

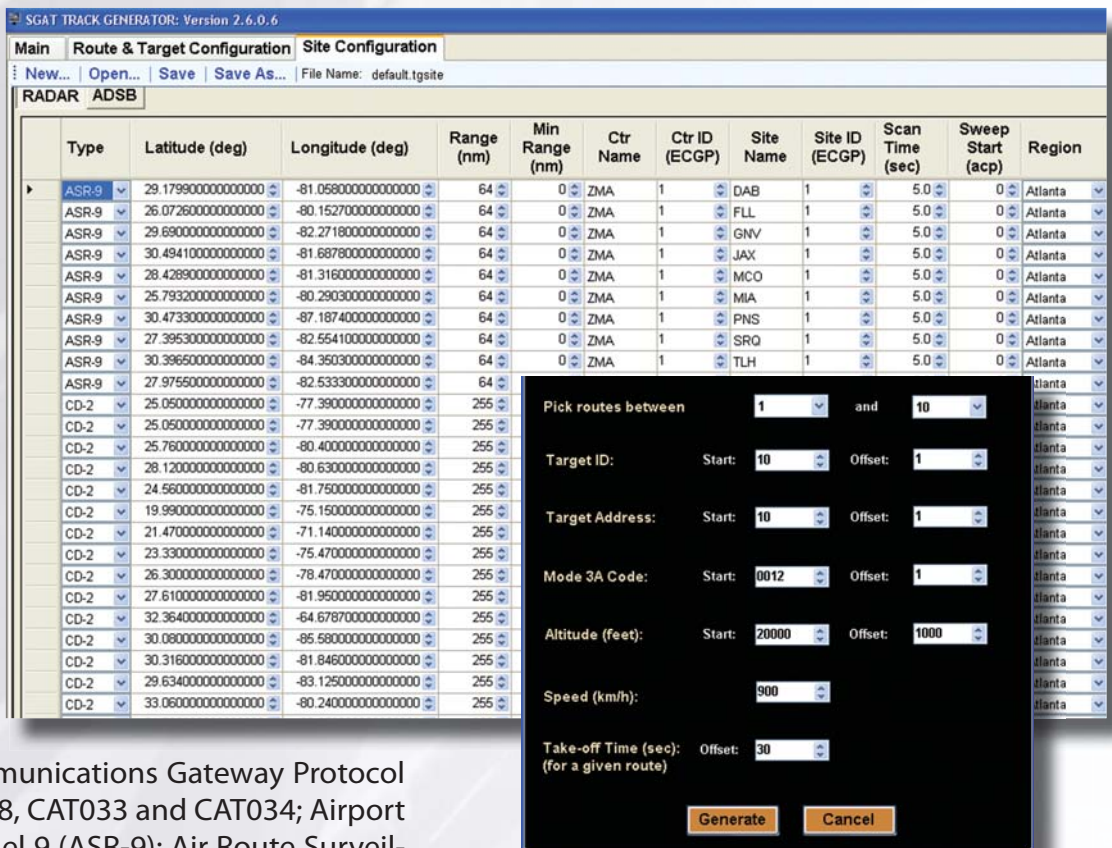


- Correlates ADS-B and RADAR
- Dynamic Data-Driven testing
- Verification and Validation tool
- Agile test case scenarios
- User-specified target data
- Generates surveillance tracks
- Supports legacy RADAR data
- Live Playback capability
- Simulates alarms

Sunhillo's Surveillance Generation and Analysis Tool (SGAT) Track Generator supports legacy radar data, ADS-B, and correlated (ADS-B/radar) target information with the ability to simulate high data loads, alerts, and excessive target data—excessive in the range of thousands to thoroughly stress Air Traffic Systems during high service volume loads.

This powerful tool provides realistic simulation, as well as track generation to “auto-generate” surveillance tracks based on user-specified site, route, and target information and is capable of saving this information for scenario creation and future playback.

The built-in Generator software provides message control parameters for a variety of common surveillance data formats, such as: En Route Communications Gateway Protocol (ECGP), ASTERIX, CAT048, CAT033 and CAT034; Airport Surveillance Radar Model 9 (ASR-9); Air Route Surveillance Radar, Model 3 and Model 4 (ARSR-3 and ARSR-4); Common Digitizer, Mode 1 and Mode 2 (CD-1 and CD-2); Minimally Attended Radar (MAR) / FPS-111; and other protocols and formats.



SGAT TRACK GENERATOR: Version 2.6.0.6

Main Route & Target Configuration Site Configuration

New... Open... Save Save As... File Name: default.tgsite

RADAR ADSB

Type	Latitude (deg)	Longitude (deg)	Range (nm)	Min Range (nm)	Ctr Name	Ctr ID (ECGP)	Site Name	Site ID (ECGP)	Scan Time (sec)	Sweep Start (acp)	Region
ASR-9	29.179900000000000	-81.058000000000000	64	0	ZMA	1	DAB	1	5.0	0	Atlanta
ASR-9	26.072600000000000	-80.152700000000000	64	0	ZMA	1	FLL	1	5.0	0	Atlanta
ASR-9	29.690000000000000	-82.271800000000000	64	0	ZMA	1	GNV	1	5.0	0	Atlanta
ASR-9	30.494100000000000	-81.687800000000000	64	0	ZMA	1	JAX	1	5.0	0	Atlanta
ASR-9	28.428900000000000	-81.316000000000000	64	0	ZMA	1	MCO	1	5.0	0	Atlanta
ASR-9	25.793200000000000	-80.290300000000000	64	0	ZMA	1	MIA	1	5.0	0	Atlanta
ASR-9	30.473300000000000	-87.187400000000000	64	0	ZMA	1	PNS	1	5.0	0	Atlanta
ASR-9	27.395300000000000	-82.554100000000000	64	0	ZMA	1	SRO	1	5.0	0	Atlanta
ASR-9	30.396500000000000	-84.350300000000000	64	0	ZMA	1	TLH	1	5.0	0	Atlanta
ASR-9	27.975500000000000	-82.533300000000000	64	0	ZMA	1		1	5.0	0	Atlanta
CD-2	25.050000000000000	-77.390000000000000	255	0							Atlanta
CD-2	25.050000000000000	-77.390000000000000	255	0							Atlanta
CD-2	25.760000000000000	-80.400000000000000	255	0							Atlanta
CD-2	28.120000000000000	-80.630000000000000	255	0							Atlanta
CD-2	24.560000000000000	-81.750000000000000	255	0							Atlanta
CD-2	19.990000000000000	-75.150000000000000	255	0							Atlanta
CD-2	21.470000000000000	-71.140000000000000	255	0							Atlanta
CD-2	23.330000000000000	-75.470000000000000	255	0							Atlanta
CD-2	26.300000000000000	-78.470000000000000	255	0							Atlanta
CD-2	27.610000000000000	-81.950000000000000	255	0							Atlanta
CD-2	32.364000000000000	-64.678700000000000	255	0							Atlanta
CD-2	30.080000000000000	-85.580000000000000	255	0							Atlanta
CD-2	30.316000000000000	-81.846000000000000	255	0							Atlanta
CD-2	29.634000000000000	-83.125000000000000	255	0							Atlanta
CD-2	33.060000000000000	-80.240000000000000	255	0							Atlanta

Pick routes between 1 and 10

Target ID: Start: 10 Offset: 1

Target Address: Start: 10 Offset: 1

Mode 3A Code: Start: 0012 Offset: 1

Altitude (feet): Start: 20000 Offset: 1000

Speed (km/h): 900

Take-off Time (sec): Offset: 30 (for a given route)

Generate Cancel

Surveillance Generator & Analysis Tool

The primary benefit of the software suite is its ability to deliver simulated data inputs to an ADS-B network as an alternative to live testing, which may use relatively unknown and uncontrolled data inputs. The software's stimulus is very controlled, predictable and accurate. This condition provides:

- Tight control over details of the test case
- Repeatable scenarios that can be saved and adjusted as necessary

The image displays three overlapping windows from the SGAT Track Generator software. The top window, 'SGAT Track Generator: Advanced Target Settings', shows fields for Time Offset (00:00:00), Speed (300 km/h), Altitude (23,000 feet), Mode 3/A Code (0003), and Mode 2 Code (0000). It includes sections for Target ID (3), TOA Velocity (0.0), Link Version (1), and various status codes. The middle window, 'SGAT Track Generator: Navigation and Surveillance Parameters', shows Navigation Integrity Category (NIC) options like 'Rc < 20 NM**' and 'Rc < 0.1 NM', and Surveillance Integrity Level (SIL) options like 'Not Available' and 'Major'. The bottom window, 'SGAT Track Generator: Advanced Radar Site Settings', shows Time Offset (00:00:00), Status options (Test, FAA, AF), Data Channels (Channel 1 On, Channel 2 On, Channel 3 On), and a list of Alarms including AIMS Alarm, Azimuth Synchro Alarm, Beacon Alarm, BRTQC Alarm, Buffer Overload Alarm, CD Alarm, CD System Overheat, Half Scan Inhibit Alarm, HT Alarm, Military Timing Alarm, MIG Alarm, Output Service Alarm, Range Error Alarm, RBPM Alarm, SRTQC Alarm, Standby Beacon Alarm, Timing Alarm (FAA), and Weather Alarm. Buttons for 'Insert...', 'Save', 'Delete', and 'Exit' are visible at the bottom of the windows.



The user configures the specific details of ADS-B and radar sites. Routes are defined using start and end longitude and latitude. Targets for service volumes and routes are created and configured (i.e. speed, altitude, codes, IDs, etc.) per user requirements. The SGAT Track Generator automatically transmits the alarm bits at the designated intervals on a per site basis. A built-in LAN Reader analyzes or "sniffs" ECGP data packets real-time on the LAN and displays details of the data within these packets. These details include a running count of types of surveillance data messages per channel, Air Route Traffic Control Center (ARTCC), Site, surveillance data type, and total message counts. The LAN Reader provides filter options for particular ARTCC, Site or message type. The ECGP data on the LAN can be recorded into data files for replay by the SGAT File Player.