

Disaster Response Design Concept

Drone Mailman

Carnegie Mellon University

We are working with Eaton

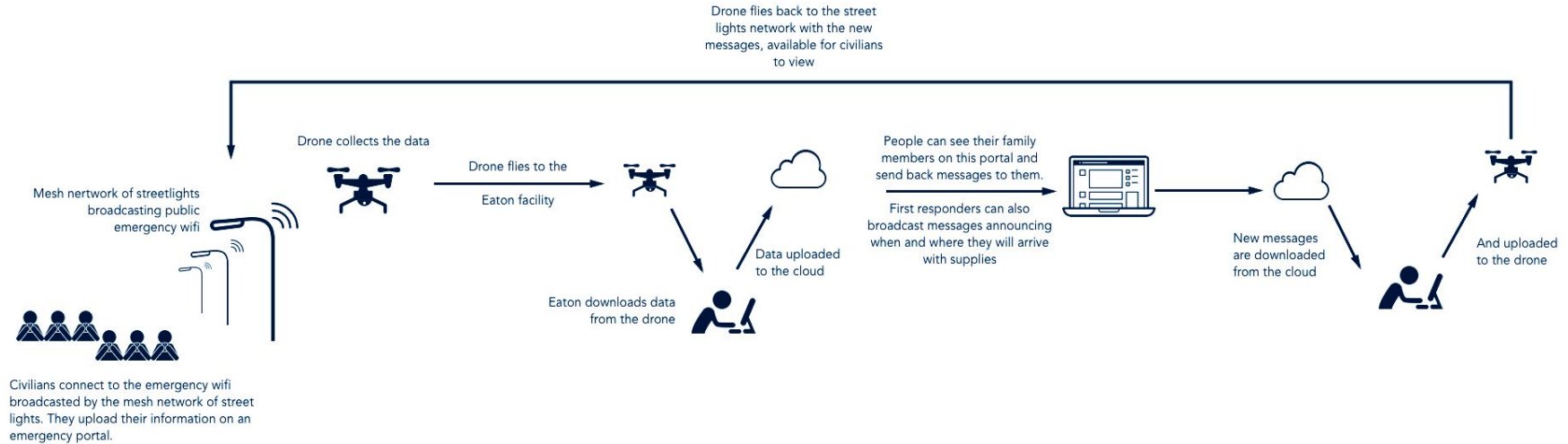
- Eaton - A Power Management Company
- Offices in 175 countries
- Dedicated towards improving the quality of life around the world through innovative solutions
- Uniquely positioned to help the people in need with its resources

Problem Area

After Hurricane Maria, many Puerto Rican citizens were faced with power and communication blackouts. Through research with actual citizens, we learned that **the ability to communicate** post-hurricane was the primary need. Citizens could live without power for a few weeks, but the struggle to communicate weighed especially heavy.

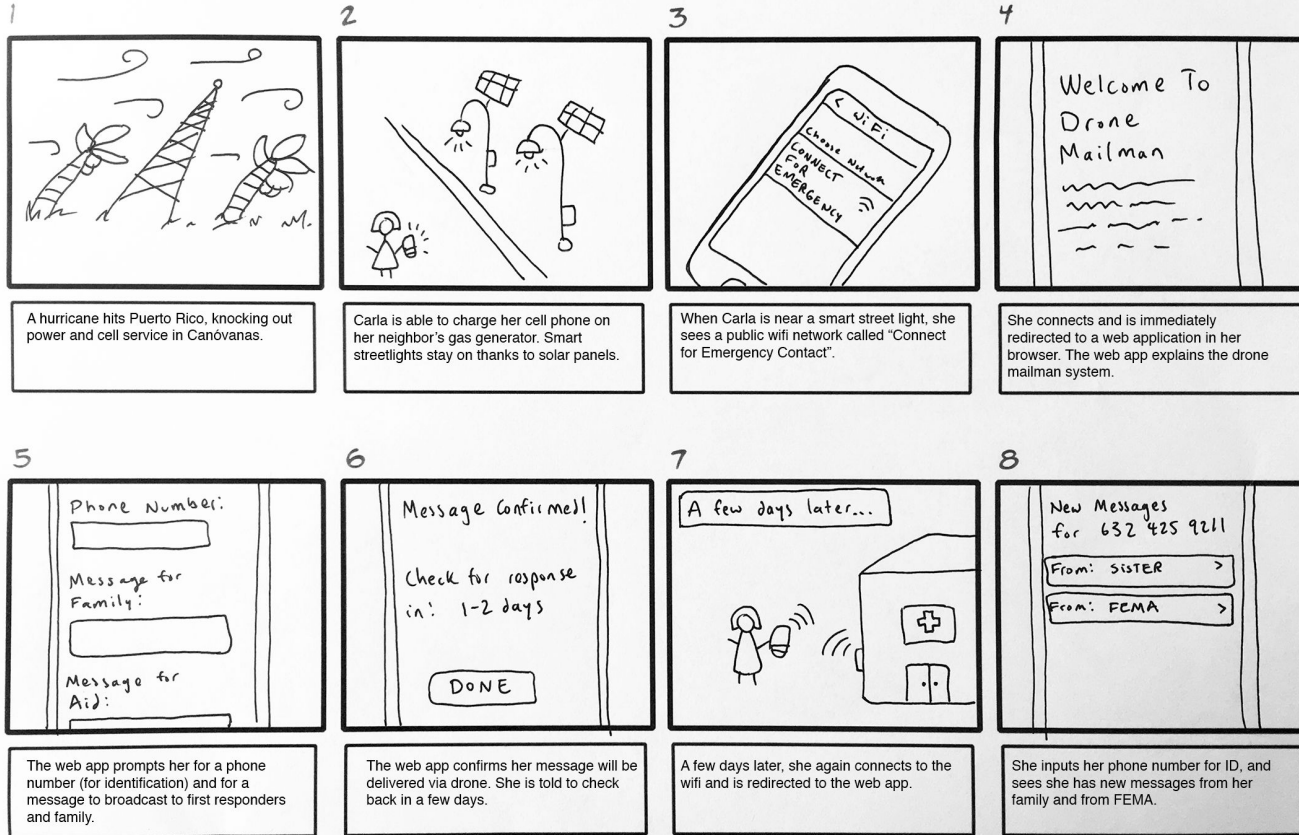
Affected citizens could not communicate with aid workers or their families, leading to inefficient aid work and intense family worry.

Design Concept

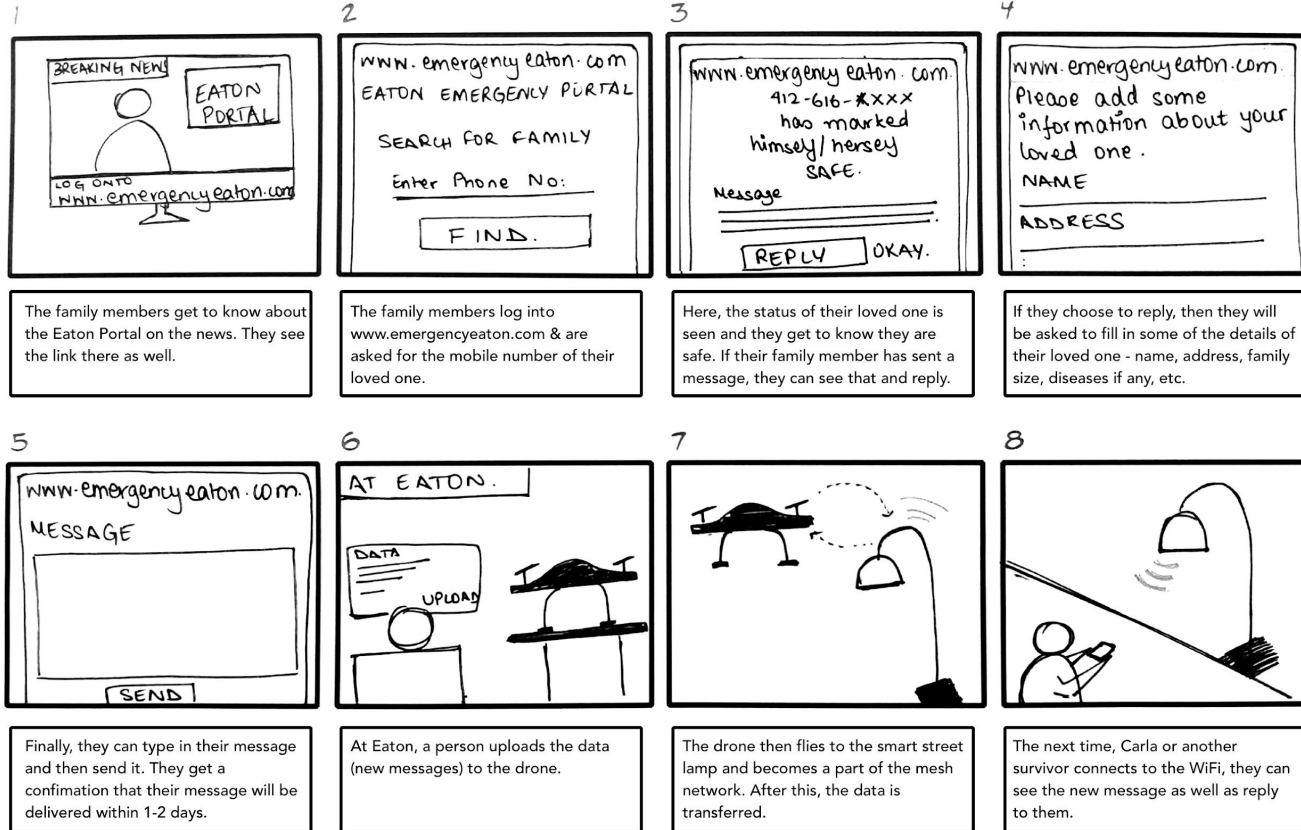


****Mesh networks** wirelessly connect computers and devices directly to each other without passing through any centralized organization like an Internet Service Provider. During disasters when the internet is down, mesh networks still work.*

Disaster Survivor's Perspective



Survivor Loved Ones' Perspective



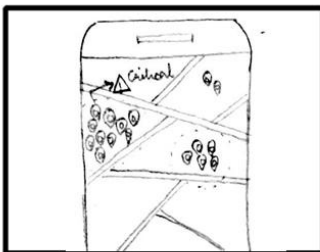
First Responder's Perspective

1



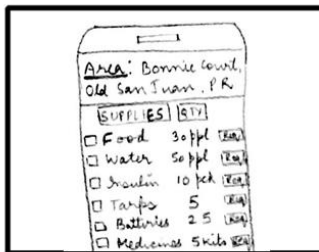
First responder logs into the Eaton disaster response portal

2



He is directed to a map showing the areas that need help. Areas that comprise of populations that need immediate help like older people, pregnant women and children are marked critical

3



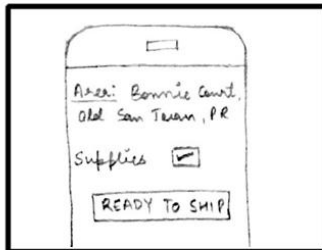
He clicks on the critical area. Messages sent by civilians on this portal are processed back-end to extract the supplies they need which are then shown in the first responder's portal

4



If the first responder is short of any supply, he can send a request to higher authorities in the organization to restock their inventory.

5



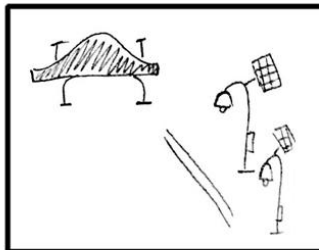
After checking all the supplies that the civilians of an area have requested, the first responder is ready to ship those supplies to that area

6



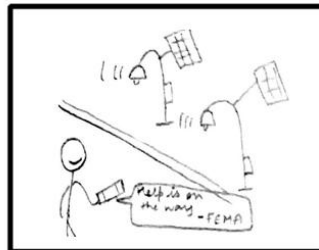
Before exiting the portal, he is asked to broadcast an automatic message to the civilians informing when and where they should assemble to receive supplies

7



Drone carries this new message to the street lights mesh network

8



When civilians go near the network, they get new message from FEMA that help is on the way