TRANSIMS Version 4.0

October 2009 Release

Change Log edited: 11/2/2009

SysLib

The lane use processing logic now checks the lane number against the link file.

The problem file format was modified to include a new ROUTE field to store the transit route number for the problem. This data was previously stored in the LINK field.

The vehicle type data class was modified to permit loading rates greater than 10 boardings per second (i.e., loading rates less than 0.1).

Time_Stamp, Minute, Second, Day, and Time functions were added to the user program functions to convert a time string to a time stamp and extract time components. The script compiler was enhanced to permit the same text string to be used for function names and variable names.

Transit Capacity and Transit Dwell problem messages were added to record instances when a transit traveler is unable to board a bus or train due to vehicle capacity or maximum wait time constraints.

The Line data class was expanded to include an impedance penalty for selected runs and stops of a route.

The Event file and output service and the Problem file were expanded to include the trip leg number.

Data range class was modified to accept zero as a range.

OUTPUT_RIDERSHIP_ALL_STOPS_* key was added to the output processing class to enable the Microsimulator to save all stop / run records in the ridership file even if the stop does not have any boardings, alightings or riders.

The time difference reports were modified to include a total user benefit calculation. The time difference reports were expanded to generate generalized cost reports as well.

The event file structure was modified to reduce file size in text (~25%) and binary (40%) formats.

ArcSnapshot 4.0.14

ADD_PASSENGER_CIRCLE_SIZE and ADD_PASSENGER_SQUARE_SIZE keys were added to insert two new fields into the output shape files ("RADIUS" and "SQUARE") that

convert the passengers to the radius of circles whose area is equal to passengers and the size of a square whose area is equal to passengers.

PlanCompare 4.0.33

SELECT_BY_RELATIVE_GAP key was added to select plans based on the percent difference in their input and compare travel times. This key is only active is SELECT_BY_PERCENT_DIFFERENCE key is false. NEW_COST_DISTRIBUTION_FILE key and generalized cost reports were added. The new report names are: PERCENT_GENERALIZED_COST_CHANGE, DUMP_COST_CHANGES_GREATER_THAN_*, GERNERALIZED_COST_DISTRIBUTION, COST_DIFFERENCE_DISTRIBUTIONS, and COST_PERIOD_SUMMARY. The new difference report now reports generalized cost differences if the compare generalized cost key is true. SELECT_TRAVELERS key was added to restrict the plan comparison to a range of traveler IDs.

Microsimulator 4.0.74

A bug was fixed in the way diagonal lane changes are processed for multi-cell vehicles. Start and end events for transit boardings and alightings are now processed. In situations where two lanes are blocked using lane use restrictions, the parking access logic will attempt to load the vehicle to the first unrestricted lane. The problem file processing was modified to save the transit route number in the new ROUTE field rather than the LINK field. The transit departure time problems now store the link ID of the origin transit stop in the LINK / DIR fields. A bug was fixed in the way transit boardings were loaded onto the first stop of a route. Changes were implemented to minimize wait time problems for transit vehicles. These changes relate to lane-use restrictions, the end of line departure lane, and lane change requests during link changes. The logic was updated to enable transit boarding rates greater than 10 per second. The procedure for setting the maximum wait time for a transit vehicle was modified to handle early and late arrivals more realistically. Transit Capacity and Transit Dwell problem messages were added to record instances when a transit traveler is unable to board a bus or train due to vehicle capacity or maximum wait time constraints. The Event output service, traveler plan data, and problem messages were expanded to include the trip leg number. The person code for transit driver events was changed to zero to avoid conflicts with household persons. Process and save walk legs in the event file. A bug was fixed in the way the first walk leg of multiple trips for a given traveler was output to the event file. Logic was added to avoid completing the walk leg of an auto trip while the traveler is waiting to load onto the network from the origin parking lot. OUTPUT_RIDERSHIP_ALL_STOPS_* key was included to save all stop / run records in the ridership file even if the stop does not have any boardings, alightings or riders. The event file processing was modified to support the reduced event file size.

ProblemSum 4.0.5

The logic was modified to detect if a network link and node files are provided before attempting to read the link data.

Reschedule 4.0.12

Logic was added to limit negative random adjustments so the first run does not start before time zero. RUN_START_TIME_FILE key was added to update the stop schedules for a route based on the difference between the departure times for the first stop of each run. This is designed to synchronize the run start times between transit networks. TRANSIT_SERVICE_FACTOR key was added to increase or decrease the number of runs on selected routes or modes during selected time periods. Corrected the time offset for the service factoring. Added capability to factor multiple time ranges in the same application. TIME_PERIOD_METHOD key was added to control the way routes are associated with time period ranges. SEGMENT_SCHEDULE_FACTOR and LINK_EQUIVALENCE_FILE keys and PRINT_LINK_EQUIVALENCIES report were added to adjust transit schedule based on a travel time factor on specified roadway segments.

Relocate 4.0.12

Additional pointer checks and warning messages were added to protect against compatibility problems between the plan file and the old network data.

PlanSum 4.0.52

A bug was fixed in the offset to the destination parking lot used for travel time updates of link-based plan files. The transit load factor is now calculated when a vehicle type file is provided. OUTPUT_ALL_TRANSIT_STOPS key was added to output new ridership file records when the stop does not have boardings or alightings.

Router 4.0.63

A minor improvement was made to the way minimum wait time was implement for transit path building. TRANSIT_PENALTY_FILE key was added to input impedance penalties for combinations of stop, route, and/or run to adjust the likelihood that a stop will be included in a path based on the capacity constraints of the transit service. A bug was fixed in the stop impedance penalty. The logic was also modified to make the stop number optional (i.e., the penalty can be applied to all stops on a route and/or run). UPDATE_PLAN_RECORDS key was added to re-skim the travel time and impedance components of existing plan records while building paths for other records. The processing checks were modified to permit the plan update to be executed without a household list or an input trip and/or activity file. The printout now includes a message about the number of updates that were made. PRINT_UPDATE_WARNINGS key was added to control the warning messages sent to the print file.

TripPrep 4.0.0

New program for manipulating trip and activity files using selection variables or user program scripts.

LineSum 4.0.11

NEW_RUN_CAPACITY_FILE key and CAPACITY_CONSTRAINED_RUNS_# reports were added to summarize the number of runs in each route and time period that have ridership demand

that exceeds transit vehicle capacity. The VEHICLE_TYPE_FILE key was added to determine the vehicle capacity. Added logic to summarize the transit ridership in link group reports.

ArcRider 4.0.6

ARCVIEW_RUN_CAPACITY_FILE and SELECT_TIME_INCREMENT keys were added to generate shapefiles for the transit route segments that are over capacity in specified time periods. The VEHICLE_TYPE_FILE key was added to determine the vehicle capacity.

EventSum 4.0.8

The Event data and sort index and the travel time file were expanded to include the trip leg. SELECT_TRIP_MODES and SELECT_PLAN_MODES keys were added to filter the trip and event records that are processed. SELECT_HOUSEHOLD_RANGE key was added limit processing to a range of household IDs. COMBINE_EVENT_LEGS key was added to enable plan leg events to be collapsed into a single trip record. Logic was added to convert plan modes to trip modes and then use the trip mode to select records to include in the output travel time file. The size of the internal event data class was reduced to require less memory. The event file processing was modified to support the reduced event file size.

PlanPrep 4.0.11

A bug was fixed in the new *.def files when updating the partitions for link-based plan files.

ExportTransit 4.0.5

The logic was adjusted to correct problems caused by rounding run offsets to minutes that result in offset values equal to the length of the time period.

LinkDelay 4.0.9

The logic was expanded to include processing of link delay files with partial, uneven, or aggregate time periods.

PlanSelect 4.0.31

The SELECT_TRAVEL_MODES key processing logic was enhanced to detect and report errors in mode number ranges and mode string inputs. A bug was fixed in the link and node selection procedures for transit legs.

RiderPrep 4.0.0

New program to merge subarea ridership file from the Microsimulator with regional ridership files generated by PlanSum.

SubareaPlans 4.0.32

The fare zone number assigned to the new subarea boundary stop at the end of the line was corrected.

Emissions 4.0.16

Protection was added for zone files that don't include all of the zone numbers.