1. **Research Title:** Trajectory Planning for Unmanned Aerial Vehicle Systems

2. **Individual Sponsor:** List the AFRL research topic sponsor's contact information

   Example:

   > Dr. Dave Grymin
   > AFRL/RQQA
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   > WPAFB, OH 45433
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3. **Academic Area/Field and Education Level**

   Aerospace Engineering/Mechanical Engineering/Computer Science
   BA/BS, MS or PhD level

4. **Objectives:** This research area is focused on the rapid generation of feasible trajectories for autonomous aircraft systems.

5. **Description:** General scenarios of interest involve position and orientation constraints on the vehicle, disturbance/environmental effects, and aircraft performance constraints. Mission planning may also be subject to various objective costs, and the tradeoff between optimality and computation time is a further area of concern. Examples of scenarios include, but are not limited to: (1) single vehicle planning between multiple tasks; (2) multiple vehicle planning subject to collision avoidance constraints; (3) multiple vehicle planning between tasks; (4) single and multiple vehicle planning incorporating aircraft performance constraints; (5) single vehicle planning in dynamic environments. We are interested in the development and modeling, simulation and analysis (MS&A) of new algorithms and approaches as well as novel applications and implementations of existing methods.

6. **Research Classification/Restrictions:** UNCLASSIFIED. Open to U.S. citizens only.

7. **Eligible Research Institutions:** All DAGSI Universities.

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