UAV Navigation
Cutting-edge Autopilots

Application Note: Synchronized Flight of Multiple UAVs Aerial Targets

The note aims to provide an overview of basic Aerial Target Drones (TG) dual operation by a coordinated penetration attack example mission.

These missions are carried out by two TG UAVs simulating a penetration attack over a coastline. At a given time, both TG perform a coordinated evasive maneuver in response to an interception action launched by the defendant.

To successfully accomplish this mission, it is vital to understand how VECTOR Autopilots (AP) are commanded to achieve a synchronized operation of TG and UAVs. The main challenge is to complete this mission without using manual commands on the UAVs.

Features Products

VECTOR-400 VECTOR-600

Mission Description

Initial & Holding Phase

The first target drone (TG-A from now on) is launched from the catapult at the start of the mission. As soon as the TG-A finishes the take-off maneuver, the TG is commanded to climb to its designated flight level FL164 (5000 m) and fly towards the waiting point (Hold A1).

After 5 to 10 min, the necessary time to rearm the launcher and prepare the second drone, the second UAV (TG-B) is launched. After its take-off maneuver, the TG is commanded to climb to the defined flight level of FL090 (2750 m) and fly to its waiting point (Hold B1).

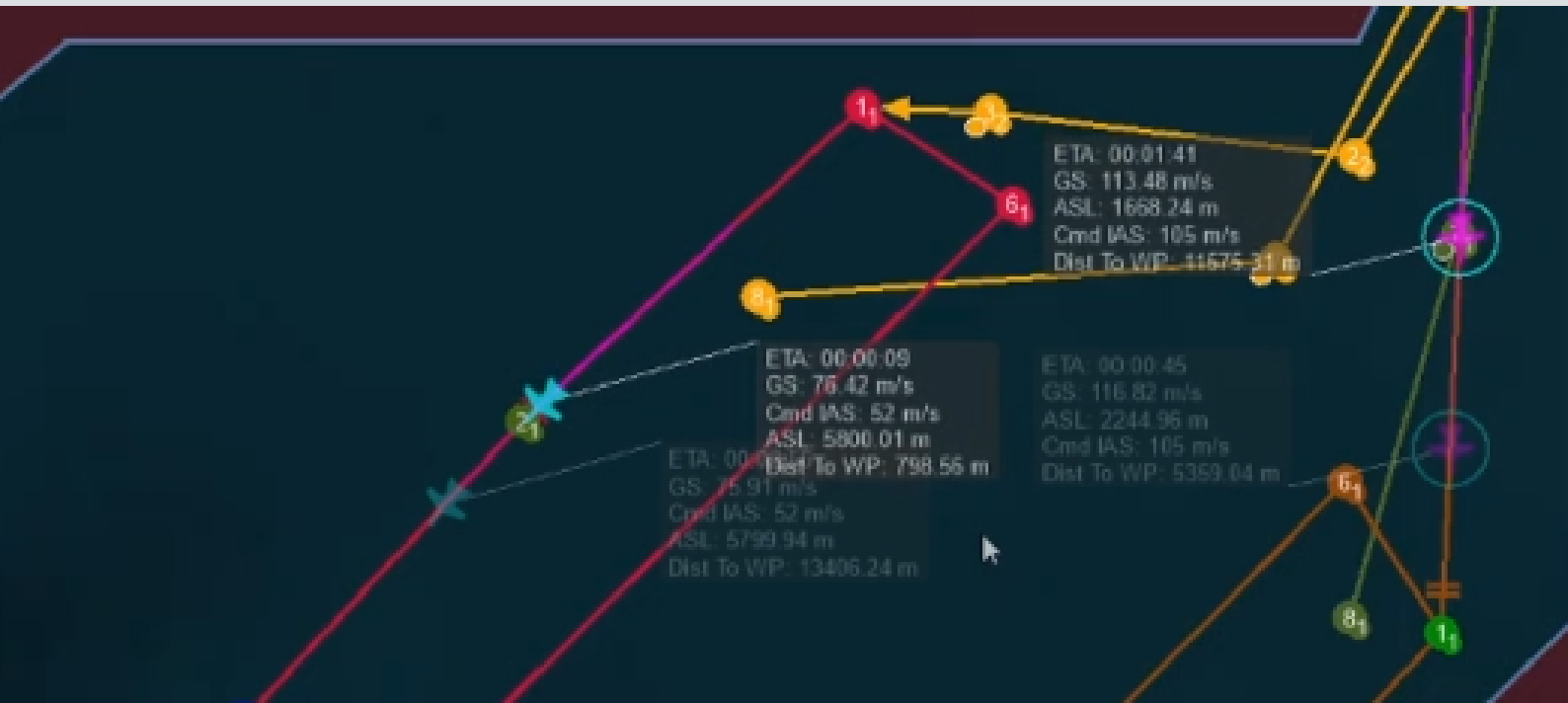
Synchronization Phase

When both TGs are in their waiting points, the attack is commenced and both UAVs are commanded to fly to the next waypoint (WP). During this flight, both TGs need to be synchronized so that they both arrive at their designated point at the same time (A for TG-A and B for TG-B).

Attack Phase

After reaching this point, the flight continues, performing the penetration attack towards the coastline. After a moment, both TGs perform an evasive maneuver to avoid an incoming interception attack.

After this first attack, these maneuvers is repeated to simulate a second wave attack. Finally, after the second attack, both TGs are commanded to perform a parachute landing recovery.

Contact us to execute synchronized flights with Multiple UAV!

The VECTOR autopilot is a cutting-edge, robust, and dependable autopilot, with built-in physical and logical redundancy. Designed to comply with MIL-STD standards required by many Departments of Defense (DoD), the VECTOR-400 is now the Flight Control Computer (FCC) of choice for aerial target applications.