



## ***FLIR – Remote Bluetooth enabled thermal target***

This project is in cooperation and partnership with FLIR Systems located in Goleta. FLIR Project Lead – Louis Tremblay/Sean Tauber

FLIR Systems, Inc. is the global leader in Infrared cameras, night vision, and thermal imaging systems. Our products play pivotal roles in a wide range of industrial, commercial, and government activities in more than 60 countries. Pioneers in the commercial infrared camera industry, the Company has been supplying thermography and night vision equipment to science, industry, law enforcement and the military for over 30 years. From predictive maintenance, condition monitoring, non-destructive testing, R&D, medical science, temperature measurement and thermal testing to law enforcement, surveillance, security and manufacturing process control, FLIR offers the widest selection of infrared cameras for beginners to pros.

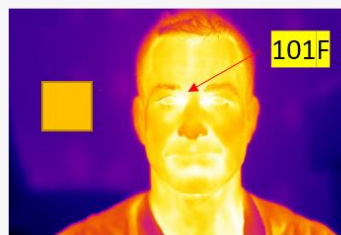
### **Project Description**

#### Statement of the Problem:

Accurate remote temperature measurement is critical in a variety of situations such as [airport human health monitoring](#), [drone building inspections](#), and [crop field measurements](#). In those applications, the typical 3-degree accuracy of most thermal cameras is insufficient. In turn, it is required to have a known temperature target in the scene, allowing for a correction to be applied and sub 1-degree accuracy achieved.



Known temperature target



#### Solution Concept:

The project could have three aspects:

- 1) Design a black-body, ie. a controlled temperature target
  - a. Needs to be battery power enabled and have a temperature accuracy of less than 1 degree
  - b. Ruggedize design that can handle to-be-decided specs.

- 2) Design a control module that modulates the temperature of the black body as desired, and transmits the known temperature via Bluetooth to a phone and/or PC.
- 3) Program up an app using FLIR developer tools/app environment to correct for the temperature in scene

Stretch goal: cross-develop app on a PC for a Boson USB camera.

FLIR One developer environment: <https://developer.flir.com/>

Ideal Student Qualifications:

- Multi disciplinary team: mechanical, electrical, and software
- Skills: feedback loops, Bluetooth, micro programming,

Student Requirements: Team participants will be required to:

- Sign non-disclosure forms with FLIR to limit outside disclosure of certain proprietary information relating to thermal cameras provided
- Sign agreements that provide FLIR with access to any intellectual property developed during the project

Assets Provided by the Company:

- FLIR Ones/Boson Cameras
- Access to systems engineering/mechanical/computer science expertise as required

Company Website: [www.FLIR.com](http://www.FLIR.com)