



February 16, 2018

**BY ELECTRONIC FILING**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

Re: Hurricane Response, PS Docket No. 17-344

Dear Ms. Dortch:

On February 15, 2018, Hughes Network Systems, LLC ("Hughes") met with the following staff from the Public Safety and Homeland Security Bureau: Anita Patankar-Stoll, Jennifer Holtz, Brian Luu, Jeff Goldthorp, John Collins, and Debra Jordan. Hughes was represented by Jennifer A. Manner.

At the meeting Hughes discussed, as filed in its comments and the attached presentation, the efforts it made to restore communications in Puerto Rico and the U.S. Virgin Islands following the 2017 hurricane season. Hughes discussed the important role of satellite broadband in bringing communications services back to the government, retailers, schools and relief agencies, among others, in Puerto Rico and the U.S. Virgin Islands.

Pursuant to the Commission's rules, this notice is being filed in the above-referenced docket for inclusion in the public record. Please contact me should you have any questions.

Respectfully submitted,

*/s/ Jennifer A. Manner*

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Jennifer A. Manner  
Senior Vice President, Regulatory Affairs  
11717 Exploration Lane  
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(301) 428-5893

Attachment

cc: Anita Patankar-Stoll  
Jennifer Holtz  
Brian Luu  
Jeff Goldthorp  
John Collins  
Debra Jordan

# Review of the 2017 Hurricane Season

Tony Bardo

Hughes Government Systems

# Hurricane Disaster Recovery – Hughes Summary

- Govt. customers in PR/USVI
  - FEMA: 60 sites installed (20 additional units on stand-by)
  - Each site with 2 terminals – Hughes GEN 5 for Data & Spaceway 3 for Voice (8 phones/site)
  - All sites configured with “Unlimited Data Plan” – Averaging over 230GB/site/mo.
  - Averaging over 25K call completions per month on Spaceway 3
  - Trained FEMA personnel on VSAT Installations
  - 12 Hughes Certified Installers helped with initial installations
  - Other Departments & First Responders include:
    - ResponseForce1 (TX, PR & USVI), DynCorp (US Army Corps of Engineers)
    - Campo Rico Group: hospitals, churches
    - Dept. of Interior, USDA, CBP (w/added BGAN service for mobility)
  - Humanitarian support:
    - 58 sites including 47 sites in partnership with DishCARES
- Texas support FEMA Mass Care Shelter and Responder Support Camps
  - Randolph Air Force Base (Seguin, TX)
  - Corpus Christi, TX
  - Houston, TX

# Hughes Response to Hurricane Maria

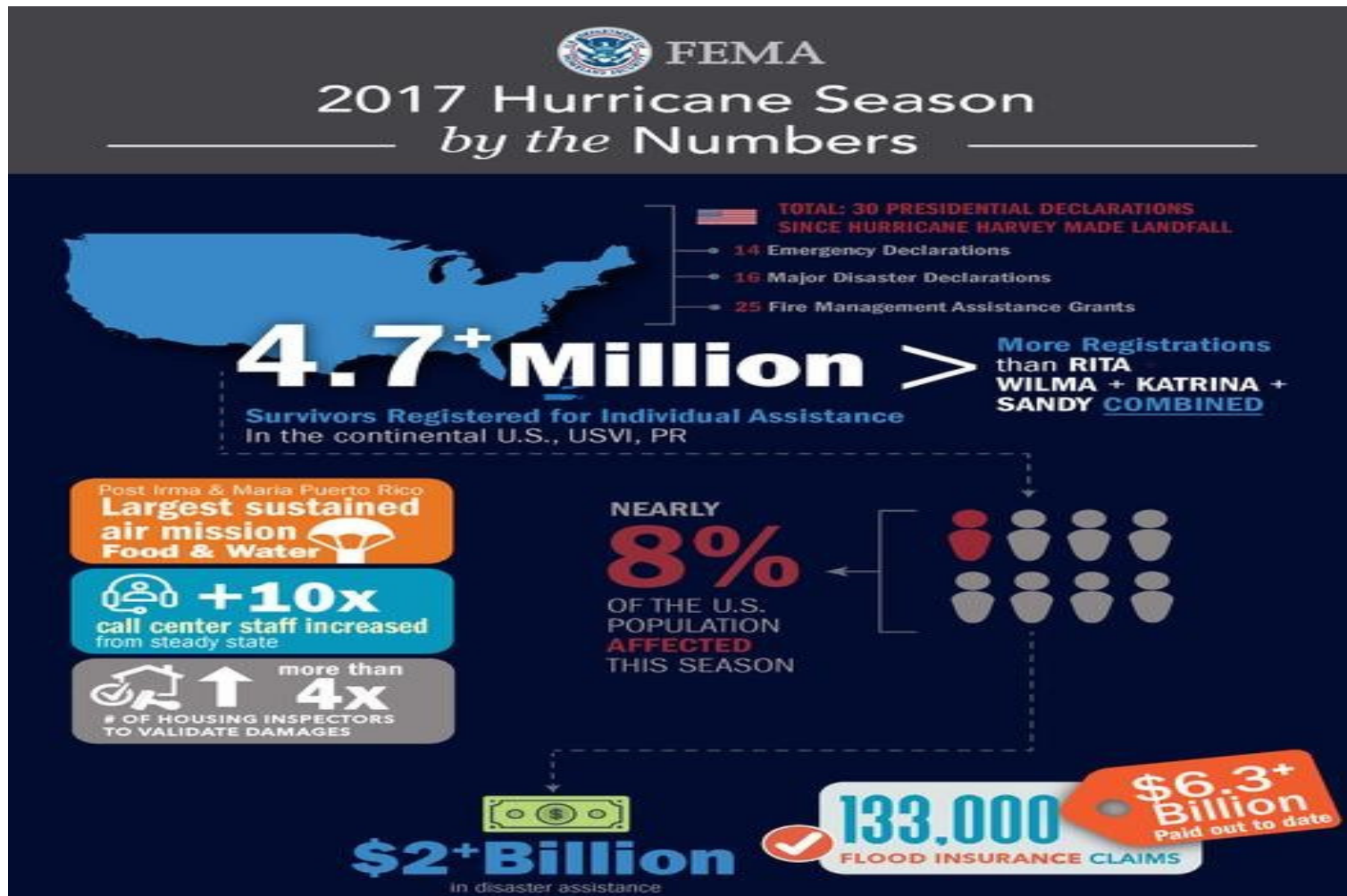


**Phones lines were down, cell towers destroyed.  
Virtually all established communications services ceased to operate!**

**“Your company stepped up big time. You did things that have never been done before. You helped save lives and you helped a lot of people!”**

**- Adrian Gardner, Chief Information Officer, U.S. Federal  
Emergency Mangement Agency (FEMA)**

# The FEMA Perspective....



# The response...multiple transport options

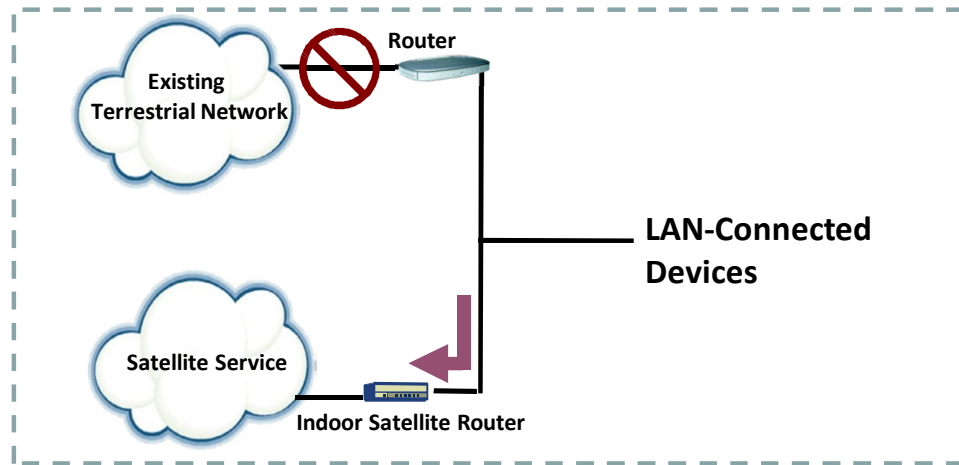


# The blueprint: Must be innovative, ambitious, achievable and result in a more resilient nation

- **READY** our nation for catastrophic disasters
- **LEVERAGE** technology to help Americans prepare for disasters
- **ENHANCE** intergovernmental (G2G), government-business (G2B), and government-academia (G2A) cooperation
- **REDUCE** the technological complexity of disaster response.....promote interoperability
- **HARNESS** the power of the crowd for both two-way communications and warning dissemination
- **IMPROVE** continuity and redundant communications capabilities (e.g., survivable communications)



## Satellite Service as a Backup to an Existing Private Network Enables Very High Network Availability and Continuity of Operations



- **Virtual Router Redundancy Protocol (VRRP)**
  - Provides automatic failure detection and recovery of link and router
  - Delivers for no-loss-of-data operation
- **Maintains MPLS “class-of-service” tags (DiffServ)**
  - Delivers data with proper class of service
  - End-to-end class of service ensures critical application performance
- **Complete bypass of the terrestrial network to the primary and backup data center**
  - True path diversity



# Recommendations for Emergency Communications

- Understand the differences between “Emergency Readiness” and “Emergency Response”
  - Door #1 - Emergency Readiness:
    - Pre-established Communications Path Diversity at Critical Sites
    - “Retainer Contracts” with satellite services providers for rapid restoral of service
  - Door #2 - Emergency Response:
    - No pre-established path diverse back-up communications in place anywhere
    - Complete reliance on single path terrestrial communications facilities
    - Out-reach to satellite service providers only after in-place communications services fail
- Choose Door #2
  - This is critical for government agencies
  - Citizens need government to stay open for business during disasters!!!