



**PROBLEM**

Worldwide, over 350 natural disasters strike every year, damaging the existing communication infrastructure. This results in relief coordination carried out without insight into what the needs are and where they are greatest. The consequence is lives lost and valuable resources wasted.

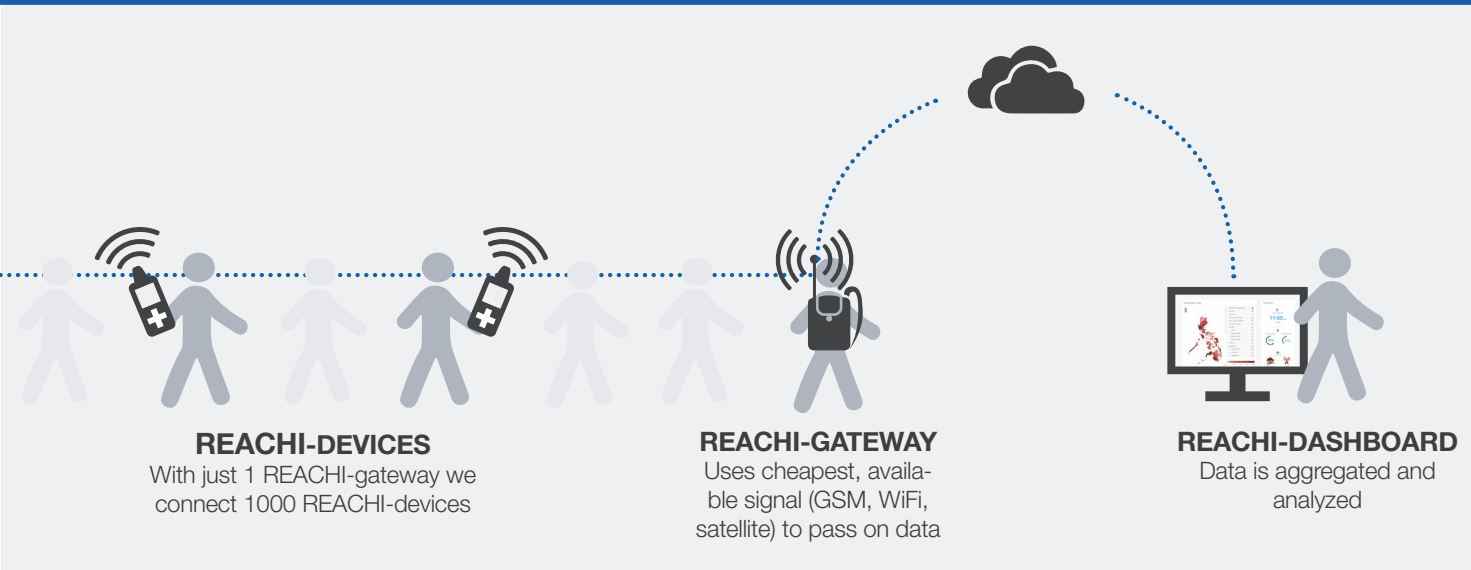
**SOLUTION**

REACHI is a resilient information management system designed to radically optimize disaster relief. REACHI enables communication from local volunteers to relief coordinators via wearable and disaster proof mesh devices, thereby efficiently accelerating need-based decision making.

**STATUS**

The REACHI-system has been tested and proven in the Philippines with the Red Cross as test partner. It has involved more than 10 tests in the Philippines and 4 device iterations. Final proof-of-concept was obtained in September 2018, and thus the REACHI-system is now ready for implementation.





### UTILIZING EXISTING CAPACITY

Local volunteers will own a REACHI-device prior to disasters, enabling them to report before, during and after. The devices create a mesh network, where data is sent from device to device within radio range. Due to the density of volunteers, data can travel long distances despite limited range between each volunteer.

### UNIQUE MESH PROTOCOL

The REACHI-system uses a unique mesh protocol that addresses typical limitations through:

- 1) Time synchronized operation.
- 2) Autonomous nodes.
- 3) Patented routing protocol.

### SYSTEM ARCHITECTURE

The REACHI-devices are connect to the cloud via a REACHI-gateway. The gateways are carried in backpacks and are redundant, ensuring reports find an-

other way if one gateway should fail. The gateways automatically selects the cheapest available signal for data transport and can store reports if a connection is periodically unavailable.

### TWO-WAY COMMUNICATION

From the REACHI-dashboard, the relief coordinators can broadcast messages to all volunteers This provides a direct link to the areas that are hard to reach.

### ROBUST HARDWARE

The devices have power for at least 1 month in one charge and can survive immersion as well as shock – unlike most smart phones.

### SIMPLE INTERFACE

The volunteers fill out questionnaires by counting or choosing between a list of possible answers. The interaction principles have been successfully tested with local volunteers and the information structure

can easily be adjusted and updated according to learnings during and after implementation.

### NO MANUAL DATA HANDLING

Reports are automatically aggregated in a digital overview for relief coordinators. The data is currently available in a web application, and we can enable data integration to existing analytics systems. Basing information on predefined options makes communication less flexible but removes issues with big data analysis. The format is optimized for decision-making.

### NEED-BASED DECISION-MAKING

Quick and early access to information from all affected areas will make prioritisation of the early response more informed, ensuring optimal use of the limited resources particularly in the early stages.