

SPECIFYING VEHICLE MOTION

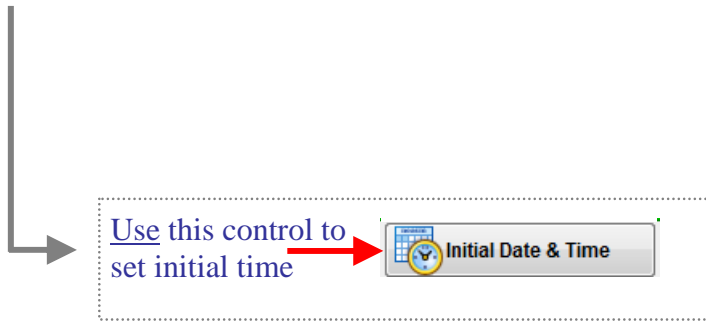
VEHICLE MOTION USING WAYPOINTS

A ELAPSED-TIME LLA

Initial Latitude ($^{\circ}$) Longitude ($^{\circ}$)
Altitude (m) Heading($^{\circ}$)

Times are relative to Simulation
Start Time (sec).

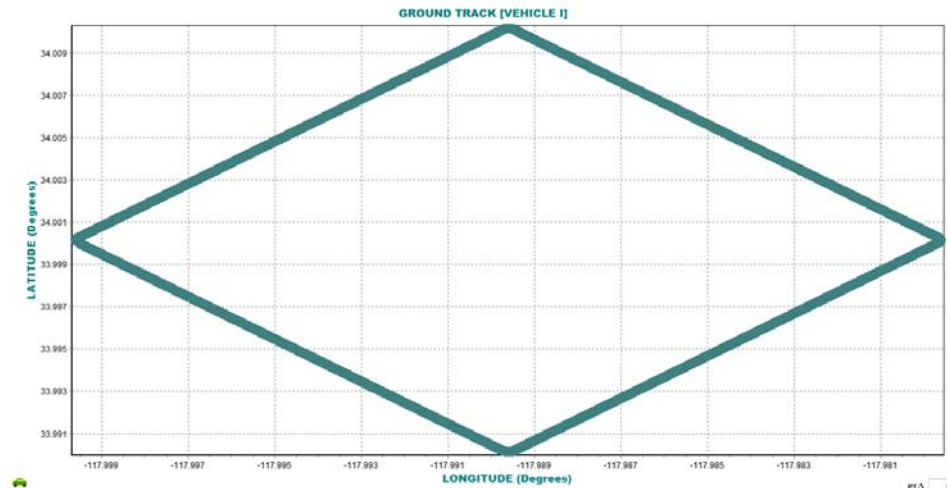
```
Example_WayPoint_A.txt - Notepad
File Edit Format View Help
; Format = 0
;
;
A 34.0 -118.0 0.0 0.0
100 34.01 -117.99 0.0
200 34.00 -117.98 0.0
300 33.99 -117.99 0.0
400 34.00 -118.00 0.0
```



200 34.00 -117.98 0.0

Terminal Altitude (m)
Terminal Longitude ($^{\circ}$)
Terminal Latitude ($^{\circ}$)
Relative Elapsed Time @ Terminal LLA

SEE C:\TAPESTRY\TRAJECTORIES\ EXAMPLE_WAYPOINT_A .TXT



VEHICLE MOTION USING WAYPOINTS

SPEED BEARING DURATION

Initial Latitude (°) Longitude (°)
Altitude (m) Heading(°)

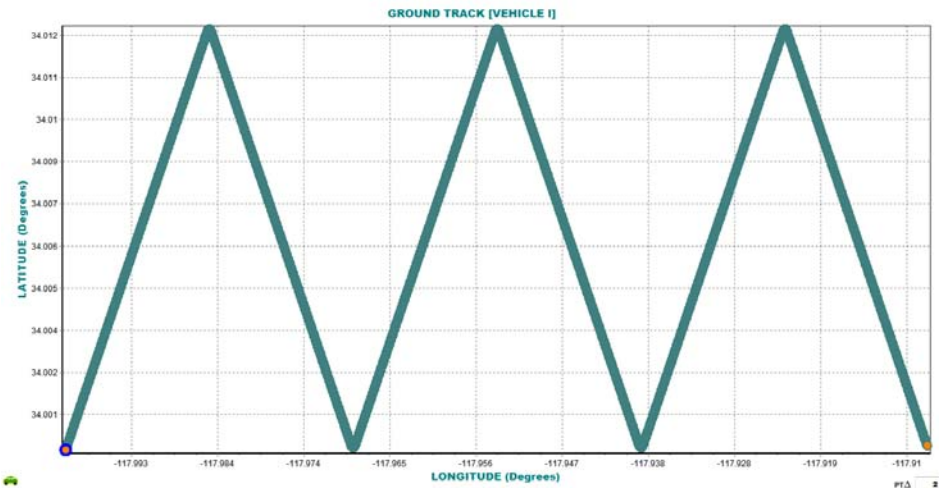
Times are relative to Simulation
Start Time (sec).

```
Example_Waypoint_B.txt - Notepad
File Edit Format View Help
; Format = B
;
;
B 34.0 -118.0 0.0 45.0
20.0 45.0 100.0
20.0 135.0 100.0
20.0 45.0 100.0
20.0 135.0 100.0
20.0 45.0 100.0
```

20.0 135.0 100.0

↑ Segment Duration (sec)
↑ Segment Bearing (°)
↑ Segment Speed-Over-Ground (m/s)

SEE C:\TAPESTRY\TRAJECTORIES\ EXAMPLE_WAYPOINT_B.TXT



VEHICLE MOTION USING SCRIPTING

TIME ORDERED LIST OF VEHICLE MOTION DERIVED FROM A 6-DOF JERK MODEL

Scripted Vehicle Motion ▾

MANEUVER PRIMITIVES



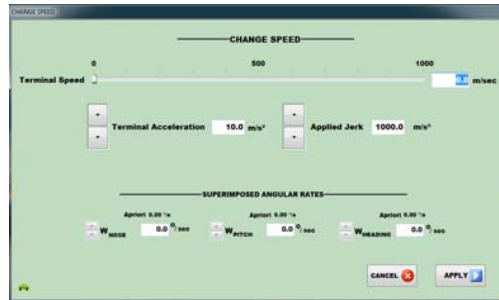
MAINTAIN STATE

- PROGRAMMED
- DURATION



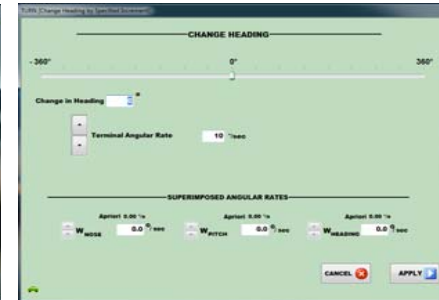
CHANGE SPEED

- PROGRAMMED
- TERMINAL SPEED
 - ACCELERATION / JERK



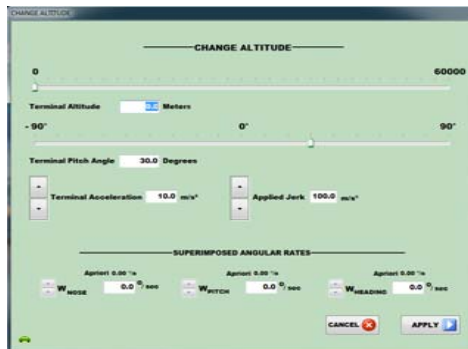
CHANGE HEADING

- PROGRAMMED
- TERMINAL HEADING
 - BANK ANGLE AND RATE
 - ACCELERATION / JERK



CHANGE ALTITUDE

- PROGRAMMED
- TERMINAL ALTITUDE
 - PITCH ANGLE
 - RADIAL ACCELERATION / JERK



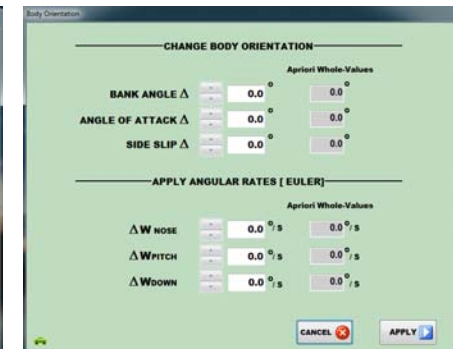
CHANGE PITCH

- PROGRAMMED
- PITCH ANGLE AND RATE
 - ACCELERATION / JERK



CHANGE BODY ORIENTATION

- PROGRAMMED
- ATTITUDE
 - BODY RATES
 - ACCELERATION / JERK



VEHICLE MOTION USING ROUTEMAKER

VEHICLE MOTION BY CLICKING ON A GRID (MAP)

The screenshot displays the Route Maker software interface. The main window shows a grid with a route plotted in green. The route starts at a red dot on the right and moves left, then forms a large loop. The interface includes a menu bar (File, Edit, Preferences), a toolbar with icons for loading files and preferences, and a status bar at the top right indicating a scale of 5000 Meters. On the left side, there are several panels: 'INITIAL PAD (S)' set to 120, 'INSERT A SEGMENT' with a 'HEADS UP DISPLAY' showing distance (239) and time (10 MIN), and 'SEGMENT LIST' with a table of waypoints. A red arrow points from the 'SEGMENT LIST' table to a red dot on the grid. The 'SEGMENT LIST' table has the following data:

TIME	ΔN	ΔE	SPD	θ	F/R
1046.8	-273	3	5.0	179.3	
1122.8	-379	-21	5.0	183.2	
1177.8	-267	-60	5.0	192.8	
1245.9	-267	-210	5.0	218.2	
1304.4	-195	-217	5.0	228.1	
1363.8	-16	-296	5.0	266.8	
1449.3	217	-367	5.0	300.6	
1555.7	457	-271	5.0	323.3	
1660.3	518	-64	5.0	352.9	
1747.6	435	32	5.0	4.2	
1813.7	284	167	5.0	30.5	
1858.9	111	196	5.0	60.4	
1913.6	55	267	5.0	78.2	
1959.4	16	228	5.0	85.8	
2043.7	5	421	5.0	89.2	
2129.4	-5	428	5.0	90.7	
2259.4	-5	650	5.0	90.5	
2307.3	-5	239	5.0	91.3	

Below the table, 'SEGMENT DURATION' is 47.9 S. At the bottom, 'INITIAL TIME PAD (S)' is 120, 'SELECTED' is 32 SEGMENTS, and 'ROUTE DURATION' is 2307.3 SEC. An 'APPLY' button is visible at the bottom right.

A LIST OF "TYPE -C " WAYPOINTS