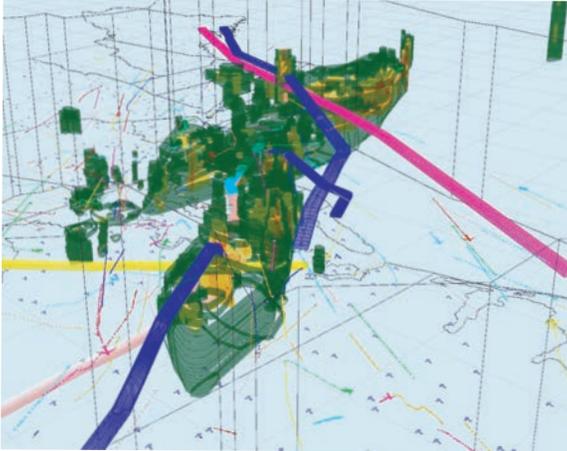


FliteViz 4D Weather

FliteViz4D visualization and animation of convective weather was an essential component in the successful completion of a comprehensive study of the impact that convective weather has on air traffic.

See following link for details:

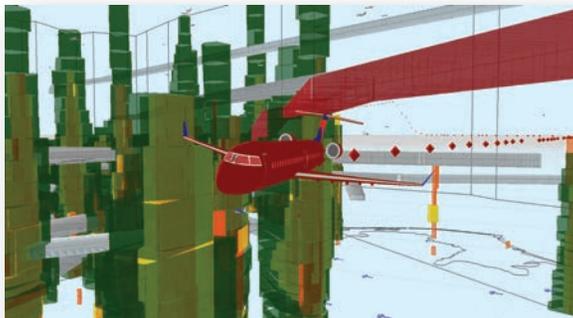
https://acy.tc.faa.gov/cpat/docs/ConvWxStudy_final.pdf



FliteViz4D animates convective weather interaction illustrating the planned versus actual 4-dimensional aircraft trajectory around the weather phenomena.



These weather polygons are animated by FliteViz4D allowing researchers to examine their interaction with air traffic and discover patterns within the data.



Publications:
An Interactive 4D Visualization System
for Air Traffic Concept Analysis
Modeling Weather in Simulation and Analysis

<http://acy.tc.faa.gov/fliteviz>

Select Documentation for Links to Publications



Modeling & Simulation Branch

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FliteViz 4D



Modeling & Simulation Branch ANG-C55

FLITEViz4D

The Modeling and Simulation Branch has developed an interactive four-dimensional (4D) visualization tool for analysis of practically any aviation concept. Flexible Flight Traffic Exploration Visualization 4D (FliteViz4D) excels at visualizing many dynamic National Airspace System (NAS) concepts at the same-time in one piece of software. This tool can give a true view of NAS wide operations as well as displaying specific components, in other words, FliteViz allows users to analyze NAS operations as a system of systems by capturing the relations between various aviation concepts.



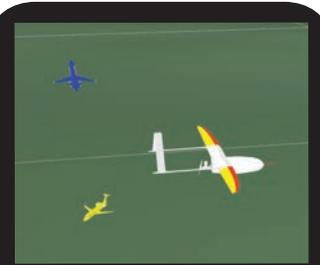
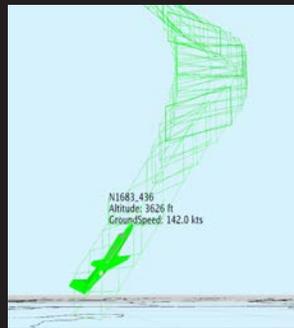
The Airport Plugin for FliteViz4D provides airport positions and optionally satellite imagery. It uses airports from the airport list database in the FliteViz4D system.

FliteViz

Some of the concepts studied at this point in FliteViz4D include; 4D trajectory based operations, Impact of national convective weather forecasts on the NAS, 4D path arrival management, Impact of UAS operations on NAS, Impact of proposed commercial space launch/re-entry operations on the NAS, Visualize true "Gate to Gate" air traffic data, and Separation Management systems and Conflict probe analysis.

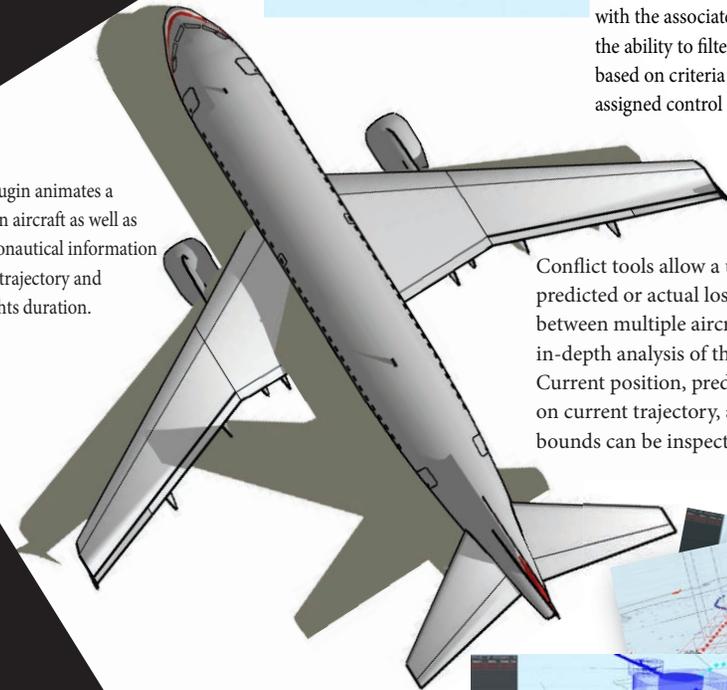
Data visualized in FliteViz4D includes:

- PDARS
- ASDE-X
- AirTop
- AgentFly
- NASQuest
- CMS
- ACES
- MicroEARTS
- ODAPS
- TFMS

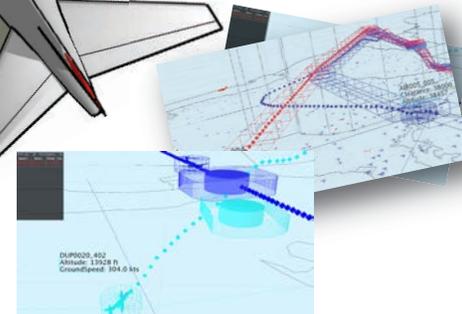


UAS Visualization

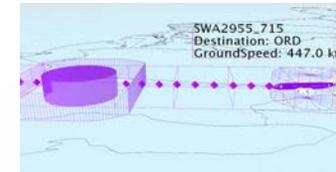
The aircraft plugin animates a 3D model of an aircraft as well as associated aeronautical information such as route, trajectory and track for a flights duration.



Conflict tools allow a user to visualize predicted or actual loss of separation between multiple aircraft and to perform in-depth analysis of these situations. Current position, predicted position based on current trajectory, and separation bounds can be inspected in detail.



The Space Vehicle Operation Project was designed to analyze the potential impact of proposed commercial space launch/re-entry operations on the NAS and to explore possible strategies to minimize NAS impact. The Modeling and Simulation Branch is able to run a fast-time simulation using the space vehicles and visualize the impact in FliteViz4D.



Users can choose what aeronautical statistics they would like to display with the associated aircraft. Users have the ability to filter flight information based on criteria such as, selected flights, assigned control center and other criteria.



PLUGINS