

Title	<b>0016</b>	11/11/2023
	by <b>Randall Sandone</b> in <b>Kansas BEAD Volume 2</b>	id. 44673194
	<b>Public comment</b>	
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## Original Submission 11/11/2023

Please provide your first and last name	Randall Sandone
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Please provide your address (not required)	
Are you filing a comment on behalf of an organization?	Yes
Which organization are filing on behalf of?	Critical Infrastructure Resilience Institute - University of Illinois
Please indicate which sections of volume 2 you are responding to:	Requirement 1: Objectives
Please provide your response to Requirement 1: Objectives	<p>The Kansas Office of Broadband Development has put together an extensive and well-crafted proposal for implementing the Broadband Equity, Access, and Deployment (BEAD) grant program in the State of Kansas. While the proposal appears to meet the specified grant requirements, it seems to overlook a crucial factor that could impact the deployment – the resilience of the broadband infrastructure itself.</p> <p>The goals and objectives of the Kansas program are detailed in Volume 2, specifically on pages 4 and 5. The preface to the goals and objectives contains this statement: “The state aspires to be a national leader in broadband availability, adoption, and affordability.” The first objective</p>

states that Kansas seeks to “Ensure universal broadband coverage to every home, business, farm and CAI.” Additionally, Objective 2 encompasses the provision for “Leveraging innovative solutions...”. This comment is submitted to focus on these aforementioned excerpts.

Modern telecommunications infrastructure relies heavily on precise timing signals, currently provided by GPS (Global Positioning System) satellites, for its efficient operation. Any loss, disruption or manipulation of these signals could render the broadband infrastructure inaccessible to subscribers, thus negating the primary goal of the BEAD program and the objectives of Kansas.

There have been numerous instances worldwide where the timing function of broadband has been compromised due to accidental or malicious actions targeting and degrading GPS timing sources. These events have exposed vulnerabilities in the reliability of broadband infrastructure, necessitating the development of mitigation strategies to provide alternative backup timing sources. This is crucial to ensure the continuity of critical infrastructure and accessibility, both of which are vital to the intended beneficiaries of this grant program. A resilient broadband timing solution is not just important; it's foundational to the success of broadband delivery.

We wholeheartedly support the goals and objectives of the Kansas plan for implementing BEAD grant funding. However, to ensure “coverage” and “availability” of broadband infrastructure, it is imperative to address the need for a robust and resilient back-up timing signal source as part of the broadband deployment. The Kansas Volume 2 proposal does provide for leveraging innovative solutions but does not mention back-up timing as a prioritized investment.

Terrestrial-based timing systems represent a solution that relies on ground-based infrastructure and signals, in contrast to satellite-based systems like GPS or GNSS (Global Navigation Satellite System). These terrestrial systems incorporate redundancy and backup mechanisms to ensure reliability, such as using multiple timing sources or paths to minimize the risk of timing disruptions due to equipment failures or other issues.

Currently, eight states and one territory in the US have implemented an alternative timing solution known as the Nationwide Integration of Timing Resiliency for Operation (NITRO). NITRO retrieves timing information from multiple government and commercial sources of space-based and terrestrial timing, including GPS, and analyzes them for accuracy. The most precise alternative timing signal is then transmitted to users via terrestrial broadcasts, fiber, and wireless cellular networks. NITRO is currently utilized by State National Guard Bureaus to maintain their ability to support civilian authorities during disasters and similar crises. This same capability can serve as a backup timing source for the broader broadband telecommunications systems that rely on precise timing.

This is a perfect opportunity to utilize BEAD Grant funding to expand NITRO, a critical capability, and make it accessible to a wider range of stakeholders, thereby strengthening an essential component of broadband delivery and usage that is susceptible to attacks. This initiative would leverage the Department of Defense's existing investment in creating the

basic NITRO capability and enable the Department of Commerce to fulfill its mandate of providing critical backup timing to ensure uninterrupted commerce and the stability of the US economy. Such an approach aligns with the public/private partnership philosophy promoted by Congress in the Infrastructure Investment and Jobs Act and BEAD Grant legislative language. Failure to address the resilience of the timing function in broadband infrastructure could undermine the goals and objectives of the BEAD Program in general and the Kansas program specifically and would diminish the return on the \$42 billion investment that has been appropriated to support the program. Accordingly, we recommend that Kansas include back-up timing as a priority for BEAD Grant implementation in its final Volume 2 Proposal.

By submitting the Public Comment Form (the "Form") and any supporting evidence, you attest that all information furnished is true and accurate to the best of your knowledge and that any attachments are free of malware or viruses. You also acknowledge that falsifying any information could result in legal action against you and will bar you from submitting public comments to this web site in the future. You authorize the Kansas Office of Broadband Development, Kansas Department of Commerce (KOBD) to contact you if further information is needed. You expressly acknowledge and consent to some personal information, including your name, address, phone, e-mail, organization you represent, and

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comments, being posted for public view on the Kansas Department of Commerce web site at [www.kansascommerce.gov](http://www.kansascommerce.gov).

The KOBD will use its best efforts to redact any personal identifiable information outside of the above that is not considered in the public domain. By typing your name and date and by submitting the Form, you acknowledge, authorize, and consent to this Public Comment Privacy & Acknowledgments.

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