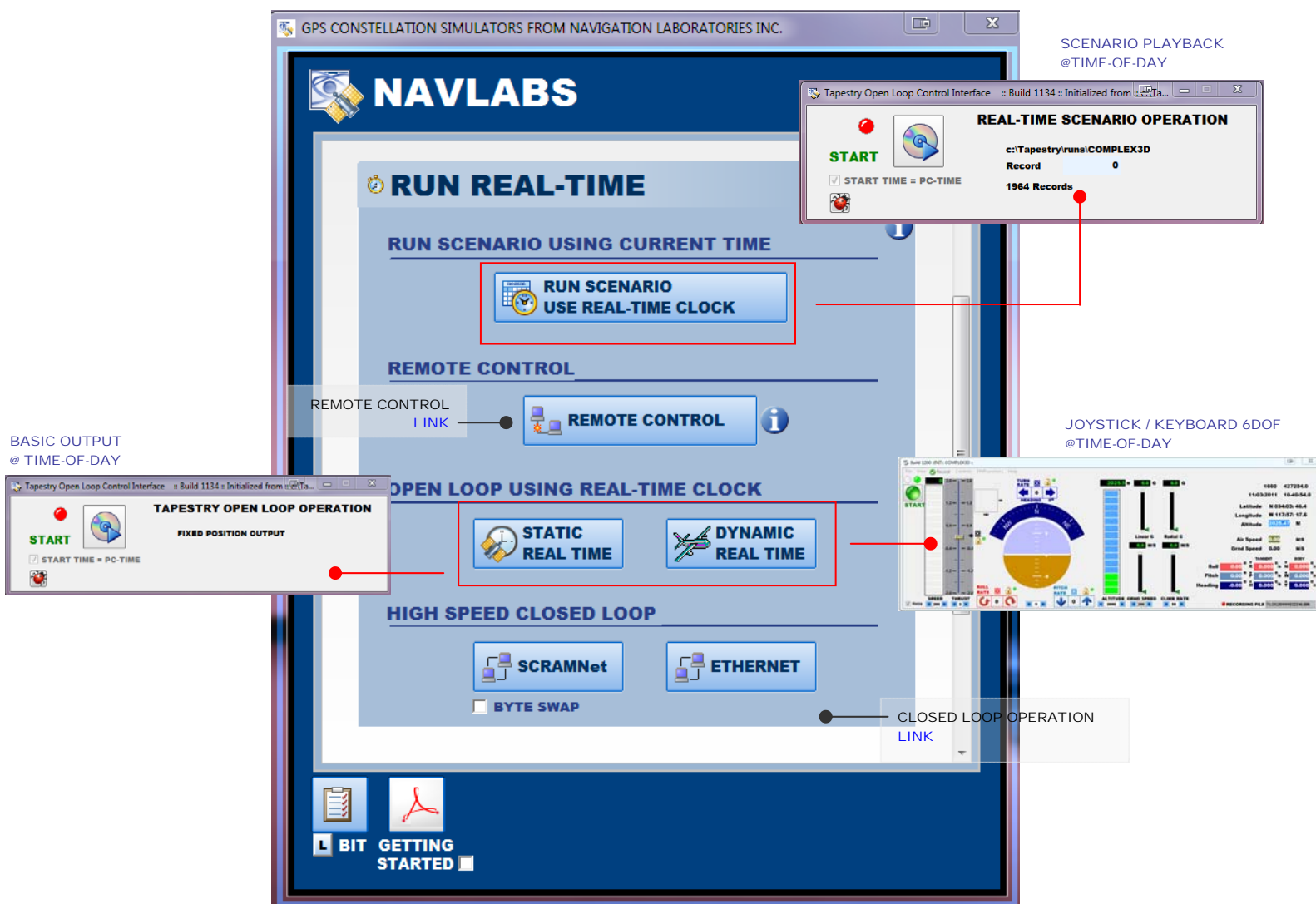


## USING THE OPENLOOP VEHICLE MOTION GENERATOR [ REAL-TIME-CLOCK ]

To operate in TIME-OF-DAY, use this operational configuration in which TAPESTRY outputs an RF Signals consistent with clock time as defined by the Computer Clock. The modes are:

- BASIC RF OUTPUT at TIME-OF-DAY
- SCENARIO PLAYBACK at TIME-OF-DAY
- 6DOF INTERACTIVE Motion Generator at TIME-OF-DAY

Each is expanded upon subsequently.



The screenshot displays the NAVLABS Tapestry Open Loop Control Interface, which is a software application for simulating GPS constellations. The interface is divided into several sections, each representing a different operational mode:

- RUN REAL-TIME**: This section includes a button labeled "RUN SCENARIO USING CURRENT TIME" and a sub-section "RUN SCENARIO USE REAL-TIME CLOCK".
- REMOTE CONTROL**: This section includes a button labeled "REMOTE CONTROL" and a "REMOTE CONTROL LINK" button.
- OPEN LOOP USING REAL-TIME CLOCK**: This section includes buttons for "STATIC REAL TIME" and "DYNAMIC REAL TIME".
- HIGH SPEED CLOSED LOOP**: This section includes buttons for "SCRAMNet" and "ETHERNET", and a "BYTE SWAP" checkbox.

Four callout boxes provide additional details for specific modes:

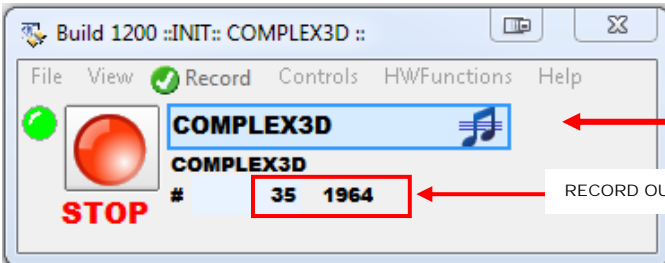
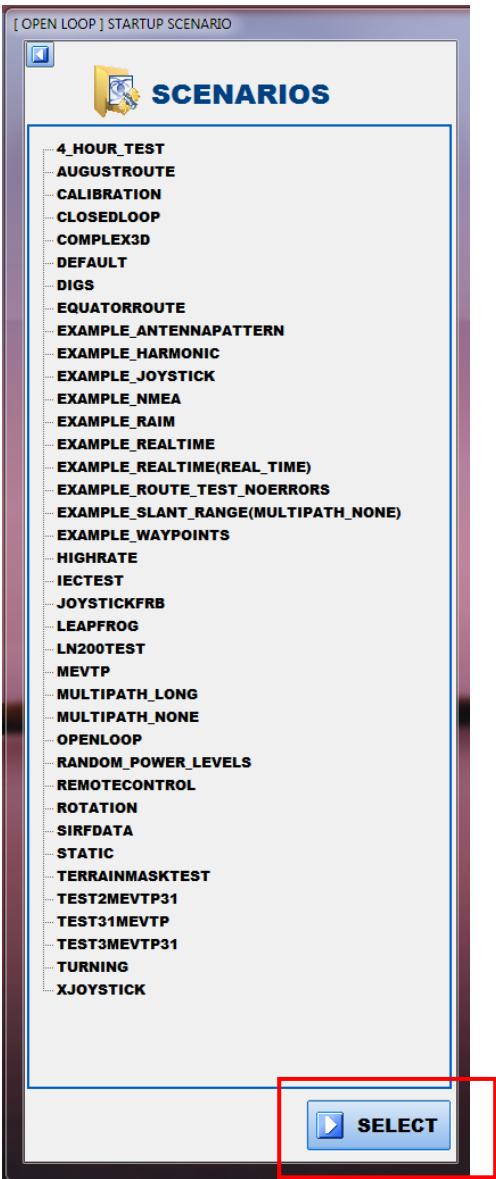
- SCENARIO PLAYBACK @TIME-OF-DAY**: This box shows the "REAL-TIME SCENARIO OPERATION" window, which includes a "START" button, a "START TIME = PC-TIME" checkbox, and a "Record" counter showing "1964 Records".
- BASIC OUTPUT @ TIME-OF-DAY**: This box shows the "TAPESTRY OPEN LOOP OPERATION" window, which includes a "START" button, a "START TIME = PC-TIME" checkbox, and a "FIXED POSITION OUTPUT" checkbox.
- JOYSTICK / KEYBOARD 6DOF @TIME-OF-DAY**: This box shows a 6DOF control interface with a joystick, buttons, and a display showing various parameters like "Latitude", "Longitude", "Altitude", "Air Speed", "Ground Speed", "Heading", "Roll", "Pitch", and "Yaw".
- CLOSED LOOP OPERATION LINK**: This box shows a "CLOSED LOOP OPERATION LINK" button.

At the bottom of the interface, there is a "GETTING STARTED" button and a "BIT" button.

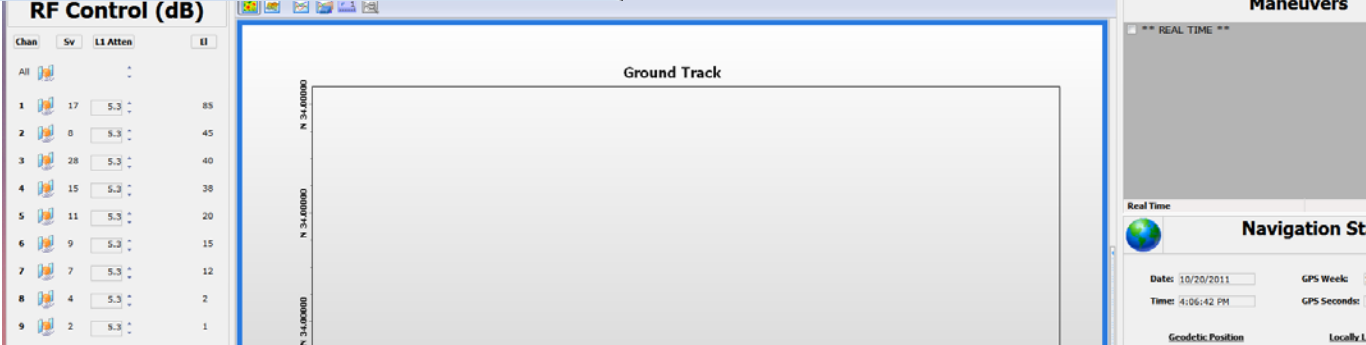
# SCENARIO PLAYBACK

USE THE OPENLOOP MODE TO PLAYBACK A SCENARIO USING CURRENT TIME-OF-DAY.

This is for those applications that cannot go "back in time"



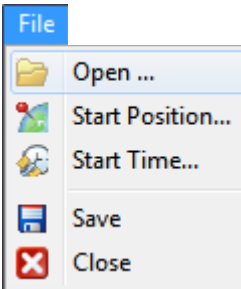
SCENARIO BEING PLAYED BACK AT REAL-TIME



# BASIC RF OUTPUT

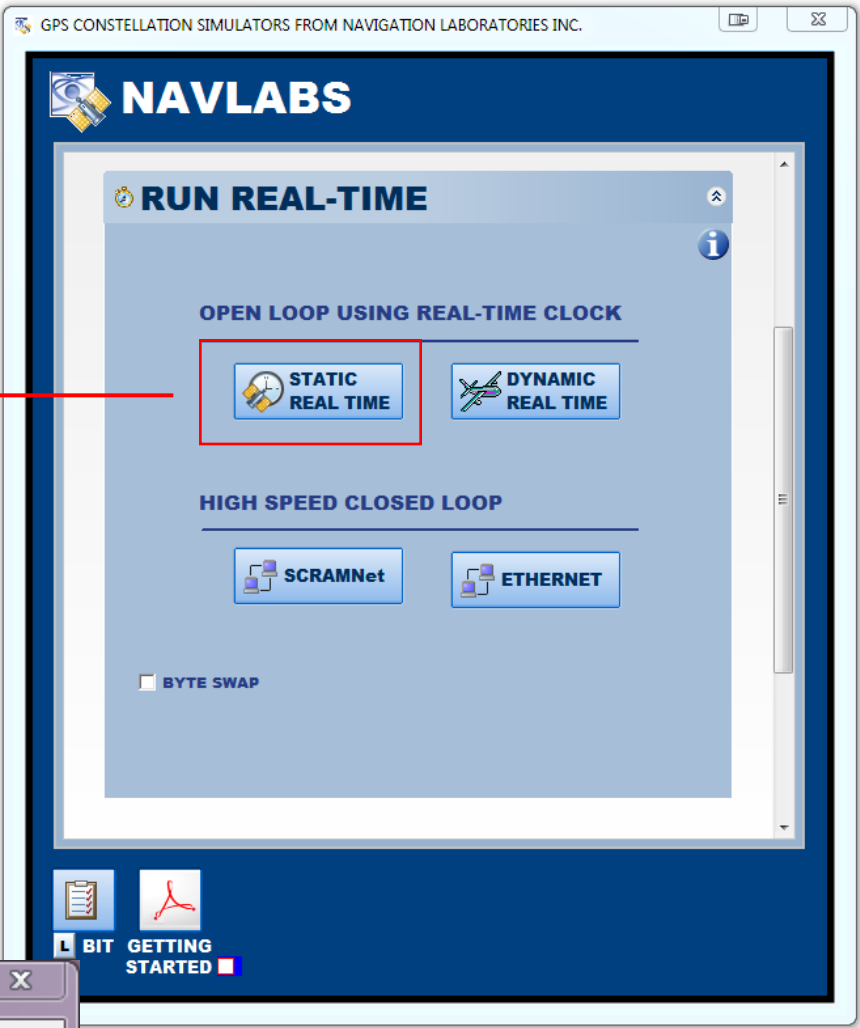
STARTUP\_SCENARIO CONTAINS LEGACY SUBFRAMES AND INITIAL POSITION FOR BASIC OUTPUT

CHANGE WITH THESE CONTROLS

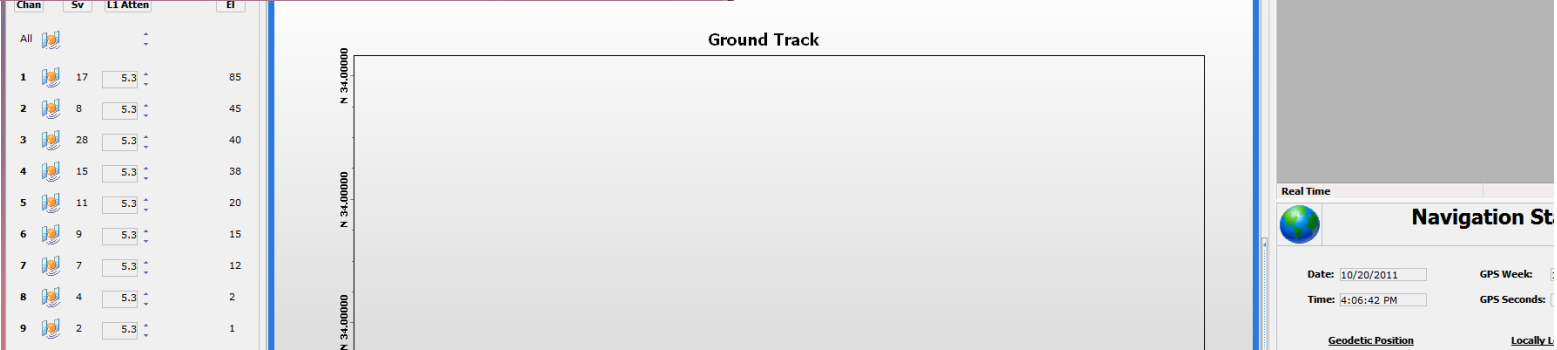
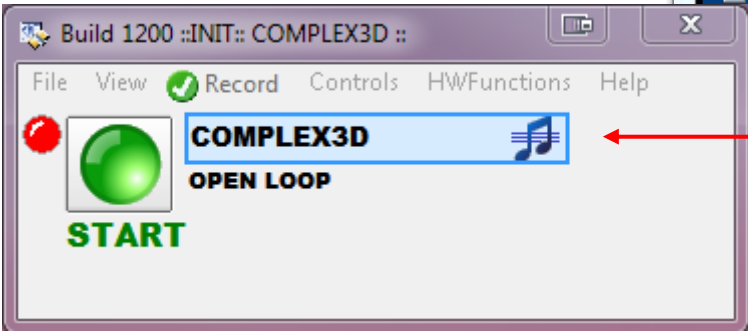


CHANGE INITIAL LOCATION

CHANGE INITIAL TIME



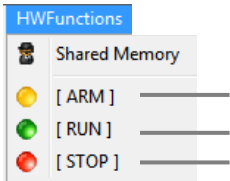
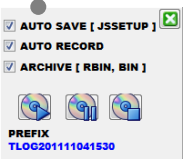
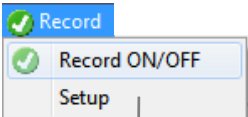
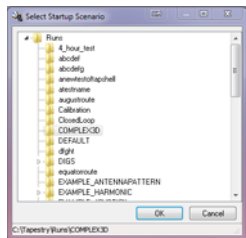
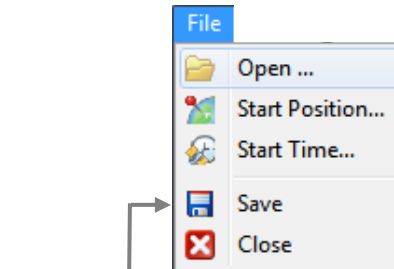
CHANGE STARTUP SCENARIO



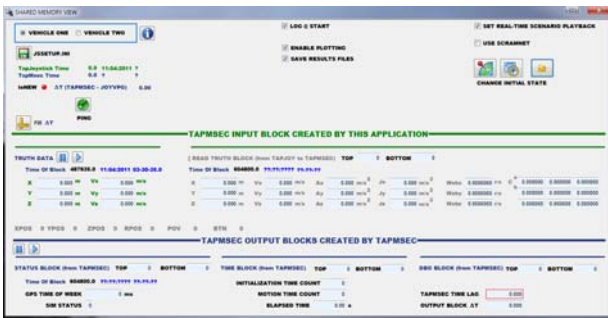
6DOF INTERACTIVE MOTION GENERATOR



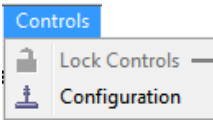
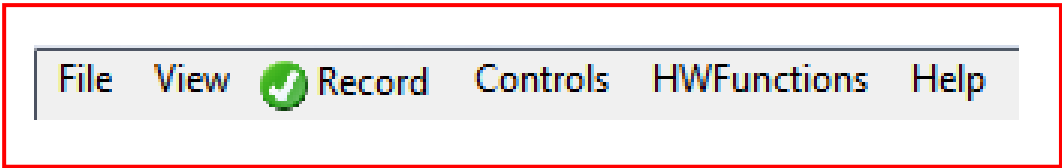
FLIGHT-STICK / MOUSE Operation in Real Time.  
Import the RECORDED motion profile into BUILD SCENARIO.



PING HARDWARE PLACE IN READY MODE  
SIMENABLE = 1  
START TAPMSEC  
STOP HARDWARE SIMENABLE = 2

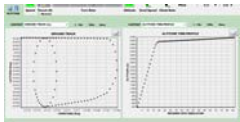


SPY SHARED MEMORY

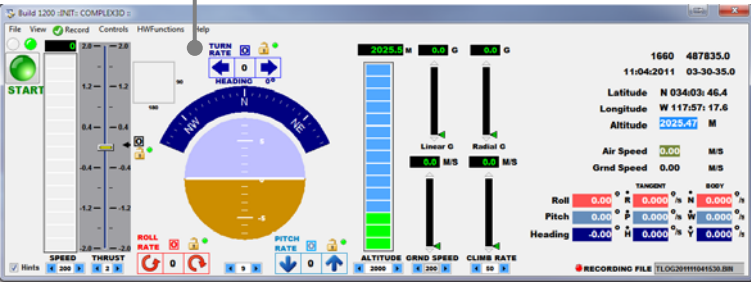
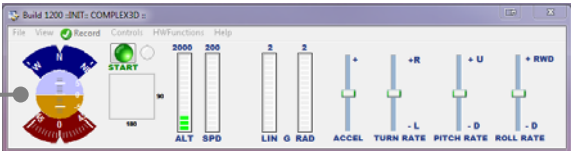
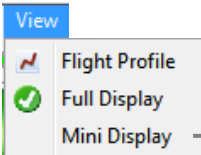


LOCK ALL GUI DYNAMICS  
CONTROLS AT CURRENT

JOYSTICK LAYOUT AND  
SENSITIVITY SETTINGS



SHOW  
GROUND TRACK



6DOF INTERACTIVE SETUP

CHANGE START SCENARIO [ SOURCE OF SUBFRAMES ]

File

Open ...

Start Position...

Start Time...

Save

Close

CHANGE INITIAL LOCATION

CHANGE INITIAL TIME

C:\TAPESTRY\TAPJOYSTICKJSSETUP.INI

[DEFAULT]

TestMode =1

AutoLogFile =1

UseJoystick =0

UseCurrentTime =1

StartScenarioPath = C:\Tapestry\Runs\COMPLEX3D

MakePlots =1

MaxAcceleration =2

MaxSpeedDisplay =200

MaxThrustDisplay =2

MaxAltitudeDisplay =2000

MaxGrndSpeedDisplay =200

MaxClimbRateDisplay =50

MaxTurnRate =0

JoystickConfiguration =0

ITapMsecSleep =3000

Units =0

ForwardDeltaT =0.25

AutoSave =1

GSscale =0

SaveWmf =1

SaveResultsFiles =1

UseScenarioFlag =1

TrajectoriesPath =C:\Tapestry\Trajectories

MaxGrndSpeedDisaply =200

[STARTUP]

RunInLabMateMode =0

HWFunctions

Shared Memory

[ ARM ]

[ RUN ]

[ STOP ]

SPY SHARED MEMORY

SHARED MEMORY VIEW

VEHICLE ONE VEHICLE TWO

JSSETUP.INI

TopJoystick Time 0.0 11-04-2011 ?

TopMsec Time 0.0 ?

INNEW AT (TAPMSEC - JOYVPO) 0.00

LOG @ START

ENABLE PLOTTING

SAVE RESULTS FILES

SET REAL-TIME SCENARIO PLAYBACK

USE SCRAMNET

CHANGE INITIAL STATE

TAPMSEC INPUT BLOCK CREATED BY THIS APPLICATION

TRUTH DATA

Time Of Block 487835.0 11-04-2011 03-30-36.0

X 0.000 m Vx 0.000 m/s

Y 0.000 m Vy 0.000 m/s

Z 0.000 m Vz 0.000 m/s

Time Of Block 604800.0 11-11-1111 11-11-11

X 0.000 m Vx 0.000 m/s

Y 0.000 m Vy 0.000 m/s

Z 0.000 m Vz 0.000 m/s

TAPMSEC OUTPUT BLOCKS CREATED BY TAPMSEC

STATUS BLOCK (from TAPMSEC) TOP 0 BOTTOM 0

Time Of Block 604800.0 11-11-1111 11-11-11

GPS TIME OF WEEK 0 ms

SIM STATUS 0

INITIALIZATION TIME COUNT 0

MOTION TIME COUNT 0

ELAPSED TIME 0.00 s

DBO BLOCK (from TAPMSEC) TOP 0 BOTTOM 0

TAPMSEC TIME LAG 0.000

OUTPUT BLOCK AT 0.000

Record

Record ON/OFF

Setup

SAVE APPLICATION SETUP AND CONFIGURATION IN C:\TAPESTRY\TAPJOYSTICKJSSETUP.INI AT STARTUP

FOR MULTIPLE RUNS, CHECK IF RECORDED FILES ARE SAVED AND NOT OVERWRITTEN

AUTO SAVE [ JSSETUP ]

AUTO RECORD

ARCHIVE [ RBIN , BIN ]

PREFIX TLOG201111032256

AUTOMATICALLY RECORD AT START UP. RECORDING CAN'T BE STOPPED IF CHECKED ( ONLY PAUSED )

RECORDING ARCHIVE FILE PREFIX. SAVES [BIN, RBIN , TMC, RCV FILE SET ] TO AVOID DATA OVERWRITING [ see REFERENCE RECEIVER VIEWER ]

ARCHIVE NAMES

SCENARIO NAMES

.BIN	TRAJECTORY1.SCN
.RBIN	SIRF.DAT3 / ZODIAC.DAT3
.RCV	RECEIVER.DAT3
.TMC	POSVELERR.DAT3

YYYYMMDDHHMM

C:\TAPESTRY\RUNS\THE\_START\_UP\_SCENARIO\TLOG20111103



**STATUS INDICATORS:**

- RUNNING
- WAITING
- ARMED
- RECORDING
- PAUSED
- FILE CLOSED

**CONTROLS AND DISPLAYS:**

- Δ AIR-SPEED:** Points to the speed/thrust display on the left.
- Δ YAW RATE RIGHT/LEFT:** Points to the Turn Rate control.
- Δ ROLL RATE UP/DWN:** Points to the Roll Rate control.
- Δ PITCH RATE UP/DWN:** Points to the Pitch Rate control.
- ROOT SCENARIO FOLDER:** Points to the 'COMPLEX3D' folder in the bottom right.
- ARCHIVE FILE PREFIX OF SAVED [BIN, RBIN, TMC, RCV] FILE SET:** Points to the 'TLOG201111301452' text.

**Display Data:**

- Altitude: 2025.5 M
- Grnd Speed: 0.0 M/S
- Climb Rate: 0.0 M/S
- Roll: 0.00 °/s
- Pitch: 0.00 °/s
- Heading: -0.00 °/s

CLICK TO LOCK /UNLOCK  
CONTROL  
GREEN LIGHT TO RED

CLICK TO FORCE RATE = 0

**TURN RATE**

HEADING 0°

**ROLL RATE**

**PITCH RATE**

DISPLAY ONLY  
ADJUST ALTITUDE BAR

DISPLAY ONLY  
ADJUST GROUND SPEED

**ALTITUDE GRND SPEED CLIMB RATE**

2000 200 50

ADJUST SPEED SLIDER BAR

DISPLAY ONLY ADJUST ROC

**SPEED THRUST**

200 2

ADJUST DISPLAYED G'S



Controls

Lock Controls

Configuration

JOYSTICK LAYOUT AND SENSITIVITY

[ A ] 2D

●

CONFIGURATION A (TURN, FORWARD/REVERSE)

[ B ] 3D YAW CONTROL

○

CONFIGURATION B (PCH, TURN, THRUST)

[ C ] 3D 6-DOF

○

CONFIGURATION C ( PCH, ROLL,THRUST )

MIN

MAX

2G

JOYSTICK

MOUSE

FORWARD ΔT

0.25 sec

[ A ] 2D

●

CONFIGURATION A (TURN, FORWARD/REVERSE )



[ B ] 3D YAW CONTROL

○

CONFIGURATION B (PCH, TURN, THRUST )



[ C ] 3D 6-DOF

○

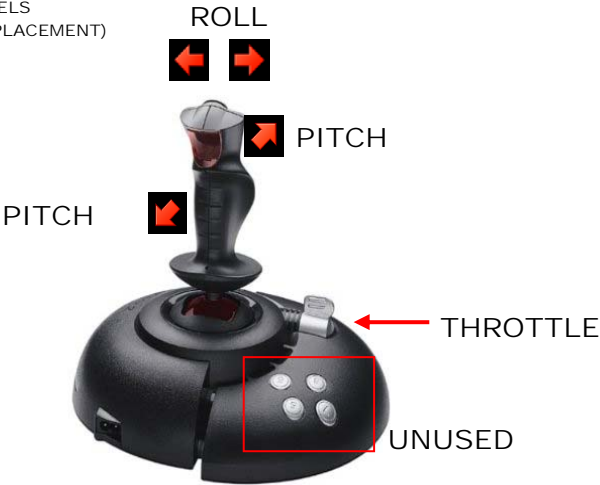
CONFIGURATION C ( PCH, ROLL,THRUST )

MIN

MAX

2G

SET G LEVELS  
( MAX DISPLACEMENT )

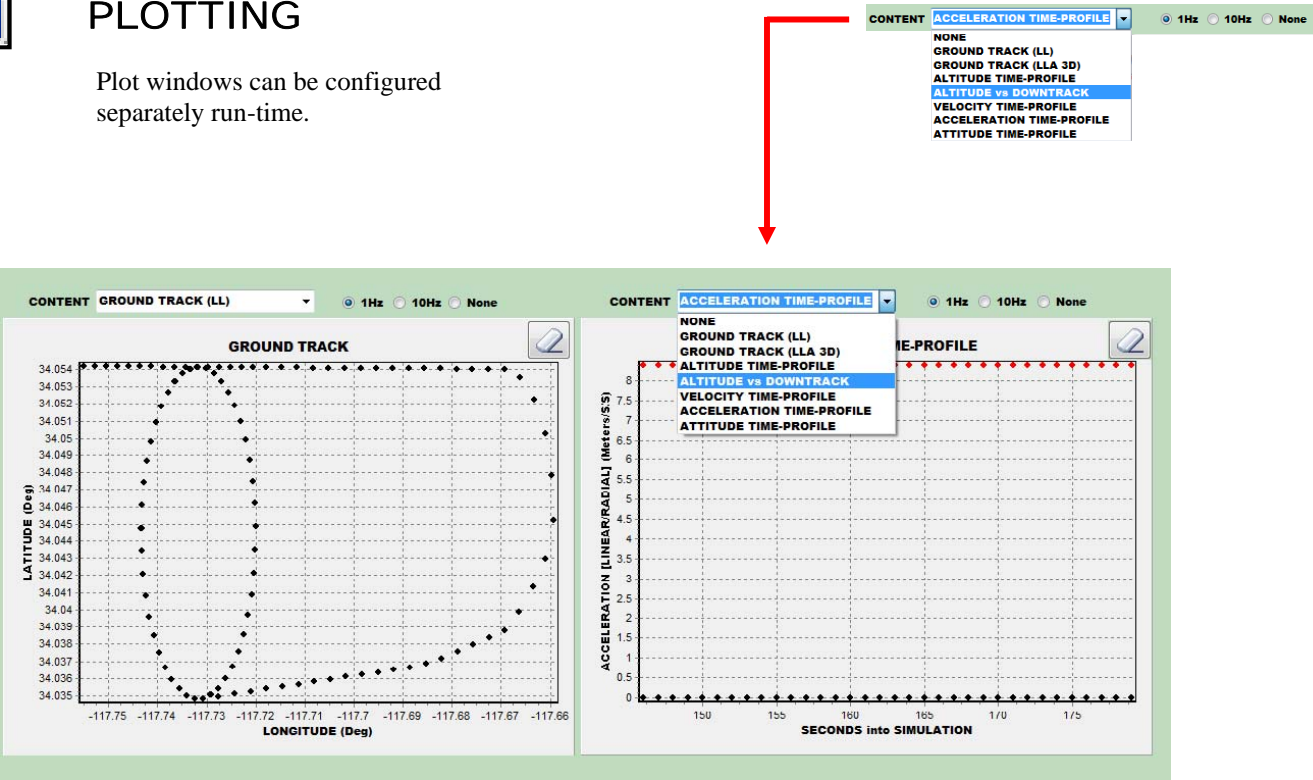






PLOTTING

Plot windows can be configured separately run-time.



DATA RECORDING

☒ **AUTO SAVE [ JSSETUP ]**

☒ **AUTO RECORD**

☒ **ARCHIVE [ RBIN, BIN ]**

**PREFIX**  
**TLOG20111032256**

AUTOMATICALLY RECORD

DISBALE PREFIX FILE ARCHIVING

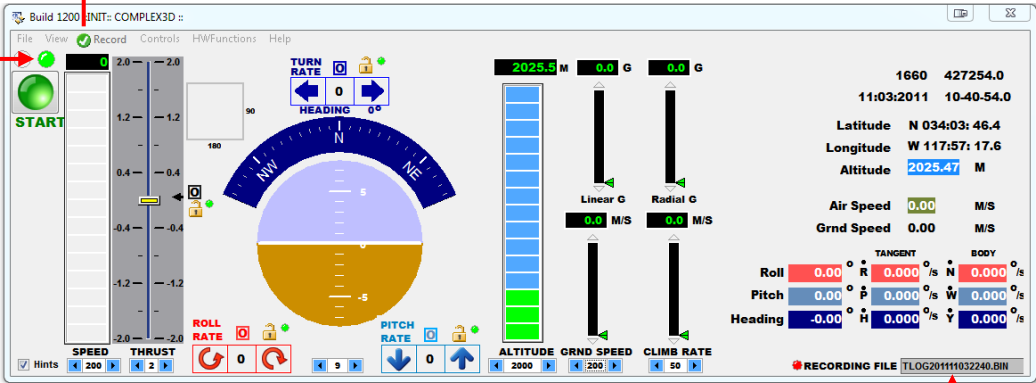
RECORDING ARCHIVE FILE PREFIX. SAVES [BIN, RBIN , TMC, RCV FILE SET ] TO AVOID DATA OVERWRITING [ see REFERENCE RECEIVER VIEWER ]

RUN TIME RECORDING CONTROL

DATA RECORDING

Green Active  
Red Not

NOTE: CLICK TO TOGGLE ON/OFF



Data is saved in [\[ TAPESTRY BINARY .BIN \]](#) format.