

Before the
**FEDERAL COMMUNICATIONS COMMISSION and the
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION**
Washington, D.C. 20554

ACCEPTED/FILED

In the Matter of:

AUG 29 2014

Model City for Demonstrating and Evaluating
Advanced Sharing Technologies

ET Docket No. 14-99
Federal Communications Commission
Office of the Secretary

**REPLY COMMENTS OF PEGASUS GLOBAL HOLDINGS, LLC AND CITE
DEVELOPMENT, LLC**

Pegasus Global Holdings, LLC,¹ a Virginia registered limited liability company, (“Pegasus”) and its solely-held subsidiary, CITE™ Development, LLC,² a New Mexico limited liability company (“CITE™”), provide the following information pursuant to the Joint Public Notice to seek public comment on the President's Council of Advisors on Science and Technology (“PCAST”) recommendation that the Secretary of Commerce establish a public-private partnership to facilitate the creation of an urban test city that would support rapid experimentation and development of policies, underlying technologies, and system capabilities for advanced, dynamic spectrum sharing.³ The test services (referred to herein as a “Model City”) are for demonstrating and evaluating advanced spectrum sharing technologies which could include large-scale sustainable facilities for systems-level testing in real-world environments across multiple frequency bands, including public safety and selected federal bands. These comments are intended to bring to the attention of the National Telecommunications and Information

¹ www.pegasusglobalholdings.com

² www.cite-city.com

³ <https://www.federalregister.gov/articles/2014/07/15/2014-16529/model-city-for-demonstrating-and-evaluating-advanced-spectrum-sharing-technologies>

Administration (“NTIA”) and the Federal Communications Commission (“FCC”) a “Model City” project being developed by the private sector through Pegasus and its wholly-owned subsidiary. We submit that this project — The Center for Innovation, Testing, and Evaluation, or “CITE™” — meets and exceeds the recommendations of the PCAST Report.

I. THE CENTER FOR INNOVATION, TESTING AND EVALUATION (“CITE™”): AN UNINHABITED TEST CITY

CITE™ is a truly remarkable private sector project which, since its inception in 2011, has stimulated not just national interest, but also global interest. Its fundamental principles and origins are described below. In sum, CITE™ will be a ubiquitous, cross-disciplinary, Uninhabited Test City, situated on 26 square miles of vacant land in Southern New Mexico. CITE™ was conceived to address the needs of federally-funded and private research dollars seeking greater scale and scope to support test and evaluation of new technologies and applications in the areas of energy, transportation (aviation, vehicular, rail – light & heavy), telecommunications, network operating systems/sensors, and security, in real world urban, suburban and rural environments. Under the support and sponsorship of two Governors– Bill Richardson and Susanna Martinez - CITE™ has received the full support of the State of New Mexico.⁴ Additionally, CITE™ has received strong interest from the New Mexico-based Federal labs, including Sandia National Lab, and Los Alamos National Lab. CITE™ has been presented to the staff of the President’s Office of Science & Technology; Department of Commerce (Office of the Secretary; Undersecretary, NIST), as well as the Departments of Energy and Defense.

⁴ http://www.cite-city.com/downloads/2011_09_06_NM_Economic_Development_Press_Release.pdf.

In March 2012, Pegasus filed an application for a US patent entitled “Uninhabited Test City,” as well as an International Patent.⁵ In April 2012, CITE™ sponsored and presented at several “Industry Day” events in Palo Alto, California; Tysons, Corner, Virginia; and Raleigh, North Carolina, at open forums to potential users, regulators, and financiers,⁶ where the project’s design and financial plan were outlined in detail. Finally, from October 2011 to July 2012, the CITE™ project was the subject of briefings to the entire New Mexico Congressional Delegation.

Since July 2012, CITE™ has been engaged in its underlying engineering and design, identification and location of a cost-effective physical location for the project, financing, and potential customer interest. Both the location of the CITE™ facility, and its estimated 350 full-time and 3500 part-time jobs, has been the subject of a great deal of interest and local encouragement. Notwithstanding the issues that arise from such a large-scale project, including environmental, regulatory, and the uncertainty of the location of the recently established Organ Mountains National Monument,⁷ the CITE™ project has continued to develop and anticipates announcing its permanent location in September 2014.⁸ With this announcement, the CITE™ project will commence construction with an estimated opening of the full facility in 2018.

⁵ UNITED STATES PATENT APPLICATION PUBLICATION PUB No.: US 2013/0255405 A1; PUB Date: October 3, 2013

⁶ http://extras.mnginteractive.com/live/media/site557/2012/0716/20120716_023541_CITE%20Industry%20Day%20Presentation.04.26.2012.pdf

⁷ <http://www.whitehouse.gov/the-press-office/2014/05/21/presidential-proclamation-organ-mountains-desert-peaks-national-monument>

⁸ <http://www.bizjournals.com/albuquerque/print-edition/2014/06/13/cite-hopes-to-build-test-city-on-remote-stretch-of.html?page=all>;
http://www.lcsun-news.com/las_cruces-business/ci_25912237/cite-pegasus-takes-flight-again-near-las-cruces

II. EVOLUTION OF THE DESIGN OF A “TEST CITY”

Pegasus realized that an isolated, sector-specific test environment was unique solely in the scale that was offered, not in its operation. Indoor and outdoor test laboratories exist today, both public and private. They are usually very specific in their focus (*e.g.*, energy, telecommunications), are generally pristine in their conditions to achieve maximum return from the test, and are not integrated, or influenced by outside limiting or affecting factors (*e.g.*, middle wear, legacy networks). We concluded that to truly “test and evaluate” a new technology, intelligent or otherwise, it would be valuable to do so in a more broad-based environment of various, possibly disruptive, activities — in conditions more “real world” than those replicated in the laboratory, and among infrastructure that was aging or “legacy” but representative of the true market conditions upon which the product would be dependent.

Additionally, Pegasus believed it would be valuable to the test and the evaluator to “experience” the anticipated and unanticipated effect of a new technology in a cross-disciplinary environment, where the consequences of its performance could be measured – both intended and unintended. This shift from the “pristine laboratory” environment to the “legacy world” environment was principally driven by Pegasus’ experience that no technology – smart or otherwise - performs the same in the laboratory and the legacy world. The legacy environment is fraught with too many inconsistencies in its operating and physical infrastructure. Moreover, testing under “real world” conditions places populations, as well as existing operating and service systems at risk. Consequently, researchers and product developers generally test in more controlled environments. Pegasus saw these limitations as a key opportunity in its proposal.

Proving that a “smart technology” performs at a certain operating level in a pristine laboratory is an important and necessary step in the product commercialization process. However, introducing a “smart technology” into a “legacy, or dumb infrastructure,” which is more

representative of the marketplace the product must ultimately operate within, is an equally important step. Consequently, CITE™ seeks to merge the merits of both processes into a laboratory environment where the needs of both pristine and legacy infrastructure conditions could be met, simultaneously, at a single location. For the first time at this scale and scope, a researcher could test and evaluate new technologies destined for the marketplace in a single campus environment where researchers could conduct pristine and legacy testing. Additionally, CITE™ contemplates a campus where all the sectors of our legacy economy would exist in an operational environment (*e.g.*, energy, telecommunications) without the risk of injury to populations, or dependent operating and service systems. This “real world” operating environment also would yield cross-disciplinary results, including impact analysis of products intended for one sector, yet affecting others. Finally, CITE™ merges all these test and evaluation activities into a fully-integrated “system of systems,” meaning a unique architecture of above and below ground operating platforms that replicate both aspects of laboratory operation: pristine and legacy.

In order to match form and function of the contemplated design for the facility, CITE™ merged the functional areas of such a test facility with an architectural concept that was representative of those functions. In sum, CITE™’s design now represents all sector-specific areas of new technology development present in the legacy operations of a typical American community. Such a community has energy, telecommunications, traffic, security, agricultural, and disparate construction aspects to it. The sole differentiator is quality and quantity, not intelligence, meaning that the vast majority of American communities are fundamentally legacy—“dumb,” not “smart.” Yet, the vast majority of “smart” technologies arising from the public and private laboratories today must operate efficiently and cost-effectively in a “dumb”, or legacy infrastructure environment. How better to test and evaluate all aspects — intended and

unintended — of “smart” technologies than in a “dumb” infrastructure environment, representative of a standard American community? How much more reliable can the data be when tests can be conducted without fear of impact on existing operating and service delivery systems, and most importantly, populations? Finally, how best to determine the cross-disciplinary impact (*i.e.*, the “law of unintended consequences”) as well as the performance benefits of a new technology than in an operating environment that is representative of the vast majority of our communities today?

We believe that the PCAST report and the very essence behind its recommendation of a Model City for testing next-generation spectrum-based applications and equipment validates CITE™’s above design goals. The sole difference is scale and scope. An important question is whether it should be a government-managed and financed facility or a private facility, open to all users, including government as a customer. We submit that the appropriate pathway is a public-private partnership, as also recommended by PCAST, where the private sector funds, owns and operates the facility, and the government is a customer for services.

III. PRELIMINARY COSTING DECISIONS

On July 12, 2012, Pegasus/CITE™ held a two-day planning session on the project’s preliminary design and concept of operations (CONOPS). This meeting was a culmination of several briefings between the Pegasus and CITE™ vendor teams. The goal of this session was to focus on CITE™’s execution plan and financial model, including the “cost-out” of each element of construction - CITE™’s CITE LAB™, CITE™ BackBone™, and CITE™ Research Campus™.

These elements have been “costed out.” This “costing” process will form the primary basis of the initial capital expense (CAPEX) projection, currently estimated by Pegasus at

\$450-500 Million. The remaining cost variables to be addressed at this stage — assuming the land variable has been reduced to a constant — are operating expenses (OPEX), and staffing (SG&A). Revenue projections are segmented into four assumption sets: user/tenant fees, “bolt-on, build-in” infrastructure enhancements, resource production and resale, and “other,” which includes branding, film-site revenue, and certification testing.

In the PCAST Report, the findings indicated that “Building a Test City from scratch would be prohibitively expensive. . .”⁹ Our business plan, and projected CAPEX/OPEX and revenue models indicate that as a privately-financed, publicly-available enterprise, an investor return in excess of +20% is feasible, without the need of any federal grant or subsidy. Consequently, CITE™’s scale and scope would actually provide the government with more capability than the expectation of the contemplated “Model City” in PCAST, and extend potential users to other government, university, and private sector stakeholders, beyond solely new generation wireless technologies and applications. In sum, by being a promoter of CITE™, and a potential customer for CITE™ services, the PCAST goals are met and exceeded without the uncertainty of annual budgets and appropriations.

IV. CONCLUSION

Based on the above information and the following description of CITE™ — its origins, and concept of operations—CITE™ is a perfect example of a private sector response to the “Model City” described in the PCAST recommendation on a much broader scale. Moreover, CITE™ not only would be the appropriate vehicle for the goals sought by PCAST and those

⁹ G.4. “How Much Will The Test City And Mobile Service Test Center Cost?
http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_spectrum_report_final_july_20_2012.pdf

outlined in the joint NTIA and FCC Request for Comments, but also would save the USG an anticipated \$14 Million in appropriations.

We look forward to further discussions with NTIA and the FCC staff on CITE™ and how CITE™ can support the goals of the PCAST recommendation.

Respectfully submitted,

/s/

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