

## Project Design Phase-I

### Problem Solution Fit

Date	01 October 2022
Team ID	PNT2022TMID30190
Project Name	Emerging Methods for Early Detection of Forest Fires
Maximum Marks	2 Marks

### Problem Solution Fit:

Define CS, fit into CL	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> -early adopters of new technology -for officers who are smokejumpers and working for forestry department	<b>6. CUSTOMER LIMITATIONS</b> EG. BUDGET, DEVICES <span>CL</span> -should have knowledge about the devices -Feature loaded device	<b>5. AVAILABLE SOLUTIONS</b> PROS & CONS <span>AS</span> -Satellite based system give high resolution image but it provides image of entire earth for every two days, that is long time for fire scanning	Explore AS, differentiate
	<b>2. PROBLEMS / PAINS</b> + ITS FREQUENCY <span>PR</span> -forest fire disrupt transportation, power, and water supply -Even though many devices available for fire detection, they are incapable for producing desired results -they lead to deterioration of air quality, loss of property, resources and animals -sometimes devices may malfunction	<b>9. PROBLEM ROOT / CAUSE</b> <span>RC</span> -many forest fire starts from natural cause such as lightning -fire is caused when a source of fire like naked flame, electric spark or any source of ignition -spark generated from the monitoring devices due to malfunction can cause fire -less humidity, high temperature may also cause forest fire	<b>7. BEHAVIOR</b> + ITS INTENSITY <span>BE</span> -it emits a large amount of CO2 which may lead to increase in global warming -the fire may burst the monitoring devices which may emits CO as the chips are made of silicon - The device uses many algorithms for AI proctoring of forest fire - It measures the intensity, light, colour and defines according to its behaviour	
Identify strong TR & EM	<b>3. TRIGGERS TO ACT</b> <span>TR</span> -to get prior information of forest fire -to get more efficient information to the proctor	<b>10. YOUR SOLUTION</b> <span>SL</span> -we train the model with required algo's like CNN, images of smoke, fire. -we collect the information from each frame and the frame is sent through ImageDataGenerator that helps recognise. -with the use of different sensors, we can classify the intensity of the flame, smoke intensity, and fire density	<b>8. CHANNELS of BEHAVIOR</b> <span>CH</span> ONLINE -they should monitor and check the device functionality, to alert the smokejumpers OFFLINE -the smokejumpers should be present at the fire spot with extinguishers and with all safety precautions	Extract online & offline CH of BE
	<b>4. EMOTIONS</b> BEFORE / AFTER <span>EM</span> -it would proceed the misinformation or late details about the forest fire - it proceeds faster with exact information			