TRANSIMS Release 4.0.2

Software differences between 4.0.1 and 4.0.2

Change Log edited: 5/21/2008

SysLib:

Transit stop and route (line) file and data classes and the network read services were expanded to include transit stop and route (line) name processing if the Notes_Name_Flag is true. Line data and file classes now support both a name and notes field. EXTERNAL was added to the Transit Stop types to enable subarea transit networks. The Transit Schedule service was enhanced to properly handle transit routes that loop through the first stop on the line multiple times. The Transit Ridership service was enhanced to synthesize schedule data for records with a schedule value of zero. Line equivalence class was added for transit line (route) group summaries. A bug was fixed in the Rider Data class and logic was added to the ridership service to interpolate the departure time for each stop based on actual and schedule times. Ridership services were enhanced to check the schedule time when identifying the stop index in order to address potential inaccuracies caused by including the same stop multiple times on a route. Summarize_Riders method was added to the ridership data classes to calculate riders leaving each stop and maximum load point for each run. The Output_Ridership class was corrected to interpret the schedule and time methods as Microsimulator time steps.

Route header and nodes file and data classes were added to the network service. The new keys include ROUTE_HEADER_FILE, ROUTE_HEADER_FORMAT, ROUTE_NODES_FILE, ROUTE_NODES_FORMAT, NEW_ROUTE_HEADER_FILE, NEW_ROUTE_HEADER_FORMAT, NEW_ROUTE_NODES_FILE, and NEW_ROUTE_HEADER_FORMAT. Route nodes network services were modified to provide a warning message and skip nodes not found in the node file rather than an error message that terminates the execution. Changes were made to the route header file processing to simplify the file replication logic.

The Transit Fare file, data, and network service classes were updated to enable significantly more complex fare structures. A Class_Type enumeration was added for traveler fare classes including CASH, CARD, and SPECIAL categories. Logic was included in the network service method to read both the original and new fare data files. The new fare zone data was implemented as a structure rather than a class to simplify the complex 6 value indexing. The file now permits ranges and lists for each index variable (from zone, to zone, from mode, to mode, time period, and fare class).

Kiss-&-ride modes (KNR_OUT and KNR_IN) were added to the mode codes. Kiss-&-ride lot message was added to the problem codes.

The Max_Dwell and Min_Dwell methods within the Vehicle_Type data class were rounded.

Skim_File class was modified to set the default for the Total Time flag to false so PlanSum operates correctly when the SKIM_TOTAL_TIME key is undefined.

Subzone File and Data classes were added.

CONICAL and EXPONENTIAL volume-delay functions were added.

Z coordinates were added to the node data class and non-Version 3 node file formats. The Shape file, data, and read services were modified to accommodate Z coordinates. XYZ_Point, Point_Data and Z_Array structures and classes were added and Link_Shape and Smooth_Shape methods were expanded to include Z_Array data. The shape offset calculation in Link_Shape was improved. ArcView_File class was modified to accommodate Z and/or M coordinates. OUTPUT_XYZ_SHAPES and OUTPUT_XYM_SHAPES keys were added to the projection services to facilitate generation of ArcView shapesfiles with XYZ or XYM coordinates. The length units in the Smooth_Shape function were corrected.

The help flag was expanded to include a list of report options. The report file name was modified to include the partition number when the REPORT_FILE key is specified. The execution and report services were expanded to include the option for a parameter or a partition number. MAX_WARNING_MESSAGES and MAX_WARNING_EXIT_FLAG keys were added to the Execution_Service, Report_Service, and Message_Service interfaces. Default behavior will terminate the execution after 100,000 warning messages. Warning messages generated by the network service methods were converted to the Warning method.

The FIELD_BUFFER set at 256 could not be used in dBase/ArcView files. The string fields for notes, vehicle use restrictions, and street names were set back to 255 for newly created files. A bug was fixed in the Db_Base logic for converting string fields into integers and doubles. The Date_Time class was also enhanced to better handle time strings that don't contain time related characters.

Linux compiler warning messages were addressed and several memory delete calls were replaced with free calls. Level 4 warning messages from the Visual C++ compiler were addressed.

Time Difference output services were modified to ignore records with negative time of day.

The user program PRINT and LIST logic was expanded to insert the data type codes into the format string if these codes are not provided by the user.

The Get_Token function was modified to properly process a quoted substring contained within a token. Previously the token needed to start with a quote to be captured properly. The new logic will handle tokens like: name="text xx" as a single token.

The Add_Breaks method within the time range class was modified to avoid integer overflow issues when "NONE" is provided as the break string.

Logic was added to the network Read_Zone method to print the highest zone number in the report.
The network read services for link, lane-use, parking, turn, toll, and transit stop files were modified to process blank use codes more effectively. The node-based turn prohibition key was fixed.

The problem code number was added to the problem summary report.

The Round method was modified to round negative numbers more appropriately.

The random probability method was made an inline function.

ActGen 4.0.19

Several data-related error messages were converted to warning messages. A new report called LOCATION_CHOICE_DETAILS_* was included to dump out detailed status messages for selected households during the location choice process. This report was later expanded to dump distances and travel times between activity locations and the activity scheduling data for the selected households. The travel time estimates were modified to only include the additional time value when the activity schedule has adequate slack. The scheduling logic was modified to include additional time checks to avoid overlapping the start and end times of neighboring activities as a consequence of repairing duration errors. The location choice process was modified to avoid relocating common anchor activity locations between household persons or tours. The person matching algorithm was modified to give priority to un-used household members before it considers re-using a person that matches additional attributes. An error message was removed for situations where the vehicle file includes vehicles for households that are not in the household file. TRAVEL_TIME_FIELD_MODE_x key was added to enable the specification of a skim field for use in the travel time calculations for each mode. TRIP_PURPOSE_SUMMARY and TOUR_PURPOSE_SUMMARY reports were added. The trip purpose summary reports trip lengths and travel times by origin-destination trip purpose combinations. The tour summary reports the trip lengths and travel times by tour purpose and tour complexity (i.e., number of activities). Travel time budget information was added to the tour data passed to the location choice scripts. ACTIVITY_FILE key was added to read an existing activity file and update the activities and trip data for households in the household list. All other households are copied to the output activity file.

Router 4.0.42

Conical and exponential volume-delay functions were added. BUS_BIAS_FACTOR and BUS_BIAS_CONSTANT keys were added to implement a boarding impedance bias for buses. The restricted link logic was expanded to permit the path to include a continuous sequence of restricted links starting or ended at a restricted origin and/or destination. STOP_WAITING_PENALTY and STATION_WAITING_PENALTY keys were added to include a differential penalty if the transit waiting takes place at a stop versus a station. MIN_WAIT_TIME key was added to avoid closely timed boardings and transfers. A bug was fixed in the calculation that converted the fare value of cost to impedance for transit routes. The default value of cost was changed from 1 to 0. A bug was fixed in the penalty impedance

calculations. For highway paths this affected the LEFT_TURN_PENALTY, RIGHT_TURN_PENALTY, and U_TURN_PENALTY. For transit paths this affected the TRANSFER_PENALTY, STOP_WAITING_PENALTY, and STATION_WAITING_PENALTY. To reproduce the same impact as before, multiply the key value by 8. The logic was modified to output a transfer leg to the plan file when walk detail is not requested and the alighting and boarding stops are the same. The park-&-ride logic was modified to add the daily parking cost from the park-&-ride lot to the path cost and impedance. The default time of day format was changed from HOURS to 24_HOUR_CLOCK. The transit fare processing was modified to process the new transit fare format. A new report called FARE_DATA_REPORT is available to print the expanded fare data. The source code was reorganized to call a common Plan_Build method for trip, activity, and user-specified origins and destinations. Path building methods for kiss-&-ride trips were added. New keys include MAX_KISS_RIDE_PERCENTAGE and KISS_RIDE_TIME_FACTOR. The parking cost logic has also been updated to use the daily and hourly cost fields in the Version 4 parking file plus the parking duration by trip purpose specified with the new key PARKING_HOURS_BY_PURPOSE. The minimum of the daily or hourly times hours parking cost is used. Parking costs for purpose zero and kiss-&-ride trips are automatically set to zero. For activity files, the parking duration is set by the activity duration. The new key FARE_CLASS_DISTRIBUTION was added to define the probability of a transit trip using cash, card, or special fare structures. The transit fare structure was modified to simplify input and improve processing efficiency. MAX_KISS_RIDE_DROPOFF_WALK and KISS_RIDE_STOP_TYPES keys were added to permit the user to control the maximum distance between a parking lot and a transit stop that will be considered for kiss-&-ride trips, and control the types of transit stops were kiss-&-ride trips are permitted. A bug was fixed for park-&-ride/kiss-&-ride trips where the activity location and parking lot record ordering are different for a given location. PARKING_PENALTY_FILE key was added to include impedance penalties at specified parking lots as a way of balancing parking demand to parking capacity. The parking cost and penalty data were attached to the access link from the parking lot to the activity location for standard drive and park-&-ride modes. The penalties and parking costs are not included in the kiss-&-ride trips. The vehicle ID was initialized to zero to avoid problems processing activity files. The computational efficiency for transit fare processing was improved.

Microsimulator 4.0.46

The transit processing rates were adjusted to work correctly with sub-second time steps. The Output_Ridership class was corrected to interpret the schedule and time methods as time steps. Transit network coding errors were changed from error messages to warning messages in order to dump all of the problems and then terminate the program with a transit coding error message. The boarding index for transit routes that pass through the same stop multiple times was modified to select the last time the bus passes through the stop prior to the alighting station. A few refinements in the way transit route warning messages are generated were implemented. Logic was added to process external transit stops. A bug was fixed for the situation where no vehicles are included in the input vehicle file. Additional process accounting logic was added to separate transit vehicle processing from normal vehicle processing. The alighting totals were fixed for exits at the end of the line that is also the end of the link. The starting and ending cell for a transit route were corrected. Transit vehicles are now added to the priority queue at all

times. Added percent calculations to the number of vehicle and transit trips started and completed. The logic was changed to avoid problems caused when transit vehicles fail to load onto the network.

PlanSum 4.0.38

A bug was fixed in the time period calculation for transit ridership summaries. The Vehicle Type file was added to calculate the stop dwell time based on boarding and alighting processing rates. Compatibility problems between the plans and the network now use the Warning interface. The average and maximum density fields in the output link delay file were re-calculated using 24 hours when the summary time increment key is zero. The Skim File processing was corrected when SKIM_TOTAL_TIME is not defined for non-Version3 output formats. The column sums and percents for the Trip Time report were corrected. For situations were a transit route utilizes a stop multiple times and the path boards at one of these stops, the transit schedule logic was modified to select the last boarding time prior to the alighting stop. Conical and exponential volume-delay functions were added. The skim and trip table summary logic was modified to avoid printing warning messages when processing incomplete transit trips. A bug was fixed in the path based selection logic for node-based paths with zero nodes. Transit distance and travel time calculations were refined for routes that pass through the same stop multiple times. A bug was fixed in the time periods for transit link group reports. A bug was fixed in the number of time periods allocated for turning movement summaries.

ArcPlan 4.0.18

SELECT_TRANSIT_ROUTES, ARCVIEW_RIDERSHIP_FILE, ARCVIEW_STOP_DEMAND_FILE, RIDERSHIP_SCALING_FACTOR, MINIMUM_RIDERSHIP_VALUE, MINIMUM_RIDERSHIP_SIZE, and MAXIMUM_RIDERSHIP_SIZE keys were added to summarize transit ridership data on link segments and at transit stops. A TOTAL field was added to the ArcView Stop Demand file. SEGMENT, BOARD, and ALIGHT fields were added to the ArcView Ridership File. ARCVIEW_PARKING_DEMAND and SELECT_TRANSIT_MODES keys were added. Parking demand reports the number of vehicles that depart and arrive at each parking lot. ARCVIEW_STOP_GROUP_FILE and STOP_EQUIVALENCE_FILE keys were added to generated ridership summaries for a group of transit stops. ArcView shapesfiles with XYZ or XYM coordinates were enabled. SELECT_RANDOM_PERCENTAGE and RANDOM_NUMBER_SEED keys were added to select a random percentage of the travelers selected based on the result of the other selection criteria.

AdjustPlans 4.0.8

A conflict between the new help system and the NEW_VEHICLE_FILE key was fixed.

PlanSelect 4.0.21

A bug was fixed in setting the flags for SELECT_OD_COORDINATES and EXCLUDE_OD_COORDINATES. SELECT_TRANSIT_ROUTES was added to select households based on a transit route range. The network is no longer disabled if only time ratios are selected.

ProblemSelect 4.0.3

The input household list file was made optional. TIME_OF_DAY_FORMAT was added to specify the time format in the input problem file.

ProblemSum 4.0.1

A bug was fixed in printing the summary increment value. The increment value was also changed from seconds to minutes to be consistent with other summary programs. A bug was fixed in the selection logic for situations were the problem density report, select links, and select polygons were not specified.

ArcProblem 4.0.2

The time increment value was changed from seconds to minutes to be consistent with other summary programs. The logic was changed to require an activity location file when the problem file does not include a link field. A bug was fixed in the activity location offset calculation. ArcView shapesfiles with XYZ or XYM coordinates were enabled.

TPPlusNet 4.0.2

Logic was added to detect and automatically convert the speeds in the speed-capacity lookup table from miles per hour to meters per second.

GISNet 4.0.8

GIS_NODE_FILE key was added to initialize the node numbers for link centerline conversions. Z coordinate reads were added to the node file processing. The logic was modified to read Z and/or M coordinates. Logic was added to correct link shapes based on AB orientation. Warning messages about different coordinate locations were added.

TransimsNet 4.0.11

ACTIVITY_LOCATION_SIDE_OFFSET key was added to enable the user to control the coordinates calculated for the coordinates posted on the activity location records. The position calculation logic was replaced with the Link_Shape method. Bridge facilities were processed as major arterials in the intersection calculations. Logic was added to detect ramp merges onto arterials better. The closest zone logic was modified to avoid selecting an external zone number for an internal activity location. The link use code for an external station link is now copied from the internal link it attaches to. A warning message was added when external station links do not have network connectivity. The maximum length of a pocket lane now considers the setback distance at both ends of the link. Bridge facility types are now treated as major arterials in the thru link selection process. New zone file processing was added with the option to derive the zone data from the input zone file or the input node file. A bug was fixed in reading the signal warrant keys. Logic was added to avoid creating stop signs on walk and rail links. The signal warrant logic was improved for dividing arterials and intersections with only one entry option. External activity locations and parking lots are no longer added to external links that do not permit autos and do permit rail. FACILITY_TYPE_ACCESS_FLAGS key was added to enable the user to override the default facility types where parking lots and activity locations are generated. The logic for utilizing turn prohibition records was corrected. NEW_TURN_PROHIBITION_TABLE key was added to output the input turn prohibitions to

the new network directory and file format. The logic for transit-related external links was modified to add the walk use code if walk is not already permitted. Logic was added to properly label complex diverge configurations and the lane connectivity for multi-lane left side diverge movements was improved.

IntControl 4.0.11

Warning messages were added for links entering an intersection without any lane connectivity or if the only connectivity is from merge or diverge movements. The signal timing logic was enhanced to use the number of right turn lanes if the left and thru lanes are zero or use the maximum of the merge and diverge lanes. Warning messages are now only shown for the first time period. PRINT_MERGE_WARNINGS key was added to enable or disable the warning messages about merge or diverge movements at intersections.

ArcNet 4.0.14

DRAW_AB_DIRECTION key was added to draw one-way links with lanes only in the B to A direction with shape points in the A to B direction. SUBZONE_DATA_FILE key was added to convert subzone data files to arcview shape files. TRANSIT_OVERLAP_FLAG key was added to enable the transit drawing routines to separate routes that overlap on a link. The logic was modified to use the new route header and nodes network services. Logic was added to copy the name and notes fields from the transit route file to the arcview shape file. The link retrieval logic for Route Nodes files with negative node numbers was fixed and the message when a link between two nodes is not found was changed from an error message to a warning message. ArcView shapesfiles with XYZ or XYM coordinates were enabled.

ConvertTrips 4.0.17

Warning message logic was added to continue processing trip tables that include higher zone numbers than the TRANSIMS network. The logic was expanded to include the new kiss-&-ride modes. The trip groups with return trip duration (typically park-&-ride and kiss-&-ride) were modified to improve the balance between outbound and inbound trips. Location weight field checks and automatic corrections are no longer performed. The network zone file was included to optionally check the zone data against zone numbers in the zone file. The network link file was included to optionally check that the activity location is on an auto accessible link before generating a warning about missing parking lots. Logic was added to check for drive modes before requiring an activity location to have a parking lot attached.

TripSum 4.0.4

The column sums and percents for the Trip Time report were corrected.

LocationData 4.0.4

Processing data files is now optional, but a warning message is sent. CREATE_NOTES_AND_NAME_FIELDS no longer adds two NOTES fields to the new activity location file. COPY_EXISTING_FIELDS key was added to automatically copy all of the fields in the input activity location file to the output activity location file. Error messages are generated when a duplicate field name is added. The NEW_WALK_ACCESS_FIELD and MAX_WALK_DISTANCE keys was added to create location weights based on the level of

transit service within walking distance. Link, Node, Transit Stop, Transit Route, and Transit Schedule files are read when the walk access field is specified. If the conversion script returns zero, the activity location record is not written to the output file. NEW_SUBZONE_FIELD_x, MAX_SUBZONE_DISTANCE_x, SUBZONE_DATA_FILE_x, SUBZONE_DATA_FORMAT_x and SUBZONE_DATA_FIELD_x keys were added to create location weights based on the subzone activity in the proximity to each activity location within a zone. The ZONE_BOUNDARY_POLYGON, ZONE_FIELD_NAME and ZONE_UPDATE_RANGE keys were added to update the zone numbers assigned to activity locations based on zone boundaries. A report called CHECK_ZONE_COVERAGE was added to check the number of activity locations within each zone. NEW_USE_FLAG_FIELD and LINK_USE_FLAG_TYPES keys were added to set an activity location flag based on the use codes of the associated link. NEW_USE_FLAG_FIELD_* and LINK_USE_FLAG_TYPES_* keys were added to permit multiple use flags to be added to the file at one time.

CoordMatch 4.0.0

New program to adjust node coordinates, convert node numbers, and/or create a node equivalence between two node files. A reference node map is used to rubber sheet the node coordinates.

TPPlusRoute 4.0.2

New program to convert multiple TP Plus transit line files to TRANSIMS route header and nodes files. TPPLUS_MODE_MAP_x and TPPLUS_NODE_MAP_FILE keys were added to convert TP Plus mode codes to TRANSIMS mode codes and convert the TP Plus node numbers to a TRANSIMS equivalent value. Several bugs were fixed related to the file appending logic, processing multiple FREQ fields, and processing the last line record in each file. TPPLUS_FLIP_ROUTE_x key was added to reverse the node order to synthesize PM peak routes from AM peak routes. The name and notes fields were enhanced by concatenating route names and orientation information. Logic was added to combine the headways and travel times for routes that are merged and have service in the same time period. A bug was fixed when PERIOD_TRAVEL_TIMES is false.

TransitNet 4.0.15

Input Transit Stop, Transit Route, Transit Schedule and Transit Driver files are now accepted for updated processing. Distance-based path building has been added to permit route coding at turn-points only. The logic was modified to make the new transit stop file have the same fields and format as the input transit stop file. The optional Speed field on the Route_Nodes file was activated. Rail and Bus use restrictions were added to the path building logic. INTERSECTION_STOP_OFFSET key was added and the logic was modified to include the A and B node intersection setbacks in placing stops. The stop generation logic was enhanced to better utilize existing stops and generate new stops on an as needed basis. The stop placement logic was improved between stop and non-stop nodes. Lane connectivity checks were added to the path building logic. The transit route processing now copies both a name and notes field from the input to output files. The travel time field on the route header file is now used to adjust the link travel times and stop schedules to match the overall run time for the route. TRANSIT_PROCESS_LINK_TIME key was added to control the time between transit stops and

transit activity locations. The notes field was copied from the input transit route file to the output transit route file and from the route header file to the output transit route file. ROUTE_HEADER_FORMAT and ROUTE_NODES_FORMAT keys were added. The option to read travel time fields for each time period from the route header file was added. The ligic was modified to use the new route header and nodes network services. Protection against integer overflow math was added. A bug was fixed in the way travel times were calculated. The route nodes network services now generate warning messages rather than error messages for missing nodes. HOURLY and DAILY parking cost fields were added to the input park-&-ride node file. The exit status for lane connectivity warning messages was changed to an error rather than a warning.

LineSum 4.0.6

The subarea selection polygon logic was implemented. The reports were modified slightly to accommodate outputting a subset of stops on a transit line. The time period method options were expanded to include both actual (RUN_START, RUN_MIDPOINT, RUN_END) and schedule (SCHEDULE_START, SCHEDULE_MIDPOINT, and SCHEDULE_END) times. STOP_EQUIVALENCE_FILE key and TRANSIT_STOP_GROUP_SUMMARY, TRANSIT_STOP_GROUP_DETAIL, and PRINT_STOP_EQUIVALENCIES reports were added to summarize stop group boardings and alightings for bus and rail by time of day. LINE_EQUIVALENCE_FILE key and LINE_GROUP_SUMMARY_REPORT, LINE_GROUP_PEFORMANCE_REPORT, and PRINT_LINE_EQUIVALENCIES reports were added to summary line group ridership by time of day. TRANSIT_STOP_GROUP_BY_STOP report was added to list the ridership by stop within each stop group. Name fields were automatically activated for stop group and line ridership reports. A few format refinements and null point protection were added to the stop group by stop report.

SideFriction 4.0.0

New program to generate Lane_Use records for short lane blockages associated with double parking, bus stops, and other side friction events.

ExportTransit 4.0.2

New program to convert the Transit Stop, Route, Schedule, and Driver files to a Route Header and Route Nodes file. The route travel time was added to the route header file. SELECT_TRANSIT_MODES and SELECT_TRANSIT_ROUTES keys were added to export selected modes and routes. A bug was fixed in the travel time calculation logic. PERIOD_TRAVEL_TIMES key was added to permit the program to calculate the travel time for each time period rather than the lower average for all time periods. The notes field was copied from the transit route file to the route header file. The logic was modified to use the new route header and nodes network services

Reschedule 4.0.6

The option to input a Ridership file and/or a Vehicle Type file was include. This enables the schedule adjustments to record the actual stop departure times from the Microsimulator or to calculate the stop dwell time based on the boarding and alighting processing rates. SELECT_TRANSIT_MODES and SELECT_TRANSIT_ROUTES were added to constrain the

routes that are rescheduled. MAXIMUM_DWELL_TIME key was added along with logic to generate warning messages if no transit schedules were updated or the dwell time keys are provided but not used. Protection was added for integer overflow and negative times of day. Schedules for routes that loop through the first stop multiple times were fixed. SELECT_TIME_PERIODS key was added to select runs for specified time periods for rescheduling.. ROUTE_HEADER_FILE key was added to adjust the schedules based on time period running time values.

Validate 4.0.14

Transit route and stop validation were added. In addition to the transit network and ridership file, the new keys include LINE_GROUP_COUNT_FILE, STOP_GROUP_COUNT_FILE, LINE_EQUIVALENCE_FILE, and STOP_EQUIVALENCE_FILE. The new reports include LINE_GROUP_SUMMARY, STOP_GROUP_SUMMARY, BOARDING_GROUP_SUMMARY, ALIGHTING_GROUP_SUMMARY, PRINT_LINE_EQUIVALENCIES, and PRINT_STOP_EQUIVALENCIES. The transit line and stop group reports were modified to post the number of lines and runs made in each group and remove unnecessary statistics from each row. A correction was made to the average error calculation for transit line and stop reports. Additional Facility Type labels were added to the Facility Type report.

SubareaNet 4.0.3

Logic was added to convert the regional transit network files to a subarea transit network. The subarea flag structure was replaced with overlaid methods within existing data classes. The transit line generation logic was fixed for situations were the line has only one node outside of the boundary.

SubareaPlans 4.0.21

The transit network processing from SubareaNet was added and transit plan processing was implemented. A bug was fixed when generating a single output plan file from multiple input plan files.

ArcRider 4.0.3

New program to generated ArcView shapefile from the transit ridership data. Protection was added for situations where line groups include zero routes. ArcView shapesfiles with XYZ or XYM coordinates were enabled. A bug was fixed in the line group graphics for excluding lines with no ridership from the shapefile.

ArcDelay 4.0.13

A bug was fixed in the Link Delay bandwidth and direction processing. ArcView shapesfiles with XYZ or XYM coordinates were enabled.

ArcAddZ 4.0.1

New program to convert ArcView shapefiles from XY coordinates to XYZ or XYM coordinates. A bug was fixed in the z coordinate initialization.

ArcDiff 4.0.3

The XYZ or XYM coordinates from the input delay file #1 are used to set the output difference file coordinates.

ArcSnapshot 4.0.7

ArcView shapesfiles with XYZ or XYM coordinates were enabled.

RunSetup 4.0.3

The program was significantly rewritten. Add PROGRAM_FLAGS key to insert a control flag on the command line. Several changes were made to the batch file generation logic to enable the program to work better with Linux operating systems.