THE CHALLENGE

Your challenge is to create an application that leverages NASA's near-real-time and archival wildfire datasets along with other tools to support firefighting and fire mitigation efforts. This challenge builds on last year’s challenge of the same name by calling for innovative ideas and apps that focus on how to engage and enable citizens to assist with the entire firefighting and fire mitigation process.

Background

In recent years, wildfires have become a significant threat to communities across the globe. New developments in technologies and data access have enabled citizens to participate in and contribute to firefighting and fire mitigation efforts. In the 2018 NASA International Space Apps Challenge, we received many stimulating solutions on wildfire early detection, reporting, and data visualization in response to the challenge Spot That Fire.

For Space Apps 2019, Spot That Fire V2.0 is calling for innovative ideas and apps that focus on how to engage and enable citizens to assist with the entire firefighting and fire mitigation process. For this challenge, you are encouraged to leverage various technologies, including (but not limited to) machine learning, artificial intelligence, voice recognition, application programming interface (API) development, data science and analytics, Internet of Things (IoT), image processing, mobile computing, cloud services, and computing and edge computing.

Potential Considerations

You may (but are not required to) consider one or several of the following topics while developing your solution:

- **Report a fire**: upload text and multimedia (such as picture or video with geolocation), etc.*
- **Verify and screen citizen fire reports**: check with NASA fire database, cross-check, verify whether a picture/video is fire-related (through machine learning for example), etc.
- **Notify related people**: notify nearby residents and local fire department, notify people driving by, allow people to subscribe to fire warnings, etc.
- **Track and visualize fires**: show fire locations and tracks on maps, embed animation, display detailed fire data, etc.
- **Design rescue paths**: mark on maps a customized way to a safe area
- **Real-time fire status monitoring and reporting**: provide real-time fire status reports and monitoring visualization
- **Predict fire trends**: apply machine learning to predict fire trends and direction
- **Personalized support**: show the public the nearest refuges, or how to self-support during a fire
- **Voice support**: provide voice support in addition to screen-based support
- **Identify major concerns**: apply big data analytics to identify core areas/concerns in a fire and notify fire department
- **Emergency social networking**: build an emergency social network in a small area to facilitate support from neighbors
- **Build mashups**: integrate geospatial data from various sources to provide innovative services to the public (e.g., local weather and local traffic), typically through their published APIs.

(Note that this is an app challenge instead of a data collection challenge.)*

Teams are encouraged to develop and post publicly accessible APIs, containerized images and files, code repositories and digital notebooks, and any other relevant technologies that may allow others to reuse parts of your solution after Space Apps in the spirit of open data!

In order to make your efforts sustainable after the event and allow the community to continue with your innovative ideas, your solution must:

- Provide a brief description of the app or solution goal and design – what does it do and how?
- Offer the description (a story) of why this app or solution is important and what insights or future capabilities it provides with regard to fighting wildfires
- Leverage NASA state-of-the-art technology, including near-real-time fire databases and satellite image processing APIs accessible through NASA OpenNEX
- Be an open-source project with open and accessible code
- Provide descriptions and links to other open-source tools used in the development
- Register back to the NASA OpenNEX. In this way, other people can leverage your efforts to build new value-added apps.

We look forward to innovative apps that motivate, encourage, facilitate, and support this human-based remote sensing initiative on wildfires!

REQUERIMIENTOS

Reportar incendios

- Ciudadano
- No necesita autentificación
- Marcar punto en el mapa
- Enviar notificación

Administrar usuarios

- Administrador
- Necesita autentificación
- Altas, bajas, consulta y modificación de usuario
    - correo
    - contraseña
    - ubicación.

Administrar refugios

- Administrador, Ciudadano
- Altas, bajas, consulta y modificación de refugios
- Necesita autentificación
- Marcar punto en el mapa
- Información del lugar
    - Locación
    - Capacidad
    - Disponibilidad
    - Edades de las personas
    - Necesidades
        - Agua
        - Comida
        - Ropa
        - Artículos de higiene

Administrar puntos seguros

- Administrador
- Altas, bajas, consulta y modificación de punto seguros.
- Marcar punto en el mapa

Enviar notificación

- Alerta

- Indica ruta a sitios seguro más cercano
- Indica refugios cercanos

ANÁLISIS Y DISEÑO

Reportar incendios

- Ciudadano no registrado, captura incendio.
- Enviar a la nasa la ubicación.
- Esperar confirmación de incendio
- Notificar a los usuarios que tengan una ubicación registrada
- Incluir mapa
- Al registrarse un incendio, se manda un correo a los usuarios cercanos. Comparar la ubicación con