



Call for Code Founding Partner



CALL FOR CODE

COMMIT TO THE CAUSE. PUSH FOR CHANGE.

Agenda

- Need of the society and its response
- 2018 winners solution analysis
- GitHub / Code patterns for you
- Scope to leverage research papers
- What could be an effective solution
- 2019 focus

Commit to the Cause



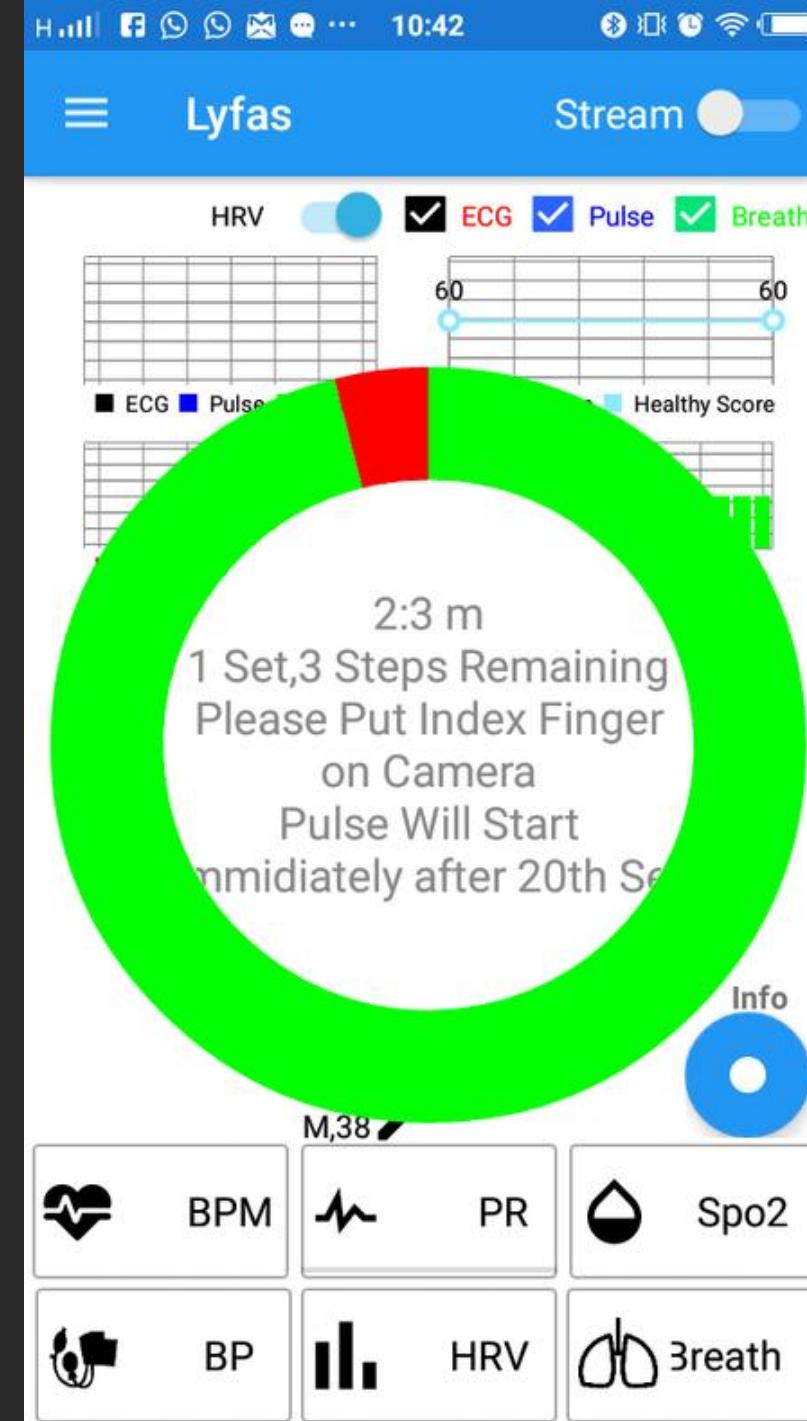
Push for Change- Mother Created Life Saving Device - TJay



Push for Change

**Lyfas - Non-Invasive Mobile Tool
To Detect Heart Attack Risk**

Courtesy : <https://www.lyfas.com/>

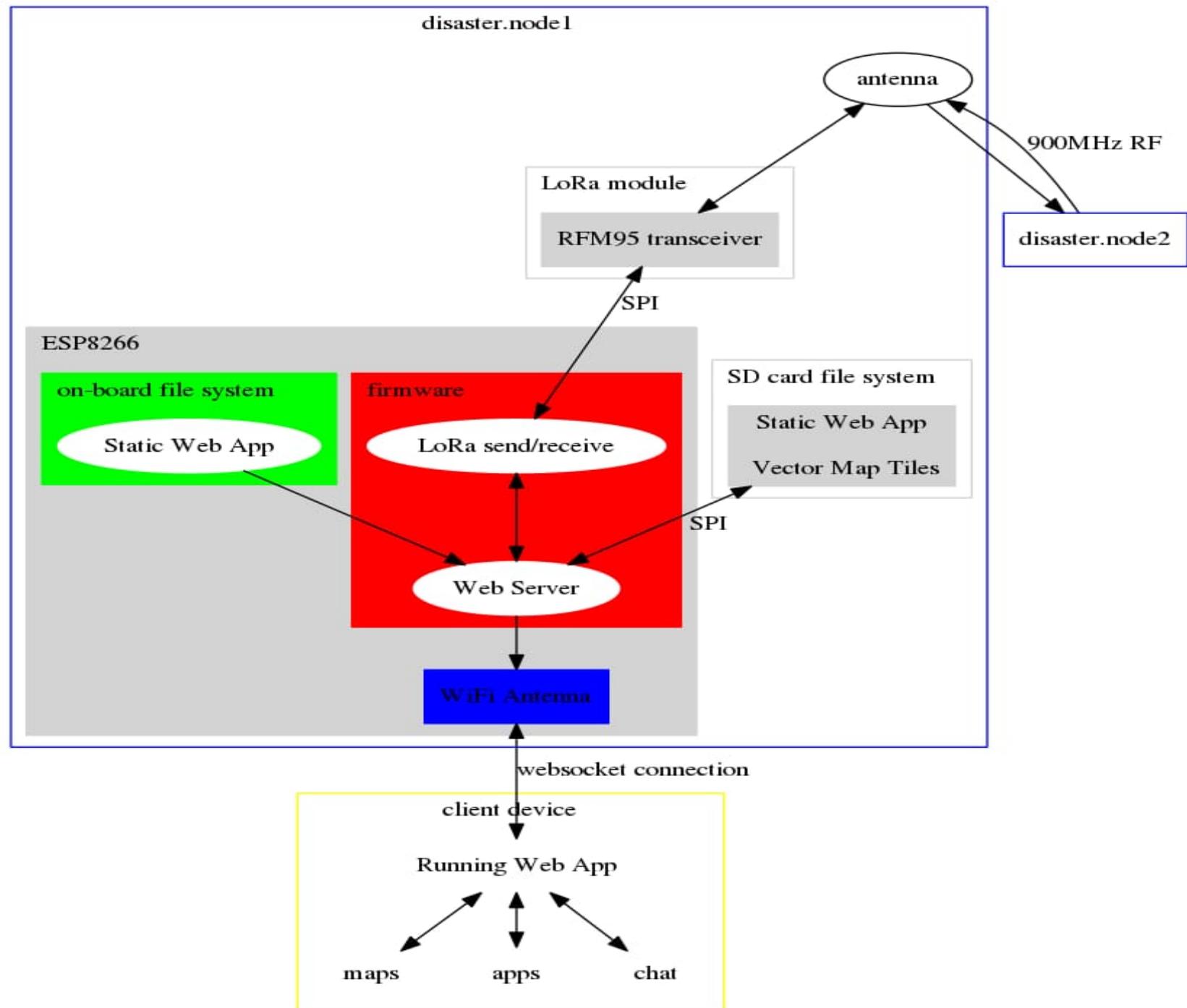


Answer the call

During Disaster



Answer the Call

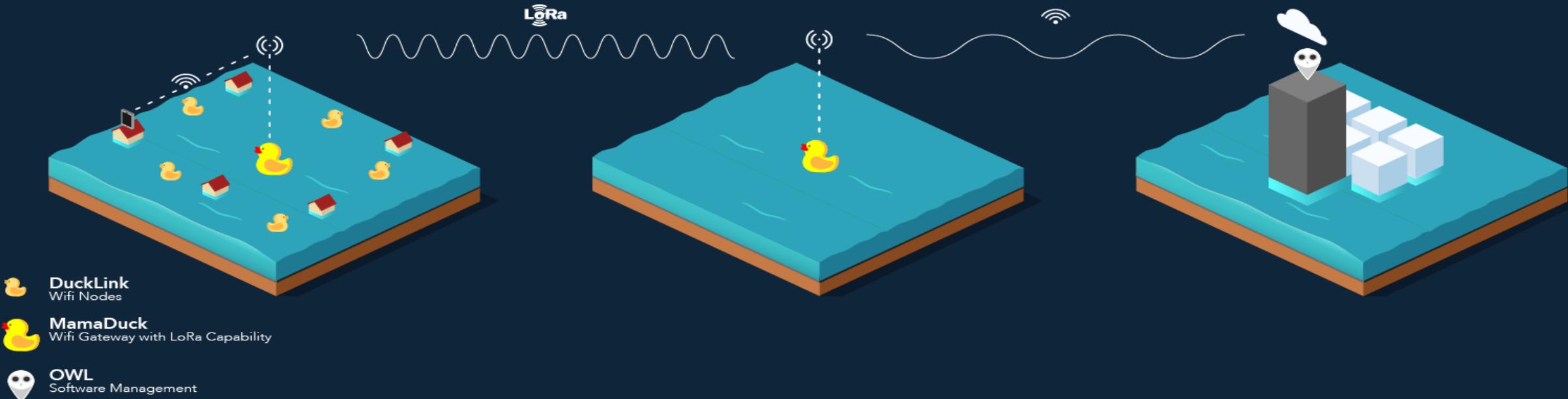


2018 Winners solution analysis

- > Incident Management system to geo without active network
- Two-part hardware/software solution.
- > provides an offline communication infrastructure
- > the OWL software incident management system, uses predictive analytics and multiple data sources to build a dashboard for first responders.
- > Project Owl is a Ruby on Rails web application hosted on IBM Cloud leveraging the IBM Watson Studio, IBM Watson Cloud APIs, Weather Company APIs, Google Maps API, and public data sets.

Project OWL

<https://github.com/Project-Owl>

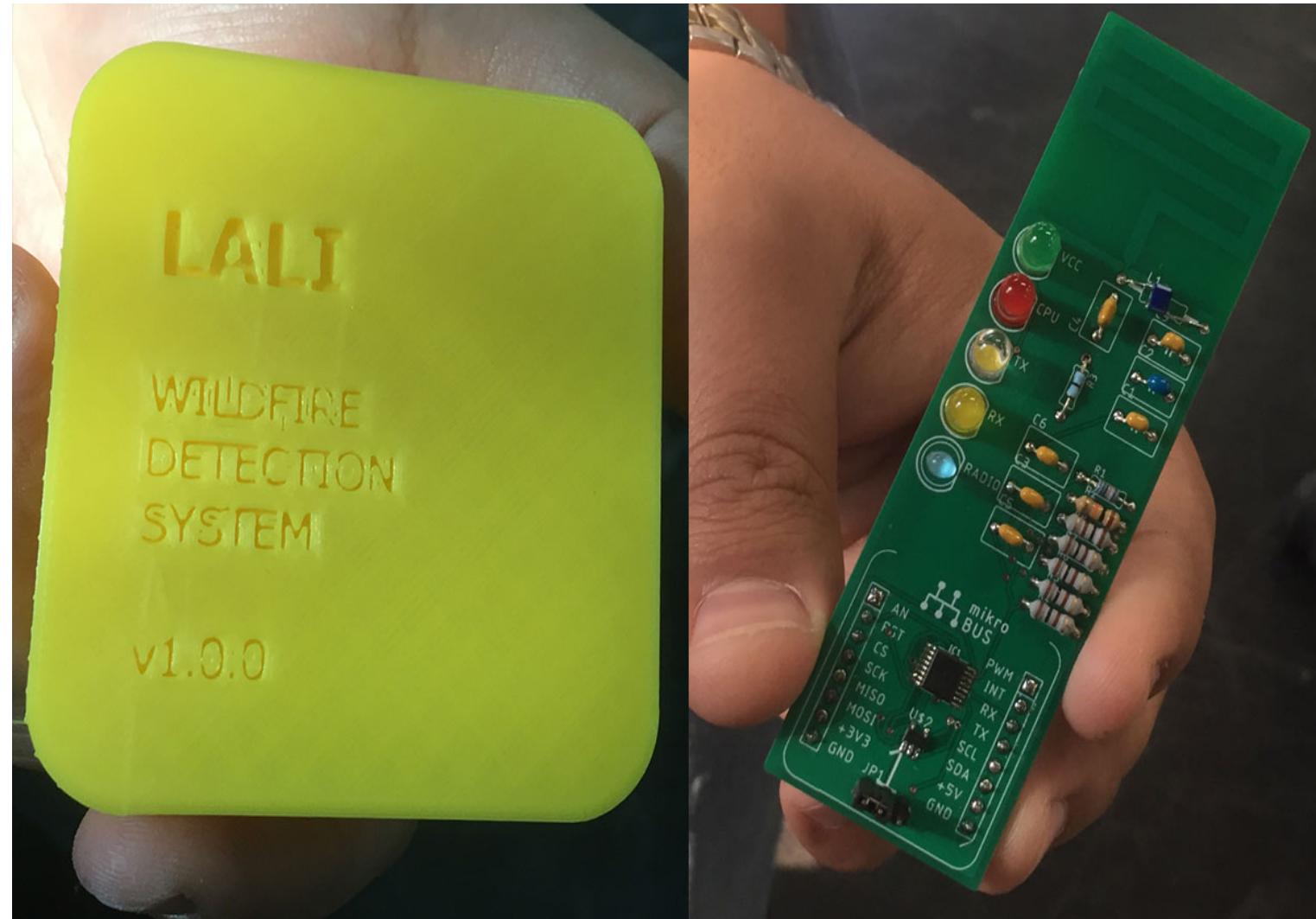


2018 Winners solution analysis

Project Lali predicts and detects wildfires with sensor networks

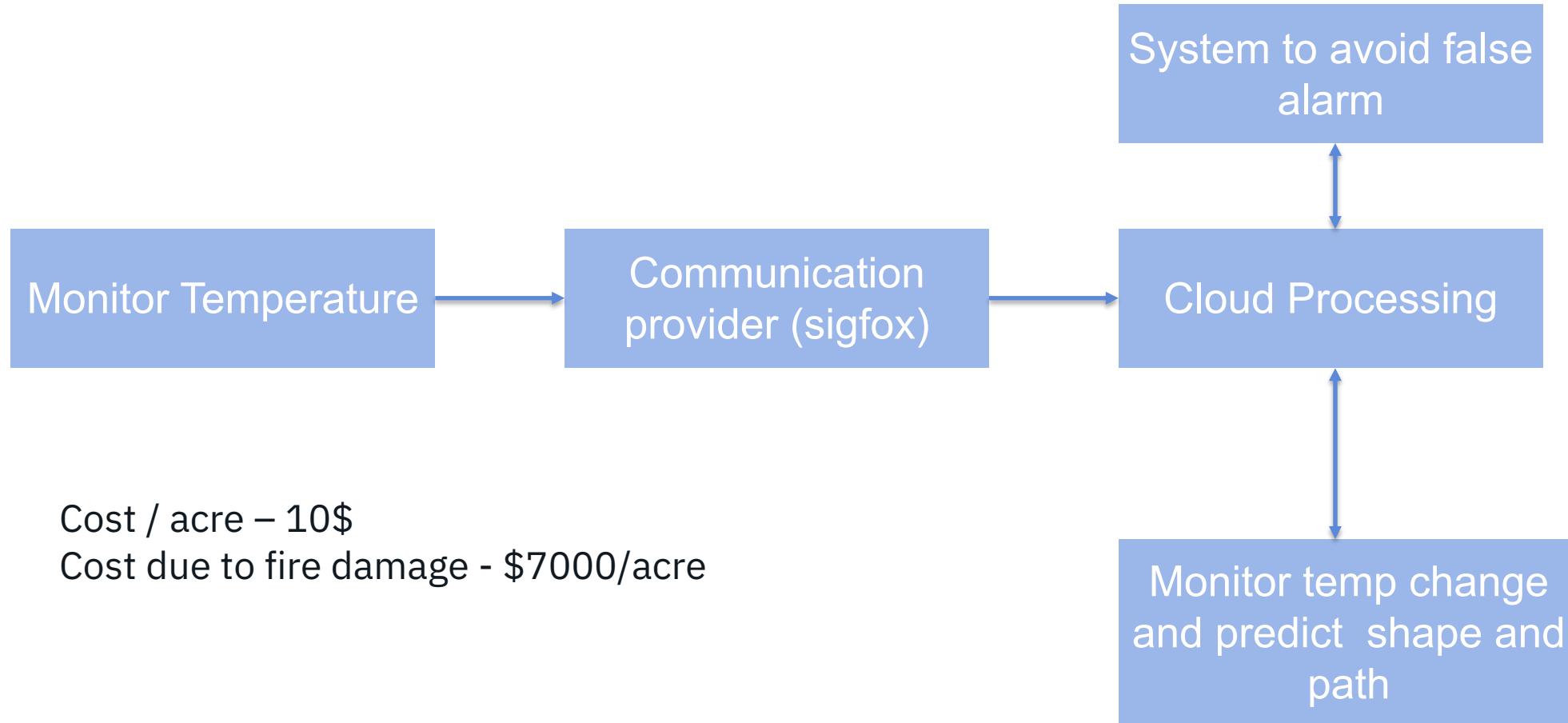
Using smart technology to leverage big data

- >rapid mapping of affected areas and the extent of damage,
- > crowd sourced data – text , visual , geo information
- >AI, ML, and data analytics can map potential hazards to enable proactive mitigation, all while keeping personally identifiable data protected.
- > [IBM Cloud Hyper Protect Services](#) can help you create and implement highly secure AI, ML, and data analytics solutions



<https://spectrum.ieee.org/view-from-the-valley/at-work/start-ups/stopping-a-wildfire-with-a-lowcost-sensor-network>

Solution Environment



<https://spectrum.ieee.org/view-from-the-valley/at-work/start-ups/stopping-a-wildfire-with-a-lowcost-sensor-network>

2018 Winners solution analysis

Post-Disaster Rapid Response Retrofit (PD3R)

- > Crowd source the damaged house images and also use Computer generated images for AI training
- > Use AI to identify the damages
- > Use additional software packages like Building Information Modelling Software, (BIM) to develop the retrofit design
- > Time saved from days to hours

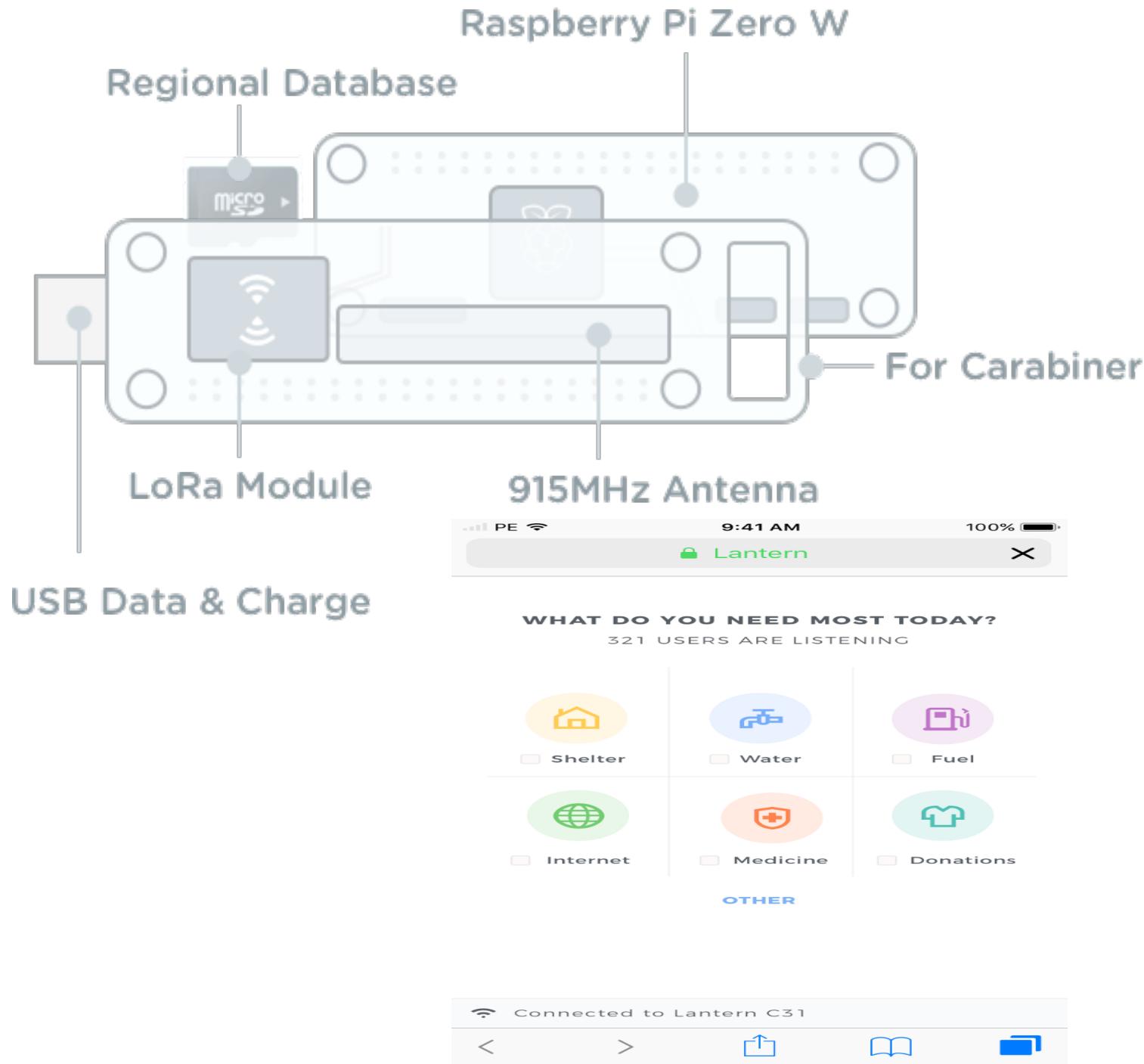


https://github.com/Build-Change/call_for_code

2018 Winners solution analysis

Project Lantern

- > collaboration between local volunteers, at risk populations and trained relief workers.
- > predicting the optimal distribution of supplies in affected areas
- > Weather API , Cloudant , conversation service (bot)
- > Real-time maps of disaster regions, travel routes
- > map tool to guide users to shelters, fresh waste and fuel, this solution is designed to keep communities organized



<https://github.com/lantern-works>

2018 Winners solution analysis

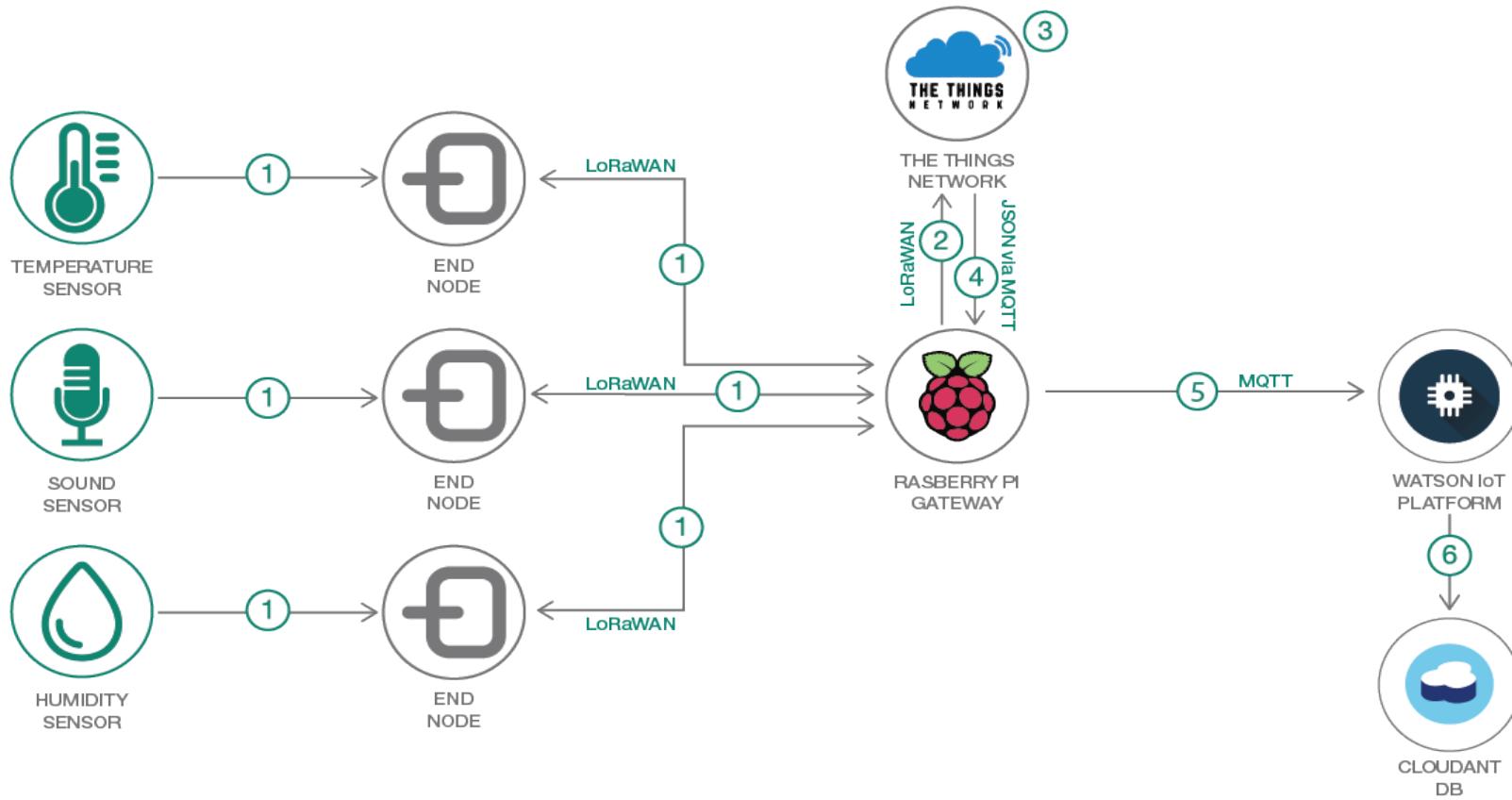
Green Coder – United Aid Net (UAN)

- > Problem: During an emergency, cash and credit cards can be lost and relatives can be separated, which leaves disaster victims without the money they may need.
- > UAN contains two networks: an institution network and a family network
- > identify family /friends through family network
- > Financial Institute joins the network
- > Beneficiaries withdraw money using face identification
- > Blockchain, Watson VR, Cloudant



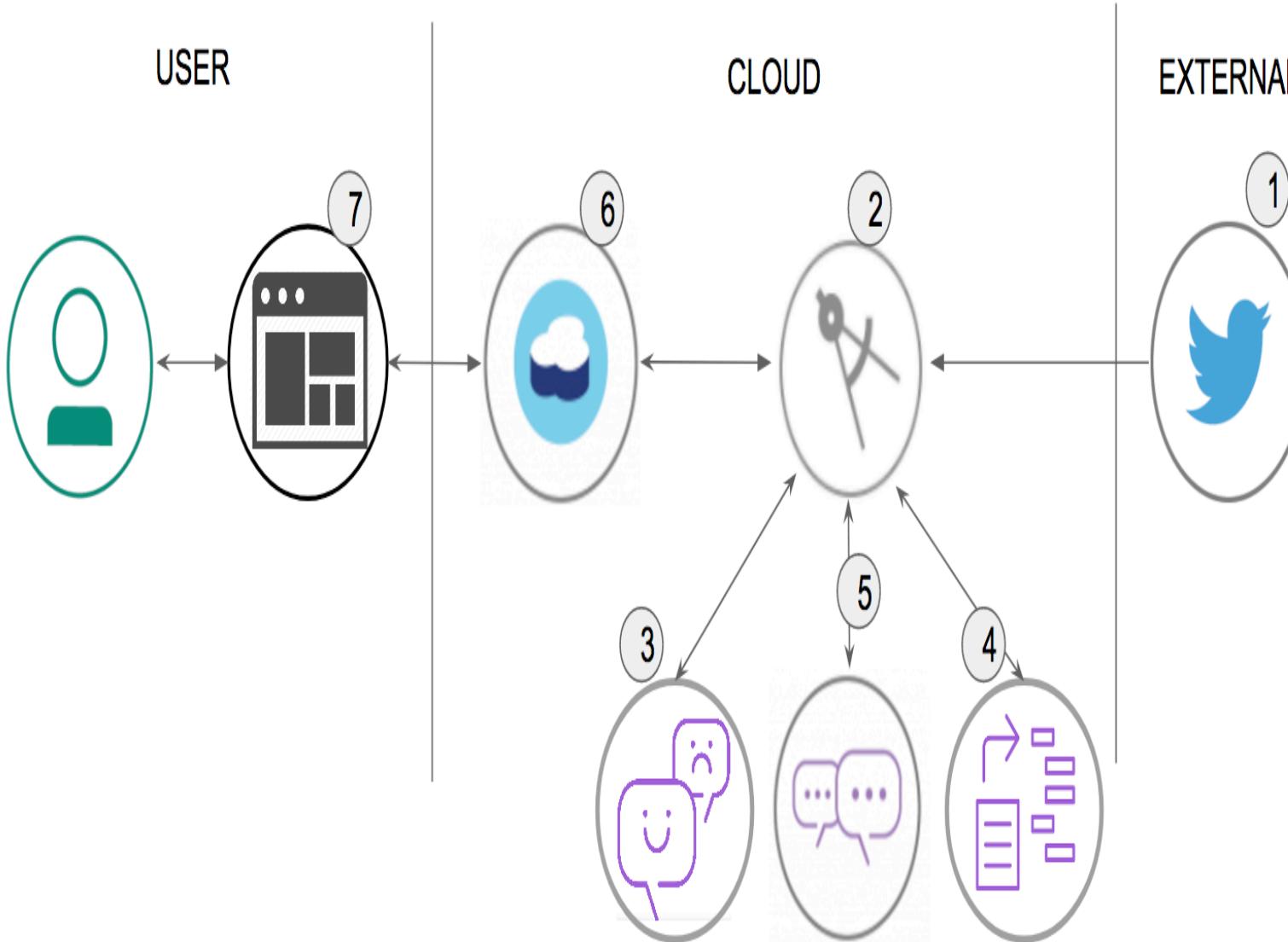
<https://developer.ibm.com/blogs/call-for-code-finalist-network-for-uninterrupted-financial-services/>

Solution Implementation quick reference - Code Patterns



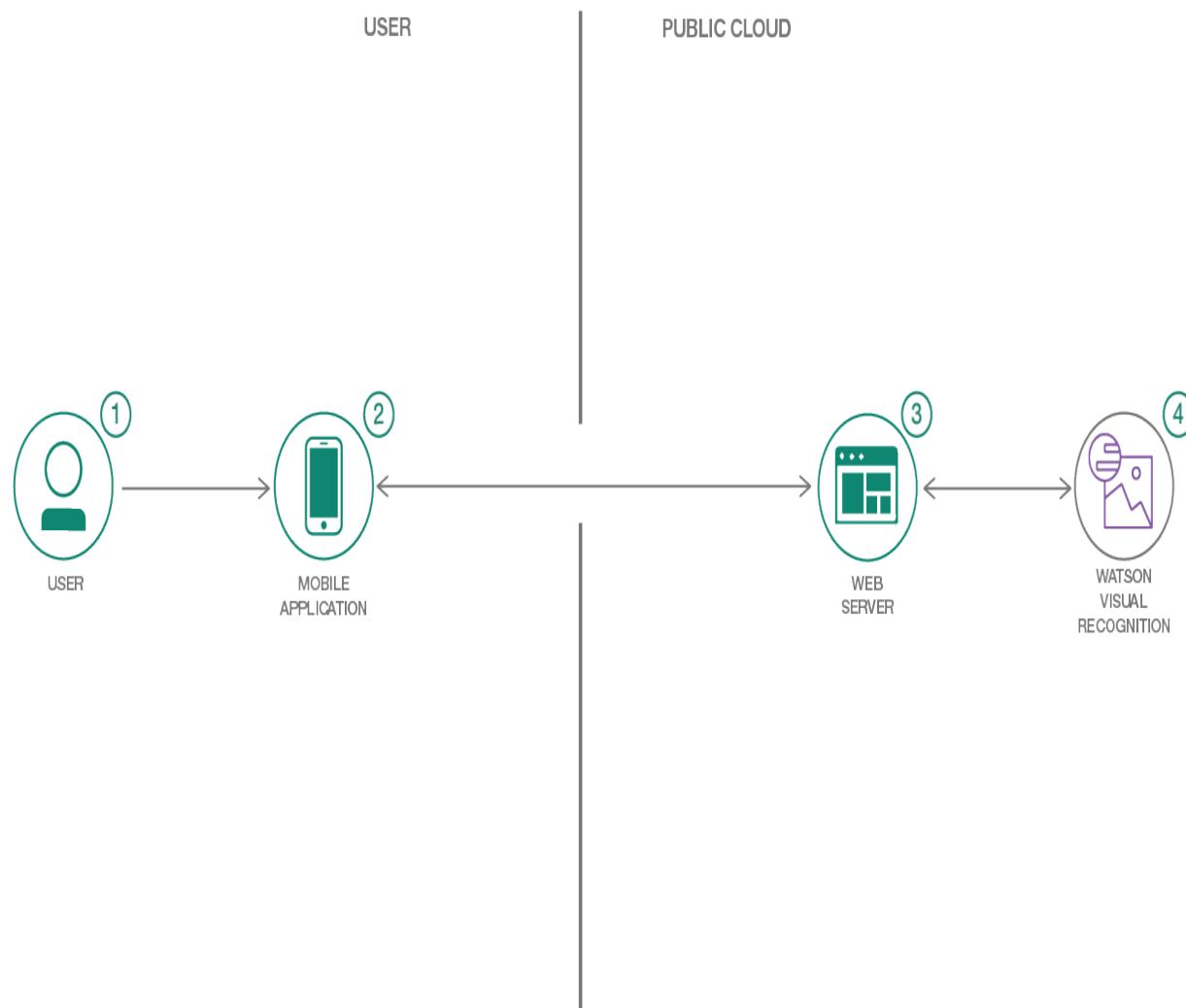
<https://developer.ibm.com/patterns/set-up-lorawan-iot-gateway-hardware/>

Stream and Analyze Tweets



- 1.Tweets are pushed out by Twitter.
- 2.The Cognitive Social CRM app (server.js) processes the tweet.
- 3.The Watson Tone Analyzer Service performs analysis of sentiment and emotional tone.
- 4.The Watson Natural Language Understanding Service pulls out keywords and entities.
- 5.The Watson Assistant Service extracts the intents (verbs) from the tweets.
- 6.Tweets and metadata are stored in Cloudant.
- 7.The Web UI displays charts and graphs as well as the tweets.

Visual Recognition To Process Claims Quickly



- Create a Node.js server that can utilize the Watson Visual Recognition service for classifying images.
- Have a server initialize a Visual Recognition custom classifier at startup.
- Create a Visual Recognition custom classifier in an application.
- Create an Android mobile application that can send pictures to a server app for classification using Visual Recognition.

Drone Image classification

Flooding

Associated Service : watson-vision-combined-dsx

Edit and Retrain

Overview Test Implementation

Filter

Threshold 0.0
0 1

Class
 Flooded Neighborhood
 Rescue Boat
 Rooftop Survivors

Clear results

1_s.jpg



Rescue Boat 0.89
Rooftop Survivors 0.06
Flooded Neighborhood 0.02

rescueboat.jpg



Rescue Boat 0.62
Rooftop Survivors 0.57
Flooded Neighborhood 0.11

grande.jpg



Flooded Neighborhood 0.89
Rescue Boat 0.02
Rooftop Survivors 0.00

screen-shot-2016-04-20-at-105252.jpg



Flooded Neighborhood 0.89
Rescue Boat 0.08
Rooftop Survivors 0.00

tokyoflood.jpg



Rooftop Survivors 0.91
Rescue Boat 0.00
Flooded Neighborhood 0.00

sjm-floodalert-0226-04.jpg



Rescue Boat 0.83
Flooded Neighborhood 0.30
Rooftop Survivors 0.00

<https://developer.ibm.com/tutorials/detect-wildfire-damaged-homes-using-drone-images-watson-visual-recognition/>

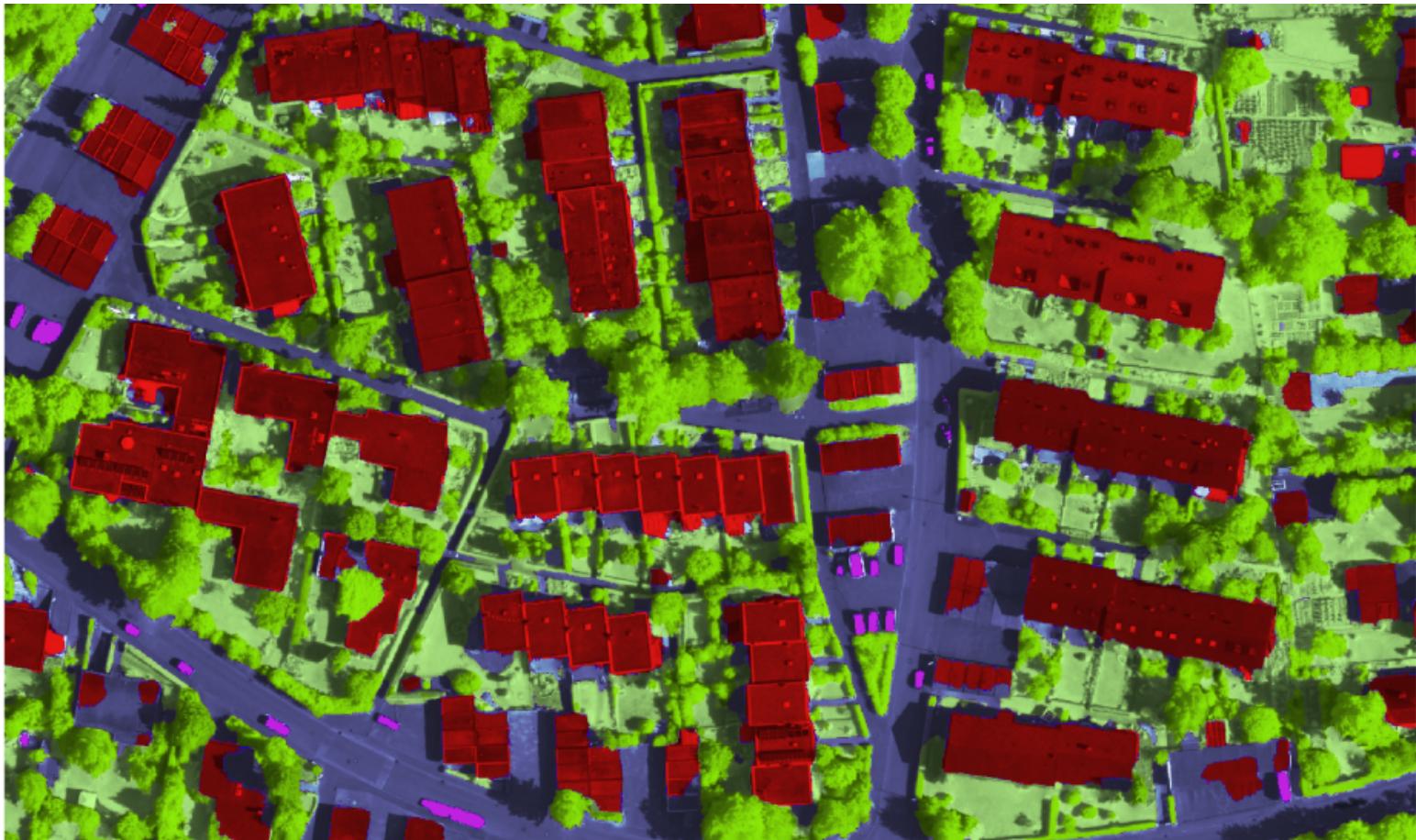
<https://github.com/blumareks/ai-visrec-under-10min>

Image semantic segmentation

ESPNet based models good for real-time images !!

- Usage for land coverage information.
- Can be used for impact assessment , flood prediction etc.,

<https://arxiv.org/abs/1803.06815>



Deep learning model training - "Experiment" @ Watson Studio

The screenshot shows the IBM Watson Studio interface. At the top, there is a dark header bar with the text "IBM Watson Studio" on the left, "Upgrade" with an upward arrow icon, a bell icon, and "Rajesh Jeyapaul's Acco..." on the right. Below the header is a navigation bar with links for "My Projects" and "DDL-ExperimentFeb28". On the far right of the navigation bar are icons for "Add to project" (highlighted in blue), "Info", "Download", "Edit", and "Delete". The main content area has tabs for "Overview", "Assets" (which is selected and underlined in blue), "Environments", "Bookmarks", "Deployments", "Access Control", and "Settings". A search bar asks "What assets are you looking for?". Below the tabs, there are sections for "Data assets", "Models", and "Experiments". The "Experiments" section is expanded, showing a table with two rows. The columns are "NAME", "CREATED BY", "LAST MODIFIED", and "ACTIONS". The first row has a "NAME" of "DDL-MNIST", "CREATED BY" of "Rajesh Jeyapaul", "LAST MODIFIED" of "2 Mar 2019", and an "ACTIONS" column with a plus sign. The second row has a "NAME" of "vit_ekansh", "CREATED BY" of "Rajesh Jeyapaul", "LAST MODIFIED" of "2 Mar 2019", and an "ACTIONS" column with a plus sign. To the right of the table is a sidebar with a "Load" button, "Files" tab (selected and underlined in blue), and a "Catalog" tab. The "Files" tab contains a dashed box with the text "Drop files here or browse for files to upload.".

NAME	CREATED BY	LAST MODIFIED	ACTIONS
DDL-MNIST	Rajesh Jeyapaul	2 Mar 2019	+ New experiment
vit_ekansh	Rajesh Jeyapaul	2 Mar 2019	+ New experiment

2019 – Emphasize is on healthcare

Water, Sanitation and Hygiene: Essential for Disease Control in Emergencies

!!

Water is critical to Ebola treatment,” recalls Dr. Adam Levine, an Ebola specialist and emergency medicine physician who helped lead the International Medical Corps response in West Africa. “With resources at the site being limited, and with trucking water into such a remote area very difficult, we had only one option. Before we could take in patients, we had to drill our own boreholes.”

<https://internationalmedicalcorps.org/stories-and-news/>



2019 – Emphasize is on healthcare

midwives can make the difference between mothers and new-born babies thriving—or dying.



<https://internationalmedicalcorps.org/stories-and-news/>

2019 – Emphasize is on healthcare

Cholera Outbreak !!

When cholera starts spreading, it can be difficult to control. Outbreaks usually happen when a country's health, hygiene, and water systems break down

The good news is that if people are treated quickly with rehydration solutions (and sometimes, antibiotics), cholera is survivable.



<https://internationalmedicalcorps.org/stories-and-news/>

Key Code patterns -> <https://github.com/derekteay/call-for-code-top-patterns>

[←](#) [→](#) [↻](#) GitHub, Inc. [US] | <https://github.com/derekteay/call-for-code-top-patterns>

Call for Code Top Code Patterns

A list of Code Patterns broken down by industry and technology to aid in the development of applications for IBM Call for Code

Top Patterns by Industry

Healthcare

1. Store healthcare data using Blockchain
 - <https://developer.ibm.com/patterns/storing-private-data-off-chain-using-blockchain-think-healthcare-use-case/>
2. IoT medical asset tracking using Blockchain
 - <https://developer.ibm.com/patterns/develop-an-iot-asset-tracking-app-using-blockchain/>
3. Explore medical datasets using Watson Machine Learning
 - <https://developer.ibm.com/patterns/analyze-open-medical-data-sets-to-gain-insights/>
4. Create a custom speech-to-text model using medical speech data and Watson
 - <https://developer.ibm.com/patterns/customize-and-continuously-train-your-own-watson-speech-service/>

FinTech/Banking

1. Stock market prediction using Watson Machine Learning
 - <https://developer.ibm.com/patterns/predicting-the-stock-market-in-watson-studio/>
2. Create a global finance application using Blockchain
 - <https://developer.ibm.com/patterns/global-financing-use-case-for-blockchain/>
3. Live news web app to monitor market changes

Practical , Effective and High quality Solution

Pattern from Last year submission:

- > Project Owl Trigger point -> Hardware and Software, Solution to First Responders
- > Project Post-Disaster Rapid Response Retrofit (PD3R)
 - > Image classification solution supported by Computer Model. BIM , Houses in Nepal region has the capacity to retrofit
- > Project Lali -> Low cost , ability to predict shape and Path of wild fire
- > Lantern -> Hardware + Software, effective communication system for volunteers / First responders
- > Green Coder -> Blockchain based , Inclusive in terms of including the responsible stakeholders to meet the need

Next step – Register now >

<https://developer.ibm.com/callforcode/>

IBM CODER PROGRAM

Available Waiting Later Completed Filter by Category ▾

CALL FOR CODE®

1 Challenge | 1 New
Call for Code - Start

Join us for 2019's Call for Code challenge! In 2018, over 100,000 developers aro...

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CALL FOR CODE® IBM Internal Challenge

9 Challenges | 9 New
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Solving the most difficult problems in the world requires great minds and great t...

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More than a Challenge – It is
personal !!

UK-based Khalsa Aid brings hot food and clean water to people in Odisha reeling from Cyclone Fani



2,357 likes

khalsaaid_india



Cyclone Fani (Odisha) :

Our volunteers are serving hot meals (Langar) to over 4000 people of
BaliyaPanda & Girija kanta sinha Village, Puri Odisha.

We need your support.

Commit to the Cause, Push for change and Answer the call – Thank you !!

