

# ICTs FOR DISASTER RESPONSE

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# OVERVIEW

- Role of ICTs in disaster response and preparation
- Best practices
  - Government
  - Iridium
- Push-to-talk services
  - What they are
  - Advantages for disaster response
- Opportunities to improve policy to make better use of ICTs in disaster response

# IRIDIUM – A SATELLITE CONSTELLATION LIKE NO OTHER

**A vital, global communications provider of mobile voice and data services via 66 in-orbit satellites**

- Serving 788,000 customers (Q1 2016 subscriber and financial data provided)
- Key Applications: handsets, machine-to-machine (M2M), maritime, aviation, government, emergency & remote voice and asset tracking
- Building Iridium NEXT constellation
- New constellation will deliver expanded capacity and higher data speed capabilities
- Global Coverage
- Independent of terrestrial infrastructure
- Providing connectivity when terrestrial networks are not available.



# CRITICAL ROLE OF ICTs IN DISASTER RESPONSE

## Emergency Communications: Sequence of Events

1. Disaster Warning

2. Evacuation

3. Disaster Strikes

4. First Responders

5. Search & Rescue

6. Disaster Assessment

7. Reinforcements Arrive

8. Cleanup

Mobile Satellite Services are critical in the early stages of natural disasters, geopolitical events and crises.





## GOVERNMENT BEST PRACTICE

- Developing disaster communications management plans
- Pre-positioning emergency equipment and solutions
- Developing alert and early warning systems
- Training
- Maintaining equipment
- Advance licensing and type approval
- Work across regions and with all stakeholders to eliminate barriers and improve response capabilities

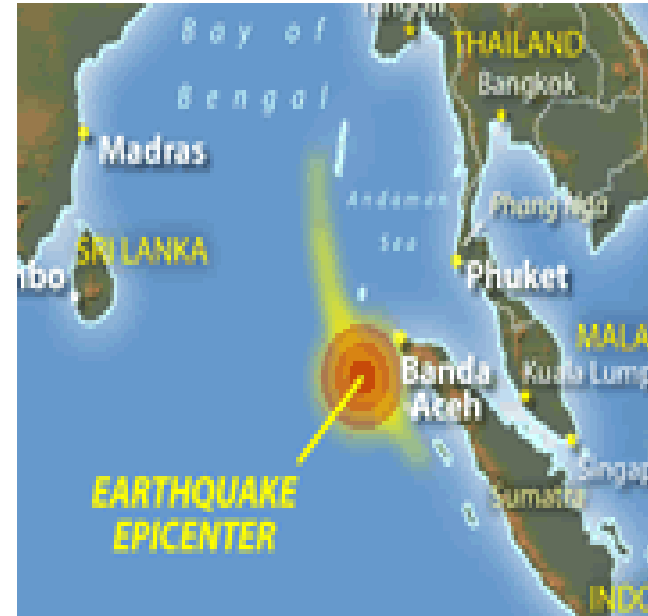
## IRIDIUM'S BEST PRACTICE

- Working with distribution partners:
  - Ensure supply chain continuity
  - Facilitate rapid deployment
- Providing phones with solar charging accessories
- Promoting pre-positioning of phone for preparedness
- Supporting government efforts to develop national preparedness plans
- Iridium has donated 70 phones to the ITU, and works with ITU-D closely to assist when disaster strikes



## HISTORICAL USAGE OF IRIDIUM FOR DISASTER RECOVERY

- Taiwan Earthquake (1999)
- South Pole rescue (2001)
- September 11 (2001)
- Asian Tsunami (2004)
- Hurricane Season in US and Caribbean (2005)
- Pakistani Earthquake (2005)
- Hurricanes Gustav, Hanna and Ike (2008)
- Tropical Cyclone Aila (2009)
- Zimbabwe Floods (2009)
- Haiti Earthquake (2010)
- Japan Earthquake (2011)
- Hurricane Sandy (2012)
- Nepal Earthquake (2015)
- Ecuador Earthquake (2015)



# SEARCH AND RESCUE

- Bluefin-21 submarine searches for Malaysia Flight 370





# MARINE CLEANUP

MetOcean buoys transmitting via the Iridium network help with the clean up of the largest accidental marine oil spill in history in the Gulf of Mexico in 2010.



# DISASTER RECOVERY

- Supporting firefighters during Texas wildfires



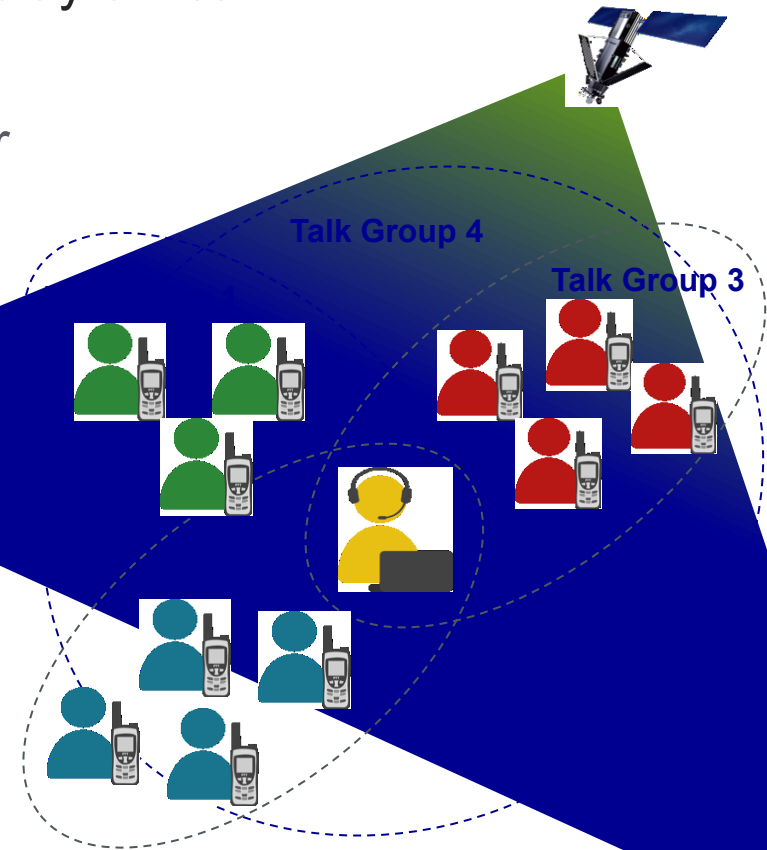
# EXAMPLE: ADVANTAGES OF SATELLITE PUSH-TO-TALK SERVICE

- Push-to-talk (PTT) – two-way communication service
  - Similar to ‘walkie talkie’
- World’s only global Push-to-Talk Network
  - Efficient – no wasted time
  - Clear – higher quality information transfer
  - Durable – handsets built for physically stressful conditions
  - Options for connectivity – person-to-person communication
- Satellite PTT advantages:
  - Reliable: satellite networks operate beyond reach of natural
  - Expanded coverage: wider geographic coverage than terres
  - Cost-effective: no repair required post-disaster and less exp
  - Interoperable: integration with all other networks



# SATELLITE PUSH-TO-TALK SERVICE FOR EMERGENCY COMMUNICATIONS

- Flexible Talkgroups configurations can play critical role for emergency relief efforts.
- Programmed over the air in real time for fast and simple deployment globally



## BETTER LEVERAGING ICTs IN DISASTER RESPONSE

- Consider regulatory amendments **in advance** of disasters
- Simplified licensing procedures
- Lower licensing fees
- Special temporary emergency licensing procedures:
  - Exemption from onerous licensing procedures
  - No customs/import restrictions
  - Relaxed local gateway requirements

## USE OF ICTs FOR DISASTER RISK REDUCTION

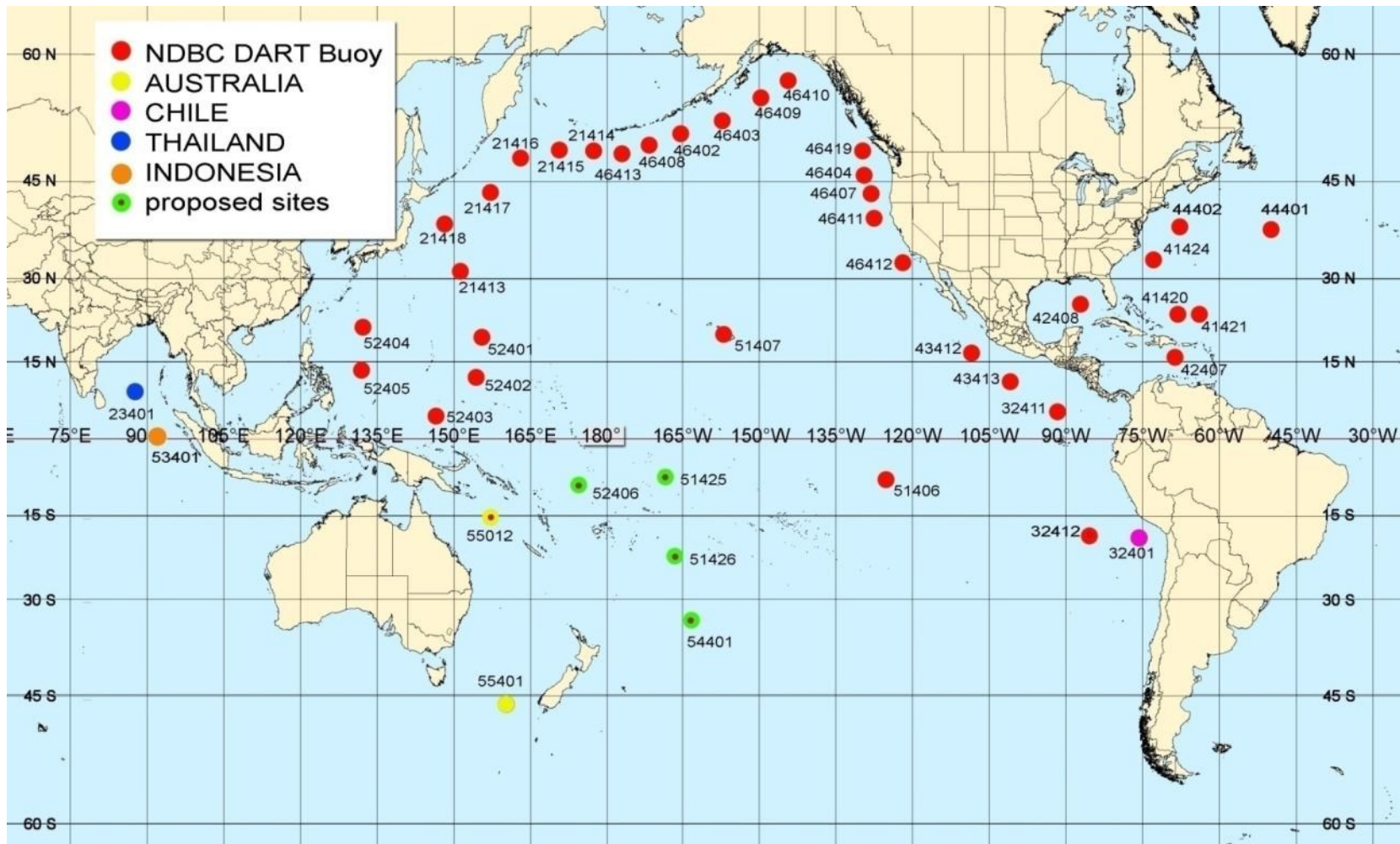
- Adoption of certain technologies or solutions **in advance** is essential
- Are traditional regulatory frameworks inhibiting disaster response?
- Example: M2M applications
  - Range of solutions for: environmental monitoring, disaster detection, early warning
  - Innovation and flexibility key – ability to develop tailored solutions
  - Emerging solution for disaster response that doesn't fit traditional regulations
- Regulatory review an essential part of disaster risk reduction

# EARLY WARNING

## Dart II Tsunami Warning System



# DART®II TSUNAMI WARNING SYSTEM







## RECOMMENDATIONS

- Develop disaster management plans
- Put equipment, early warning/alert systems in place
- Review regulations to ensure flexibility
- Introduce special licensing procedures for disaster response
- Work with industry to ensure swift disaster responses and promote disaster preparation



Thank you