

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Public Safety and Homeland Security Bureau)	
Seeks Comment on the Effectiveness of the)	PS Docket No. 11-60
Wireless Network Resiliency Cooperative)	
Framework and for the Study on Public Access)	
to 911 Services during Emergencies)	
)	

COMMENTS OF HUGHES NETWORK SYSTEMS, LLC

Hughes Network Systems, LLC (“Hughes”) submits these comments in response to the above-referenced proceeding, reviewing the overall efficacy of the Federal Communications Commission’s (“Commission”) Wireless Network Resiliency Cooperative Framework (“Framework”) and further seeking comment on a future Commission study to determine the public safety benefits, technical feasibility, and cost of providing the public with access to 9-1-1 services via alternative technologies when mobile service is not available during times of emergency.

An important mission of Hughes is to ensure the provision of reliable communications during and in the wake of natural disasters and other emergency situations. Hughes has demonstrated the efficacy of its systems over the course of numerous emergency deployments, including following last year’s series of devastating hurricanes that impacted this country from Texas to the U.S. Virgin Islands.¹ The 2017 hurricanes, and prior disasters, have demonstrated the

¹ See Comments of Hughes, PS 17-344 et. al., Jan. 22, 2018.

critical importance of ensuring the availability of satellite networks to support terrestrial networks during times of crisis.² In particular, when existing terrestrial networks are seriously damaged or disabled, only through the provision of an alternate path, such as satellite access, can the Commission ensure that first responders stay connected, including for 9-1-1 response purposes.

As discussed herein, these experiences demonstrate an urgent need for emergency preparedness plans to include highly resilient communications infrastructure employing both terrestrial and satellite access technologies. This ensures that there will be adequate tactical support resources in place before disaster strikes, which is critical for guaranteeing that the nation's 9-1-1 system will be available when called upon. The Commission should embrace this opportunity to encourage mobile operators to include satellite path diversity as part of their 9-1-1 networks, thus ensuring that the 9-1-1 network will always be available when needed, especially during and following a major disaster.

BACKGROUND

Hughes is the global leader in broadband satellite networks and services. Its flagship high-speed satellite Internet service is HughesNet®, the world's leading satellite broadband service with over 1.2 million residential and business customers across the Americas. The HughesNet service includes high speed broadband services at speeds of 25/3 Mbps and voice over internet protocol. In addition, Hughes provides managed network services to government and business customers, as well as back-haul.

² See Comments of Liga de Cooperativas de Puerto Rico, WC 18-143 et. al., Jul. 2, 2018 (“Liga de Cooperativas Comments”) (“Satellite broadband was the only reliable communications system [*sic*] in the aftermath of the hurricanes and must be fully implemented across the island to build a truly resilient and connected Puerto Rico.”); see also Comments of the Puerto Rico Manufacturers Association, WC 18-143 (Jul. 3, 2018) (“PRMA Comments”); see also Casa Pueblo, WC 18-143 et. al (Jul. 5, 2018) (“Casa Pueblo Comments”).

DISCUSSION

One of the most attention grabbing headlines to emerge during the 2017 hurricane season, and which arises during times of emergency, was the inability of victims to reach emergency dispatch personnel. During Hurricane Harvey, the inability of the hurricane victims in Texas to reach 9-1-1 PSAPS in order to notifying first responders of their locations among the rising flood waters resulted in victims abandoning the 9-1-1 infrastructure for more responsive modes of communication: social media.³ With victims tweeting their locations some were able to get the help they needed, while emergency responders struggled to determine what information was up-to-date without the assistance of their primary dispatchers.⁴

Instances like this may have been preventable if 9-1-1 networks were more resilient, and were designed with high-availability, path diverse backup technology networks. True network diversity calls for the addition of satellite broadband connectivity as a fail-safe back up to terrestrial networks – regardless of whether it is fiber, cable, DSL, or LTE. The transition between the technologies in a path diverse network is so seamless that if an operator were in the middle of a communication with an emergency caller, the caller would experience no call degradation during the switch. By incorporating satellite into the 9-1-1 PSAP architecture, operators can continue taking calls during an emergency, even when their PSAP loses their primary and secondary terrestrial network connections.

³ See e.g. Chris Ciaccia, “Tropical Storm Harvey: Is Twitter becoming the new 911?” Fox News, August 28, 2017. Available at: <http://www.foxnews.com/tech/2017/08/28/topical-storm-harvey-is-twitter-becoming-new-911.html>; see also Lauren Silverman, “Facebook, Twitter Replace 911 Calls for Stranded In Houston”, NPR, August 28, 2017. Available at: <https://www.npr.org/sections/alltechconsidered/2017/08/28/546831780/texas-police-and-residents-turn-to-social-media-to-communicate-amid-harvey>.

⁴ Ibid.

Some states and regions have already adopted path diverse resiliency. A council of county governments along the Texas and Arkansas border (Ark-Tex Council of Governments, “ATCOG”) added a satellite network to its 9-1-1 system to ensure its citizens have access to emergency services across nine counties in two States.⁵ With satellite path diversity, if a PSAP T1 line were to fail, routers at the point of failure would automatically switch to the satellite system and reroute the emergency call.

Moreover, in the wake of the disastrous 2017 hurricane season and the on-going relief efforts, impacted residents and businesses are insisting that telecommunications networks that receive federal funding contain a satellite broadband component in order to ensure resiliency.⁶ Accordingly, Puerto Rican organizations are urging the Commission to include satellite broadband communications as an essential component of its Universal Service Fund supported network deployment, as satellite broadband provides reliable service following natural disasters and can be restored without delay should the minimal ground infrastructure be damaged.⁷ Additionally, organizations in Puerto Rico are collaborating to develop their own resilient, redundant satellite broadband infrastructure as they know from their first-hand experience that this was the only reliable service available to them in the wake of the hurricanes.⁸

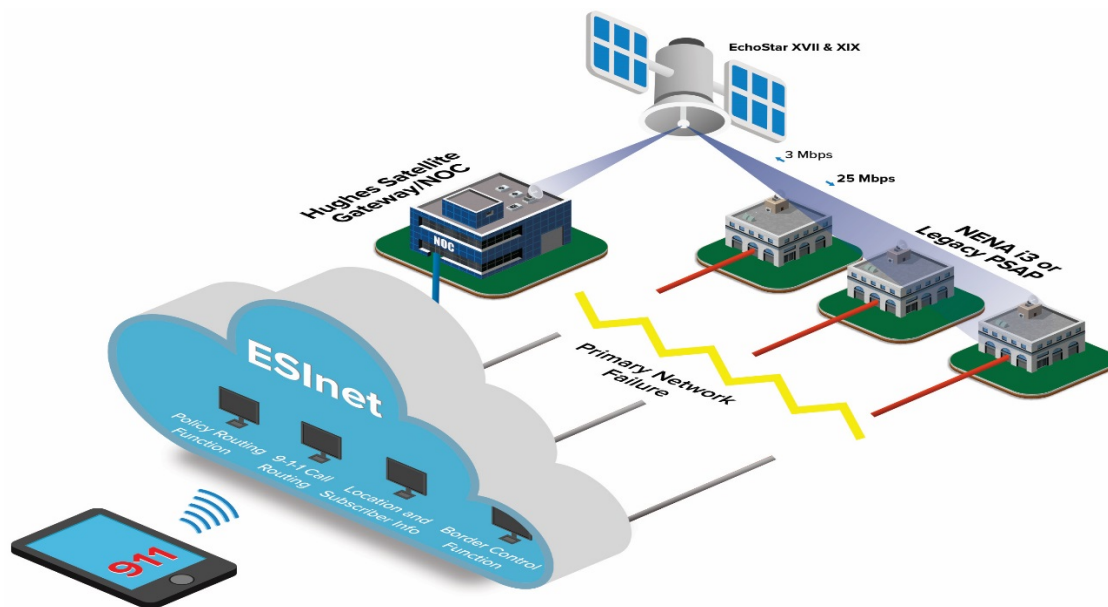
⁵ See “Ark-Texas Council of Governments Receives GCN DigIT Award for Regional Satellite Emergency Number System Deployment” Altmagaz (Nov. 3, 2016). Available at: <https://alt-mag.org/2016/11/03/ark-texas-council-of-governments-receives-gcn-digit-award-for-regional-satellite-emergency-number-system-deployment/#prettyPhoto>; see also “Backup 911 system designed in Texarkana recognized with national award,” Fox12 Oregon (Dec. 5, 2016). Available at: <http://www.kptv.com/story/33917642/backup-911-system-designed-in-texarkana-recognized-with-national-award>.

⁶ See note 2 *infra*.

⁷ *Ibid*.

⁸ See Liga de Cooperativas Comments; see also Casa Pueblo Comments (both comments refer to the establishment of the Centros de Preparacion y Respuesta (CPR), a satellite connected network of member organizations across Puerto Rico that will ensure residents of the communities they serve will remain connected to each other, emergency services, community organizations – schools, hospitals, fire departments, government agencies, etc. – regardless of the emergency situation.)

Hughes urges the Commission to recognize the critical role that satellite path diversity plays in ensuring 9-1-1 networks remain operational and available during times of emergencies. By creating technologically diverse paths to and from the PSAP the emergency response community can ensure that even during the most chaotic times, people in need will be able to reach the 9-1-1 network for help. To enable this, the Commission should encourage wireless operators and integrators to include satellite path diversity when supporting PSAPs. Additionally, working with its federal partners, the Commission should offer educational programs for the PSAPs, as well as state and local governments, on the benefits of including satellite path diversity in their 9-1-1 network operations.



CONCLUSION

While emergencies will always arise, the ability of operators, responders, and the Commission to be better prepared for the next one is always an achievable objective. The 2017 hurricanes highlighted the critical need for emergency response networks to implement path

diverse technology in order to ensure that people in need could always reach a PSAP. Satellite broadband provides high availability, path diversity to complement existing terrestrial infrastructure. By incorporating satellite into the 9-1-1 and PSAP network architecture, the Commission can encourage the highest levels of resiliency to handle escalated call volume in the face of an emergency.

Respectfully Submitted,

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