Testimony of the GPS Innovation Alliance and CompTIA Space Enterprise Council
Submitted for the Record
U.S. Senate Committee on Commerce, Science, and Transportation
"America's Infrastructure Needs: Keeping Pace with a Growing Economy"
February 13, 2019

The GPS Innovation Alliance (GPSIA) and the CompTIA Space Enterprise Council jointly submit this statement in support of the Committee's examination of our nation's infrastructure.

America has a history of creating infrastructure milestones that have led to significant prosperity and national advantages. During the 1950s and 1960s, our nation was transformed by explosive growth in its public infrastructure ecosystem. That ecosystem allowed America to prosper by bridging communities and creating regional pockets of innovation. Coupled with the Space Race with the Soviet Union, the 20th century infrastructure ecosystem helped make America a technological superpower.

Now we have the opportunity to create a 21st century national infrastructure that will benefit all Americans. In almost every aspect of our infrastructure ecosystem, the Global Positioning System (GPS), a constellation of satellites located 12,500 miles above the earth, has played an integral role. The three capabilities derived from the constellation are Positioning, Navigation, and Timing. All three play key roles in the infrastructure ecosystem. According to the Department of Transportation, Positioning is the ability to accurately and precisely determine one's location and orientation two-dimensionally (or three-dimensionally when required), Navigation is the ability to determine current and desired position (relative or absolute) and apply corrections to course, orientation, and speed to attain a desired position anywhere around the world, from sub-surface to surface and from surface to space. Timing is the ability to acquire and maintain accurate and precise time from a standard (Coordinated Universal Time, or UTC), anywhere in the world and within user-defined timeliness parameters. Similarly, communication satellites provide voice, video, and data supporting aviation, defense, banking, and agriculture.

A 21st century infrastructure ecosystem includes transportation (roads, bridges, ports, and airports), water (public utilities) and energy (electric grid) that is layered by cross-cutting smart technology and enabled by ubiquitous broadband connectivity and sensors. Our infrastructure is urban, suburban, and rural, impacting every single American.

As we invest in our infrastructure, we must take into account emerging technologies for both the physical infrastructure (new durable materials) and the digital tier that makes the physical infrastructure smart. These technologies range from commercial earthmoving and grading equipment that use GPS to digital 3D models that can help streamline the construction process. When we utilize commercially-proven and competitively acquired technologies, we can improve efficiency, productivity and reduce delays associated with the engineering, construction and

operation of infrastructure projects. All of this translates into substantial savings, both in terms of new and existing spending.

Whether in the air or on the ground, it is imperative that we invest the resources needed to build a 21st century infrastructure. The *status quo* of aging bridges and not yet universal broadband connectivity is simply unacceptable. We must aim for American exceptionalism. Our GPS constellation will play a leading role in that exceptionalism. GPSIA and the CompTIA Space Enterprise Council appreciate the opportunity to share this perspective with the Committee and stand ready to work with you on efforts to advance our nation's infrastructure while promoting, protecting, and enhancing GPS and other communication satellites.