TRANSIMS Version 4.0

October 2008 Release

Change Log edited: 10/14/2008

SysLib

Extended header file class was added and used for trip and activity file types. The demand control service was modified to detect partitioned applications and open or create the trip and activity files accordingly. Extended file class was modified to include enhanced partitioning logic.

A Location_Flag method was added to the snapshot file class to include X_COORD, Y_COORD, Z_COORD, and BEARING fields in Version 4.0 file formats. The OUTPUT_SNAPSHOT_LOCATION_FLAG key was added to the snapshot generation class used in the Microsimulator to include location data (x, y, z, and bearing) in the Version 4.0 file formats. The azimuth field is now calculated for the VERSION3 format.

SQLITE3 database software was added to SysLib and edited so it compiles in 32bit and 64bit versions without warning messages. Basic SQLITE3 database reads/writes were added to the standard Db_File logic. This interface does not work for nested files. _unlink was replaced with remove for Linux compatibility in Db_File. A few changes to the sqlite3 interface were required to compile under Linux. The SQLITE3 SQL logic was modified to use single quotes rather than double quotes to identify string fields. This eliminated the need to add and subtract the double quotes from the strings on input and output.

Exit_Stat was modified to delete the execution object on normal exits. Additional destructor logic was added to several low level objects to smooth the destruction of the execution object. The most important change was to automatically close open files – particularly databases. Bugs were fixed in virtual object destructors that called virtual clear methods. The transit ridership data array class where the issue was discovered. The Exit_Stat method was adjusted to always call the class destructor. The DONEX enumeration value was added to the exit_stat options to override the automatic program destructor call. This was used in PopSyn to avoid potential destructor errors that could not be tracked down at this time.

The pointer array classes were restructured and renamed. A potential crash during destruction of the time equivalence class was corrected. The new data pointer array was integrated into the time equivalence class methods.

The user program logic was enhanced to detect a syntax error in if statements that can result in a program crash.

A return code was added to the projection service class to tell the calling program that projection keys were provided by the user.

Expansion weights were added to the trip length summary class.

Destination field method was added to the problem file interface.

Protection was added to the trip length data array to avoid problems caused by negative travel times or distances.

The process link processing method was modified to keep transit stop connections when value checks are not requested.

A potential bug was fixed in the user program random function.

Corrections were made to the way SQLITE3 text fields were written. Nested file types were implemented as two linked tables within an SQLITE3 database.

The zone file interface was modified to include the option for minimum and maximum coordinate ranges.

SF3Prep 4.0.1

Logic to read the SF3_SUMMARY_LEVEL key was added.

TransimsNet 4.0.14

The coordinate calculations for the activity location file were corrected. A bug was fixed in the way lane connections were constructed for multi-lane arterials with pocket lanes. Improved the lane connectivity logic for multi-lane T intersections.

ActGen 4.0.27

The input and output activity files now include partitioning logic. MIN_FAC1, MAX_FAC1, MIN_FAC2, and MAX_FAC2 fields were added to the tour data to enable the script writer to include the range of activity location distances within the target zone in the zone utility calculation. The zone processing was modified to read the optional minimum and maximum coordinate ranges from the zone file. The minimum and maximum factor calculations were changed to represent the ratio of the minimum and maximum straight-line distance to the four corners of the zone coordinate range or the zone centroid to the straight-line distance between the origin and destination zone centroids.

TripSum 4.0.11

The input and output trip or activity files now include partitioning logic. TripSum can now process a partitioned set of trip or activity files. The files and reports identified using "VOLUME" were renamed to "TRIP_END" for improved clarity. NEW_TRIP and NEW_ACTIVITY keys were added to enable output of selected or combined trip or activity files. HOUSEHOLD_LIST key was added to enable summary reports or output of selected households. The NEW_TRIP_TIME_FILE key was changed to NEW_TIME_DISTRIBUTION to facilitate key compatibility with ActGen. New ActGen compatibility includes NEW_TRIP_TIME_FILE and NEW_TRIP_DISTANCE_FILE keys and

TRIP_LENGTH_SUMMARY, TRIP_PURPOSE_SUMMARY, MODE_LENGTH_SUMMARY, and MODE_PURPOSE_SUMMARY reports. The household list file was implemented with the enhanced extended file logic to permit partitioned household lists to be used to partition an input activity or trip file. Partitioned household list files can also be used to select a subset of records from a set of partitioned input activity or trip files. Several error messages were changed to warning messages to make the program more useful for processing dirty activity survey files. HOUSEHOLD_WEIGHT_FILE key was added to weight the trip length summaries. TIME_OF_DAY_FORMAT key was added to specify the time format for the input trip or activity file. The extra protection in the trip length data array was included to avoid problems caused by negative travel times or distances. SELECT_ORIGIN_POLYGON and SELECT_DESTINATION_POLYGON keys were added to select trips based on the coordinates of the origin and/or destination activity locations. The selection criteria (household list, modes, purposes, origins, and destinations) now control the records output to the new trip or activity file as well as the data used in the summary reports. The select modes key was modified to accept range codes. SELECT_ORIGIN_ZONES, SELECT_DESTINATION_ZONES, VEHICLE_FILE, and NEW_VEHICLE_FILE keys were added to enable select logic that includes the origin and destination zone numbers. The vehicles associated with the selected trips or activities can now be written to an output vehicle file. The logic was modified to only save the trip record if the trip start, end, or mid-time is within range.

Router 4.0.51

The input trip and activity files now include partitioning logic. ROUTE_SELECTED_PURPOSES key was added to enable routing trips with selected trip purpose codes. VEHICLE_TYPE_FILE key was added to enable Version 4.0 vehicle type use codes to be used to control path building permissions. The ROUTE_SELECTED_MODES key was modified to accept range codes. One meter was added to walks between activity locations on the same link to minimize round-off error and encourage walk paths to use the network links rather than direct movements between activity locations. IGNORE_VEHICLE_ID key was added to enable path building without a vehicle file. The resulting paths can be used for summary applications.

PlanSum 4.0.41

TRANSIT_TRANSFER_DETAILS report was added to report the number of bus and rail boardings by time period and access mode. A fix was made to the drive path-based data summaries when less than 24 hours are specified and turn movements are not requested. Traveler IDs were added to transit-related warning messages. NEAREST_NEIGHBOR_FACTOR was added to skim processing to calculate intrazonal travel characteristics.

NewFormat 4.0.5

The option to do coordinate projections and activity location selection was added to the conversion logic for Version 3 activity surveys. This enables the program to create a TRANSIMS activity file using the survey data that can be routed or summarized to generated average trip lengths and trip length distributions by trip purpose and mode.

ArcProblem 4.0.3

DRAW_TRIP_OD_LINKS key was added to draw the problem records as a link between the origin and destination activity locations.

ArcTraveler 4.0.0

New program to draw the origin-destination connections of traveler trips or activity patterns.

Microsimulator 4.0.49

The OUTPUT_SNAPSHOT_LOCATION_FLAG key was added to include location data (x, y, z, and bearing) in the Version 4.0 file formats.

ModeChoice 4.0.2

Converted the Version 3.x ModeChoice program to Version 4.0 code. The time equivalence class was updated to avoid a termination crash. DISTANCE_CALCULATION key was added to control the method of calculating the distance between activity locations. The logic was modified to work with trip purpose zero. MODE_SHARE_DETAILS, MODE_SHARE_FORMAT, and TIME_OF_DAY_FORMAT keys and MODE_SHARE_DETAILS report were added. The trip method for activity files was implemented.

ArcSnapshot 4.0.8

NEW_SNAPSHOT_FILE, NEW_SNAPSHOT_FORMAT, SNAPSHOT_FORMAT, and OCCUPANCY_FORMAT keys were added. The new snapshot file can be generated with or EXTERNAL_OFFSET_LENGTH key was added to enable the user to control the distance away from the external node where external station activity locations, parking lots, and transit stops are inserted. without ArcView snapshot files. The X and Y coordinates and Bearing fields included in the output snapshot file are based on the link shape and lane offset of the vehicle.

LocationData 4.0.8

WALK_ACCESS_TIME_RANGE and TIME_OF_DAY_FORMAT keys were added to included time of day restrictions for the transit walk access weight calculations.

SubareaPlans 4.0.25

A minor incompatibility between SubareaNet and SubareaPlans in processing transit paths at subarea boundaries was corrected. Logic was added to properly handle the trip and leg number for travelers with multiple input trips. Refinements were included to avoid loading transit trips on boundary links that are leaving the subarea when the boarding stop is outside of the subarea boundary. The fare zone for the external stops was set based on the fare zone assigned to the closest internal stop. A bug was fixed for trips that only utilize stops on the new transit route that is generated when a regional route enters and exits the subarea twice. EXTERNAL_OFFSET_LENGTH key was added to enable the user to control the distance away from the external node where external station activity locations, parking lots, and transit stops are inserted. Internal-External summary statistics for transit legs were added.

SubareaNet 4.0.7

The fare zone for the external stops was set based on the fare zone assigned to the closest internal stop. EXTERNAL_OFFSET_LENGTH key was added to enable the user to control the distance away from the external node where external station activity locations, parking lots, and transit stops are inserted.

PlanTrips 4.0.6

The program was updated to process transit trips as well as drive trips. It also processes multi-leg plans and outputs the plan records for each leg of trips with travel schedule adjustments.

ArcPlan 4.0.19

The selection logic was enhanced to permit a non-partitioned household list file to be used with partitioned plan file.

PopSyn 4.0.7

The supporting data structures were converted to pointer arrays in order to minimize problems with the program destructors. Unfortunately these changes did not completely resolve the problem, so the DONEX exit_stat option was used to skip the destructor call at this point in time.

PlanSelect 4.0.7

A bug was fixed in processing select nodes when certain reports or other selection options were not requested.

ExportTransit 4.0.4

WRITE_DWELL_FIELD, WRITE_TIME_FIELD, WRITE_SPEED_FIELD, MINIMUM_DWELL_TIME, and MAXIMUM_DWELL_TIME keys were added to enable the program to estimate the dwell time, travel time, and speed for each link in the output route nodes file.

LineSum 4.0.7

LINK_EQUIVALENCE_FILE key and TRANSIT_LINK_GROUP_SUMMARY and PRINT_LINK_EQUIVALENCIES reports were added.