

## PROJECT PLAN

November 2017

### Determining the “next generation” infrared cameras for Alberta Agriculture and Forestry

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## BACKGROUND

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Alberta's Wildfire Management Aviation and Geomatics Section currently uses the 'Scout' infrared (IR) camera model for regular program work. The Scout has been in operation for approximately 10 years, and although this model provides acceptable results, there are some deficiencies e.g. complicated device restrictions, poor charging design, and maintenance issues. Given the age of the Scout cameras, an expanding need for additional cameras, and the likelihood of new technology the Aviation and Geomatics Unit is interested in conducting a project aimed at researching infrared camera technology and identifying potential "the next generation" infrared cameras.

The use of infrared camera is critical to wildfire prevention and operations. This project will focus on identifying agency IR camera requirements, camera replacement options and the testing of potential replacement cameras.

## ISSUE/GOAL

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To identify the "next generation" wildfire management infrared camera

## OBJECTIVE

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1. Determine agency infrared camera technology needs through an agency needs analysis.
2. Compile a list of potential infrared camera models suitable for agency use
3. Determine specific IR cameras of interest and field test the equipment

## METHODS

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### *Agency Survey*

A survey will be conducted with wildfire agencies to determine camera models currently in use, how agencies are being used and for what purpose, and the pros and cons associated with those models.

### *Agency Needs Analysis*

A steering group will be formed from AAF IR users to support FPI in determining agency IR camera needs. This analysis will identify:

- Primary camera users
- Camera use and application
- Camera system requirements

### ***System Requirement Matrix***

The above needs analysis will confirm IR camera system requirements, which will be used to construct a system requirement matrix to provide fact-based comparisons of system requirements and camera specifications / capabilities. The requirements will be weighted by importance and cross referenced to the test IR camera models. The system requirement matrix will include, but is not limited to criteria such as:

- Non-temperature calculating camera
- Refresh rate
- Screen resolution
- Lens capabilities:
  - Focal length or distance capabilities of scan - capable to 800 feet to provide for safe scanning distance above trees
  - Swath or width of scan
- Battery type, life and charging capabilities
- Picture and video capabilities
- Size & weight
- Field ruggedness
- Price

### ***Field Trials***

Testing methods will be addressed and finalized through steering group consultation during the needs analysis, but will include both ground and aerial testing of the selected IR cameras of interest. Test methods will be determined from both past equipment testing protocols and new technology capabilities.

## **TIMELINE**

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1. Complete agency survey – March 2018
2. Complete agency needs analysis – July 2018
3. Complete system requirement matrix – August 2018
4. Complete field trials – October 2018
5. Final report – December 2018

## **PARTICIPATING MEMBERS/COLLABORATORS**

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Alberta Agriculture and Forestry