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

In the Matter of	)	
	)	
Utilizing Rapidly Deployable Aerial Communications Architecture in Response to an Emergency	)))	PS Docket No. 11-15

To: The Commission

REPLY OF xG TECHNOLOGY, INC.

xG Technology, Inc. ("xG" or "the Company"), by its representatives, hereby submits its reply to the responses to the Commission's *Notice of Inquiry* (NOI) in this proceeding, which explores the use of deployable aerial communications architecture (DACA) for emergency communications.

Summary of Comments

A common thread that runs through most of the responses to the NOI are the complexities involved in rapidly restoring communications capabilities in the immediate aftermath of a catastrophic event. These include not only deploying the equipment that will be involved in establishing interoperable emergency communications but also the problems associated with frequency coordination and the potential for harmful interference. Deploying aerial platforms may take too much time when rapid deployment is critical.[1] In addition, their deployment can be affected by high winds and other adverse weather conditions. AT&T claims that in geographic areas with a dense penetration of wireless devices, it is likely that an airborne commercial network with finite capacity would be quickly overwhelmed in light of tremendous network demand that always follows a disaster.[2]

The NOI recognizes that frequency planning will be vital to the successful deployment of

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1 Sprint Nextel Comments, at fn. 12.
2 AT&T Comments, at 8.

DACA systems in order to avoid harmful interference and enable terrestrial communications to be restored on an efficient and timely basis. Virtually all filers agree.[3]

Most commenters generally agree on the tremendous potential for harmful interference in using DACA platforms that operate on licensed commercial or public safety frequencies.[4] The interference concerns of TIA are so great that it proposes that DACA be limited to public service frequencies to avoid interference with commercial use and repair.[5] The commenting cellular carriers, AT&T and Sprint Nextel, echo this concern.[6] AT&T opposes any use of aerostats to restore commercial service following a disaster, stating that transmissions from aerostats would cause unacceptable interference and would interfere with attempts to restore service.[7] Sprint Nextel maintains that third parties should not be allowed to operate aerial transmitters on commercial frequency bands without the licensee's consent,[8] a position supported by CTIA.[9]

xG's Reply

xG is mindful of the complexities involved in establishing procedures and protocols for setting up emergency communications and restoring normal communications in the aftermath of a catastrophic event, whether it be through aerial or terrestrial means, or both. The commenting parties have aptly stated their concerns. However, many of these concerns are based on the use of licensed commercial or public safety frequencies to provide a solution. xG's xMax system eliminates the issue of frequency planning and interference to licensed commercial or public safety operations by using the unlicensed 902-928MHz band for communications. The system delivers carrier-grade voice and data to ordinary smart phones and laptops and any other Wi-Fi,

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3 *See*, for example, Oceus Networks Comments, at 15; CTIA Comments, at 6; Globalstar Comments, at 7; APCO Comments, at 2-3.

4 *See*, for example, National Academy of Sciences – CORF Comments, at 3-6; CTIA Comments, at 3.

5 TIA Comments, at 2.

6 AT&T Comments at 4; Sprint Nextel Comments, at 2,4.

7 AT&T Comments, at 9.

8 Sprint Nextel Comments, at 10-11.

9 CTIA Comments, at 7-8.

USB or Ethernet enabled devices using a wireless bridge (xMod) device that translates communications between Wi-Fi and proprietary xMax protocol. xMax protocol provides the range required for emergency communications while the Wi-Fi interface allows the use of numerous existing smart phones and laptops to connect to the network. The xMax equipment is IP-centric and has the advantages of light weight, portability, low power consumption, frequency versatility and interference avoidance. Its cognitive abilities allow it to share the unlicensed spectrum on which it operates; and its interference mitigation technology provides the range and reliability that is required for emergency data and voice communication in an interference-rich environment. xMax can provide additional communications capacity to public safety or commercial networks during and after a disaster. In addition, xMax can provide additional capacity to meet the needs of increased call and data volumes that typically result in the aftermath of a disaster.

Conclusion

xG's proprietary xMax cognitive radio technology would largely eliminate the interference and frequency planning problems associated with establishing emergency communications and restoring normal communications following a disaster. xMax is a rapidly deployable system that can operate on unlicensed spectrum without interfering with licensed commercial or public safety operations. xMax can communicate with any existing or new device that has a Wi-Fi, USB or Ethernet interface. This capability means that virtually all existing smart phones and laptops can be used as instant xMax terminals through the portable xMod wireless bridge.

The comments filed in this proceeding have demonstrated the myriad problems that must be confronted in attempting to come up with a scheme for deploying aerial communications in

emergency circumstances. There are valid concerns in operating communications facilities while aloft regardless of whether licensed commercial or public safety frequencies are used. xMax aerial-equipped platforms operating on unlicensed spectrum could roam freely over licensed wireless systems without the potential for harmful interference, thereby mitigating the fears and concerns of licensed users. High-flying aerostats along with rotary and fixed-wing aircraft (manned and unmanned) equipped with xMax could be flown with impunity without the concern of interference to the licensed systems on the ground.

The use of cognitive radio techniques, by themselves, is a huge step forward in resolving the problems raised in this proceeding. However, cognitive radio coupled with operating in unlicensed spectrum, as exemplified by xG's xMax technology, is what truly distinguishes xMax as the most viable DACA solution.

Respectfully submitted,

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