

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of )  
Preserving Post-Disaster Communications ) RM-11327  
Public Emergencies )  
)

**COMMENTS OF THE VON COALITION**

The VON Coalition, the leading advocacy organization supporting policies that enable consumer to take advantage of the benefits of IP-based communications, submits these Comments in support of the pulver/Evslin Petition to mitigate the effect of telephone outages in the event of natural disaster or other public crises.<sup>1</sup> Petitioners seek a mechanism to ensure that victims of a natural disaster or other public crisis that cause failures in communications networks, are able to reestablish expeditiously alternate forms of communication. More specifically, Petitioners ask that the Commission require any provider obligated to provide E911 services to establish an alternate communications service for affected customers via either: (1) activating temporary voicemail service that would be accessed by incoming callers dialing the affected customer's phone number, or (2) providing expedited local number porting to an alternate service provider selected by the affected customer, including porting to a number outside of the geographic area and/or rate center. The VON Coalition believes both of these proposals could provide a technically feasible and reasonable means of ensuring that American citizens remain connected during emergencies.

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<sup>1</sup> *Pleading Cycle Established for Petition for Rulemaking to Preserve Post-Disaster Communications*, Public Notice, DA 06-825 (Apr. 7, 2006).

Although the petition requests solutions that are equally applicable and necessary for all technologies and networks, the VON Coalition focuses its comments on how IP technology can provide tremendous benefits in emergency situations. The comments do not presume that only IP technology can be utilized, only that the benefits are enormous and this is where the expertise of the Coalition lies. In the wake of Hurricane Katrina, the VON Coalition and its members made a tremendous commitment to facilitating alternate communications for those citizens affected by the disaster. Moreover, the VON Coalition remains actively involved in regulatory issues related to emergency and disaster-related communications and continues to devote considerable resources to addressing these issues. Based on this involvement, the VON Coalition supports Petitioners in urging the Commission proactively to ensure that at least interim procedures are in place to address the potential for long-term communications outages that may occur in the near future (e.g., next hurricane season). The VON Coalition agrees with Petitioners that the Commission can enable the industry to make significant advances in ensuring the availability of post-disaster communications even as the Commission's independent panel reviewing Hurricane Katrina completes its investigation and recommendations and the new Public Safety/Homeland Security Bureau ramps up.

The VON Coalition believes there is an important role for IP technology in transforming and advancing post-disaster communications. In the wake of Hurricane Katrina, the role that IP technology played and could play during and after future catastrophes became readily apparent. Based on the lessons learned, it is essential that policy be crafted to enable and encourage the deployment of redundant, resilient IP-based communications technologies and services. IP-enabled devices have the benefit of being capable of receiving and delivering voice, video, and other IP-based applications over any number of transmission facilities, be it wireline telephony,

cable modem, mobile wireless, fixed wireless, WiFi, WiMax, or satellite transmission facilities. In a disaster situation, those with IP-enabled services could reestablish communication maintaining their own contact number or other identifier over any available Internet connection. Displaced individuals could also change the announcement on their voice mail to reliably inform others that they are safe and provide their new evacuated location.

The nomadic nature and enabling-power of IP technology can facilitate the types of communications proposed by Petitioners. Temporary voicemail services and number porting outside affected local calling areas could ensure that the suffering of displaced family members, friends, and colleagues, desperately seeking each other in the aftermath of Hurricane Katrina not be repeated. Emergency relief workers would not have to spend valuable time searching homes whose residents have already safely evacuated and communicated with authorities. Shelter operators and volunteers could be freed from much of the task of locating missing family members and instead, could concentrate on other vital aspects of relief. Fear of being unreachable need not discourage evacuation. As former U.S. Secretary of Homeland Security, Tom Ridge, stated in January when describing the benefits of VoIP and how the technology could enable the country in future emergencies, “it comes down to leaders using the tools available to them to serve their nation; it’s about networks and relationships and about training.” The FCC showed that it has the tools to benefit our country in the face of disaster, this petition suggests additional, proactive measures the Commission can implement.

**I. HURRICANE KATRINA DEMONSTRATES THE NEED TO PRESERVE AND ADVANCE POST-DISASTER COMMUNICATIONS.**

Disasters can threaten communications systems on several fronts: increased traffic overloads the networks so calls cannot be completed, physical damage to equipment creates

communications outages, and personnel must be redirected to repair outages. Communications using the Internet, however, have an increased likelihood of resiliency and stability due to packet switching technology, which allows data to be transmitted in separate packets over different channels rejoined at their destination. In the case of Hurricane Katrina, more than three million people lost landline phone service. Phone lines that continued working were often unable to reach emergency personnel, unfortunately, because either the 911 call centers or the switching centers that route calls to them went down.<sup>2</sup> Wireless phones also proved useless in many places, as more than 1,000 cell sites and switching centers were rendered inoperative.<sup>3</sup> Although both wireline and wireless carriers were able to begin restoring service within a few days, many customers remained without reliable communications service for more than a week.<sup>4</sup> Even one month later some 250,000 customer lines, three PSAPs, and over 300 wireless cell sites remained out of service.<sup>5</sup>

As a result, hundreds of thousands of people had difficulty receiving news and emergency information and communicating with friends and family. Moreover, emergency workers and public safety officials experienced difficulty coordinating their relief and rescue efforts. However, “[j]ust as Katrina proved the vulnerability of traditional telephone and cellular networks, it also showed how Internet-based technologies could be used to speedily re-establish links with the outside world.”<sup>6</sup> Many VoIP companies rallied to provide disaster relief services

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2 *Making Sure 911 Emergency Help Is There If You Need It*, Consumer Reports (Jan. 2006).

3 *Id.*

4 Chairman Kevin J. Martin, *Statement on the Effects of Hurricane Katrina*, FCC Open Meeting (Sept. 15, 2005).

5 Kenneth P. Moran, FCC Director of Homeland Security, *Statement at the Hearing on Hurricane Katrina and Communications Interoperability*, Senate Committee on Commerce, Science and Transportation (Sept. 29, 2005).

6 Matthew Fordahl, *Geek Cavalries Turn Post-Katrina Landscape into Wireless Lab*, Associated Press (Oct. 4, 2005) (available at <http://www.duluthsuperior.com/mld/duluthsuperior/business/technology/12815804.html>).

through the use of underlying satellite and wireless broadband connections, which would not have been possible relying solely on traditional wireline facilities and services.

## **II. BENEFITS OF THE INTERNET IN HURRICANE KATRINA DISASTER RECOVERY.**

The Internet, originally designed by the U.S. Department of Defense to withstand a nuclear attack, has some inherent advantages over traditional centralized communications systems. For instance, a decentralized network with multiple paths between any two points and the use of packet communication protocol enhances network capabilities, eliminates many single points of failure, and enables the network to automatically and efficiently bypass failures. Indeed, one of the inherent advantages of VoIP is that it can be operated over any IP network – wireline, cable, satellite, wireless – and thus need not be limited if any single infrastructure fails. In addition, VoIP’s inherent nomadic capability, allowing a customer to move to any IP-enabled location and still receive the same service, has proven key in an emergency.

Nomadic IP-based voice and messaging communications played a critical role in the aftermath of Hurricane Katrina. IP networks in the Hurricane Katrina areas remained functional despite the catastrophic damage to many wireline and wireless services.<sup>7</sup> “Text messaging, e-mail, Web-obtained information, video blogs and other streaming media and other IP-based applications were instrumental in keeping people connected and informed in the wake of Hurricane Katrina.”<sup>8</sup> Some examples of the use of IP-based applications in the wake of Hurricane Katrina include:

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<sup>7</sup> W. David Gardner, *Internet Calling’s Role in Katrina Aftermath Understated*, InternetWeek (Sept. 16, 2005).

<sup>8</sup> *Id.* (quoting Jeff Pulver).

- **VoIP Delivered Free Calling for FEMA, 1,000 VoIP Lines in the AstroDome, and Phone Service for Refugees.** AT&T established IP-based calling centers where directed by the Federal Emergency Management Agency (“FEMA”) to give evacuees and emergency workers access to free calling. In Houston, AT&T worked with Avaya, Cisco Systems, and SBC to establish a communications network for refugees moved to the Astrodome. The coalition of VoIP companies delivered local, long distance, and Internet service to refugees. (INFOWORLD, Sept. 2, 2005)
- **New Orleans City Leaders Relied Upon VoIP Almost Entirely – Providing Critical Link In Organizing Response and Communicating.** New Orleans city leaders relied virtually entirely on VoIP services for five days after the failure of basic landline phone service, and mobile and satellite phones, which eventually lost battery power and could not be recharged. (Wall Street Journal, Sept. 9, 2005)
- **Red Cross Turned to VoIP Over Satellite For Volunteers, Managers And Refugees.** For its critical communications needs, the Red Cross turned to VoIP using a global network of satellites and VSATs (very small aperture terminals) to provide a link to the outside world. VoIP it allowed phones to be set up in advance with a PBX located at the headquarters, it enabled easy set up for people without much experience, and could be managed from anywhere. (e-week, Sept. 9, 2005)
- **VoIP Deployed By Mobile Command Center for Fire, Rescue, and Law Enforcement Agencies.** In an area of vast devastation in Mississippi, F4W established a VoIP network to provide critical communications for relief agencies and a lifeline from the disaster area to the outside world. (VoIP Magazine, Sept. 1, 2005)
- **Internet Telephony Kept Baton Rouge Hospital in Touch.** Baton Rouge General Hospital had a broadband connection after the hurricane but no long distance. Vonage helped them get set up with VoIP. The hospital ultimately used nine voice-over IP converters and wireless-enabled laptops with VoIP software installed for long distance communications and to set up a public branch exchange for communications within the hospital and sharing patient data. (Government Technology, Aug. 31, 2005)
- **Satellite Based VoIP Put Repair Crews In Touch To Restore Service.** Siemens Enterprise Networks worked with a power utility in Mississippi send repair crews into the field with VoIP phones. The VoIP system was the main means of voice communications for utility crew supervisors in the field. With the Siemens VoIP phones, the workers were able to make five-digit calls over a familiar device to co-workers without needing special codes for the satellite links.(ComputerWorld, Sept. 2, 2005)
- **Rapid VoIP Deployments Helped Get Emergency Phone Services Up and Running.** The Louisiana Department of Health and Hospitals was the first organization to deploy preconfigured VoIP kits to gain phone service and Internet access in the wake of Katrina. 3Com Corporation donated the VoIP equipment. Each kit included a VoIP phone system with voice mail and auto attendant, which enabled DHH to provide all callers with

recorded information on recovery efforts and the ability to route calls to the appropriate emergency personnel. The phone systems could also be networked so that calls could be transferred between multiple locations. (3Com Release, Sept. 1, 2005)

- **VoIP Used To Rapidly Set Up Red Cross NBC Telethon For Relief.** When NBC hosted a Red Cross telethon, Teletech used its VoIP call center technology to answer an anticipated half a million calls from donors making pledges during the telethon. (TMCnet, Sept. 2, 2005)
- **VoIP Service Proved Critical For Cajundome Refugees.** Volunteers at the Cajundome refuge center in Lafayette, LA, in fewer than 8 hours, helped set up a 100 Mbps connection and a wireless access point. By the next afternoon, a VoIP system had been put in place.
- **“Web Phones for Shelters” Project Launched.** Volunteers in Lafayette Louisiana helped Katrina refugees communicate with family and friends. The Web Phones for Shelters project worked with Cisco and IConverge to make available internet-based phones for refugees to make free phone calls anywhere in the country. (<http://www.lafayettedcomingtogether.org/webphones.htm>)
- **Red Cross Equipped a Fleet of SUV’s with VoIP for Mobile Voice Services.** The Red Cross equipped a fleet of SUVs with IP communications equipment and VSAT antennas for satellite communications. Each vehicle had WiFi equipment, VoIP phones, and wireless laptops to set up a communications center. In some areas these vehicles provided the only voice communication available. (New Telephony, Sept. 6, 2005)
- **Army Used VoIP to Communicate.** The Army used satellite as the Internet link for a VoIP network that transmitted terrestrially on National Guard Internet bandwidth. (Source: New Telephony, Sept. 6, 2005)
- **VoIP Supported FEMA Emergency Mobile Communications in New Orleans.** MCI deployed its “Big Blue” Emergency Mobile Communications Facilities, under a contract with FEMA, to support various rescue and relief efforts in the New Orleans area. These self-contained mobile facilities provided all communications services – voice, data, Internet – via a satellite solution that uses VoIP technology to deliver those communications. In addition, MCI “flyaway kits” (essentially a hard case that holds a satellite terminal and VoIP-enabled equipment) were used by a naval air station in Belle Chasse, LA; Plaquemines Parish; and near a National Guard site in New Orleans. (Source: MCI)
- **VoIP Allowed Refugees To Reach The Outside World, Look For Loved Ones.** The network at Mangham Baptist Church allowed concerned citizens to set up a VoIP telephone and a computer that enabled dozens of refugees at the church to communicate with the outside world. (Washington Post, Sept. 9, 2005)

### **III. CONSTRAINTS ON THE USE OF TECHNOLOGY TO IMPROVE EMERGENCY COMMUNICATIONS**

As demonstrated with Hurricane Katrina, the Commission's current number porting rules can potentially undermine the use of IP technology to restore communications in emergencies. The Commission's rules require customers to port numbers upon request, but they do not permit porting outside of a geographic area or rate center. As the Commission recognized when it suspended the cross-LATA porting restrictions of certain telecommunications providers following Hurricane Katrina, in disaster situations, these rules can inhibit timely restoration of service by prohibiting customers from porting their numbers, even temporarily, outside the affected rate center. While the Commission acted with commendable speed during the Katrina emergency, as recognized in the North American Numbering Council November 2005 report, further progress could be made to ensure the interoperability and interchangeability of IP networks and the PSTN.<sup>9</sup> Commission action on the instant Petition would be a proactive way to help facilitate disaster-related communications.

In addition, the VON Coalition encourages the FCC to focus some attention on ways to promote the benefits of IP-based networks and next generation IP emergency services, especially in emergency circumstances, to users of PSTN-based services. During Hurricane Katrina, 36 PSAPs failed, and calls to those PSAPs could not be completed. The availability and use of next generation IP-based 911 networks, in addition to the PSTN selective router networks could have provided more reliability and versatility. The Commission should strive to consider and adopt

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<sup>9</sup> Although the report did not specifically address issues related to IP communications, many of the same conclusions the NANC reached with regard to the issues faced by wireless and wireline carriers are equally applicable to the provision of VoIP services. For instance, VoIP providers, like wireless providers, are not constrained by LATA boundaries. However, the current routing and rating practices of wireline carriers may cause compensation and billing problems. The VON Coalition encourages the FCC to view these issues not as numbering or LNP problems, but instead, as additional incentive for the adoption of a unified compensation scheme.

policies that expedite transition to IP-based networks and emergency services. In addition to the voice mail and portability solutions proposed by the petitioners, ultimately, the Commission should work to further maximize the benefits of IP-based and wireless networks and ensure that consumers can gain those benefits of reliability and flexibility within the PSTN environment. In a post-9/11, post-Katrina world, establishment of a communications disaster recovery and/or long-term outage plan is urgently needed as a complement to the 911 system.

Consumer Reports recommends that consumers avoid relying solely on a single type of communications by considering subscribing to more than one type of phone service.<sup>10</sup> Moreover, “[t]he lesson for consumers is that while a single telephone account could suffice for individual emergencies, no one service can currently be counted on to work in a widespread calamity.<sup>11</sup> The Commission should take this recommendation to heart in encouraging the deployment of multiple communications networks to operate in an emergency. Allowing and encouraging use of an IP-based emergency network in a disaster area could ensure that 911 calls would not go unanswered during an emergency as these PSAPs could use the unique advantages of VoIP to forward calls to a working PSAP. Petitioners’ suggestion that communications providers activate an emergency voicemail service is an even more immediate action the Commission could take that can be implemented without any use of IP technology. Indeed, all local phone companies currently have the technology needed to provide voice mail and call forwarding.

#### **IV. CONCLUSION**

The VON Coalition commends the Commission for its foresight and wisdom in the actions it has taken to date regarding VoIP emergency services and for recent statements

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<sup>10</sup> *Making Sure 911 Emergency Help Is There If You Need It*, Consumer Reports (Jan. 2006).

<sup>11</sup> *Id.*

recognizing the enabling (albeit differentiated), redundant, and resilient capabilities of IP-based communications can provide when deployed during an emergency. To quote Chairman Martin at the March 2006 Open Meeting discussing Hurricane Katrina and post-disaster communications:

I would also like to see a greater use of IP technologies that are capable of changing and rerouting telecommunications traffic. In the event of a systems failure within the traditional network, such IP technologies would enable service to be restored more quickly and would provide the flexibility to initiate service at new locations chosen by consumers.

The VON Coalition could not agree more.

Adopting the requests in the pulver/Evslin Petition would help to assure that the proper regulatory steps can be taken and that carriers have time to comply before the next hurricane season or other public catastrophe leads to another unnecessary breakdown in communications.

Respectfully submitted,

THE VON COALITION

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April 27, 2006