IDRAS – Innovative Disaster Recovery Activation System

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A typical disaster risk management system is structured along five stages that should include prevention, protection, preparedness, response, recovery and review. **IDRAS** – Innovative Disaster Recovery Activation System is an innovative solution which can be used proactively and reactively in case of any natural disaster. The solution is defined in two modes namely Proactive and Reactive Mode.

Proactive Mode:

Proactive Mode will have two components and integrated to work in tandem - a web and mobile app that will be available on Apple and Android platforms, however it can be scaled up to other platforms as well. This mode can be activated prior to any calamities such as Cyclones or floods that are anticipated. It can ascertain the presence of humans in these possible areas of impact. The Web application will be accessible only for authorized departments such as UN, Government bodies who are authorized to do the Disaster Management. There are 3 probable scenarios where we can use Proactive mode –

1) Push geo-location from mobile app to central DB
2) Pull geo-location from mobile device and represent to web application as heat maps
3) Share the geo-location of impacted area by relatives or friends using Mobile app

The system can be used to proactively save or evacuate people from the impacted location based on the heat maps generated by web application that is developed using IBM Watson technology.

Reactive Mode:

Reactive Mode is another facet to same web application with provision to mark the impacted location that will be identified by the Mobile Cell tower in impacted area and the information of last connected mobile devices from that tower needs to be shared with the web page. Based on the available data Disaster Management team could activate the rescue operations and act swiftly. The data from the mobile tower will be available only to authorized Disaster Management department or Government bodies as these are sensitive information. System will be filtering out unique numbers based on the towers within the selected range and timeframe. This mode can be used in any calamities where we could hardly get any time to react and alert individuals to evacuate.

Technologies Used:

- Server -
  - IBM Watson
  - Pixiedust
  - Spark NY
  - Jupyter notebooks
  - Python 3.0
- Client –
  - Cordova 8.0
  - PHP
  - MySQL

Enhancement options for IDRAS

- Options to integrate with alerting systems related to natural disasters
- Options to extent the rescue operations to non-human living creatures
- Features that can mark the location where rescue team has already done the operation, eliminating duplicate efforts.