicle count input file used to calibrate the network model and compare between simulated versus field data. This file is labeled as 'sensor_count' and recognized as `.csv` file type.

Attribute

Attribute Label: scenario_id (Column A)
Attribute Definition: This field contains a discrete integer value assigned to a sensor within the network. Attribute Domain Values: Integer

Attribute

Attribute Label: from_node_id (Column B)
Attribute Definition: This field contains the unique identifier for the origin node.

Attribute

Attribute Domain Values: Integer

Attribute Label: to_node_id (Column C)

Attribute Definition: This field contains the unique identifier for the destination node.

Attribute Domain Values: Integer

Attribute

Attribute Label: count_sensor_id (Column D)

Attribute Definition: This field contains the origin and destination node identifier in the following format: from_node_id -> to_node_id. Attribute

Domain Values: String

Attribute

Attribute Label: day_no (Column E)

Attribute Definition: This field contains the day identification when the corresponding vehicle counts were reported. Attribute Domain

Values: Integer

Attribute

Attribute Label: start_time_in_min (Column F)

Attribute Definition: This field contains the start time reported in minutes corresponding to the time when the link counts began reporting. Attribute Domain Values: Integer

Attribute

Attribute Label: end_time_in_min (Column G)

Attribute Definition: This field contains the end time reported in minutes corresponding to the time when the link counts stopped reporting.

Attribute Domain Values: Integer

Attribute

Attribute Label: sensor_type (Column H)

Attribute Definition: This field contains the type of sensor used for data collection when reporting the vehicle count. Attribute Domain Values: String

Attribute

Attribute Label: sensor_type (Column I)

Attribute Definition: This field contains the vehicle counts reported during the corresponding time duration at the associated origin-destination pair.

Attribute Domain Values: Integer

Description for AMS Movement Input File

This file defines the corresponding nodes where turning movements are prohibited. Data structure in this file is formatted where the identified origin, intermediate, and destination node movement is prohibited. This file is labeled as 'AMS_movement' and recognized as `.csv` file type.

Attribute

Attribute

Attribute Label: node_id (Column A)

Attribute Definition: This field contains a discrete integer value assigned to an

intermediate node location where a movement is prohibited.

Attribute Domain Values: Integer

Attribute

Attribute Label: up_node_is (Column B)

Attribute Definition: This field contains a discrete integer value assigned to the origin node location corresponding to the intermediate and destination node. Attribute Domain Values: Integer

Attribute

Attribute Label: dest_node_id (Column C)

Attribute Definition: This field contains a discrete integer value assigned to the destination node location corresponding to the intermediate and origin node. Attribute Domain Values: Integer

Description for AMS Transit Calendar Input File

This file defines the transit service plan for corresponding day of the week. This file is labeled as 'calendar_dates' and recognized as .txt file type.

Attribute

Attribute Label: service_id (Column 1)

Attribute Definition: This field contains a short description of the corresponding trip in the following format: start location – service day – trip type – end location – days serviced in Boolean. (MTWTFSS). Attribute Domain Values: String

Attribute

Attribute Label: date (Column 2)

Attribute Definition: This field contains an integer value for the date of the corresponding transit service plan in the following format: YYYYMMDD.

Attribute Domain Values: Integer

Attribute

Attribute Label: exception_Type (Column 3)

Attribute Definition: This field contains an integer value for the exception type, which indicates whether service is available on the date specified in the date field. 1 indicates service has been added, 2 indicates that service has been removed

Attribute Domain Values: Integer

Description for AMS Transit Route Names Input File

This file defines the transit route names. This file is labeled as 'routes' and recognized as .txt file type.

Attribute

Attribute Label: route_id (Column 1)

Attribute Definition: This field contains a unique numeric identification assigned to a transit service plan.

Attribute Domain Values: Integer

Attribute

Attribute Label: route_short_name (Column 2)

Attribute Definition: This field contains the short name for the corresponding route.

Attribute Domain Values: String

Attribute

Attribute Label: route_long_name (Column 3)

Attribute Definition: This field contains the long name for the corresponding route.

Attribute Domain Values: String

Attribute

Attribute Label: route_desc (Column 4)

Attribute Definition: This field contains a description of the corresponding route.

This field can be left blank.

Attribute Domain Values: String

Attribute

Attribute Label: route_type (Column 5)

Attribute Definition: This field contains a numeric categorization of the route type.

Attribute Domain Values: Integer

Attribute

Attribute Label: route_url (Column 6)

Attribute Definition: This field contains a url link corresponding to the transit route. This field can be left blank.

Attribute Domain Values: String

Description for AMS Transit Path Input File

This file defines the transit paths available for the individual routes to traverse. This file is labeled as 'shapes' and recognized as .txt file type.

Attribute

Attribute Label: shape_id (Column 1)

Attribute Definition: This field contains an alphanumeric combination for route identification to create the geometry via nodes. Attribute Domain Values: String

Attribute

Attribute Label: shape_pt_lat (Column 2)

Attribute Definition: This field contains latitude coordinate for the corresponding node that forms the path geometry. Attribute Domain Values: Double

Attribute

Attribute Label: shape_pt_lon (Column 3)

Attribute Definition: This field contains longitude coordinate for the corresponding node that forms the path geometry.

Attribute Domain Values: Double

Attribute

Attribute Label: shape_pt_sequence (Column 4)

Attribute Definition: This field contains a numeric sequence for the order of the corresponding node that forms the path. Attribute Domain Values:

Integer

Description for AMS Transit Stop Time Input File

This file defines the transit stop time. This file is labeled as 'stop_times' and recognized as .txt file type.

Attribute

Attribute Label: trip_id (Column 1)

Attribute Definition: This field contains a numeric identification assigned to a transit trip.

Attribute Domain Values: Integer

Attribute

Attribute Label: arrival_time (Column 2)

Attribute Definition: This field contains the time when the transit vehicle will arrive at the corresponding stop in the following format "hh:mm:ss".

Attribute Domain Values: Time

Attribute

Attribute Label: departure_time (Column 3)

Attribute Definition: This field contains the time when the transit vehicle will departs from the corresponding stop in the following format "hh:mm:ss".

Attribute Domain Values: Time

Attribute

Attribute Label: stop_id (Column 4)

Attribute Definition: This field contains a unique numeric identification assigned to a stop location.

Attribute Domain Values: Integer

Attribute

Attribute Label: stop_sequence (Column 5)

Attribute Definition: This field contains a numeric identifier in ascending order corresponding to the trip stop order to the stop locations. Attribute

Domain Values: Integer

Attribute

Attribute Label: pickup_type (Column 6)

Attribute Definition: This field contains a numerical identifier corresponding to the pickup type.

Attribute Domain Values: Integer

Attribute

Attribute Label: route_url (Column 7)

Attribute Definition: This field contains a numerical identifier corresponding to the drop off type.

Attribute Domain Values: Integer

Description for AMS Transit Stop Locations Input File

This file defines the transit stop locations. This file is labeled as 'stops' and recognized as .txt file type.

Attribute

Attribute Label: stop_id (Column 1)

Attribute Definition: This field contains a unique numeric identification assigned to a transit stop location.

Attribute Domain Values: Integer

Attribute

Attribute Label: stop_code (Column 2)

Attribute Definition: This field contains unique code for the corresponding to the stop location. This field can be left blank. Attribute Domain Values: String

Attribute

Attribute Label: stop_name (Column 3)

Attribute Definition: This field contains the street and/or cross street name for the stop location.

Attribute Domain Values: String

Attribute

Attribute Label: stop_desc (Column 4)

Attribute Definition: This field contains description of the corresponding stop location. This field can be left blank. Attribute Domain Values: String

Attribute

Attribute Label: stop_lat (Column 5)

Attribute Definition: This field contains the latitude coordinate of the stop location.

Attribute Domain Values: Double

Attribute

Attribute Label: stop_lon (Column 6)

Attribute Definition: This field contains the longitude coordinate of the stop location.

Attribute Domain Values: Double

Attribute

Attribute Label: zone_id (Column 7)

Attribute Definition: This field contains the zone identification used to identify various stop locations that belong in the same zone. This field can be left blank.

Attribute Domain Values: String

Attribute

Attribute Label: stop_url (Column 8)

Attribute Definition: This field contains a url link for the corresponding stop location. This field can be left blank. Attribute Domain Values: String

Attribute

Attribute Label: location_type (Column 9)

Attribute Definition: This field contains a numerical identifier corresponding to the stop location type.

Attribute Domain Values: Integer

Attribute

Attribute Label: parent_station (Column 10)

Attribute Definition: This field contains a short description if the transit stop location is a station.

Attribute Domain Values: String

Description for AMS Transit Trip Input File

This file defines the transit trips within the testbed study location. This file is labeled as 'trips' and recognized as .txt file type.

Attribute

Attribute Label: route_id (Column 1)

Attribute Definition: This field contains a unique code identification for the corresponding route.

Attribute Domain Values: String

Attribute

Attribute Label: service_id (Column 2)

Attribute Definition: This field contains a short description of the corresponding trip in the following format: start location – service day – trip type – end location – days serviced in Boolean. (MTWTFSS). Attribute Domain Values: String

Attribute

Attribute Label: trip_id (Column 3)

Attribute Definition: This field contains the unique trip identification for the corresponding trip.

Attribute Domain Values: Integer

Attribute

Attribute Label: trip_headsign (Column 4)

Attribute Definition: This field contains description of the trip information displayed on the transit vehicle. Attribute Domain

Values: String

Attribute

Attribute Label: direction_id (Column 5)

Attribute Definition: This field contains the Boolean value for the trip direction if the start to end location should be reversed.

Attribute Domain Values: Boolean

Attribute

Attribute Label: block_id (Column 6)

Attribute Definition: This field contains the block identification for the corresponding trip.

Attribute Domain Values: Double

Attribute

Attribute Label: shape_id (Column 7)

Attribute Definition: This field contains the shape identification for the corresponding trip.

Attribute Domain Values: String

Description for AMS Traffic Signal Input File**Attribute**

File Type: Econolite ASC/3 Configuration File

File Extension: .cfg

File Definition: This file contains signal with detector configuration used by the Econolite ASC/3 signal controller emulator.

Attribute

File Type: Database File

File Extension: .db

File Definition: This file contains signal timing and action plans used by the Econolite ASC/3 signal controller emulator.

Attribute

File Type: Database File

File Extension: .rif

File Definition: This file contains basic geometry layout, signal timing and detector configurations at the subject intersection used by the RHODES signal controller.

Access Constraints:

To access the data set, users must register through the USDOT Research Data

Exchange (RDE) portal (<https://www.its-rde.net/>). The registration process will include a request for contact information and agreement to terms of use for the data. What information is optional versus mandatory for registration has not been finalized ; however in order to encourage broad access and use, mandatory information will be kept to a minimum and ease of use maximized. See the RDE Terms of Use and Data Privacy Policy on how registration information is kept secure and for uses only applicable to the RDE administration.

User Constraints:

Those who use data and data processing tools distributed by the Research Data Exchange have the following responsibilities:

1. Where the contributed materials have been utilized to any extent to enable, verify, supplement or validate performance measurement, analysis, research or software development, to fully reference the Research Data Exchange Program and the contributions of the individuals in all subsequent and related publications or public events, specifically:
 - a. In publications, reference the Research Data Exchange website and the date accessed, data and/or data processing tools (by name and version number), and the individual contributors identified on the reference template associated with each data and/or data processing tool.
 - b. In presentations or other oral communication, by noting the data and/or data processing tool by name and version number, and communicating the address of the Research Data Exchange website.
2. Users are encouraged to accurately post and update within the Research Data Exchange website a description of the project utilizing the data and/or the data processing tools, including:
 - a. A description of the project, including a brief statement of the project goals.
 - b. A summary of the hypotheses and findings (when available) of the project.
 - c. Individuals directing and/or substantively participating in the project.
 - d. The name and version number of the data and/or data processing tools downloaded and utilized in the project.
 - e. The current state of the project (upcoming, underway, completed).
 - f. References to published materials (if any).
3. Users are encouraged to report anomalies, errors or other questionable data elements using the Data Forum of the Research Data Exchange website, referencing the specific data or data processing tool by name and version number.

4. To refrain from duplication and dissemination of the data and data processing tools to third parties.

Publication of certain derived information such as location of residence, specific stores visited, purpose of trips, etc. must be cleared with the data set originator prior to publication.

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