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**VIA REGULATIONS.GOV**

The Honorable Gina M. Raimondo  
Secretary of Commerce  
U.S. Department of Commerce  
1401 Constitution Avenue, NW  
Washington, DC 20230  
Attention: National Telecommunications and Information Administration

***Re: NTIA-2022-0003: Public Wireless Supply Chain Innovation Fund  
Implementation***

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Dear Secretary Raimondo:

Attobahn Inc., (“Attobahn”) hereby respectfully responds to the National Telecommunications and Information Administration’s (“NTIA”) request for comment on the Public Wireless Supply Chain Innovation Fund,<sup>1</sup> enacted through the CHIPS and Science Act of 2022.<sup>2</sup> Attobahn commends NTIA’s initiative to seek stakeholder input on the implementation of this historic legislation, as well as NTIA’s focus on funding for start-up companies with the technological capabilities and know-how to revolutionize the nation’s wireless capabilities. As set forth below, Attobahn has re-imagined and successfully engineered high-speed and high-capacity data transmission technologies of the future, and its innovations will propel the United States ahead of its competitors in next-generation technology beyond. Further, these advancements will

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<sup>1</sup> *Public Wireless Supply Chain Innovation Fund Implementation*, 87 Fed. Reg. 76,182 (Dep’t Commerce Dec. 13, 2022) (“Request for Comment”).

<sup>2</sup> *See Implementation of the CHIPS Incentive Program*, 87 Fed. Reg. 61,570 (Dep’t Commerce Oct. 12, 2022) (Docket Number 21006-0213).

enhance competition and diversification of the U.S. telecommunications supply chain while augmenting the security of data transmissions nationwide.<sup>3</sup>

## I. INTRODUCTION

Attobahn is a small, American company that is accelerating America's digital transformation by revolutionizing communication network technology. Attobahn has spent millions of dollars over the course of a decade developing the first bleeding-edge wireless (and fibreless) mobile broadband content delivery system.<sup>4</sup> Attobahn's innovation lies in a mobile device that acts as a roving hotspot – the Viral Molecular Network – which enables high-speed, high-capacity internet, providing terabits per second quantum speed throughput to each user.<sup>5</sup> Leveraging a range of spectrum, including high-frequency spectrum (millimeter waves over 100 GHz), Attobahn's technological breakthroughs optimize data transmission by defeating traditional barriers, including distance, physical structures, and interference. Additionally, the company's solutions complement, and are compatible with, the significant investments already made to date in legacy networks and systems that are enabling America's transition to 5G.

Attobahn's innovations are approaching Technical Readiness level 7<sup>6</sup> and are capable of delivering symmetrical 10 gigabits of data enterprise to edge throughput, apart from data storage. In recent tests, the company's patented technologies demonstrated processing capability 1,100% times faster than the current industry's fastest data center switch. The Viral Molecular Network

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<sup>3</sup> Attobahn, <https://attobahn.com/> (last visited Jan. 27, 2023).

<sup>4</sup> Attobahn, Products, <https://attobahn.com/products/> (last visited Jan. 27, 2023).

<sup>5</sup> Attobahn, Corporate Profile, <https://attobahn.com/corporate-profile/> (last visited Jan. 27, 2023).

<sup>6</sup> Technology Readiness Level 7: System prototype demonstration in an operational environment. Prototype near or at planned operational system. Represents a major step up from technical readiness level 6 by requiring demonstration of an actual system prototype in an operational environment (e.g., in an aircraft, in a vehicle, or in space). Supporting information includes results from testing a prototype system in an operational environment.

will be groundbreaking when delivered to the commercial market.<sup>7</sup> In addition, Attobahn's layered security architecture and interoperability make its solutions safer than all communication platforms on the market today.<sup>8</sup>

Further, Attobahn's technologies are rapidly scalable, easily deployable, and energy efficient, which means that the company is able to expeditiously deliver products and services nationwide at a lower cost – including to communities that currently have limited or no access to broadband due to geographical constraints.<sup>9</sup> Because Attobahn's Viral Molecular Network technology works independently of cell towers, tower deployment (and associated costs) are no longer an impediment to America's 5G and future generation readiness. With Attobahn's technologies, America is poised to lead the rest of the world in the adoption of new wireless communications systems that enable the digital demands of tomorrow, including reliable low latency real-time communications, the Internet of Things, advanced manufacturing, smart cities, and much more. The economic and national security implications here are enormous; America must lead and Attobahn's technologies will give America the runway to lead.

Without question, Attobahn's mission aligns perfectly with NTIA's, which is to secure "U.S. leadership in the global telecommunications ecosystem, {and} foster competition, lower costs for consumers and network operators, and strengthen {America's} supply chain."<sup>10</sup> As NTIA seeks to "unlock opportunities for U.S. companies, particularly small and medium enterprises,"<sup>11</sup>

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<sup>7</sup> Attobahn, Corporate Profile, <https://attobahn.com/corporate-profile/> (last visited Jan. 27, 2023).

<sup>8</sup> Attobahn, Why Attobahn, <https://attobahn.com/why-attobahn/> (last visited Jan. 27, 2023).

<sup>9</sup> Attobahn, Corporate Profile, <https://attobahn.com/corporate-profile/> last visited Jan. 27, 2023). Attobahn's technologies empower and support local services in delivering products and services across the country at lower cost.

<sup>10</sup> Request for Comment at 76,182.

<sup>11</sup> *Id.* at 76,183.

Attobahn is preeminently positioned as an American and minority-owned telecommunications and integrated circuit<sup>12</sup> technology company to become a market leader and provider of trusted technology throughout America and the markets of America's allies.

## **II. QUESTIONS ON THE STATE OF THE INDUSTRY**

NTIA aptly recognized in its Request for Comments that today's wireless technology infrastructure market has become highly consolidated, characterized by a small group of foreign firms dominating the global industry. This lack of competition has made market entry by new companies with innovative solutions exceedingly difficult. As a consequence, America is now lagging in innovation, constrained by higher prices, dependence on foreign producers, and threatened by a growing digital divide across global wireless systems.

At the same time, state-owned and state-subsidized telecommunications enterprises located in the People's Republic of China are leveraging their enormous market share and distorted prices to displace competitors. The national security risks posed by the United States ceding the next generation of telecommunications innovations to China and other countries of concern are obvious. The U.S. telecommunications ecosystem needs to regain a competitive advantage, and the Innovation Fund will be an important catalyst for this change. By bringing new, start-up innovations to America's wireless communications ecosystem, NTIA can ensure that the domestic market has equal access to the technological capabilities it requires to lead once again.

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<sup>12</sup> Specifically, field-programmable gate array, FPGA, and application-specific integrated circuit, ASIC.

***A. What are the chief challenges to the adoption and deployment of open and interoperable, standards-based RAN, such as Open RAN? (Q. 1) What are the challenges for brownfield deployments, in which existing networks are upgraded to incorporate open, interoperable, and standards-based equipment? (Q. 1a)***

At present, one of the most significant challenges for the United States in advancing telecommunications capabilities is that the nation is looking primarily for software solutions rather than re-envisioning how new software and hardware capabilities can be integrated together to form new, highly-advanced communication systems. If the Innovation Fund is to succeed in catalyzing the growth of new wireless communications capabilities, NTIA needs to back new technological pathways that enable existing telecommunications devices to transmit data more rapidly, efficiently, securely, and in more environmentally sustainable ways.

In the high-technology industry, switches are moving to the forefront of the integrated circuit device revolution because they are able to harness data and radio frequencies in unprecedented ways. Attobahn's technology platform is based on unique high-speed and high-capacity switch-enabled systems specially engineered for integration with current telecommunications devices (*e.g.*, mobile phones, automobiles, personal computers, and advanced systems-integrated computing systems),<sup>13</sup> and the company's specific value proposition is that its integrated Viral Molecular Network (system of integrated switches) delivers to users nationwide secure, high-speed, high-capacity internet with reduced power consumption at terabits per second. More specifically, the architecture of Attobahn's system is such that it eliminates the need to invest in additional costly infrastructure by deploying small, mobile, and affordable nodal bodies that

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<sup>13</sup> Attobahn, Company, <https://attobahn.com/company> (last visited Jan. 27, 2023).

integrate together and with existing devices into a sophisticated telecommunications network.<sup>14</sup> And because Attobahn's technologies are able to leverage existing telecommunications infrastructure, its integration into cities nationwide will be efficient.

In sum, by combining existing hardware and technologies with a completely wireless new systems architecture that moves while transporting data, Attobahn has pioneered the creation of new media properties, applications, and advanced technologies that will revolutionize telecommunications capabilities and speed within the United States and around the world.<sup>15</sup> Plus, with a layered security architecture incorporated into the system, communications platforms are safer.

***B. What ongoing public and private sector initiatives may be relevant to the Innovation Fund? (Q. 2)***

The "Spectrum Horizon" initiative of the Federal Communications Commission ("FCC") is a major public sector initiative that is relevant to the Innovation Fund because it governs the ultra-high radio frequencies between 95Ghz and 3Thz.<sup>16</sup> The FCC recently adopted new rules as part of Spectrum Horizon to allow for innovators and experimenters to push those boundaries further, and to develop new equipment and applications for radio spectrum between 95Ghz and 3Thz.<sup>17</sup> These frequencies – long considered to lie at the outermost horizons of usable radio spectrum – are becoming increasingly well-suited for the development and deployment of active

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<sup>14</sup> Attobahn, Corporate Profile, <https://attobahn.com/corporate-profile/> (last visited Jan. 27, 2023).

<sup>15</sup> Attobahn, Why Attobahn, <https://attobahn.com/why-attobahn/> (last visited Jan. 27, 2023).

<sup>16</sup> 34 FCC Red 1605 (2).

<sup>17</sup> Press Release, Federal Communications Commission, FCC Opens Spectrum Horizons for New Services & Technologies (Mar. 21, 2019). *See also Spectrum Horizons*, 84 Fed. Reg. 25,685 (Fed. Comm'n Comm'n June 4, 2019).

communications services and applications.<sup>18</sup> Under the new rules, the FCC created a new category of experimental licenses for use of these higher frequencies.<sup>19</sup> Frequencies above 95 Ghz have importantly been identified as optimal for instantaneously temporary data links that can enable the transmission of large bandwidth uncompressed high-definition video signals and other high-speed data for other types of applications, such as Attobahn's technology. Thus, in order to maximize the U.S. Government's efforts, the Innovation Fund should leverage the FCC's Spectrum Horizon initiative to spur innovation in the ultra high frequencies and allocate funds specifically for innovations at frequencies that are not currently in standard use.

Furthermore, NTIA should substantially improve visibility and communications with new industry stakeholders. One productive way is to institute a formal committee made up of start-up firms – for example through an advisory committee – to collect and share information about the telecommunications industry, including emerging standards and innovations. Such a committee would work best if it is able to facilitate private sector interactions with a broad range of relevant U.S. Government agencies to ensure the efficient intersection of industry innovations and Government policies. It stands to reason that collaboration in this manner would dramatically accelerate American R&D efforts and the commercialization of new innovation.

***C. What gaps exist from an R&D commercialization and standards perspective, and how much might NTIA best ensure funding is used in a way that complements existing public and private sector initiatives? (Qs. 2a and 2b)***

As NTIA correctly underscored in its request for comment, the Innovation Fund investment opportunity is intended to incentivize, exactly as its name suggests, new innovations and

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<sup>18</sup> Press Release, Federal Communications Commission, FCC Opens Spectrum Horizons for New Services & Technologies (Mar. 21, 2019).

<sup>19</sup> *Id.*

advancements in the telecommunications sector.<sup>20</sup> NTIA described the key drivers of the Innovation Fund as technologies that promote American leadership, lower costs for users, and strengthen domestic supply chains. NTIA also emphasized that the Fund will be critical to improving the state of the industry currently marked by the lack of competition, the weakening of American supply chain resilience, and the escalation in prices.<sup>21</sup>

To be sure, the consolidation of the telecommunications industry has foreclosed opportunities for new, innovative American companies to break into the market. A few industry giants in the market today are dictating the future of U.S. (and global) telecommunications capabilities, and this lack of diversity and competition threatens to constrain innovation.

In this context, it is easy to understand why the Innovation Fund is so crucial. Financial awards that focus on innovative, efficient, and economic technologies will enable small companies like Attobahn to participate in the market by deploying new capabilities that have the potential to transform the telecommunications industry, accelerate America's adoption of 5G and successor generations, and usher in the next technological revolution. It should be remembered that throughout American history, the nation's most important scientific achievements often resulted from the discovery of innovative pathways by small and relatively unknown market players. The telecommunications industry is now ripe for such evolution, and Innovation Fund awards focusing on groundbreaking technologies from start-up companies like Attobahn will drive forward that change.

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<sup>20</sup> Request for Comment at 76,182.

<sup>21</sup> *Id.*



Further, it is important to keep in mind that, in America, minority- and women-owned businesses are historically underutilized and receive less than 3% combined of venture capital available in the market: 2% to women-owned businesses and less than 1% to minority-owned businesses. This creates significant barriers to entry into today's wireless technology infrastructure market for innovations that could change the world. To ensure America secures its leadership position in the global telecommunications market, NTIA must ensure that the Innovation Fund addresses these inequities.

***D. How can the Innovation Fund help increase and accelerate the pace of investment by public and private entities? (Q. 4)***

Traditionally, U.S. Government awards have been vital to start-up firms, enabling them to attract additional capital from investors that ordinarily would not have taken the risk. Indeed, the Government's acknowledgment and validation of new technologies through grants helps the investor community, who often lacks the requisite expertise to validate the technical merits of projects, gain sufficient confidence in those projects to financially back them. Additionally, the Government's endorsement of technologies, through the provision of loans and loan guarantees, can often go a long way in boosting investor confidence in new projects as well.

In this context, the U.S. Government must understand how important its pre-award engagement with industry can be. The more frequently the Government interacts with potential funding applicants, the more it is able to explore, understand, and evaluate the technical merits of specific projects and their likelihood of success. And within an industry where corporate giants dominate and innovations by small start-up companies are generally less known, repeated Government engagement with smaller industry players is crucial.

Accordingly, Attobahn welcomes any potential for substantive engagement with NTIA and other agency stakeholders to discuss its technologies. Attobahn is looking forward to demonstrating how its integrated network solutions are able to rapidly transform the telecommunications industry, provide high quality and low-cost wireless access nationwide, and advance the nation's broader competition goals. Service to the American industry is the reason Attobahn was formed in the first place.

### **III. QUESTIONS ON TECHNOLOGY DEVELOPMENT AND STANDARDS**

NTIA has requested information from industry as to the current state of open and interoperable, standards-based RAN. This information is being sought to maximize the potential impact of grants by identifying technologies that would be best suited to receive them.

***A. What open and interoperable, standards-based network elements, including RAN and core network elements, would most benefit from additional R&D supported by the Innovation Fund? (Q. 6)***

It should be noted that interoperability and standards-based networks are not limited to the set of technologies available on the market today. Attobahn's technologies are both new and meet NTIA's criteria of interoperability and standards-based solutions. Funding opportunities need to account for innovations, like Attobahn's, that are groundbreaking in this respect.

Indeed, the fact that the telecommunications industry is on the brink of a major revolution driven by advancements in quantum technologies means that it is too early for the industry to choose winners and losers based on traditional network architectures. History has proven, time and time again, that the technologies with the greatest potential to revolutionize an industry are those that re-envision the manner in which current systems operate. Attobahn's technologies are just that – they re-envision the entire wireless network operating system by bypassing traditional

Transmission Control Protocol/Internet Protocol (TCP/IP) methods and simplifying systems integration through smaller, mobile devices.

***B. What kinds of projects would help ensure 6G and future generation standards are built on a foundation of open and interoperable, standards-based RAN elements? (Q. 8)***

As noted, NTIA should ensure that the forthcoming Innovation Fund awards edibility criteria are not limited to technologies based solely on existing architecture. It is important that award eligibility accommodate technologies that utilize new, groundbreaking architectures, like Attobahn's, that re-envision the communications networks in transformative ways, dramatically improve data transfer speed and security, and remain interoperable and standards-based.

Emphasizing again the enormous the barriers to market entry, Attobahn submits that it is extraordinarily difficult for start-up companies that have already invested substantial capital in R&D to generate the additional capital needed for product deployment. This is where financial support from the Government is necessary. Attobahn respectfully submits that NTIA should reserve awards for start-up companies needing assistance to deploy products at a small scale (*e.g.*, at a city level) in order to demonstrate a successful proof-of-concept. Companies that are able to prove their technologies at this scale should then be permitted to qualify for additional funding for product deployment at the larger, commercial scale.

**IV. QUESTIONS ON INTEGRATION, INTEROPERABILITY, AND CERTIFICATION**

NTIA's Request for Comment states that its goal with the Innovation Fund is to promote telecommunications advancements through systems integration and component interoperability. Attobahn's innovations perfectly align with NTIA's mission as its revolutionary wireless

communications system integrates its technology platform with existing telecommunications equipment to augment the speed and size of data transfers nationwide.

*A. How can projects funded through the program most effectively support the “integration of multi-vendor network environments”? (Q. 10)*

The promotion of open, interoperable and standards-based equipment is precisely the reason why Attobahn developed its revolutionary high-speed, high-capacity terabits per second wireless network system.<sup>22</sup> As noted, Attobahn’s wireless architecture connects existing multi-vendor telecommunications equipment to its specially-designed high-speed mobile molecular network structures through highly-advanced access nodes (switches) that interact with one another to facilitate data transfers at unprecedented speeds.<sup>23</sup> By integrating open, interoperable, and standards-based equipment and current infrastructure with cutting-edge core technologies, Attobahn’s wireless systems are able to transfer data leagues faster than current technologies at substantial cost savings, including a significant reduction in cell towers required for 5G. In short, Attobahn’s technologies enhance competition within the telecommunications industry by enhancing, rather than limiting, systems interoperability.

Attobahn believes that the Innovation Fund should support any advanced technologies that benefit the industry as a whole rather than promote the specific objectives of individual companies.

These facts make clear that Innovation Fund awards are needed to seed breakthroughs in telecommunications innovations. In a sector where the economic costs and national security implications of ceding market share to foreign companies are too great, falling behind competitors cannot be an option.

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<sup>22</sup> Attobahn, Company, <https://attobahn.com/company> (last visited Jan. 27, 2023).

<sup>23</sup> Attobahn, Company Profile, <https://attobahn.com/corporate-profile/> (last visited Jan. 27, 2023).

V. **QUESTIONS ON TRIALS, PILOTS, USE CASES, AND MARKET DEVELOPMENT**

A key goal of the Innovation Fund is to promote and deploy technologies that enhance the competitiveness of America's telecommunications systems and interoperable standards-based radio access network (RAN). Attobahn submits that the award eligibility criteria should be as inclusive as possible to ensure innovative technologies from new, start-up companies are able to garner Government support to meaningfully participate in the U.S. market.

- A. What kinds of trials, use cases, feasibility studies, or proofs of concept will help achieve the goals identified in 47 U.S.C. 906(a)(1)(C), including accelerating commercial deployments? (Q. 14) What sort of outcomes would be required from proof-of-concept pilots and trials to enable widespread adoption and deployment of open and interoperable, standards-based RAN, such as Open RAN? (Q. 16)*

U.S. Government support is essential to enabling the American telecommunications industry to lead the rest of the world. At the same time, Attobahn understands that Government resources are limited and that NTIA will need to develop vetting criteria to ensure that projects selected for awards have a high degree of success. At the same time, Attobahn cautions that the development of criteria should not inadvertently discriminate against small companies that have not yet accumulated the level of capital needed to deploy their technologies at scale.

In Attobahn's case, as noted, the barriers to market entry are significant and prohibit the generation of the cash flow needed – beyond the substantial R&D investments already made – to fund product deployment at scale. Yet, notwithstanding this constraint, the company has already compiled substantial data – in the form of test reports and detailed patents filed in over 116 countries, and expressions of interest from private industry, universities, and all levels of government – to demonstrate the success of its innovations. These datasets should be evaluated as part of Attobahn's funding application.

Consistent with NTIA's stated goal of facilitating market entry for new innovative American companies, NTIA's award program should also be structured in a way that recognizes that firms may require capital in phases. For example, capital could first be awarded to demonstrate a proof-of-concept through product deployment, and then additional capital would be awarded to bring the innovation to the market. Operationally, this means that NTIA should structure grants to start-up companies as one continuous project with discreet award disbursements occurring with the completion of specific milestones. In Attobahn's case specifically, the company would use the first award disbursement to develop and deploy its integrated network system prototype at a small scale (*e.g.*, a three city-block network) and then incrementally build out its network systems at larger scales through additional disbursements.

## **VI. QUESTIONS ON PROGRAM EXECUTION AND MONITORING**

NTIA has underscored the historic nature of the Innovation Fund in building America's telecommunications future. To best effectuate the purpose of the Fund and to ensure that eligibility is broad, Attobahn makes specific recommendations on how the program requirements and monitoring may be tailored to achieve specific goals.

### ***A. What kind of metrics and data should NTIA collect from awardees to evaluate the impact of the projects being funded? (Q. 21)***

To ensure that the Innovation Fund maximizes America's technological progress as well as opportunities across the telecommunications ecosystem, Attobahn submits the following additional metrics and data that should inform the Innovation Fund's impact evaluation:

- security against today's most common vulnerabilities;
- speed and latency;
- scalability;
- economic benefits;
- next generation workforce training and development;

- increased network throughput to support next generation application; and
- economic hub for expansion.

***B. How can NTIA ensure that a diverse array of stakeholders can compete for funding through the program? Are there any types of stakeholders NTIA should ensure are represented? (Q. 22)***

NTIA has already acknowledged the importance of enhancing competition and unlocking opportunities for small and medium U.S. enterprises in its request for comment. NTIA's forthcoming Funding Opportunity Announcement should encourage participation by such enterprises in five important respects.

First, funding should be flexible, both in type and timing. NTIA should explore not only grants, but also loans, loan guarantees, and other funding options that enhance the flexibility and reach of the investments. With respect to matching contributions, the 50-50 cost-share split that the U.S. Government traditionally requires may be too difficult for small, start-up companies like Attobahn to achieve, especially when they have already invested millions of dollars in R&D and product development. In instances like this, NTIA should consider including in the cost-share analysis the applicant's past investments in R&D and related operations that have to-date supported the development of the technology. Additionally, NTIA should consider loans obtained by the applicant (including loans backed by loan guarantees) as part of the applicant's cost-share. Flexible approaches such as this encourage greater participation by smaller companies in the Innovation Fund awards process.

Second, as noted above, NTIA should provide awards for various stages of product development, including the building and testing of prototypes to full scale deployment. Such an approach will increase NTIA's confidence in the likelihood of the project's success while the

project progresses in phases. Furthermore, allowing start-up firms to participate in the awards process in this flexible way will foster greater inclusion.

Third, NTIA should permit companies to make confidential submissions and facilitate confidential meetings with industry. This will allow companies like Attobahn to present their innovative and revolutionary technologies to the Government without rendering the technology vulnerable to theft by foreign competitors.

Fourth, NTIA should ensure that the administrative burden associated with the process of applying for awards does not exclude smaller, less sophisticated companies. Navigating the awards process is often complex and time consuming, so it is important to simplify the process as much as possible to encourage greater participation.

Fifth, NTIA should provide special consideration to those technologies that can demonstrate a capability of operating at higher level bandwidths of the spectrum to optimize its technology to benefit a diversity of Americans who deserve access to the benefits of the 6G market and beyond.

***C. How can the fund ensure that programs promote U.S. competitiveness in the 5G market? Should NTIA require that grantee projects take place in the U.S.? (Qs. 25 and 25a)***

NTIA should take extra precaution to ensure that applicants owned by, or controlled by governments of, or entities located in countries of concern do not benefit from the Innovation Fund awards. NTIA should require substantive and comprehensive disclosure on an applicant's leadership, researchers, beneficial owners, affiliations, and substantial business dealings that can lead to foreign influence or control. Additionally, NTIA should take steps to ensure that award recipients have no connection to the Chinese Communist Party ("CCP"), the People's Liberation



Army (“PLA”) or other Chinese government entities flagged by the U.S. Government as problematic and untrustworthy.

NTIA should take additional steps to ensure that foreign applicants that have previously received government subsidies (*e.g.*, as defined by the Subsidies and Countervailing Measures Agreement of the World Trade Organization) do not qualify for Innovation Fund awards. A reasonable look-back period would be 10 years. It stands to reason that because those entities have already benefitted from foreign government programs from which American applicants were disqualified, it would be patently unjust to allow them to benefit from U.S. Government assistance to the detriment of American-based firms.

NTIA should also prohibit any Innovation Fund award recipients to invest in R&D and other types of product development work in any countries of concern. Because money is fungible, U.S. Government grants should not be used to indirectly offset other investments abroad that may imperil U.S. national security or foreign policy interests.

Finally, NTIA should require that all projects that receive Innovation Fund awards take place in the United States. Because American taxpayers are funding innovations in wireless communications technologies, it is axiomatic that the American public directly benefit.

## **VII. CONCLUSION**

The Innovation Fund offers a unique opportunity for the United States to catalyze innovations in the telecommunications industry with the goal of leading the world in next-generation wireless capabilities. As the Government proceeds with formulating the awards program, it should consider ways to encourage participation by new companies with technologies that promise to revolutionize the industry by re-envisioning current system architectures.

Attobahn's technologies offer capabilities beyond anything available in the market today, and are unique in that they are easily scalable and deployable. Attobahn looks forward to its ongoing engagement with the U.S. Government and consideration to receive Innovation Fund awards.

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Thank you for your consideration. If you have any questions concerning this submission, please do not hesitate to contact the undersigned.

Respectfully submitted,

/s/ Nazak Nikakhtar  
Nazak Nikakhtar, Esq.