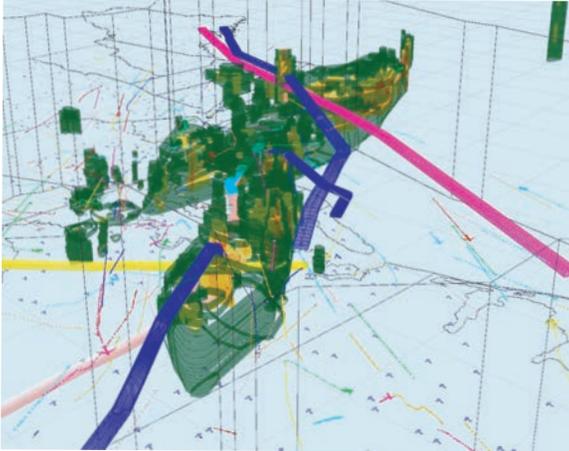


FliteViz 4D Weather

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 moving convective weather with interaction of moving aircraft, illustrating the planned versus actual 4-dimensional aircraft trajectory around the weather phenomena.



These weather polygons were added to the three-dimensional visualization tool FliteViz4D to allow researchers to animate air traffic and weather and identify patterns and anomalies 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



Concept Analysis Branch

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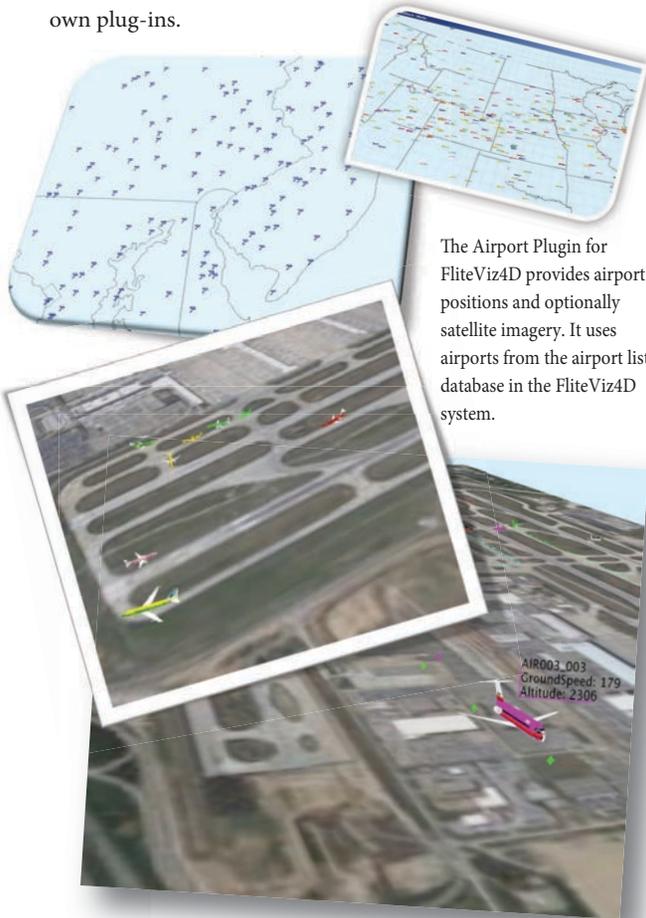
4D FliteViz



Concept Analysis Branch ANG-C41

FLITEViz4D

The Concept Analysis Branch has developed an interactive four-dimensional (4D) visualization tool for analysis of practically any aviation concept. Flexible Flight Traffic Exploration Visualization 4D (FliteViz4D) was originally conceived as a means to visualize dynamic National Airspace System (NAS) concepts, including 4D trajectory based operations, national convective weather forecasts and 4D path arrival management. Users have a great amount of flexibility to control the information that is displayed. The extensible design of this software allows developers to integrate future concepts by attaching their own plug-ins.



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

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.

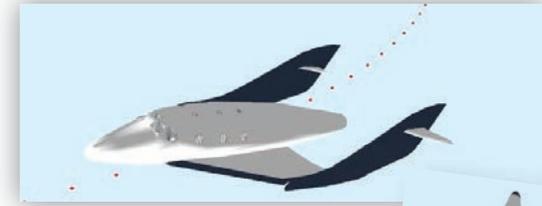
FLT003_497
GroundSpeed: 463
Heading: 95



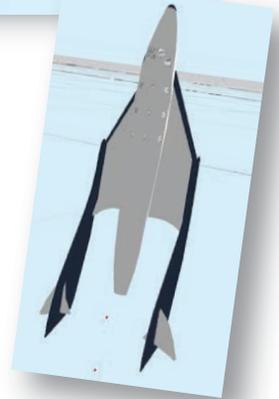
The Cockpit display of traffic information (CDTI) plugin simulates a common navigational display used by commercial pilots. When this plugin is enabled it gives the user insight to what navigational information is available to the pilot of a particular flight. Plugins such as this transform how aeronautical data is visualized by the user. The possibilities of data visualization are endless with FliteViz4D's plugin design.



UAS Visualization



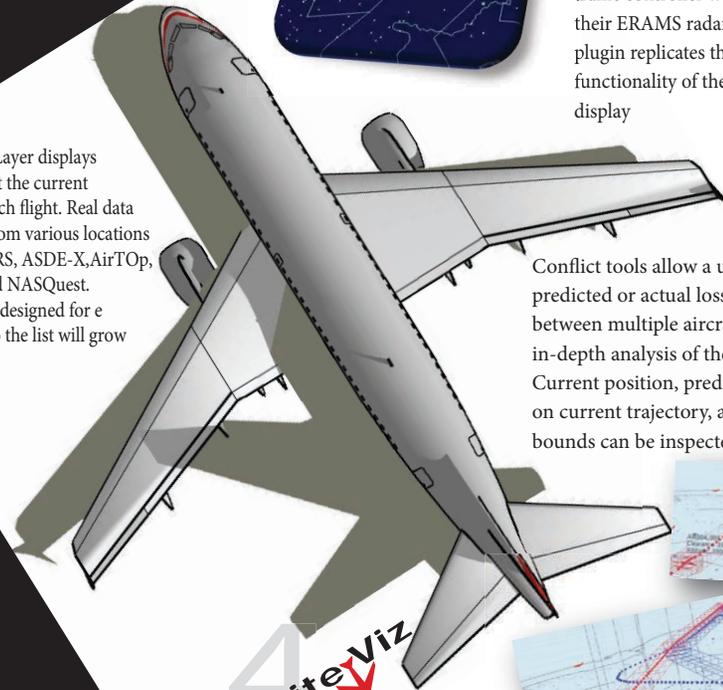
The Space Vehicle Operation Project is to understand the potential impact of proposed commercial space launch/re-entry operations on the NAS and to explore possible strategies to minimize NAS impact. The Concept Analysis group is able to run a fast-time simulation using the space vehicles and visualize the impact in FliteViz4D.



The Radar Plugin gives the user running a FliteViz scenario the ability to see the same information an air traffic controller would see through their ERAMS radar system. The plugin replicates the graphics and functionality of the actual ERAMS display



The Aircraft Layer displays a 3D model at the current location of each flight. Real data is pulled in from various locations such as PDARS, ASDE-X, AirTOP, AgentFly, and NASQuest. FliteViz4D is designed for extensibility so the list will grow over time



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 great detail

FliteViz4D

