

Description

- 7. If all the answers to Items 4, 5, 6 are "NO", include as an exhibit a narrative statement describing in detail the following items:**
- a. The complete program of research and experimentation proposed including description of equipment and theory of operation.**
 - b. The specific objectives sought to be accomplished.**
 - c. How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion or utilization of the radio art, or is along line not already investigated.**

We (Daedalean AG) aim to support our US partner, an eVTOL manufacturer, in their demonstration flights. Specifically we provide ground-based radar coverage to enable collision avoidance in the air for our partners aircraft. Together with the partner we will conduct a number of flights to calibrate our system, evaluate its performance and demonstrate our partners ability to detect and avoid potential collisions in the air to their stakeholders.

We aim to operate 2 transmitters and 2 receivers in the Monterey Bay area, (a rectangle 36°34' - 36°53' N, 121°34' - 122°00' W). They will be installed by field teams temporarily for each test session lasting up to 2 hours of continuous operation. We will do a number of such sessions throughout 2025 as our partner requests.

Our system is a bistatic ground-based radar: it has separate transmitter and receiver devices. Receivers pick up direct path signals from transmitters, as well as reflections from aircraft and other objects up to 20 km away. Their trajectories are tracked and supplied to our partner via internet connection, to allow deconfliction to be done on our partners side.

Transmitter devices are 50 kg boxes with the antenna continuously broadcasting our radar OFDM waveform (without data transmission) in a cone towards the aircraft area of operation. Receiver devices are 15 kg boxes with a digital beamforming array receiver, analog and ADC electronics and a radar processing computer.

In the future we aim to develop our system further by allowing the receivers to be mounted onboard the aircraft to provide onboard sensing using either onboard or ground-based illumination, advancing the state of the art for collision avoidance for civilian aircraft.

The aim of the system is to provide aeronautical radionavigation service to enable collision avoidance and safe operation for our partners aircraft.