HACETTEPE UNIVERSITY DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

NAME: FURKAN ÇETİN | SUPERVISOR: DR.ŞÖLEN KUMBAY YILDIZ

LOS COVERAGE

WHAT IS LOS COVERAGE SOFTWARE ?

LOS (LINE OF SIGHT) COVERAGE SOFTWARE IS THE SOFTWARE THAT CALCULATES AND DISPLAYS THE ZONE, WHERE UAV (UNMANNED AERIAL VEHICLE) CAN BE CONTROLLED.

WHICH FACTORS AFFECT LOS COVEARAGE ?

LOS COVERAGE OF THE DATALINK ANTENNA IS DETERMINED BY THE FOLLOWING FACTORS:
- DATALINK STRENGTH
- GEOGRAPHICAL LOCATION OF DATALINK ANTENNA
- ELEVATION PROFILE OF THE REGION
- ALTITUDE OF THE UAV

WHY DO YOU NEED LOS COVERAGE SOFTWARE ?

BEFORE DEPLOYMENT OF THE UAV SYSTEM TO THE NEW BASE, GEOMETRICAL COVERAGE ANALYSIS NEEDS TO BE DONE TO SEE THE BOUNDARIES OF THE AREA WHERE UAV CAN BE UNDER CONTROL. WITH LOS COVERAGE SOFTWARE YOU CAN CHOOSE THE BEST LOCATIONS.
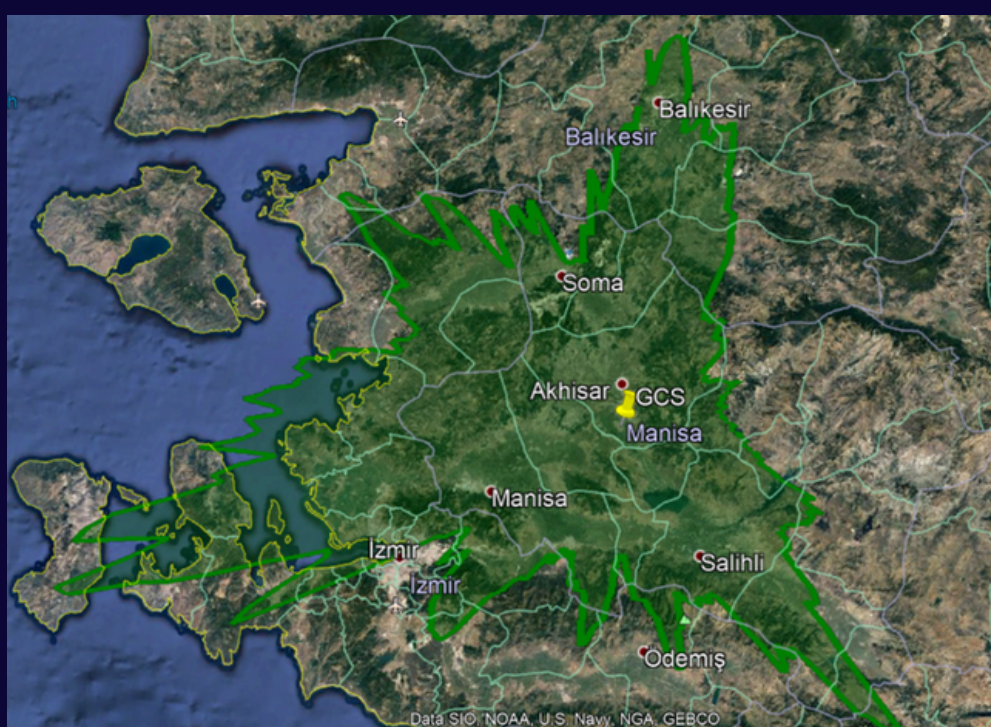
LOS COVERAGE AREAS FOR DIFFERENT ALTITUDES
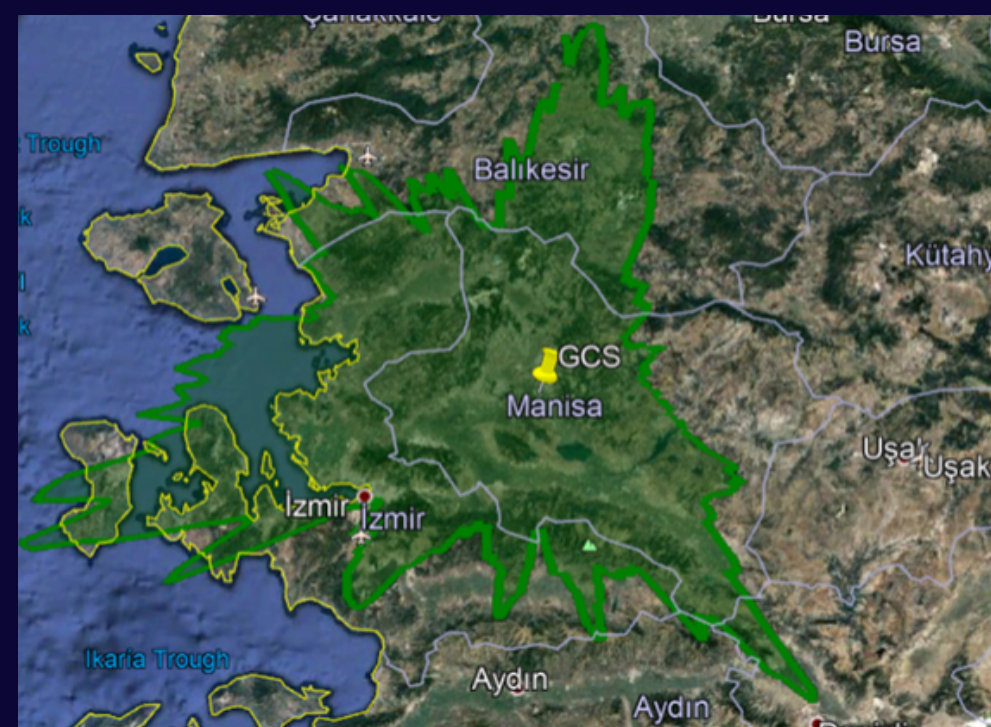
FIGURE 1: UAV AT 6000 FEET

FIGURE 2: UAV AT 8000 FEET

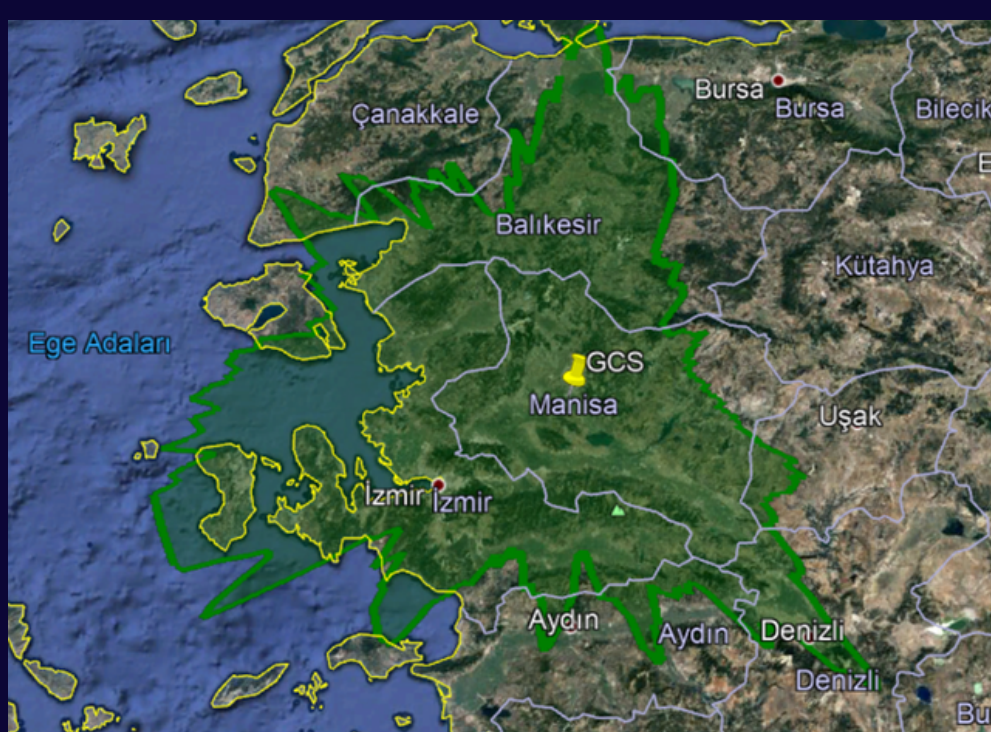**FIGURE 3:** UAV AT 12000 FEET

FIGURE 4: UAV AT 18000 FEET

LINE OF SIGHT ANALYSIS

PROCESS OF FINDING THE VISIBLE LOCATIONS FROM THE DATALINK ANTENNA IS CALLED AS THE LINE OF SIGHT ANALYSIS IN THIS CASE. ON A DIRECTION LAST VISIBLE LOCATION CALLED AS HORIZON POINT. WITH THIS HORIZON POINT, FARTHEST CONTROLLABLE LOCATION OF THE UAV CAN BE CALCULATED ON A DIRECTION. USING THIS METHOD ON MULTIPLE DIRECTIONS GIVES US THE CONTROLLABLE ZONE OF THE UAV. LOS COVERAGE SOFTWARE FLOWCHART CAN BE SEEN AT FIGURE 5. BLUE COLOR REPRESENTS THE USER INPUTS, GREEN COLOR REPRESENTS THE ALL THE SOFTWARE PART AND RED COLOR REPRESENTS THE FILES THAT IS USED BY THE SOFTWARE OR GIVEN AS OUTPUT.
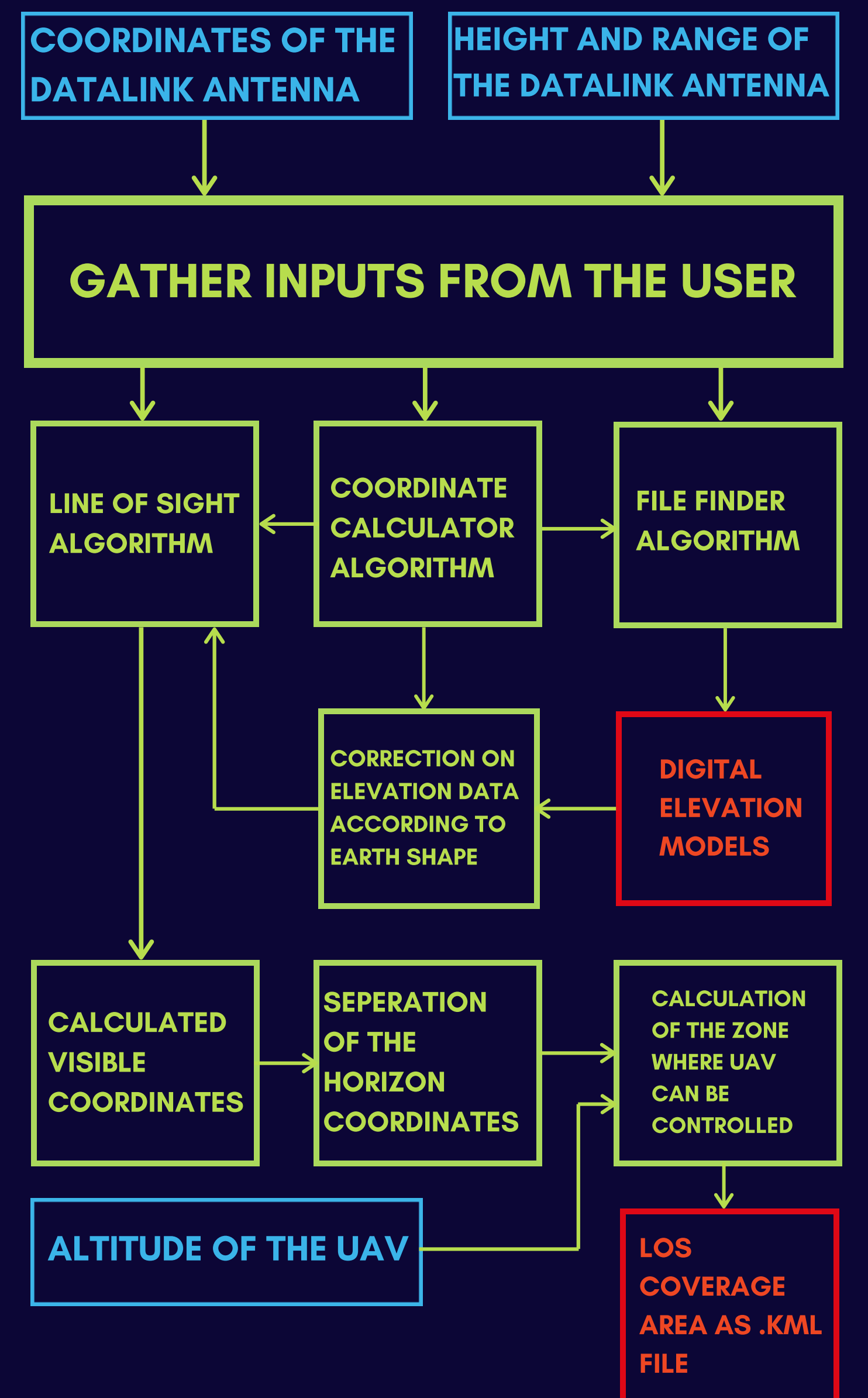
FIGURE 5: LOS COVERAGE SOFTWARE FLOWCHART

IN FIGURE 6 YOU CAN SEE THE VISIUAL REPRESENTATION OF THE LINE OF SIGHT ANALYSIS ON SINGLE DIRECTION. GREEN LINES REPRESENTS THE VISIBLE LOCATIONS AND RED LINES REPRESENTS THE NOT VISIBLE ONES FROM THE DATALINK ANTENNA. LAST VISIBLE LOCATION ON A DIRECTION IS USED AS THE HORIZON POINT TO CALCULATE THE FARTHEST LOCATION OF THE UAV CAN BE CONTROLLED.
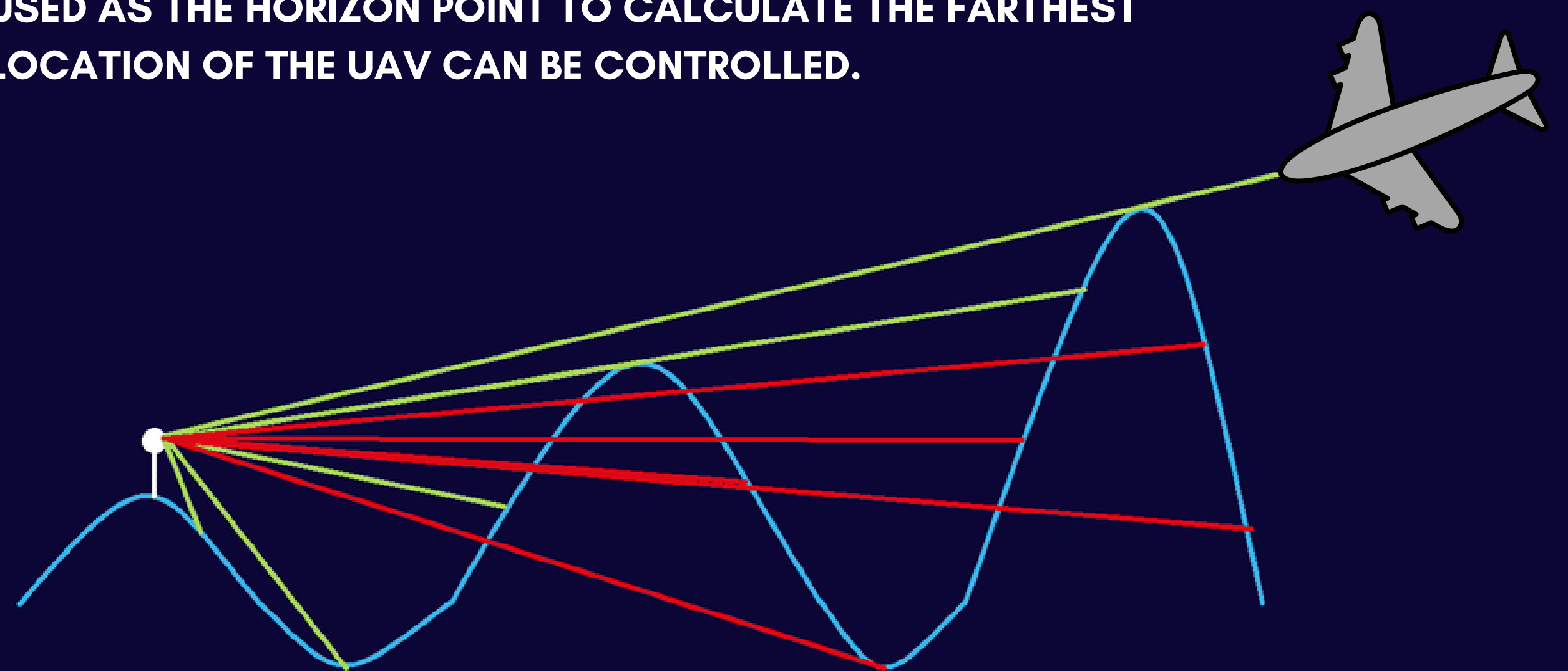
FIGURE 6: LINE OF SIGHT ANALYSIS ON ONE DIRECTION.

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