\*Name of the Project:

Dogfighter UAV Design

\*Field of Research:

Aerospace, Control, Image Processing

\*Project Team Members:

Shaikh Muhammad Adil, Metehan Atcı, Zafer Doğan Budak, Fetullah Ceylan, Göktuğ Mete Kesici Ahmet Nacar, Alperen Tekin

\*Project Supervisor’s Title and Name: Prof. Dr. Ozan Tekinalp

\*Abstract: (100-150 words)

In this study, the design and development process of an autonomous UAV system to perform dogfight is introduced. The dogfight mission for this vehicle is described as determining an ideal target for itself from many targets, reaching and locking the target via position based tracking and visual guidance. The design includes aerodynamic, mechanical, and electronical subsystems, and software pipeline. First of all, a mini class UAV system that can perform airborne maneuvers for the dogfight mission is designed and the components for the communication and control systems are determined. Then, a new hybrid airborne UAV tracking method is proposed for visual navigation, with an agile control system that enables autonomous dogfight abilities.\\

Keywords: Fixed Wing UAV Design, Target Optimization, Autonomous dogfight, airborne UAV tracking, visual guidance.