

Earthquake Response and Recovery in San Diego Region: **Perspectives of Collaboration**



Eric G. Frost



March 10th, 2020



Social Media (for Disasters) Is About **RELATIONSHIPS**, Often Over a **NETWORK**, with Critical **CONTENT**

Most Disasters Are Local---So Interacting with **Neighbors**

Sirens ???
Does anyone know what's going on??hear lots of sirens down by Baltimore Drive...

New 1 day ago · 22 neighborhoods in General

Thank Comment ▾

7 11

Marisa Papitto, Lake Murray West **New**
Heard a couple of fire trucks and then police sirens heading down Cowles Mountain from Jackson

1 day ago Thank Reply

Jenny Martinez, Lake Murray Central **New**
Same

1 day ago Thank Reply

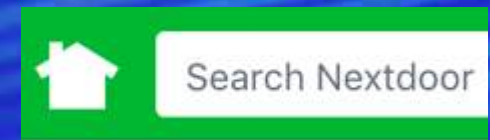
Shanti Hofshi, Lake Murray Central **New**
House fire June Lake. Fire Department seems to have

C.J. Truesdale, Del Cerro South **New**
Also an accident on College N at 8. Car was doing 120 down 8 west from Lk Murray, (possibly connected to parkway/lk murray incident) got off on college N and rolled it up on the... See more

Edited 20 hr ago Thank Reply

12

C.J. Truesdale, Del Cerro South **New**
College IC Terminated at 2340 hrs . College ave will be open in a few minutes as soon as units clear.



One of Best Social Media Tools is **Talking** to Each Other To Help Walk Next Door---**WHO** are your **NEIGHBORS?**

Social Media (for Disasters) Is About **RELATIONSHIPS**, Often Over a **NETWORK**, with Critical **CONTENT**



San Diego Police Department



Begin Date/Time: 02/22/2020 01:03 AM

End Date/Time:

Beat: 246

Location: 11800 Spruce Run Drive

Neighborhood: Miramar Ranch

Inc Type: Fatal Accident

Synopsis: A 26 year old male was riding his 2017 Yamaha motorcycle westbound Scripps Poway Parkway at a high rate of speed. The roadway curved to the right but he was traveling too fast to negotiate the bend in the roadway. The male continued straight, struck the raised center median curb, drove onto it and continued across and into the eastbound lanes of Scripps Poway Parkway. The male and his motorcycle came to rest along the south curb-line. The male was pronounced deceased at the scene. SDPD's Traffic Division is investigating the collision.

Watch Cmdr Contact: Officer J. Buttle

One of Best Social Media Tools is Talking to Each Other To Help

Walk Next Door---**WHO** are your **NEIGHBORS?** **TIME?**

Social Media (for Disasters) Is About **RELATIONSHIPS**, Often Over a **NETWORK**, with Critical **CONTENT**

Most Disasters Are Local---So Interacting with **Neighbors**

At Home?



On
Road?



At Work?



In
Canyons?



One of Best “Social Media” Tools is Talking to Each Other To Help
WALK Next Door---**WHO** are your **NEIGHBORS**?

Collaboration with Facebook Disaster Maps

Use Meta-Data & Preserve Privacy



facebook Data for Good

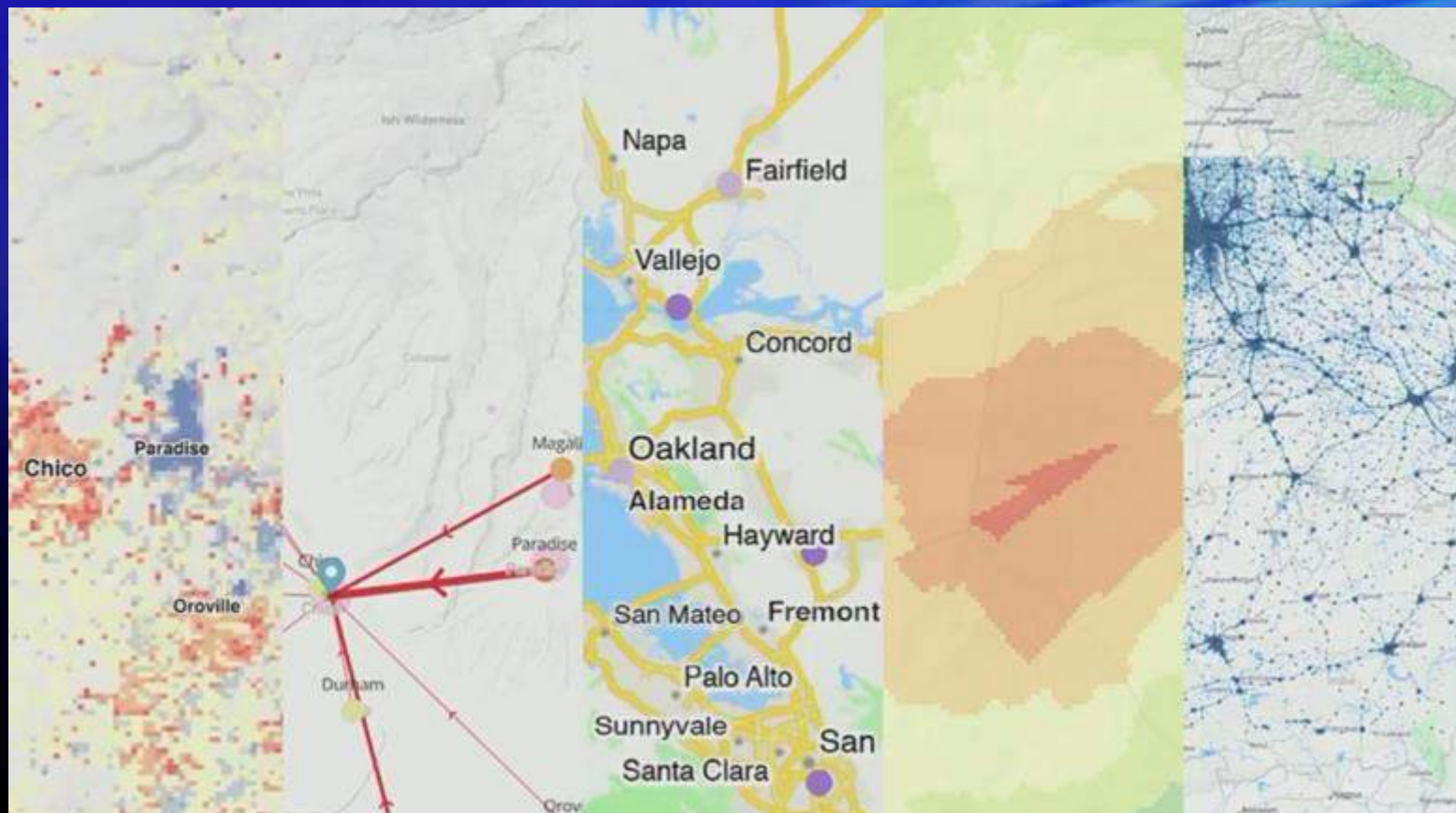


And where they were checking in safe

Facebook Disaster Maps: Aggregate Insights for Crisis Response & Recovery

Conference on Information Systems for Crisis Response and Management (ISCRAM)

By: Paige Maas, Shankar Iyer, Andreas Gros, Wonhee Park, Laura McGorman, Chaya Nayak, Alex Dow



Facebook
Population

Movement

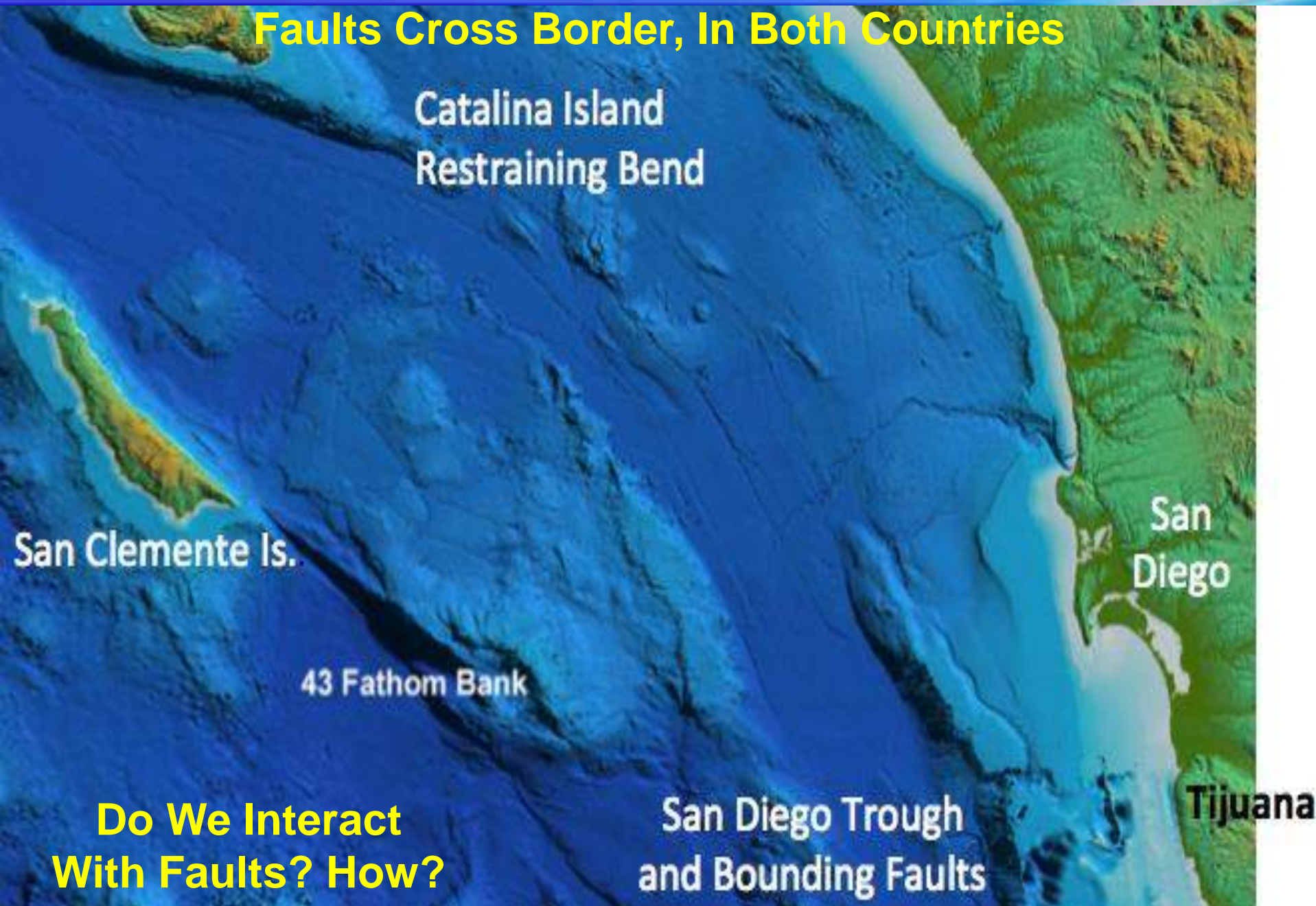
Displacement

Network
Coverage

Power
Availability

Offshore Faults Are Greatest Concern for San Diego & Tijuana

Faults Cross Border, In Both Countries



**Do We Interact
With Faults? How?**

Thousands of Sensors (IoT) Along Border and Region and Data Fusion in Dashboard Can Provide Compelling Tool



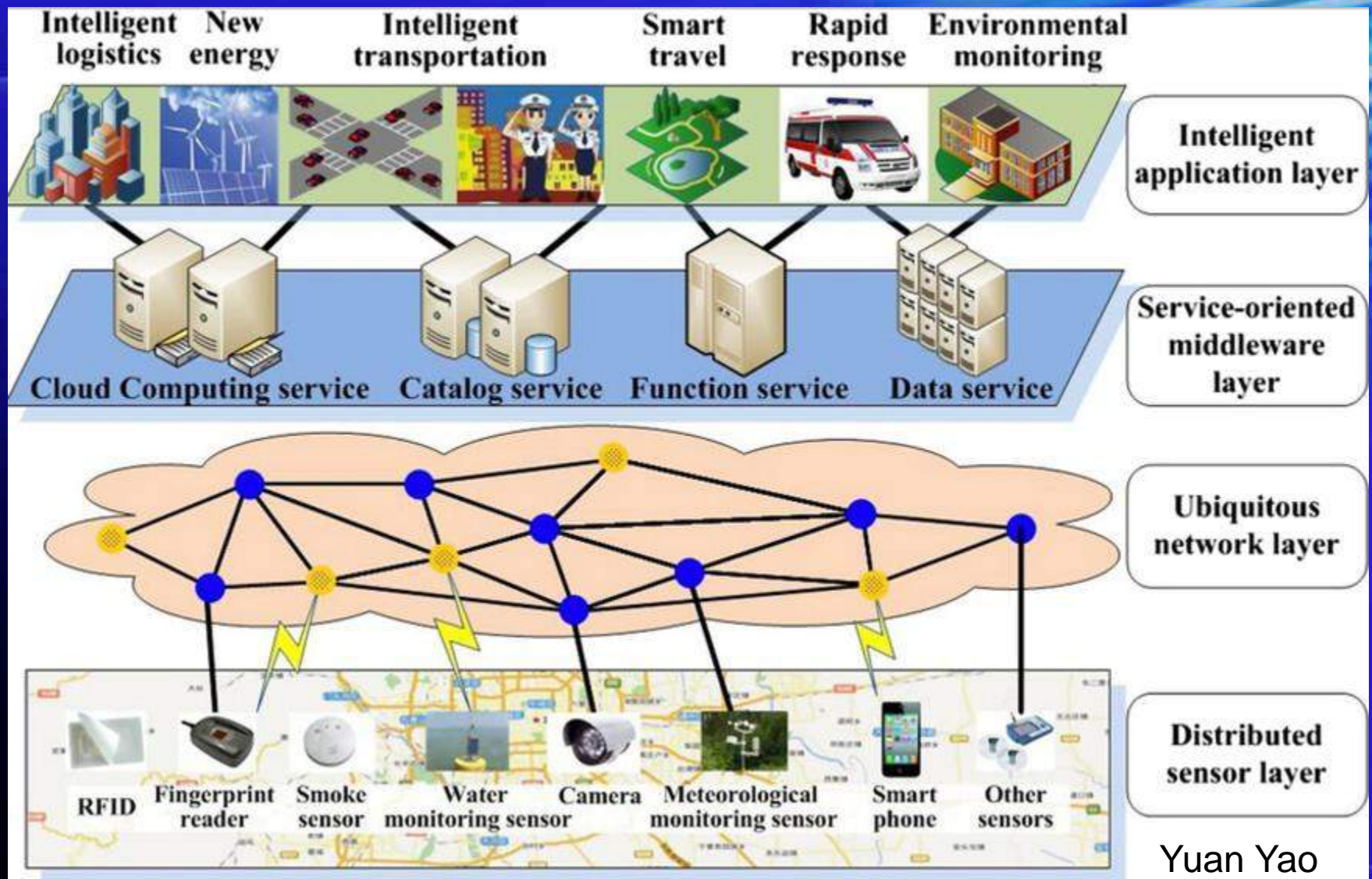
<https://www.kernelsphere.com/remote-sensing.html>

Yuan Yao

Time-to-Decision Assistance Can Be Nearly Real Time

Most Powerful Neighbor May be Thousands of Sensors

Internet of Things—**Social Media with Sensors & 5G**



Time to Decision Assistance Can Be Nearly Real Time

CBX Is an Example of Technology Enabling **Relationships:** **Linking US and Mexico with Physical and IT Bridge**



Cross
Border
Xpress
“CBX”



Airport &
Customs
To Enhance
Commerce With
Private Sector

Area of the Former Wall is North of Lanes Taking Trucks to Otay Mesa Port of Entry Crossing at End of Double Fence

Former
Wall
Prototypes

Trucks = \$70 Billion/Year

Can We Build Ultra-Smart, 5G Border for Security & Trade?

“Trade Pedigree” is Developed for Border Agent by
Linking Massive Data Sets much like Internet Browser
Pattern Through Time Assists in Disasters



Trucks Communicating Sensor Data & Location Along Route

BORDER WAIT TIMES

BASICS OF CROSSING
THE BORDER



ATTEND
OUR MEETINGS

CONTACT US

ESP

Menu



BORDER WAIT TIMES		
Into U.S.		Into Mexico
SAN YSIDRO	OTAY MESA	TECATE
LANE	LANE	LANE
ALL TRAFFIC 24 HRS/DAY	ALL TRAFFIC 24 HRS/DAY	ALL TRAFFIC 5 AM-5 PM
0:40 NO DELAY	1:15 NO DELAY	UPDATE PENDING
READY LANES 24 HRS/DAY	READY LANES 24 HRS/DAY	READY LANES 5 AM-5 PM
0:20 NO DELAY	1:10 NO DELAY	UPDATE PENDING
SENTRI LANES 24 HRS/DAY	SENTRI LANES 24 HRS/DAY	SENTRI LANES 5 AM-5 PM
0:10	LANES CLOSED	UPDATE PENDING
	CARGO STANDARD 6 AM-5 PM	
	UPDATE PENDING	
	CARGO FAST 6 AM-5 PM	
	UPDATE PENDING	

* SOURCE: CBP BORDER WAIT TIMES

UPDATED 1 WEEK AGO



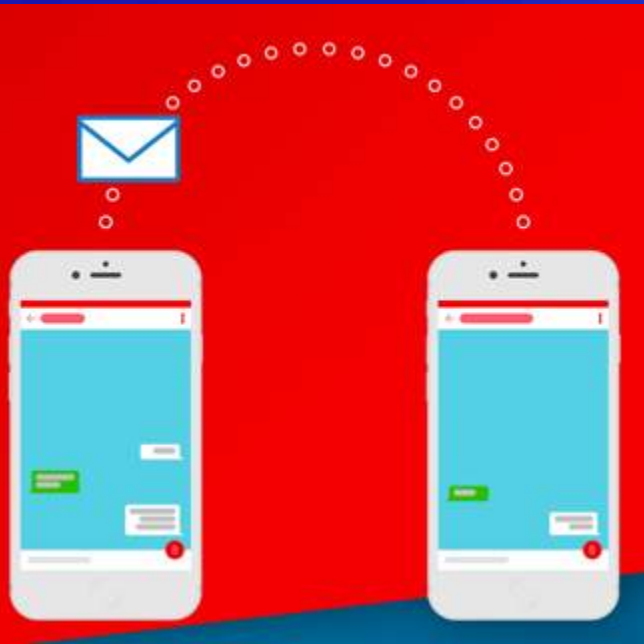
Smart Border Coalition Already Started Down Road of Providing Real-Time Data Dashboards to Assist Border Travel and Trade

Earthquake
Response



Earthquake
Recovery

FireChat & Bridgefy: Mesh Messaging Like Hong Kong Protests, But Also Disasters: When Not Using Internet or Cell Service, but Bluetooth etc.



 **bridgefy**

75,000 downloads in 7 days in Hong Kong



Smartphones Linking (Mesh Messaging) Without Internet or Cell Phones Connected Via Bluetooth, WiFi, or Apple Multipeer



STARTUP NEWS



How Mexican app Bridgefy is connecting protesters in Hong Kong

<https://www.siliconrepublic.com/comms/hong-kong-mesh-network-bridgefy>

Lifesaving Advice



... the info you never knew you'd need, until you need it most, always within arm's reach, regardless of connectivity

... Update, Embed, then Notify: transforming the ability to predict into the power to prevent and fund local preparedness exercises, disaster recovery and diversity

Here's the concept ... **Lifesaving Advice**

With voice request or Google search find the local shelter, hospital, or evacuation route ... easy right.

... but only if you have a connection to the network.



Now, place your smartphone on airplane mode and make the same request.
'Zero - Zip - Nada'




The best way to ensure that critical content will always be available is to have the local emergency info constantly being updated and embedded into the memory, followed by a sponsor-driven notification ... this will instill a greater level of confidence knowing you'll have what you need, regardless of connectivity.

5G & Earthquake Recovery:

Use San Diego as Demonstration Site

How Do First Responders & Public Really Use It?



Experience: Smooth social media, music and video streaming, etc.	10ms	 Latency	<1ms	Experience: Near real-time for remote monitoring and control of solutions that require precision (ie. autonomous vehicles, remote surgery, etc.)
Example of solutions: Smart utility meters, Vehicles tracking, etc.	100 Thousand Connections/Km2	 Connection Density	1 Million Connections/Km2	Example of solutions: Smart cities with connected infrastructures, Smart factories, etc.
Best for mobile Video, social media, Internet and game	1Gbps	 Peak Data Rate	20Gbps	Best for mobile 4K video and game streaming, AR and VR

Digi Highlights 5G in Emergency Services, Learning and eSports

<https://businesscirclekl.com/digi-highlights-5g-in-emergency-services-learning-and-esports/>

5G CONNECTING THE COMMUNITY



How Will 5G Actually Provide
Compelling Solutions to
Disaster Response &
Recovery?

**The Future of Emergency
Response:**
5G Ultra Wideband

Demonstrate in San Diego!

TheSurvivalMom.com



SDSU
Georgia



SDSU
Mission Valley



SDSU
Main Campus



SDSU
Imperial Valley

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