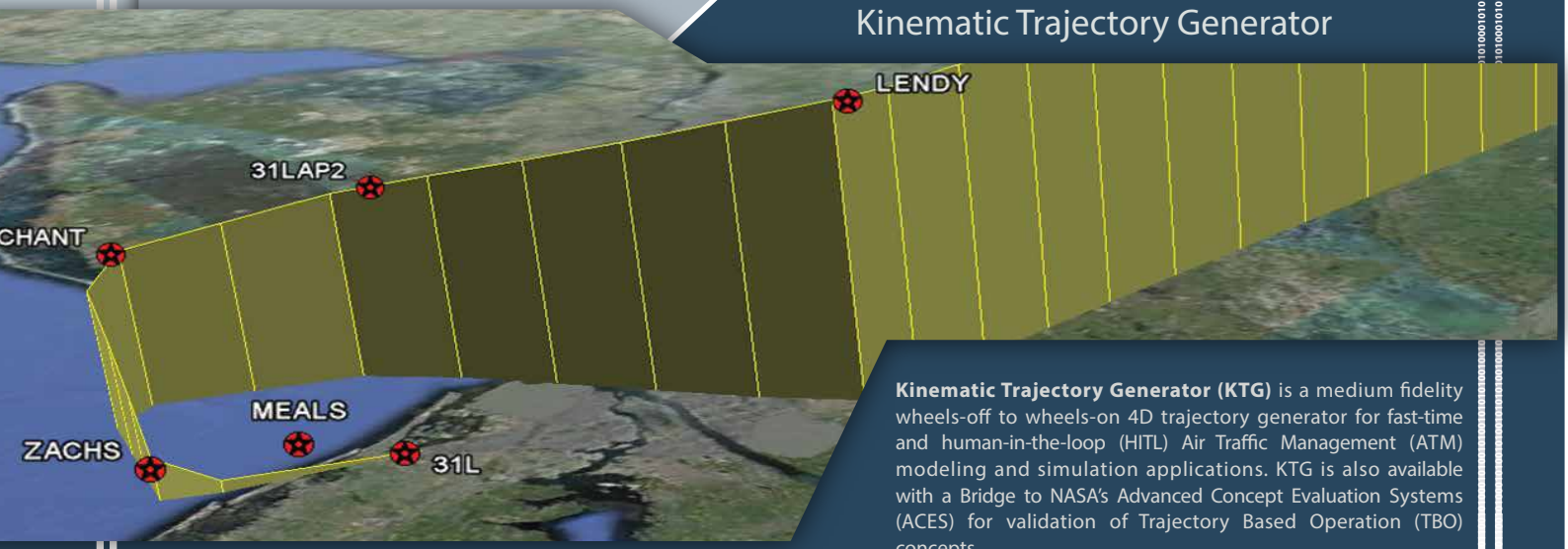
KTG

Kinematic Trajectory Generator



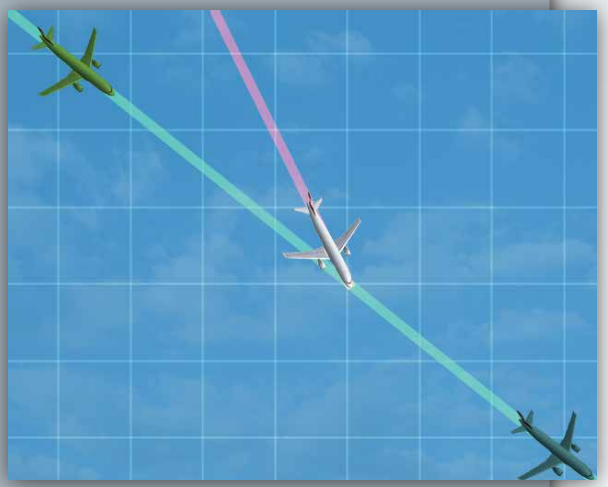
Kinematic Trajectory Generator (KTG) is a medium fidelity wheels-off to wheels-on 4D trajectory generator for fast-time and human-in-the-loop (HITL) Air Traffic Management (ATM) modeling and simulation applications. KTG is also available with a Bridge to NASA's Advanced Concept Evaluation Systems (ACES) for validation of Trajectory Based Operation (TBO) concepts.

Software

Kinematic Trajectory Generator (KTG) is available as a Java based library with documented APIs for integration with third-party simulation tools. KTG uses point mass kinematic model of the aircraft, and uses Eurocontrol's BADA aircraft performance data as guidance parameters to generate nominal LNAV, VNAV and 4D trajectories. It also uses Total Energy Model to generate off-nominal trajectories. KTG APIs offer maneuver management function similar to applying Mode Control Panel (MCP) based target state commands and Cockpit Display Unit (CDU) based flight plan amendment to generated trajectories.

Features

- Kinematic and Total Energy Model based trajectory generation
- BADA (Based of Aircraft Data) aircraft performance model (APM)
- Complies with altitude and Required Time of Arrival (RTA) restrictions
- Integrated with NASA's ACES for NAS wide simulation
- Complies with arrival and departure (RNAV-RNP) procedures
- Applies variable time step for computational efficiency
- Includes wind, weight, APM, intent uncertainty model
- Provides Trajectory prediction capability



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