ArcNet

Version 5.0.4

Revision History
July 2011 - Created by Volpe Center

The **ArcNet** program is used to:
1. Create ArcView shapefiles from TRANSIMS nodes, links, shape, lane-use, activity locations, parking, process links, pocket lanes, lane connectivity, turn prohibition, unsignalized nodes, signalized nodes, detector, transit routes, transit stop, transit driver, route header, and route nodes files.
2. Draw links and link-related attributes using individual lanes.
3. Draw transit routes using a different offset for each route.
4. Draw the network attributes associates with a specific time period.

[Take the following from the header of the –h file, convert table to text, and reformat]

Syntax is ArcNet [-flag] [control_file]

The control_file is the file name of an ASCII file that contains the control strings expected by the program. The control_file is optional. If a file name is not provided, the program will prompt the user to enter a file name. The flag parameters are also optional. Any combination of thefollowing flag parameters can be included on the command line:

Optional Flags:
-Q[uiet] = execute without screen messages
-H[elp] = show program syntax and control keys
-C[ontrol] = create/update a default control file
-K[eyCheck] = list unrecognized control file keys
-P[ause] = pause before exiting
-N[oPause] = never pause before exiting
-D[etail] = execute with detailed status messages
-X[ML] = write an XML file with control keys

The program automatically creates a printout file based on the control_file name. If the file name includes an extension (e.g., ".ctl"), the extension is removed and ".prn" is added. The printout file will be created in the current working directory and will overwrite an existing file with the same name.

Version 5 Features

1. Version 5 requires that the individual output files be specified, rather than just an output directory
2. At intersections, ArcNet now produces curved connections, making the output lane connectivity shapefile more readable.

Control Key List

The list of control file keys appears in the table below:

- Req / Opt indicates whether the key is **req**uired or **opt**ional
- The types include **Text**, Input **File**name, **New** file, **Bool**ean, **Path** (to a file), **Time**, **Int**eger, **Dec**imal, **List** of items
- The Default is the default value, used if the key does not appear in the control file.
- I/O/P indicates Input, Output or Parameter.

For a more detailed description of the Parameter control keys, see the Parameter Reference. For a more detailed description of the Input or Output control keys, see the File Reference.

Control File Keys:	Req/Opt	Type	Default	I/O/P
TITLE	Opt	Text		P
REPORT_FILE	Opt	File		O
REPORT_FLAG	Opt	Bool	FALSE	P
PROJECT_DIRECTORY	Opt	Path		P
DEFAULT_FILE_FORMAT	Opt	Text	TAB_DELIMITED	P
TIME_OF_DAY_FORMAT	Opt	Text	DAY_TIME	P
MODEL_START_TIME	Opt	Time	0:00	P
MODEL_END_TIME	Opt	Time	24:00:00	P
UNITS_OF_MEASURE	Opt	Text	METRIC	P
RANDOM_NUMBER_SEED	Opt	Int.	0	P
MAX_WARNING_MESSAGES	Opt	Int.	100000	P
MAX_WARNING_EXIT_FLAG	Opt	Bool	TRUE	P
MAX_PROBLEM_COUNT	Opt	Int.	0	P
NUMBER_OF_THREADS	Opt	Int.	1	P
NODE_FILE	Opt	File		I
NODE_FORMAT	Opt	Text	TAB_DELIMITED	P
ZONE_FILE	Opt	File		I
ZONE_FORMAT	Opt	Text	TAB_DELIMITED	P
SHAPE_FILE	Opt	File		I
SHAPE_FORMAT	Opt	Text	TAB_DELIMITED	P

LINK_FILE	Opt	File		I
LINK_FORMAT	Opt	Text	TAB_DELIMITED	P
POCKET_FILE	Opt	File		I
POCKET_FORMAT	Opt	Text	TAB_DELIMITED	P
LANE_USE_FILE	Opt	File		I
LANE_USE_FORMAT	Opt	Text	TAB_DELIMITED	P
LOCATION_FILE	Opt	File		I
LOCATION_FORMAT	Opt	Text	TAB_DELIMITED	P
PARKING_FILE	Opt	File		I
PARKING_FORMAT	Opt	Text	TAB_DELIMITED	P
ACCESS_FILE	Opt	File		I
ACCESS_FORMAT	Opt	Text	TAB_DELIMITED	P
CONNECTION_FILE	Opt	File		I
CONNECTION_FORMAT	Opt	Text	TAB_DELIMITED	P
TURN_PENALTY_FILE	Opt	File		I
TURN_PENALTY_FORMAT	Opt	Text	TAB_DELIMITED	P
SIGN_FILE	Opt	File		I
SIGN_FORMAT	Opt	Text	TAB_DELIMITED	P
SIGNAL_FILE	Opt	File		I
SIGNAL_FORMAT	Opt	Text	TAB_DELIMITED	P
TIMING_PLAN_FILE	Opt	File		I
TIMING_PLAN_FORMAT	Opt	Text	TAB_DELIMITED	P
PHASING_PLAN_FILE	Opt	File		I
PHASING_PLAN_FORMAT	Opt	Text	TAB_DELIMITED	P
DETECTOR_FILE	Opt	File		I
DETECTOR_FORMAT	Opt	Text	TAB_DELIMITED	P
TRANSIT_STOP_FILE	Opt	File		I
TRANSIT_STOP_FORMAT	Opt	Text	TAB_DELIMITED	P
TRANSIT_ROUTE_FILE	Opt	File		I
TRANSIT_ROUTE_FORMAT	Opt	Text	TAB_DELIMITED	P
TRANSIT_SCHEDULE_FILE	Opt	File		I
TRANSIT_SCHEDULE_FORMAT	Opt	Text	TAB_DELIMITED	P
TRANSIT_DRIVER_FILE	Opt	File		I
TRANSIT_DRIVER_FORMAT	Opt	Text	TAB_DELIMITED	P
ROUTE_NODES_FILE	Opt	File		I
ROUTE_NODES_FORMAT	Opt	Text	TAB_DELIMITED	P
VEHICLE_TYPE_FILE	Opt	File		I
VEHICLE_TYPE_FORMAT	Opt	Text	TAB_DELIMITED	P
NOTES_AND_NAME_FIELDS	Opt	Bool	FALSE	P
DRAW_NETWORK_LANES	Opt	Bool	FALSE	P
LANE_WIDTH	Opt	Dec.	3.5 meters	P

CENTER_ONEWAY_LINKS	Opt	Bool	FALSE	P
LINK_DIRECTION_OFFSET	Opt	Dec.	0.0 meters	P
DRAW_AB_DIRECTION	Opt	Bool	FALSE	P
POCKET_SIDE_OFFSET	Opt	Dec.	2.0 meters	P
PARKING_SIDE_OFFSET	Opt	Dec.	3.0 meters	P
LOCATION_SIDE_OFFSET	Opt	Dec.	10.0 meters	P
SIGN_SIDE_OFFSET	Opt	Dec.	2.0 meters	P
SIGN_SETBACK	Opt	Dec.	2.0 meters	P
TRANSIT_STOP_SIDE_OFFSET	Opt	Dec.	2.0 meters	P
TRANSIT_DIRECTION_OFFSET	Opt	Dec.	0.0 meters	P
TRANSIT_OVERLAP_FLAG	Opt	Bool	TRUE	P
DRAW_ONEWAY_ARROWS	Opt	Bool	FALSE	P
ONEWAY_ARROW_LENGTH	Opt	Dec.	7.0 meters	P
ONEWAY_ARROW_SIDE_OFFSET	Opt	Dec.	1.75 meters	P
CURVED_CONNECTION_FLAG	Opt	Bool	FALSE	P
SUBZONE_DATA_FILE	Opt	File		I
NEW_ARC_NODE_FILE	Opt	New		O
NEW_ARC_ZONE_FILE	Opt	New		O
NEW_ARC_LINK_FILE	Opt	New		O
NEW_ARC_CENTERLINE_FILE	Opt	New		O
NEW_ARC_POCKET_FILE	Opt	New		O
NEW_ARC_LANE_USE_FILE	Opt	New		O
NEW_ARC_LOCATION_FILE	Opt	New		O
NEW_ARC_PARKING_FILE	Opt	New		O
NEW_ARC_ACCESS_FILE	Opt	New		O
NEW_ARC_CONNECTION_FILE	Opt	New		O
NEW_ARC_TURN_PENALTY_FILE	Opt	New		O
NEW_ARC_SIGN_FILE	Opt	New		O
NEW_ARC_SIGNAL_FILE	Opt	New		O
NEW_ARC_TIMING_PLAN_FILE	Opt	New		O
NEW_ARC_PHASING_PLAN_FILE	Opt	New		O
NEW_ARC_DETECTOR_FILE	Opt	New		O
NEW_ARC_TRANSIT_STOP_FILE	Opt	New		O
NEW_ARC_TRANSIT_ROUTE_FILE	Opt	New		O
NEW_ARC_TRANSIT_DRIVER_FILE	Opt	New		O
NEW_ARC_ROUTE_NODES_FILE	Opt	New		O
NEW_ARC_SUBZONE_DATA_FILE	Opt	New		O
SELECT_TIME	Opt	Time	0:00	P
TRANSIT_TIME_PERIODS	Opt	Text	Time Breaks	P
INPUT_COORDINATE_SYSTEM	Opt	List		P
INPUT_COORDINATE_ADJUSTMENT	Opt	List		P

OUTPUT_COORDINATE_SYSTEM	Opt	List		P
OUTPUT_COORDINATE_ADJUSTMENT	Opt	List		P
OUTPUT_XYZ_SHAPES	Opt	Bool	FALSE	P
OUTPUT_XYM_SHAPES	Opt	Bool	FALSE	P

Control Key Details

[Use Insert Text from File as a link!]

[I would prefer that this section be built as links to the appropriate parameter reference. Or we can omit this section, referring uses to the file or parameter reference.]

TITLE

Any text string can be used on this line. This text is printed on the top of each output page.

REPORT_FILE

The report file name is optional. If a file name is not provided, the program automatically creates a report file name based on the input control file name. The report file will overwrite an existing file with the same name if the Report Flag key is False or not specified.

REPORT_FLAG

The report flag key is optional. If it is specified as YES or TRUE, the report file or default printout file will be opened in "Append" mode rather than "Create" mode. This permits the user to consolidate the output of several programs into a signal report file. Possible values are TRUE/FALSE, YES/NO, 1/0, T/F, Y/N, and the default is FALSE.

PROJECT_DIRECTORY

The project directory key is optional. If it is specified, it is added to all non-network file names required by the program. If it is not specified, then the PROJECT_DIRECTORY that was specified in the config.txt file used.

FILE_FORMATS

The file format keys include DEFAULT_FILE_FORMAT, NODE_FORMAT, ZONE_FORMAT, SHAPE_FORMAT, LINK_FORMAT, POCKET_FORMAT, LANE_USE_FORMAT, LOCATION_FORMAT, PARK-

ING_FORMAT, ACCESS_FORMAT, CONNECTION_FORMAT, TURN_PENALTY_FORMAT, SIGN_FORMAT, SIGNAL_FORMAT, TIMING_PLAN_FORMAT, PHASING_PLAN_FORMAT, DETECTOR_FORMAT, TRANSIT_STOP_FORMAT, TRANSIT_ROUTE_FORMAT, TRANSIT_SCHEDULE_FORMAT, TRANSIT_DRIVER_FORMAT, ROUTE_NODES_FORMAT, VEHICLE_TYPE_FORMAT, HOUSEHOLD_FORMAT, SELECTION_FORMAT, TRIP_FORMAT, LINK_DELAY_FORMAT, VEHICLE_FORMAT, PLAN_FORMAT, NEW_PLAN_FORMAT, NEW_PROBLEM_FORMAT, NEW_LINK_DELAY_FORMAT.

These keys are optional. The default value is TAB_DELIMITED, and other values include TEXT, BINARY, FIXED_COLUMN, COMMA_DELIMITED, SPACE_DELIMITED, TAB_DELIMITED, CSV_DELIMITED, DBASE, SQLITE3, VERSION3.

In the previous version of TRANSIMS (v4), the default value was VERSION3. It is now TAB_DELIMITED.

TRANSIMS applies file formats in the following order, using the first file format that is found:

1. If a .def file is provided, the format given in the first line of that file is used. Note that in cases where the file has nested fields (for example, the SHAPE file), a .def file must be provided. Otherwise it is optional.
2. If a specific file format was given in the control file (e.g. NODE_FORMAT CSV_DELIMITED), then the file format given in the control file is used.
3. If the DEFAULT_FILE_FORMAT is given in the control file, it is used.
4. If the DEFAULT_FILE_FORMAT is specified in the TRANSIMS config.txt file, it is used.
5. Otherwise, the default value of TAB_DELIMITED is assumed.

TIME_OF_DAY_FORMAT

The time of day format key is optional. Possible values include SECONDS, MINUTES, HOURS, HOUR_CLOCK, DAY_TIME, TIME_CODE, and the default is DAY_TIME.

Examples of each format are as follows:

DAY_TIME: 1@09:39:24.3
SECONDS: 34764.3
MINUTES: 579.4
HOURS: 9.66
HOUR_CLOCK: 09:39
TIME_CODE: ?

Internally, the DTIME data object is used, with a resolution of tenths of a second. In binary files, this is stored as a 2 or 4 byte integer, in text files, as a character string with approximately 12 characters.

MODEL_START_TIME

The starting time-of-day for the model. If not specified, it is 0:00. Valid values are times greater than equal to 0 [seconds], 0.0 [hours], 0:00.

MODEL_END_TIME

The ending time-of-day for the model. If not specified, it is 24:00. Valid values are times greater than the MODEL_START_TIME.

UNITS_OF_MEASURE

Specifies the units of measure used in output files and printouts. Values are ENGLISH or METRIC, with a default of METRIC. With ENGLISH units, the distance measure is in feet, while with METRIC units, it is in meters.

RANDOM_NUMBER_SEED

The random number seed key is optional. This key specifies the random number seed to be used for the random impedance calculations. Any non-negative integer can be specified. If the value is zero or if no key is provided, the program uses the system clock to set the random number seed.

MAX_WARNING_MESSAGES

When the program generates a warning message, a counter is incremented and the total number of warning messages is reported and a warning return coded (2) is set at the end of the execution. By default the program prints up to 100,000 warning messages to the print-out file. If more than 100,000 warning messages are sent, the program stops printing additional messages to the file or terminates the program with an error message based on the MAX_WARNING_EXIT_FLAG. This parameter enables the user to modify the default warning limit. Valid values are non-negative integers.

MAX_WARNING_EXIT_FLAG

If the maximum number of warning messages is exceeded, this flag directs the program in what to do. If the flag is TRUE (the default), the program is terminated with an error message about the warning messages. If the flag is FALSE, the program continues execution, but no additional warning messages are sent to the screen or written to the printout file. The warning message counter continues to count the messages and reports the total at the end of the execution. Possible values include TRUE/FALSE, YES/NO, 1/0, T/F, Y/N, and the default is TRUE.

Examples