Save your house, save the World

SUMMARY

WILDFIRES are a global emergency and when they affect housing and industry, the firefighter system can collapse quickly. In recent years we have gone from fires of thousands of hectares to tens of thousands, and especially we have begun to see fires burning beyond 5 km/h in a sustained way. Fire extinguishing capacity does not exceed 1.2 km/h. In Europe between 2017 and 2018, forest fires have caused more civil mortality than the whole terrorist problem.

Extinction systems need to focus on the fire strategy but often most of the resources are lost defending people and assets. Self-protection becomes a priority to ensure that the emergency system can maintain the response to the source of the problem, the fire.

Self-protection means being able to guarantee the safety of people in a fire environment without losing resources assuming the responsibility to execute it. Technology is needed to be able to evaluate and guide evacuations in a dynamic way. Especially, we need IT systems to advise about the evacuation conditions versus conditions of confinement in real time.

Emergency services have been operating so far with a culture of values based on the priorities of lives, material goods and the environment. We need to add now a culture of tactical value where first it manages the value of **no colapse** to be able to guarantee that we always have capacity to answer. In this step, self-protection and guidance advice is key.

Let's save our house, let's save the world with a solution called **Community Incident Management Console (CIMC).** This tool will make it easier for the communities:

- Identify the key points to protect their houses
- Measure the risk of fire and fire load
- In case of fire, calculate if the house is in the hot area
- Help to decide to evacuate or confine and the best house to confine
- Count the people on the hot area

How CIMC works –Main capabilities: (1) Prevention with fire load indicators and self-protection recommendations by house; (2) Early Detection with fire-detection alerts; (3) Making decision advice recollecting information on real time from Google Maps to calculate the time to arrive to a secure area and from Twitter to measure the sentiment in the evacuation route; (4) Fire management to provide number of people in the hot area and searching the most valuable data to improve forest fire-fighting strategies.

Technologies – This solution uses: (1) IBM Watson Studio to create and manage cognitive models to gather insight of data; (2) IBM Watson Machine Learning to train, deploy and publish cognitive models; (3) IBM Cloud Object Storage to store data sets, trained cognitive models and training results; (4) Apache Spark service to execute Machine Learning workload; (5) Db2 Warehouse on Cloud to store the feedback data for batch predictions; (6) SQL Database to store the data and (7) Natural Language processing to analize social network inputs.

Value –CIMC is a decentralized system of fire control for wildland-urban interface (WUI) that is connected to the local emergency services and it helps to reinforce the culture of self-defence.   The key points for this solution are the sense of community with neighbours, increasing fire knowledge, self-protection capabilities and people empowerment to make the right decision in case of fire. Let's save our house, let's save the forest and let's save the world.

Key words – Will fire, Self-protection, Firefighting, IBM Watson Machine Learning.

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