Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of:	)	
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9-1-1 Resiliency and Reliability in the Wake of June 29, 2012 Derecho Storm in Central, Mid-Atlantic, and Northeastern United States	)	PS Docket No. 11-60

COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION

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To: Chief, Public Safety and Homeland Security Bureau

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I. INTRODUCTION AND SUMMARY

The Telecommunications Industry Association (TIA) hereby submits comments to the Commission's Public Notice in the above-referenced proceeding.[1] TIA is the leading trade association for the information and communications technology (ICT) industry, with 600 member companies that manufacture or supply the products and services used in global communications across all technology platforms. TIA represents its members on the full range of public policy issues affecting the ICT industry and forges consensus on industry standards. For over 80 years, TIA has enhanced the business environment for broadband, mobile wireless, information technology, networks, cable, satellite, and unified communications. TIA is accredited by the American National Standards Institute (ANSI). We appreciate the timely

[1] Public Safety and Homeland Security Bureau Seeks Comment on 9-1-1 Resiliency and Reliability in Wake of June 29, 2012, Derecho Storm in Central, Mid-Atlantic, and Northeastern United States, PS Docket No. 11-60, DA 12-1153 (rel. July 18, 2012) ("PN").

request for public input on the June 2012 derecho which resulted in significant power outages, causing related outages in communications capabilities.

II. TIA SUPPORTS THE COMMISSION'S GOAL OF ENSURING THAT THE NATION'S NETWORKS ARE RELIABLE AND RESILIENT

Public communication networks are of vital importance to virtually all aspects of our society, including public safety, national security, economic stability, and prosperity. TIA supports the goals the Commission set forth/laid out in the PN to ensure that the nation's communications networks are reliable and resilient, especially during times of major natural and man-made disasters.[2] TIA understands the gravity of issues related to this endeavor and urges the Commission to take as holistic an approach as possible in this undertaking. Such an approach should reflect an understanding of a number of trends that network vendors and network equipment operators have come to find as tried and true principles.

TIA commends the Commission for undertaking a comprehensive review of the causes of outages produced specifically by the June 29, 2012 derecho. However, we urge the Commission to understand that, as the National Security Telecommunications Advisory Committee ("NSTAC") has acknowledged, network reliability is affected by a wide-ranging assortment of elements that may benefit or negatively impact/harm the network. These include software,

[2] *See* PN at 2. The Commission notes that it has the responsibility to ensure communications networks of all types promote safety of life and property, including "ensuring the reliability, resiliency and availability of communications networks in times of emergency, including and especially during and immediately after a natural disaster such as a derecho."

hardware, human and inter-government relationship factors.[3] As a result, appropriate network architecture must anticipate a broad range of contingencies.

The NSTAC has also previously acknowledged the diverse factors involved with improving networks when it stated that "the evolution of the communications network will be driven by changes in technology, applications, content, devices, and increased requirements for capacity, bandwidth, and spectrum."[4] As TIA has noted in its previous submissions on the topic of network reliability, numerous voluntary intra- and inter-industry efforts, and public-private partnerships, undertake the task of network reliability continuously, producing standards and best practices that are heavily relied upon.[5] TIA supports deference to these efforts in lieu of new regulations on network resiliency and reliability.

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[3] *See* NSTAC, *Next Generation Networks Task Force Report* (rel. Mar. 28, 2006) at G-1 to G-10.

[4] NSTAC, *NSTAC Report to the President on Communications Resiliency* (rel. Apr. 19, 2011) at 4 (NSTAC 2011 Report).

[5] *See, e.g.*, Comments of TIA, PS Docket No. 11-60, PS Docket No. 10-92, EB Docket No. 06-119 (filed Jul. 10, 2010) at 10-20 ("TIA Network Reliability Comments").

III. THE COMMISSION SHOULD NOT TAKE REGULATORY ACTION, BUT SHOULD ENCOURAGE CONTINUED VOLUNTARY AND CONSENSUS-BASED EFFORTS WITHIN COLLABORATIVE GROUPS

A. Regulatory Action is Not Required by the Commission to Ensure Continual Improvement of the Reliability and Resiliency of Communications Networks

In the PN, the Commission asks what can be done to improve the resiliency of communications infrastructure in the face of the physical damage seen during the storm, and what actions the communications industry or the Commission can take to avoid or mitigate these outages in similar future events.[6] Individual companies, particularly network providers, are in the best position to provide specific information on how they were individually affected by the derecho.[7]

As a general response to the Commission's inquiry into this matter, TIA stresses that with typical network design, a critical element to resiliency is identifying potential points of failure. Network operators and equipment vendors take seriously reliability and resiliency. From their perspective, the highest priority is placed on designing networks to avoid such risks. The transition from legacy technology to internet protocol ("IP") -based technology is, in fact, one of the most noteworthy fundamental improvements towards increased resiliency due to the nature of IP.[8] Further, the Department of Homeland Security ("DHS") has acknowledged that operators

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[6] *See* PN at 4-5.

[7] *See, e.g.*, Verizon, 911 Service and the June 29, 2012, Derecho, (Aug. 13, 2012), *available at* http://bit.ly/Nfjglq. In this publicly-released report, Verizon notes that failures in backup batteries and generators were a direct cause, and details corrective steps it is taking to prevent such blackouts in the future.

[8] IP communications allow for a message to be broken down into packets that are sent off individually in multiple directions in search of the most efficient and least congested route. IP also allows for increased awareness of the cause of message failures. *See* Nuechterlein, J., Weiser, P., *Digital Crossroads: American Telecommunications Policy in the Internet Age* (2007) at 121-123.

have "historically factored natural disasters and accidental disruptions into network resiliency architecture, business continuity plans, and disaster recovery strategies."[9] The Commission should acknowledge that under the current regulatory approach, communications networks have been dynamically improving their reliability and resiliency. TIA firmly believes that "market incentives will remain the fundamental driver of industry practices and standards," as noted by the NSTAC.[10]

TIA urges the Commission to keep in mind its goal of removing barriers to innovation and infrastructure deployment.[11] Compared to the effects of overly-prescriptive regulations that would limit a network operator's ability to make unique, site-specific decisions to address the thousands of factors that lead to outages,[12] TIA firmly believes that applying new uniform rules creates the possibility of several highly impactful and adverse effects. If new regulations are adopted in this matter, the Commission will be ignoring the wide variety of challenges faced by networks across the United States and how they are efficiently dealt with today. Unnecessary mandates could also hinder the development and deployment of smart grid technology, which

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[9] DHS, *Communications: Critical Infrastructure and Key Resources; Sector Specific Plan as Input to the National Infrastructure Protection Plan* (2007) at 2, *available at* http://www.dhs.gov/xlibrary/assets/nipp-ssp-communications.pdf.

[10] NSTAC 2011 Report at 14.

[11] *See* Remarks of FCC Chairman Julius Genachowski, FCC Broadband Acceleration Conference (Feb. 9, 2011) at 1 ("One thing [towards implementing accelerating broadband deployment] government at all levels can do is ensuring efficient, effective regulation. We need rules that serve legitimate public needs without erecting costly or unnecessary barriers.").

[12] *See* TIA Network Reliability Comments at 3-6. As TIA has already described, adopting sweeping requirements, such as universal backup generator requirements for sites, would remove the ability to make the most informed hyper local decisions, and divert resources that would be used for other site-specific challenges that are of a higher priority. TIA believes that the only party in a position to make such a priority determination is the operator of the facility.

has been heavily invested in across several sectors.[13] TIA strongly opposes the forced commitment of capital towards meeting reliability mandates, even in instances where it is not appropriate for a facility, could better/otherwise be dedicated to best addressing resiliency challenges as deemed appropriate by those with the best knowledge of what a particular network needs to increase resiliency: the operator of that network. Taking the ability to make these judgments from network operators would detract from the network resiliency and reliability goals of the Commission.

Aside from encouraging voluntary industry developments, the need for new network reliability activity on the part of the Commission is not apparent despite the effects of the derecho. Network operators and vendors of network equipment are already furiously working to make sure networks are as resilient and reliable as possible, and have incentive to do so in order to remain competitive in the market. Given the effects such unnecessary regulation would have, TIA urges the Commission to eschew mandates on specific elements of an overall networked architecture. Further, determining minimum requirements is extremely difficult, as requirements vary from node to node. Inevitably, the Commission would, by adopting prescriptive performance requirements, create a ceiling to innovation for some operators and increase liability for those in areas that face heightened challenges to network reliability due to any number of natural or man-made factors. Therefore, if requirements must be adopted, they should be as flexible as possible. Further, the Commission is strongly encouraged to ensure that any adopted

[13] In January through May of 2010 alone, there were 30 publicly announced smart grid investment deals in the United States and Canada totaling over $1.8 billion. *See* http://idc-insights-community.com/posts/0cfbc7cb24.

rules do not explicitly or implicitly endorse one type of technology over another, consistent with its policy of technology neutrality.

Finally, we again note that the Commission should ensure that it has sufficient jurisdiction to undertake any new reliability rules.[14] We also note for the Commission that the communications infrastructure is ultimately reliant on the power grid, for which states and the North American Electric Reliability Corporation, which the Federal Energy Regulatory Commission ("FERC") has certified as the nation's Electric Reliability Organization of the bulk power system,[15] set reliability minimum standards. We strongly urge the Commission to coordinate with these state and Federal authorities who directly oversee grid reliability in its efforts to take steps to increase resiliency of the national communications network, particularly if any rulemaking is undertaken by the Commission.

B. The FCC Should Support Network Providers and Vendors as they Continue to Voluntarily Undertake Significant Efforts to Ensure Network Reliability

TIA believes that the current reliability ecosystem – consisting of industry voluntary and consensus-based standards, best practices, self-evaluation efforts, and public-private partnership efforts – should be relied upon by the Commission. Furthermore, there are several non-regulatory actions that the Commission is encouraged to take to further ensure network reliability.

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[14] *See* TIA Network Reliability Comments at 20-21.

[15] *See* Order Certifying North American Electric Reliability Corporation as the Electric Reliability Organization, 116 F.E.R.C. ¶ 61,062.

Through the years, network operators and vendors have made great strides in network resiliency through voluntary, consensus-based standards development. After times of unprecedented stress on the communications network, network operators and vendors may, as with the derecho case, find themselves in a reactionary position. Indeed, we agree that the derecho was an "extraordinary event"[16] that had uniquely extended negative effects on the eastern portion of the continental U.S.[17] We urge the Commission to recognize that these occurrences are unique and, for network providers and equipment vendors that design and plan for reliability, impossible to completely avoid – as already noted by the NSTAC.[18]

From a standard developer standpoint, TIA has been instrumental in the standards making process both within TIA and in other standard development bodies, and continues to strive for greater network reliability and resiliency. In its history, TIA has issued over 3,500 ICT industry standards and related documents,[19] the vast majority of which are ingrained with resiliency and reliability principles. Traditionally, TIA's standards work has focused on vital

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[16] *See, e.g.*, Johns, Robert H.; Jeffry S. Evans, and Stephen F. Corfidi, National Oceanic and Atmospheric Administration, *Facts About Derechos Which Are Very Damaging Windstorms*, *available at* http://www.spc.noaa.gov/misc/AbtDerechos/derechofacts.htm (last visited Aug. 14, 2012).

[17] For example, in Ohio alone, damages from the June derecho are approaching $500 million. *See* Thomas Gnau and Matt Sanctis, *'Derecho' damage approached half a billion dollars in Ohio* (Aug. 13, 2012) *available at* http://www.springfieldnewssun.com/news/news/local/derecho-damage-approached-half-a-billion-dollars-i/nQ9sX/.

[18] See NSTAC 2011 Report at 1 ("While it would be near impossible to develop and maintain networks that are invulnerable to disruption, ensuring long-term communications resilience requires that the Government understand future systems and the future technology landscape when investing in and planning for durable, survivable communications for Government officials, first responders, and the general population.").

[19] TIA standards are available at http://www.ihs.com/products/industry-standards/org/tia/list/index.aspx. In addition, TIA publishes an annual report that includes the latest actions taken by each respective TIA engineering committee. *See* TIA, 2011-2012 Standards & Technology Annual Report (rel. Apr. 2012), *available at* http://www.tiaonline.org/standards/about/documents/STAR_2011-2012.pdf.

technical areas such as mobile and personal private radio,[20] point-to-point communications,[21] multimedia access,[22] satellite equipment and systems,[23] user premises cabling[24] and fiber optic cabling.[25] However, in recent years, TIA has expanded its standards focus to areas such as smart device communications and machine-to-machine (M2M) connections[26] and smart utility

[20] Engineering Committee TR-8 formulates and maintains standards for private radio communications systems and equipment for both voice and data applications. TR-8 addresses all technical matters for systems and services, including definitions, interoperability, compatibility, and compliance requirements. The types of systems addressed by these standards include business and industrial dispatch applications, as well as public safety (such as police, ambulance and firefighting) applications.

[21] Engineering Committee TR-14 – Point to Point Communications Systems – is responsible for standards and recommended practices related to terrestrial fixed point-to-point radio communications equipment and systems (microwave radio), primarily in the frequency bands above 960 MHz. Within the TR-14 Committee, only subcommittee TR-14.7, Structural Standard for Antenna Supporting Structures and Antennas, is active.

[22] Engineering Committee TR-30 develops standards related to the functional, electrical and mechanical characteristics of interfaces between data circuit terminating equipment (DCE), data terminal equipment (DTE) and multiMedia gateways, the telephone and voice-over-Internet protocol (VoIP) networks, and other DCE and facsimile systems.

[23] Engineering Committee TR-34 is responsible for standards and studies related to satellite communications systems, including both the space and earth segments. The committee focuses on standards for space-borne and terrestrial hardware; interfaces on standards for satellite and terrestrial systems; and the efficient use of spectrum and orbital resources, including sharing between satellite and terrestrial services.

[24] Engineering Committee TR-41 addresses voluntary standards for telecommunications terminal equipment and systems, specifically those used for voice service, integrated voice and data service and Internet protocol (IP) applications. The work involves developing performance and interface criteria for equipment, systems and private networks, as well as the information necessary to ensure their proper interworking with each other, with public networks, with IP telephony infrastructures and with carrier-provided private-line services.

[25] Engineering Committee TR-42 develops and maintains voluntary telecommunications standards for telecommunications cabling infrastructure in user-owned buildings, such as commercial buildings, residential buildings, homes, data centers, industrial buildings, etc. The generic cabling topologies, design, distances and outlet configurations as well as specifics for these locations are addressed. The committee's standards work covers requirements for copper and optical fiber cabling components (such as cables, connectors and cable assemblies), installation, and field testing in addition to the administration, pathways and spaces to support the cabling.

[26] Engineering Committee TR-50 Smart Device Communications is responsible for the development and maintenance of access agnostic interface standards for the monitoring and bi-directional communication of events and information between smart devices and other devices, applications or networks. The TR-50 framework will make its functionality available to applications through a well-defined Application Programming Interface (API) that is agnostic to the vertical application domain (eHealth, Smart Grid, Industrial Automation, etc.).

networks.[27] Further, while working on these cutting edge segments, TIA coordinates with dozens of global standards developing organizations, and continues its outreach. In our comments on general network reliability submitted previously by TIA, we have detailed a number of noteworthy standards that directly increase the resiliency and reliability of equipment and the networks that are built on the equipment TIA members manufacture.[28]

We also reiterate our strong belief that the use of non-mandatory best practices has resulted in immeasurable increases in network resiliency and reliability.[29] Given the fact that each best practice is not relevant for each area, sector, node, etc. of the communications industry, because they are not mandated, network operators are allowed for the flexibility to employ the best equipment and systems that meet their specific challenges to network reliability. In addition, best practices allow for the "co-existence of new and old technologies"[30] and therefore help facilitate the smoothest transitions in technology deployments. There are currently numerous voluntary industry efforts underway that continually formulate, aggregate, and update best practices, and network operators and equipment vendors regularly look to best practices, both internal and external to their organization.

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[27] Engineering Committee TR-51 Smart Utility Networks technology focuses on efficient access technology with a mesh network topography, optimized for Smart Utility applications. The Smart Utility Networks standards are intended to provide the utility companies with another tool to improve services to their customers. During the TR-51 standards process TIA will work to incorporate the best of the applicable existing standards in order to develop an integrated multi-layer standard (covering layers 1 through 4).

[28] *See* TIA Network Reliability Comments at 13-17.

[29] *See Id.* at 17-18.

[30] CSRIC Working Group 6, *Final Report: Best Practices Implementation* (rel. Dec. 2010) at 3 (CSRIC WG6 2010 Report).

Furthermore, we again emphasize that the Commission has a history of promotion of the use of best practices, and the CSRIC has very recently reinforced the Commission's position on the value of best practices, recommending against mandates and encouraging continued endorsement of best practices:

> The FCC should continue to endorse the use of BPs by communications industry organizations. The FCC has a long history of supporting industry's development and utilization of BPs through its previously chartered Advisory Committees, including NRIC and the Media Security and Reliability Council (MSRC). The FCC should maintain this support based upon the work of CSRIC during its current and any future chartered terms.[31]

Given the abundance of best practice work today, TIA strongly urges the Commission to allow for these successful efforts to continue to evolve and succeed, and to refrain from adopting new unnecessary regulations on network reliability.

[31] CSRIC WG6 2010 Report at 17.

IV. CONCLUSION

In light of the public's dependence on communications networks, the resiliency and reliability of these networks is of paramount importance. TIA supports the Commission's efforts to ensure that these networks are reliable and resilient. However, the Commission should refrain from taking regulatory action and encourage and allow network operators and vendors to continue their voluntary efforts in improving the reliability of their networks. The technology and effort already exists and any regulation by the Commission could jeopardize a system that already pushes companies to maintain networks that are as resilient and reliable as possible.

Respectfully submitted,

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