Project Title: Emerging Methods for Early Detection of Forest Fires **Project Design Phase-I - Solution Fit Template** **Team ID:** 13932-1659535791

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) CS

- People who are living nearby forests use this application to get an alert before massive forest fire.
- Alerts forest department.
- Timely information about the appearance of fire reduces the number of areas affected by this fire and thereby minimizes the costs of fire extinguishing and the damage caused in the woods.

6. CUSTOMER CONSTRAINTS CC

- Should report the updates every minute
- Continuous monitoring
- Accurate and early prediction
- Should detect any suspicious events

5. AVAILABLE SOLUTIONS AS

- Detects fire but the model had less accuracy
- Takes more time to report
- False predictions
- Camera Based Techniques.
- Multi-modal/Multi-sensor fire analysis.
- Pyro-electric Infrared Sensors for Flame Detection.

Explore AS, differentiate

Focus on J&P, tap into BE, understand RC

2. JOBS-TO-BE-DONE / PROBLEMS J&P

- Need to detect fires earlier in forest areas
- Setup UAV everywhere to take pictures and videos
- Video processing
- Build CNN model to detect fire from images obtained

9. PROBLEM ROOT CAUSE RC

- High atmospheric temperatures and dryness (low humidity) offer favorable circumstance for a fire to start.
- Manmade causes: Fire is caused when a source of fire like naked flame, cigarette, electric spark or any source of ignition comes into contact with inflammable material.

7. BEHAVIOUR BE

- Earth-observing satellites detect wildfires in wilderness areas. Their cameras and remote sensors are used to estimate the fire's evolution and provide situational awareness that saves lives.
- Updates given on time

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS TR

Suspecting fires in forest areas before its massive spread.

4. EMOTIONS: BEFORE / AFTER EM

Before: Fear of losing, Anxious, Confused ,Worried
After: No need to worry about damage and cost, more safety

10. YOUR SOLUTION

To create a solution to monitor the forest areas continuously using cameras and UAV and detect the spread of forest fires using the information collected.
(a) volunteer reporting-public reporting of fires, public aircraft, and ground based field staff,
(b) operational detection systems: fire towers, aerial patrols, electronic lightning detectors, and automatic detection systems.

8. CHANNELS of BEHAVIOUR CH

8.1 ONLINE

People and forest department make use of the application to get alerts when fire is detected.
Notifications are sent to all nearby victims.

8.2 OFFLINE

Reduces the number of areas affected by this fire.
Reduces the costs of extinguishing fire.

Identify strong TR & EM