Re: Viasat Comments in Docket No. 200521–0144

Dear Sir or Madam:

Viasat welcomes the opportunity to respond to your request for comment in the national strategy to secure 5G implementation plan proceeding. Viasat, based in the United States and manufacturing our satellites domestically, has several decades of experience developing and manufacturing secure, reliable and resilient technology and continues to develop new technologies that will meet the demands of a 5G economy and our national security infrastructure.

5G has been conceived as an ecosystem of many technologies – a network of networks – in which satellite plays a vital role in accelerating opportunity, maximizing its potential, and extending its reach. 5G is not a step change from 4G, nor is it just a technological shift. It is a paradigm shift in the way we think about high speed broadband networks. Today's 5G vision encompasses a broad technology ecosystem – with multiple network technologies supporting a global infrastructure.

Just as the Internet transformed society's approach to doing business, we believe that this next generation of connectivity will provide world-changing economic opportunities. By combining the benefits of each technology – satellite, wireless, wireline – the world saw an explosion of information resources at its fingertips, the ability trade more efficiently, and a rapid growth in Internet adoption.

This new 5G ecosystem approach is proving to be essential for leveraging the unique benefits of each type of network technology to expand the reach and capability of the Internet. The combination of 5G cellular, Wi-Fi, satellite and other advances are enabling this same kind of ecosystem approach to be extended to the wireless world – both in the core of the network and its edges – to expand what we can do with our fixed and mobile devices and where we can

do it. This 5G ecosystem approach is also essential for expanding the reach of next-generation connectivity. By taking advantage of satellite's geographically independent cost structure to extend connectivity, for example in isolated and remote areas, satellite systems can accelerate the commercially viable deployment of advanced networks and extend scalable and efficient advanced network solutions globally. This is especially critical in areas that may not be economically connected via terrestrial networks, and in areas that terrestrial network providers otherwise leave behind. Network diversity is also essential for ensuring network security, resiliency and continuity of service across geographies and enabling 5G devices to connect on truly mobile platforms including onboard aircraft, high-speed trains, sea-going vessels, and land-based vehicles that are beyond the reach of a cell tower.

If we want to fundamentally expand what our networks are capable of achieving, and the places they are capable of reaching – we need to make sure we are taking a holistic approach to advance the entire ecosystem of technologies. When we enable next generation satellite capabilities and use them to maximize the reach and capabilities of next-generation networks, it maximizes the ability to harness this technology ecosystem to solve bigger problems – like extending high speed access to the billions of unserved people around the world, improving network resiliency, and enabling ubiquitous connectivity in the air, across the seas, and around the globe.

Next generation satellites, both geostationary and non-geostationary satellite networks, have their specific benefits for the 5G ecosystem. Innovation is driven by development of Very High Throughput Satellite (VHTS) systems in various types of orbits (GEO, MEO, LEO). VHTS systems are delivering substantial improvements in throughput, capacity and cost, as well as providing flexible, global and high-performance services. This is done by utilizing concentrated spot beams, wideband payloads, increased frequency re-use and higher frequency bands to significantly increase capacity and speeds over wide areas. VHTS networks are operating on a global basis and can provide broadband service to end-users with speeds in excess of 100 Mbit/s to the end user.

In addition to the developments in the space segment, there are technical developments in the satellite ground segment with evolutions both in the network platforms and satellite communication terminals and antennas. Satellite already has and will further adopt technologies and standards necessary to deliver the types of services needed in the 5G ecosystem, including in the areas of service delivery, network-slicing, orchestration, mobile edge computing, security, interoperability and resource virtualisation in order to transparently support secure end-to-end service delivery to vertical applications. Information flow on our network has the customer required resiliency necessary via the use of multiple gateway sites and high-level security encryption in each of the gateway locations resulting in an extremely low probability of intercept of data. In addition, our global network Security Operations Center (SOC) allows us to monitor for emerging cyber threats from both nation states and criminal organizations, by monitoring over 3 terabytes of data, and 5.5 billion cyber incidents, every day. This ability to detect monitor and mitigate these threats helps ensure that all users on our network, from sensitive government users to passengers on international flights to school

children connecting on our Community Internet sites, get meaningful levels of protection from cyber threats.

By 2022, Viasat will have completed its launch of its ViaSat-3 constellation which will give the company its own fully-global network infrastructure that can provide end-to end connectivity and high-end encryption for the most sensitive national security interests as well as for other data-sensitive industries such as financial services, banking, and healthcare. This network will help address the issues we have seen to date with the development of infrastructure and services that has not always been accompanied with an ideal approach to network security which, in turn, has led to breaches in some of the United States' most critical domestic networks and national security interests. Viasat is uniquely situated to provide a trusted global data transport infrastructure that affords unprecedented security, utility and resiliency, built on a secure supply chain. Viasat is the only vertically integrated global network operator, designing, building and operating its own network and avoiding sourcing any software or hardware from nations who would seek to undermine the security of America's networks.

As the 5G ecosystem continues to evolve, it is critical to assess which networks can best achieve the highest level of security to meet the needs of all ranges of consumers whether they are in the private or public sector. Satellite networks such as Viasat's will continue to play an essential role in providing secure, end-to-end solutions for critical national security communications.

We look forward to continuing to work with NTIA to develop strategies to address network infrastructure security.

Respectfully submitted,

Amy R. Mehlman
Vice President, US Government Affairs and Policy