

TO: Gavin Newsom, Governor of California
1303 10th Street, Suite 1173, Sacramento, CA

CC: Thom Porter, Director of California Department of Forestry & Fire Protection
1416 9th Street, Sacramento, CA

Mike Sievert, President and CEO of T-Mobile US, Inc.
3625 132nd Avenue SE, Bellevue, WA

FROM: Litespeed Emergency Services

DATE: April 16, 2020

SUBJECT: Improving Communication for Emergency Responders During Wildfires by Utilizing 5G Networks

As you may know, your state was heavily impacted by the 2018 wildfires. Lasting from February to December, the wildfires burned more than 1.9 million acres in California. The fires were able to spread so far and cause so much damage because the emergency workers were unable to get the information that they needed. During emergencies, people are always contacting each other to ensure their safety, which would lead to the networks being full and data speeds falling. Emergency responders need the information as soon as it is available, which means that the transmission speed must be fast. Our team at Litespeed Emergency Services would like to propose a project in which we install new 5G cell towers in three test areas and develop a new software that would allow emergency responders to contact each other and to receive important information quickly.

We are asking for permission to install new 5G cell towers in three locations- Los Angeles County, Butte County, and the Whiskeytown-Shasta-Trinity National Recreation Area in California. These three areas were affected by the Woolsey Fire, Camp Fire, and Carr Fire, all of which claimed over 480 thousand acres, over 21 thousand buildings, and 96 lives. We chose these areas to test the new 5G cell towers as they were greatly impacted by some of the most deadly and destructive wildfires in Californian history (California Department of Forestry & Fire Protection, 2019). There are concerns that being in close proximity with 5G cell towers would lead to radioactive poisoning. However, according to the American Cancer Society, there is no direct correlation between cancer and radiofrequency waves from cell towers (American Cancer Society, 2018). Residents living in the proximity of the new towers do not have increased risks of developing cancer.

Our leading computer science experts on the team develop a software that will optimize the use of the 5G network to help better the communication between emergency responders. The software will allow emergency responders to receive the information that they need in order to better respond to the wildfires and prevent further damage. There will be options in the software to help locate the fires by using data from people calling in fires to 911 operators. There will also be a feature where it is possible for superiors to send instructions to the emergency responders quickly so that there can rapid deployment and organization of thousands of personnel and hundreds of fire-fighting machinery.

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Our mechanical engineer will be designing a 5G cell tower that would improve the connection for emergency responders. The use of 5G networks would allow for faster data speeds so that the information can travel quickly between the emergency responders and a higher device capacity would allow for more responders to be on a single network without the data being throttled.

We hope to complete the project within 18 months to improve the communications for emergency responders so that damage from the wildfires can be minimized. We would like to request a meeting to resolve any concerns that you may have, as well as further discuss the direction of the project. We look forward to hearing back from you.

Cordially,
Litespeed Emergency Services.
litespeed@gmail.com

Attached: Reference Page

Code of Conduct

Scope

All employees of Litespeed Emergency Services will abide by the rules stated in the code of conduct.

Behavior and Integrity

All employees should hold themselves accountable for their actions and their integrity. All employees should respect others and be honest within Litespeed Emergency Services. Employees should also do everything to represent the mission of the company with confidence and honesty. Our company's reputation relies on the actions and integrity of our employees.

Respect for Other Employees in the Company

All employees must respect one another in Litespeed Emergency Services. There is no toleration for discrimination and harrassment of any kind- physical, verbal, or visual. We prohibit actions, words, jokes, and comments about another employee's sex, race, ethnicity, age, or religion. We also prohibit violence and threats of violence as we hope to create a violence-free environment for our employees.

Professionalism

All employees must complete the work assigned to them and turn in their work in a timely manner. Employees must act to protect company assets, including physical, intellectual, and digital properties. Work must be done fairly, honestly, and legally. Employees are also expected to be regular and punctual in attendance. If employees are unable to work due to illness or accidents, they should inform their supervisors.

Mission Statement

We provide emergency responders of California with a better communication system by utilizing the 5G network to transmit information quickly. To prevent wildfires from causing extensive damage, we realize that there needs to be an improved communication system between emergency responders and the people so that lives can be saved and property can be preserved. Creating a strong foundation for public safety is important for a healthy relationship between emergency responders and the people of California to control wildfires together.

Boilerplate

The Litespeed Emergency Services, founded in 2020 and stationed in New York City, is an upcoming company that specializes in the use of fifth generation wireless communications (5G) to enhance communication during emergency situations. The group designs and manufactures efficient 5G towers that allow high speed transmission of data during times of emergency. They have also developed Litespeed Fires, an application that works efficiently with these towers, providing various features to communicate during an emergency.

Civil Engineer Job Posting

Requirements:

- ❖ Bachelor Degree in Civil Engineering
- ❖ 1-3 years of work experience in civil engineering
- ❖ Must be responsible, reliable, and organized
- ❖ Knows how to create blueprints for cell towers
- ❖ Has experience with mechanical work
- ❖ Has good communication skills

Position Overview:

Litespeed Emergency Services is looking for someone that has a strong motivation to help people in need, knows how to problem solve, communicate, work well with others, pays close attention to details and will consistently perform the tasks that are given to them. As a civil engineer, you will need to complete the following job responsibilities:

- ❖ Technical and feasibility studies including site investigations
- ❖ Resolving design and development problems
- ❖ Assessing the sustainability and environmental impact of our projects
- ❖ Advising about technical matters and whether construction plans are viable

Job Type: Part-Time/Full-Time

Salary: \$66,000 to \$73,000 + benefits; open for discussion

Employment Length: 6 months-1 year

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Work Days: Monday-Friday 8AM-4PM

Job Applicant Selection: We select Leslie Paredes as an applicant for the civil engineering job posting. She is a civil engineer with extracurricular, work, and volunteer experience. Her internship at ConEdison and involvement in the STEM program at the City College of New York shows that she has hands-on experience with engineering. Our company would greatly benefit from her knowledge and experience. Paredes also shows a strong motivation in assisting people that are in need, which matches with what our company is looking for.

Litespeed Fires App

Plan A

To Be Presented on April 30, 2020

Mavis Ye

Kenneth Hahn

Nawang Jigme

Gaurav Kuwar

Presented To:

Gavin Newsom, Governor of California

Thom Porter, Director of California Department of Forestry & Fire Protection

Mike Sievert, CEO of T-Mobile US, Inc.

160 Convent Avenue, New York, NY, 10031

(212) 650-7000

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litespeed@gmail.com

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Summary

The proposed plan A technical project is the development of the Litespeed Emergency Services to improve the communications system of emergency responders during wildfires. A new software will be developed that will provide emergency responders with various features to communicate during an emergency. They are able to receive the information that they need in order to better respond to the wildfires and prevent further damage. 5G cell towers will be designed and installed in three test sites to evaluate the effectiveness of the new software. This proposal is expected to help improve response times for emergency responders in order to preserve the lives of the people and the environment that they live in, which will decrease the costs of future wildfires in the state of California. Litespeed Emergency Services is seeking permission and funding to test the software and 5G cell towers in three test sites.

1. Introduction

Wildfires are caused by dry climate, lightning, and human activities, such as unattended campfires, burning debris, and negligently left cigarettes (National Park Service, n.d.). Once the wildfire starts, it is difficult to control as high winds can carry the flames further, leading to emergency responders being unable to react in time to prevent extensive damage. According to the US Climate and Health Alliance, the wildfires can also destroy wildlife habitats, timber, as well as producing carbon dioxide, which causes global warming (Moy, n.d.). Wildfires are extremely detrimental to our health and environment, both of which would take time to recover from. The state of California has been subjected to wildfires throughout its history. However, as

the climate deteriorated, the fires became more intense and spread through the state faster than ever and were uncontrollable until the flames scorched everything they touched. Thanks to the firefighters that worked nonstop throughout the disaster, the flames were eventually controlled, but not after taking many lives and demolishing structures and the environment.

1.1 Background

Our project's focus is on the 2018 California Wildfires, which caused immense damage to the state of California and to its people. During the ongoing wildfires, which lasted from February to December, burned more than 1,900,000 acres of land. There were 7,639 incidents, resulting in the loss of over 100 lives and 22,226 structures (California Department of Forestry & Fire Protection, n.d.). The 2018 fire season cost the state of California \$24 billion from destruction of homes and infrastructure, along with firefighting costs (Bartz, n.d.). However, California is not the only place subjected to wildfires. Australia's ongoing bushfire season has already burned 46 million acres of land, resulting in 34 direct deaths and 417 deaths from smoke inhalation. To prevent more tragedies like those mentioned above, it is essential that fires are contained quickly and it can be achieved when emergency responders have all the information and instructions they need.

There is a need for 5G cell towers to be built so that information can be shared instantly for emergency responders to save lives. 5G is the 5th generation of the mobile network, designed to meet the large growth in data and connectivity in today's modern society. 5G networks boast of greater connectivity and greater device capacity, allowing for more responders being on a single network without the data being throttled. The biggest advantage that the 5G network has is

its low latency, which is the time taken for devices to respond to each other over a network. 3G networks have a latency of 100 milliseconds, 4G is around 30 milliseconds, and 5G networks is around 1 millisecond, which allows for quick response times (EMF Explained, n.d.). This is essential to emergency responders as they need to receive information quickly and organize a response to the incident before the wildfire spreads too far and causes too much damage.

1.2 Problem Statement

California is frequently affected by wildfires, whether they were caused by man or nature. The communication system for emergency responders is essential during this time where speed is crucial in controlling the wildfires. During an emergency, people contact each other to check on their safety, and when many people are on these networks, the data speed slows down and connectivity becomes unstable. This affects emergency responders because they are slowed down in their line of work, being unable to save people and extinguish the fires. As a result, lives will be lost and the efforts of emergency responders will be in vain as the fire continues to grow. The damage will be substantial, costing the state an enormous amount to restore the environment and other buildings and infrastructure. We propose to develop a software that offers emergency responders various features to better communicate with one another, utilizing the 5G networks for fast transmission of data and greater connectivity.

1.3 Needs Statement

The current communications system is lacking as evidenced by the American company, AT&T Inc. throttling firefighters' unlimited data during the 2018 California wildfires. AT&T refused to restore the data to its full speed unless the fire department paid to upgrade the plan (Brodkin, 2018). In addition, their 4G network was slow, which caused the firefighters to lose time in responding to the incidents of wildfires. Our team seeks to utilize the 5G network, which would allow high speed data transmission during times of emergency so that emergency responders can quickly receive information and respond to incidents of wildfires before they grow too big and cause extensive damage in future wildfires.

1.4 Objective

Our project to develop a new communicative software and the installation of new 5G cell towers will allow emergency responders to get the most readily available information, as well as instructions from their superiors, so that they could act quickly and control the wildfire. By successfully controlling the wildfires, lives can be saved and property can be preserved.

Our team hopes to achieve this goal by developing the new software and installing 5G cell towers in three test sites. We are seeking permission to install 5G cell towers in Los Angeles County, Butte County, and the Whiskeytown-Shasta-Trinity National Recreation Area. These three areas were home to the Woolsey Fire, Camp Fire, and Carr Fire respectively. These three fires burned a total of 479,936 acres, caused 96 deaths, and destroyed 22,051 buildings altogether.

2. Proposed Technical Approach

2.1 Requirements

Figure 1. A block diagram detailing the process of requirements.

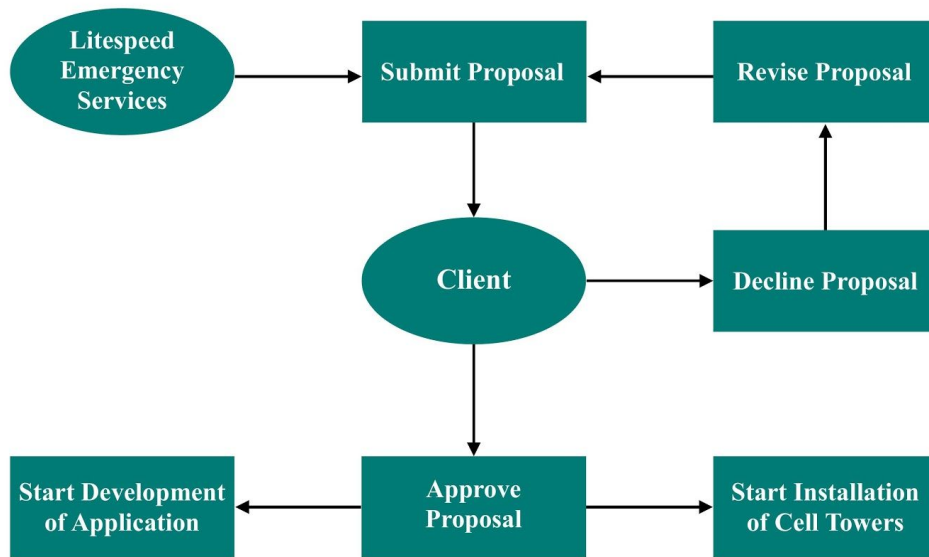


Table 1. A table detailing the costs of employees and materials needed.

Requirements	Quantity	Description	Costs
Front-End Developer	3	Design the application for visual appeal and organization	\$231,000 per year
Back-End Developer	5	Create source-code to develop the different functions of the app	\$535,000 per year
Project Manager	1	Oversee the mobile developers; plan and delegate work	\$84,000 per year
Mechanical Engineers	9	Installing and maintaining the cell towers	\$697,500 per year
Civil Engineers	3	Survey the land and plan for the design and construction of the towers	\$219,000 per year

Boom truck	1	Used to erect towers and antenna	\$47,992 for 8 months
150ft embed monopole	3	One time purchase, comprised of the tower set	\$130,942.47
5G antenna set	3	Antenna, which transmits 5g; each set includes 12	\$2,988 per set
Steel rod foundation set	3	Comprising two layers and a cylinder; welded together	\$2,000 per set
Construction workers	5	3 for installation, one for crane operation, and one for overseeing the operation.	\$185,000 per year
Total			\$2,061,482.47 for entire project

2.2 Architecture Design

2.2a Cell Towers

There are different methods of installing 5G antennas to receive connections. One method is installing small towers and mounting 5G antennas on pre-existing structures, such as lamp posts, traffic signal lights, and old 4G cell towers. Installing 5G antennas on existing structures is far more efficient in densely populated areas, where large cell towers cannot be built. For areas without pre-existing structures and in sparsely populated areas, new cell towers will be constructed.

Components

- Foundation: built of steel rods, which will be underground, to support the base of the monopole tower. They will be connected via large studs and two sets of nuts each (BlindViews, 2017).

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- Monopole tower: comprises 3 components: the base, middle, and top. It is made of hot-dip galvanized steel and hollow on the inside, which is high strength and corrosion-resistant material. There will be poles that protrude along the length to allow for a means of climbing the tower. The shape of the components will be hexagonal, becoming more narrow at the top, allowing the next part to slide over and minimize the gap (BlindViews, 2017). Fewer moving parts mean that there are greater security and strength with a smaller chance of errors.
- Antenna housing: a fence-like structure with 4 vertical poles and 2 horizontal poles, which connects the 4 poles. The 4 poles are meant to house the antenna, which will be placed perpendicular to a flat, triangular, grid formatted base. The base is formed by three smaller triangles that extend from the top of the tower (BlindViews, 2017).
- 5G Antenna: placed on the outer side of the antenna housing on the poles, with one on each pole. Each tower will house 12 antennas (BlindViews, 2017).

2.2b Litespeed Fires Application

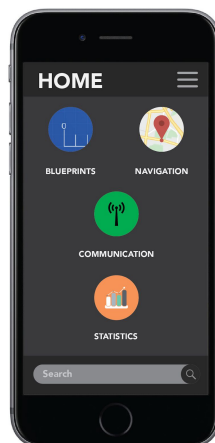


Figure 3. Interface design for an emergency responder's home page.

- Hardware: iPhones and Android phones will be used to test the application.
- Software: Swift programming language will be used for the iOS app and Java programming language will be used for the Android app.
- Network: Location and statistical data about the fires will be retrieved from the California's fire and police departments' databases and servers.

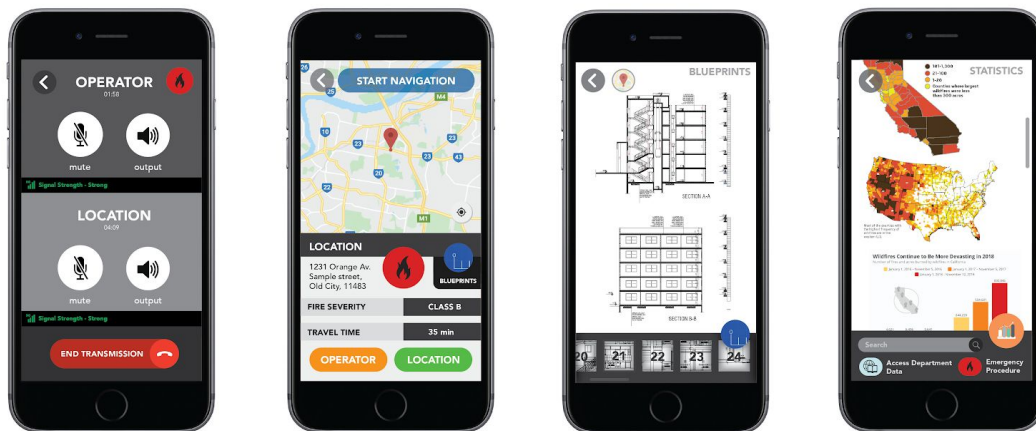


Figure 2. Different functions of the Litespeed Fires: operator call, map locations, building blueprints, fire statistics (from left to right).

Functions of the Application

- Communication (Operator Text/Call): Message or call an operator in order to seek help. Emergency responders will also receive instructions from their superiors on where to go and what actions to take to control the fire and also be in contact with people at the location of the emergency.

- Navigation (Map): Shows location of the fires and navigation instructions to lead the emergency responders there.
- Building Blueprints: Available to emergency responders who need to enter burning buildings to save victims trapped inside.
- Fire Statistics: Statistics about the wildfires, such as acres burned, casualties, number of fires, locations, and more will be available.

2.3 Implementation Design

The design of the cell towers will be implemented using locations that were impacted most during the 2018 California Wildfires- the Los Angeles County, Butte County, and the Whiskeytown-Shasta-Trinity National Recreation Area. Civil engineers will survey the land and conduct site investigations throughout the project to ensure that the land is suitable and that the workers are following all regulations. Mechanical engineers will work with the construction workers in setting up and installing the cell towers in the three test sites. Once the towers are up and running, the software will be available for download so that emergency responders can be trained to use it.

The software will be implemented by the front-end developers and back-end developers. The developers will be monitored by the project manager, who will delegate roles and ensure that everything is on track. The front-end developers will implement the design of the app using Swift for iOS users and HTML, CSS, and JavaScript for Android users. They will design the app to be visually appealing and easy to navigate. The back-end developers will implement the

source-code to create functionality using Swift for iOS users and Java for Android users. This app will be available in both the Apple App Store and Google Play Store.

2.4 Quality Assurance Plan

To assure the quality of our project, all personnel employed by Litespeed Emergency Services are properly qualified and trained and also have experience in their respective areas. Progress reports on the project will be submitted bi-weekly to ensure that the schedule is followed and to verify efficient use of our time and money.

The cell towers will undergo maintenance, which will be conducted in the most cost efficient way, to ensure that the tower is safe and secure at all times. After the initial building stage, the towers will be inspected every other week for a month by a civil engineer that will be employed. They will examine the tower to ensure that the regulations stated by the state and federal government are adhered to. Once the initial inspections are completed, a major inspection will take place 12 months after the last weekly inspection. Then major inspections will be conducted every 5 years or after harsh weather conditions, such as heavy wind, heavy snow, and earthquakes.

After the application is developed, it will go through a testing period to establish user usability. The application will also be regularly monitored for bugs and will take user feedback in order to improve the application. Once we ensure the success of the application in the three test areas with the 5G cell towers, more towers will be constructed in other areas to allow for widespread use of the application.

2.4a Qualifications

Our team is qualified for this project as we are made up of 3 computer science experts and 1 mechanical engineer. Our employees have a minimum BS in computer science and mechanical engineering. Our computer science experts will work together as front-end or back-end developers on the application. We have prior knowledge and experience working with different programming languages, such as HTML, CSS, Javascript, and Java. Our mechanical engineer will work with the other employed engineers, in which a job posting was already published, on installing the new 5G cell towers.

3. Expected Project Results

All emergency responders are expected to be trained in utilizing the application to its fullest ability. As emergency responders are trained and become more familiar with the application, our team expects the total acreage burned, lives lost, and property destroyed to decrease. Even though wildfires will still occur in California, the fires will be more quickly controlled as emergency responders receive the instructions and information, as soon as it is available, through the application. We also expect the costs of wildfire damage for the state of California to decrease as less of the land is destroyed.

3.1 Measures of Success

Our project's success will be measured by two statistics: app star rating and acreage burned. By looking at the star rating in the App and Google Play Store, we can determine if the application is effective. If the application is given a high rating and is closer to 5 stars, then we

consider the application to be successful. Our project is also considered successful if there is a decrease in acreage burned in future wildfires. By comparing the acres burned in future wildfires to past wildfires, we can recognize if the software aided emergency responders in controlling the wildfires. If the acreage burned decreased, then it proves that this application is a success because the emergency responders were able to utilize the application to get their information quickly and control the fires. As a result, people's lives will be saved, buildings will remain standing, and the environment will be preserved.

4. Schedule

Date	Task
May 5, 2020 - May 7, 2020	Meet with Governor Gavin Newsom and T-Mobile CEO Mike Sievert to discuss permissions and funding
May 8, 2020 - May 13, 2020	Plan framework for software
May 14, 2020 - September 30, 2020	Develop the software
October 2, 2020 - November 13, 2020	Test the software for bugs
November 16, 2020 - January 22, 2021	Set up 5G cell towers in Los Angeles County
January 25, 2021 - March 26, 2021	Set up 5G cell towers in Butte County
March 29, 2021 - May 28, 2021	Set up 5G cell towers in Whiskeytown-Shasta-Trinity National Recreation Area
May 31, 2021 - June 11, 2021	Train emergency responders to use software

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Audience Analysis

Reader's Name: **Gavin Newsom**

Reader's Job Title: **Governor of California**

Kind of Reader: **Primary**

Education: **BA in Political Science at Santa Clara University, 1989**

Professional Experience: **member of Board of Supervisors of San Francisco; Mayor of San Francisco; Lieutenant Governor of California**

Job Responsibilities: **signing bills into law; serving as commander-in-chief of the California's National Guard and militia; convening special sessions of the state legislature**

Personal Characteristics: **busy, firm, fair**

Cultural Characteristics: **Nothing of note**

Attitude Toward the Writer: **No problems**

Attitude Toward the Subject: **Passionate in improving the lives of Californians**

Expectations About the Subject: **Expects benefits of the improving communications to help emergency responders in dealing with wildfires**

Expectations About the Document: **Expects a proposal about a software that would provide various features of communication and information for emergency responders; expects requests for permissions**

Reasons for Reading the Document: **To find improvements for emergency responders communications**

Ways of Reading the Document:

Skim it Study It Read a portion of it Which portion? Problem Statement, Objectives, Requirements, Expected Project Results, Schedule

Modify it and submit it to another reader

Attempt to implement recommendations

Use it to perform a task or carry out a procedure

Use it to create another document

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Other ____ Explain.

Newsom will skim the proposal or read the problem statement, objectives, requirements, expected project results, and schedule because he is busy so he does not have time to read the entire report. Upon reading the benefits of the new software and new 5G cell towers, he will grant permission to install the cell towers in the three test sites and grant funding.

Reading Skills: **Excellent; has dyslexia**

Reader's Physical Environment: **1303 10th Street, Suite 1173, Sacramento, CA; surrounded by windows; park across the street**

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Audience Analysis

Reader's Name: **Thom Porter**

Reader's Job Title: **Director of the California Department of Forestry & Fire Protection
(styled as CAL FIRE)**

Kind of Reader: **Primary**

Education: **BS in Forest Management at University of California, Berkeley**

Professional Experience: **Acting Director of CAL FIRE; served as Southern Region Chief,
Assistant Region Chief, and San Diego Unit Fire Chief; Registered Professional Forester**

Job Responsibilities: **oversee CAL FIRE activities; responsible for organization and
direction of CAL FIRE; prevent or minimize loss of life, property, and injury; ensure**

Personal Characteristics: **responsible, busy, friendly**

Cultural Characteristics: **Nothing of note**

Attitude Toward the Writer: **No problems**

Attitude Toward the Subject: **Passionate in minimizing fire damage and loss of life**

Expectations About the Subject: **Expects improvements for emergency responder
communication**

Expectations About the Document: **Expects a proposal about the communications system
that emergency responders are using and how to upgrade it**

Reasons for Reading the Document: **To find improvements for the CAL FIRE department's
battle against wildfires**

Ways of Reading the Document:

Skim it ___ Study It Read a portion of it ___ Which portion? Entire Document

Modify it and submit it to another reader ___

Attempt to implement recommendations

Use it to perform a task or carry out a procedure

Use it to create another document ___

Other ___ Explain.

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Porter will study the proposal in order to find ways to improve the communications systems that the emergency responders are using. Since he is the director of the California fire department, he will be interested in ways that can help save the lives and property of the people and his own men so he will study the document intently.

Reading Skills: **Excellent**

Reader's Physical Environment: **CAL FIRE headquarters at 1416 9th Street, Sacramento, CA; located across a park; surrounded by buildings**

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Audience Analysis

Reader's Name: **Mike Sievert**

Reader's Job Title: **President and CEO of T-Mobile US, Inc.**

Kind of Reader: **Primary**

Education: **BS in Economics, Marketing, Management at University of Pennsylvania (The Wharton School)**

Professional Experience: **Microsoft Corporate Vice President; AT&T Wireless Executive Vice President; Procter & Gamble Brand Management; Rogers Communications Director**

Job Responsibilities: **manage overall operations and resources**

Personal Characteristics: **busy, strict, determined to succeed**

Cultural Characteristics: **Nothing of note**

Attitude Toward the Writer: **No problems**

Attitude Toward the Subject: **Passionate in having T-Mobile be the top network provider**

Expectations About the Subject: **Expects a project that deals with improving communications while gaining profits from it**

Expectations About the Document: **Expects a proposal requesting for funding**

Reasons for Reading the Document: **To decide whether to provide funding for the project**

Ways of Reading the Document:

Skim it Study It Read a portion of it Which portion? Problem Statement, Needs Statement, Requirements, Quality Assurance Plan, Schedule

Modify it and submit it to another reader

Attempt to implement recommendations

Use it to perform a task or carry out a procedure

Use it to create another document

Other Explain.

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Sievert will skim the portions listed above in order to find out whether reading the project is worth investing into. Since he would want to make profits as the CEO, he would look at the costs and calculate the profits from funding the document.

Reading Skills: **Excellent**

Reader's Physical Environment: **3625 132nd Avenue SE, Bellevue, WA; located near highways**

Mavis Ye's Reflection Paper

My genre for this assignment is a technical proposal. A technical proposal is a written document, usually accompanied with a presentation, that is used to propose a project. The goal of the proposal is to persuade the audience to grant permissions or funding for the project by conducting research on the topic. My assignment is a technical proposal because I write to my audiences, who are Gavin Newsom, Thom Porter, and Mike Sievert, to suggest a project that would improve the current communication system for emergency responders by utilizing 5G cell towers. In my proposal, I hope to gain permission from Governor Gavin Newsom to install new 5G cell towers in his state, to inform California Fire Department Director Thom Porter of improvements that would benefit his firefighters, and to receive funding from T-Mobile CEO Mike Sievert.

The media that I am working in is multimodal. Due to Covid-19, print was no longer used as we switched to long-distance learning. My group and I communicated digitally and worked together to produce each part of the project digitally. We would also be submitting this assignment online via Blackboard. I used search engines and the online library database to find research for my topic. My group and I also had an oral presentation, where we presented online.

The exigence of my assignment is hearing about AT&T throttling emergency responders' data in California during the 2018 wildfires and reading about Australia's ongoing bushfire season. My group decided that our topic should be about wildfires because it is an ongoing natural disaster that is not easy to control. As a result, we wanted to think of different ways to help improve emergency responder communication. We decided on developing a software that provides different functions to communicate and receive information, and the software would be accompanied by the construction of new 5G cell towers for high data speeds.

My purpose is to persuade Gavin Newsom, Thom Porter, and Mike Sievert to invest in this project. I inform my audiences about wildfires, its effects on human health, and the damage that it causes to lives, property, and the environment. Then I suggest a way to improve the lacking communication system by developing a software and installing new cell towers. In order to do so, I would need permission to work on California's land and funding to obtain the materials and hire employees.

My stance about the topic is passionate. I believe that it would greatly benefit the emergency responders of any natural disaster if there were higher speeds of data transmission. They are able to receive information quickly so then they could act quickly to help save lives.

My audiences for this assignment are Gavin Newsom, Thom Porter, and Mike Sievert. Gavin Newsom is the governor of California and I would need to obtain his permission in order to start working on the land. Thom Porter is the director of the California Department of Forestry & Fire Protection and he would be familiar with this topic and could suggest functions to add to the application that would benefit the emergency responders. Mike Sievert is the President and CEO of T-Mobile US, Inc. and he would have the funds to invest in this project.

In this assignment, my role was to research about the topic. I researched about wildfires and its causes, the 2018 California Wildfires, advantages of using 5G over other networks, and the health risks of living near 5G cell towers. I organized a proposed schedule for the development of the new software and installation of 5G cell towers. I also conducted audience analysis for Gavin Newsom, Thom Porter, and Mike Sievert. I revised the memo and job posting and added them to the beginning of the document. I also proofread the entire document and made changes to allow for better flow and organization.

I met all the Course Learning Outcomes in this assignment. I met outcomes 1, 2, and 4 due to the peer review assignment. Through the peer review, I can learn from my group-mates' writing assignments to see what I am lacking. After the peer review, I will take into account what my group mates said so that I can finalize my draft and present a more complete assignment on the proposal. I will collaborate with other groups by offering suggestions that would improve our writing. I met outcome 3 by following the conventions of the technical proposal genre, and establishing a clear purpose to our audiences. I met outcome 5 by analyzing the genre in the reflection and by producing a multimodal assignment, which is produced, researched, and submitted digitally, and presented orally. I met outcome 6 by formulating a stance about the communications system available to emergency responders by suggesting a new software to improve how they get information. I met outcome 7 by using the Internet to research information about the wildfires, its effects, and how much damage was accrued. I met outcome 8 by taking what I found on the database and listing them as sources in the reference page in APA format.

Kenneth Hahn's Reflection Paper

For this technical proposal we tried to communicate with people in need of an app. My group and I tried to create an app that would improve the response time to wildfires to prevent extreme damage. In a world where apps and technology is becoming a norm, apps that can communicate to first responders can really save lives. The audience for this technical proposal was the governor of California, Gavin Newsom. A technical proposal is a written document that includes a summary, background, proposed technical project, and the results of the project.

A technical proposal can be used as a blueprint for future studies to add on to the same field of research. For our technical proposal we chose to find a solution to the California wildfires. Our goal was to create an app that would be able to communicate with the citizens and first responders directly. The app would be able to relay the messages from the public and notify nearby first responders. Our purpose is to provide the people of California a more efficient way of communicating to the first responders to keep their communities safe.

The role I took for this project was the implementation design. As an aspiring Computer Science major I thought that creating an app was a way to incorporate the Computer Science aspect into this project. I thought about the programming languages for the app and the functions that would come with the app. In the case of an Apple phone we used Swift, and for the android users we used Javascript. Swift is usually used for iOS app programming and Javascript can be used for android. I also had to think how this app would function to ensure the safety of the people in California that suffer from wildfires.

I believe I have met all the Course Learning Outcomes. As a group we completed the peer review as well as worked on the flaws of our research. We were also able to take the comments and improve our writing. There are digital visuals in the assignment as well, so the audience does not have a hard time just reading words off a screen. We also expressed the importance of the app and how it can ensure the safety of people from wildfires. Finally, we met the requirement of staying in APA format and listing our references in the assignment.

Nawang Jigme's Reflection Paper

After being given this assignment, at first, I didn't even know much about the assignment at hand and due to the distance learning method, I was a little lost about class. After I figured out that we had a project due I figured it was time to get it together but still I didn't know where to begin. For a couple of days, I and my group had no method of communication between us to be able to brainstorm and the little brainstorming we did was little too delayed but still somewhat in time before the deadlines.

So the topic for this project was related to natural disasters and how can we as engineers be able to come up with something that can either help prevent/ provide resistance or aid after the disaster had struck. So my crew went with the California wildfires and we went with methods that can increase the speeds of communication between the emergency operators and the user. As well as design an app that will simplify things and take in data from users and the satellite to provide accurate information to the operators.

My role in the project took me a while to figure out since I was the most out of place but I took over architecture design, I had to rewrite a couple of stuff since I wasn't too sure about how it would fit in with the rest of the groups work and if it was up to par. As well as the fact that for a while I was lost on what to write and how to write it. I first wrote a process of installing and building the tower which I rewrote to simply explain the parts of the tower and the separate components and their description.

The audiences for this project are the Governor of California Gavin Newsom, Thom Porter who is the director CAL FIRE, as well the president and CEO of T-Mobile Mike Sievert. Mr. Newsom will be the one to permit us to build our cell tower sites in California since this cannot be accomplished without legal consent. As for Mr. Porter, he has prior experience in the field as the Director of the California Department of Forestry and Fire Protection. He will inform on methods that can be most effective and reduce casualties. And lastly for Mr. Sievert, as a CEO of T-Mobile, he will possess the funds which can potentially be invested in us.

The purpose of the Technical proposal, which is the genre of this project, and can be identified by the subcategories of this genre. The project contains a TOC, summary, intro, problem statement, needs statement, objective, proposed technical approach, architecture design, implementation design, quality assurance plan, expected project results, and lastly schedule. All of these are often part of a technical proposal since the purpose of this is to make our project look funding worthy as well as realistic. As for my stance on the matter, since I am a part of the project I, of course, want this to go through and be able to receive the funding.

But mainly, the cause for why this is being done is because the casualties that are caused by a fire are a little too extensive and there are ways to minimize such casualties to the micro-scale.

As for the course learning outcome, all of them are covered. I have had to improve my diction to meet the standards of the CEO, Governor, and Director to stand out. I have read over my work more than once and corrected it in accordance. I have had to style my writing so that the team's goals can be appropriately portrayed to the audience. To engage the reader I have provided them with details so that their questions are answered. Due to the genre, I have had to change my writing slightly. I had had multiple tabs open, from shopping sites to YouTube videos for sources and cites. And lastly, I had to implement those sources and citations into my writing as details to support my work.

Gaurav Kuwar's Reflection Paper

The genre of this assignment is a project proposal. A project proposal is persuading an audience of a project, which details its purpose, what it is trying to accomplish and specific details on resources and manpower required to put the project in action. This project proposal is a group project, where we will present the project to the class. Our project proposal is about using 5G technology and an app to improve communication of emergency responders during wildfires. The name of the company that will put this project in action is Litespeed Emergency Services, since we want to improve how fast the responders receive and send information about an emergency wildfire.

The audience for this project proposal is the Governor of California, Gavin Newsom, Director of the California Department of Forestry & Fire Protection, Thom Porter and Mike Sievert, President and CEO of T-Mobile US, Inc. They are the audience because in order to receive funding and the permissions required for the project, we have to present the proposal to these individuals to put the project in action. The purpose of the project to persuade the audience to give permission for the project. The project is trying to improve communication during an emergency fire, with the use of 5G technology and software built to support that technology. The media for this assignment is digital and paper, because the project will be presented virtually/digitally, but the proposal is in paper.

The "Course Learning Outcomes" for this assignment would be practice using various library resources, online databases and internet to locate sources, because when writing the project proposal, you need a lot of information and have to locate sources on the internet to get reliable information. Another "Course Learning Outcomes" for this assignment is developing and engaging in collaborative and social aspects of the writing process because this was a group project, we have to work together to make the proposal and present the proposal as a group.