Open-Source Software for Emergency Services and Disaster Recovery
Founded 2010 in Aljunied, Singapore, **Entropy Solution** focuses in delivering cutting-edge innovations catered for Telco, Enterprise and Public Sector.

We offer location-based services, web/mobile-based applications, and telco solutions that brings convergence and simplicity to a multi-technology environment.

The company opened it’s Philippine office in 2013.
Philippines: Paradise at Risk

• One of the most disaster risk-prone nations in the world
• Located along the Pacific Typhoon belt and within the Pacific Ring of Fire
• The “Big One”, a 7.2 magnitude earthquake could kill 34,000 people
Typhoon Haiyan - Day 0

- Major infrastructures were heavily damaged
- No food
- No clean water supply
- No electricity
- **Cellular communications were down**
Typhoon Haiyan – Day 1

- Three C130 aircraft were able to land there on the first day, bringing personnel, relief goods, and a communications van—thus partly restoring communications in the area allowing better coordination.
Communications Devices Available

Satellite Phones
- Limited availability due to subscription cost
- Line of sight dependent
- Call quality dependent on Line of Sight to Satellite

2 Way Radio
- Limited availability due to license to use policies
- Half duplex communication
- Range is dependent on device power output
eReach – Portable GSM Solution

eReach aims to improve the emergency communication system
- Portable GSM network
- GSM standard range coverage
- Reliable communication using 2G GSM Band
- Operator agnostic
- Most mobile phones support 2G Frequencies
- Abusive use control feature
- Runs on open-source software – OpenBTS or Osmocom
eReach Deployment

- Power up in less than 30 minutes
- Mobile phones connect and receive initial SMS message providing procedures, alerts and news
- Mobile phones are notified about emergency hotline for immediate assistance
- Mobile phones are notified emergency SMS hotline for quick information relay
eReach HQ

**eReach BTS Management**
- Configurations
- License Management
- SMS Broadcast

**Incident Management**
- Log call information from Hotline
- Log SMS information
- Relay information between responders
- Casualty and Survivor Reports

**Social Media Management**
- Post status to social media
- List of survivors
SMS Broadcast

- Emergency news
- Announcements
- Safety procedures
- Hazard alerts
- Situational Information
Usage Regulation

- Abusive Control mechanism to ensure eReach is operating as intended
- Regular monthly drills of equipment to ensure:
  - Operation license is updated
  - Software is updated
  - Configuration is updated
- Operational audit
- Physical Hardware maintenance
Social Media Integration

• Send Text Message (SMS) to Emergency Access Code

• Message gets posted to Government Agency Social Media Page

• Manage messages before posting to Social Media page via eReach Management UI or via eReach HQ
eReach LTE – Portable LTE solution

- Portable LTE network
- Enables delivery of live video and other multimedia applications
- Runs on open-source software - OAI
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