Congress of the United States
Washington, DC 20515

June 3, 2021

The Honorable Betty McCollum
Chairwoman
Subcommittee on Defense
House Committee on Appropriations
Washington, DC 20510

The Honorable Ken Calvert
Ranking Member
Subcommittee on Defense
House Committee on Appropriations
Washington, DC 20510

Dear Chairwoman McCollum and Ranking Member Calvert,

We write in support of the Air Force Research Laboratory Information Directorate's (AFRL/RI) Fiscal Year 2022 defense appropriations funding request. This includes $10 million for a quantum network computing testbed, $10 million for the first and only government-owned UAS traffic management (UTM) system, and $10 million for an artificial intelligence and machine learning (AI/ML) Experimentation and Transition Testbed. These investments will deepen AFRL/RI's expertise in cutting-edge fields such as quantum computing and artificial intelligence and greatly strengthen our defense capabilities.

We write today as Members who represent the five-county region that is home to 96 percent of AFRL/RI's workforce. The site employs 830 military and civilian personnel in addition to 372 contractors. AFRL/RI has a significant economic impact of more than $500 million across the five counties we represent and is responsible for 1,415 indirect jobs, a testament to the vitally important role AFRL/RI plays in driving economic growth and high-tech innovation our community.

Our top priority request on behalf of AFRL/RI is for a $10 million addition to the U.S. Air Force Research, Development Test, and Evaluation Budget to establish a Quantum Network Computing Testbed. It is a national security imperative that we lead in the development of quantum computing technologies, especially given advances that continue to be made by adversaries like China. This new program will establish a groundbreaking avenue for creating the necessary components and protocols to demonstrate a proof-of-concept quantum network. This project would build on the objectives of the National Quantum Initiative Act of 2018, which established a coordinated multiagency program to support research and training in quantum information science. It would also complement other breakthrough initiatives in the quantum network field, such as the Quantum Network Infrastructure Act of 2020 and the Quantum User Expansion for Science & Technology (QUEST) Program. While based in Rome, New York, this project will have positive spillover effects for nearby private industry and academic institutions. The main objectives of the Quantum Network Computing Testbed will be to:

- Foster and grow the local quantum ecosystem, bringing together key stakeholders across government, industry, and academia;
- Accelerate the development of new software and algorithms that provide a quantum advantage over traditional computing systems;
- Create the necessary components and protocols to show that quantum networks are not only possible but an integral part of the future national security space and economy;

- Establish the initial infrastructure for the first multi-city quantum entanglement distribution network in the United States; and
- Continue to train the next generation of scientists and engineers through expanded access to quantum technologies and through the development of new academic courses and new degrees.

Our second request on behalf of AFRL/RI is for an additional $10 million to the U.S. Air Force Research, Development Test, and Evaluation Budget to continue development of the first and only government-owned UAS Traffic Management (UTM) system. This project will provide the Department of Defense and other federal agencies the services needed to support Blue Force small Unmanned Aircraft Systems (sUAS) base security operations and Counter-sUAS operations. This investment would be a revolutionary tool to counter our adversaries' use of low cost sUAS to target American lives, exploit air space, hide in plain sight, and commit acts that disrupt our nation's economy and homeland security. The project would be based in Rome, New York, and its focus will be to:

- Support the research and development needed to prototype a trusted UTM system;
- Counter adversaries' capabilities to disrupt operations, gather intelligence, and provide indirect fire support; and
- Provide a real-time view of the airspace and situational awareness needed to support counter-sUAS missions.

Our final request on behalf of AFRL/RI is for a $10 million addition to the U.S. Air Force Research, Development Test, and Evaluation Budget for the development of the Artificial Intelligence and Machine Learning (AI/ML) Experimentation and Transition Testbed. The AI/ML Experimentation and Transition Testbed will provide an operationally relevant environment for warfighters to use and assess new AI tools, AI agents, and human-machine teaming techniques.

It also builds on the 2021 NDAA AI/ML Center of Excellence's four pillars – data, people, algorithms, and infrastructure – while adding a fifth pillar of capability. While the testbed would be based in Rome, New York, this project will have positive spillover effects for nearby businesses and academic institutions. AI is a proven and rapidly advancing capability that has the potential to impact every aspect of the Pentagon's mission. It is therefore vitally important to:

- Build controlled and accessible data repositories to support industry and academic partners;
- Expand the pool of AI/ML practitioners and researchers through better-funded training initiatives;
- Accelerate research and development of new algorithms that focus on our national security needs and leverage the AFRL/RI's AI/ML ecosystem; and
- Create an operationally relevant testbed with live data that will enable AI/ML experimentation.

We thank you for your consideration of these important requests. The programs we support would greatly expand AFRL/RI's capabilities and in turn enable the United States to compete globally with our adversaries, dominate the virtual battlespace, and counter emerging threats to our country.

Sincerely,

Claudia Tenney
Member of Congress

Elise M. Stefanik
Member of Congress