

United States Patent and Trademark Office

“America Invents Act”

Written Comments of

James F. Kurkowski

Chief Intellectual Property Counsel
Space Exploration Technologies Corp. (SpaceX)

on the topic of

Prior User Rights

November 8, 2011

Written Comments of James F. Kurkowski, Chief Intellectual Property
Counsel, Space Exploration Technologies Corp.

As part of the study mandated by Congress in the new America Invents Act of 2011, the U.S. Patent and Trademark Office (“USPTO”) has requested comments on the effect of prior user rights on innovation rates and small businesses. We thank Undersecretary David Kappos and members of the USPTO for giving our company an opportunity to address this important issue.

As a highly innovative small business, Space Exploration Technologies Corp. (“SpaceX”) strongly supports the inclusion of prior user rights in the new patent act and respectfully requests that the USPTO recognize in its study the need for robust prior user rights in the United States.

I. SpaceX is a successful and innovative small business.

SpaceX is a highly innovative and successful small company. We operate at the cutting edge of commercial space transportation with the goal of developing the safest, most reliable and affordable space launch and reentry services in the world. To that end, we have developed (and continue to develop) from the ground up a unique family of commercial launch vehicles and spacecraft.

With our technology, we serve a variety of America’s space-related needs. Our launch manifest includes nearly 40 flights for both commercial and government customers. As part of our Cargo Resupply Services contract with NASA, we will fly at least 12 missions to deliver supplies and cargo to and from the International Space Station. And before long, we expect to be carrying American astronauts into space as well.

Innovation is the enabler for much of this activity. SpaceX designed, built, tested, and commercialized the Merlin engine -- the first new all-American hydrocarbon engine for an orbital booster in 40 years. We created the Falcon 9 launch vehicle, the first U.S. launch vehicle developed since Saturn V with engine out reliability. We successfully launched and reentered the Dragon spacecraft and,

in doing so, became the first commercial company in history to successfully recover a spacecraft from Earth orbit.

The importance of these innovations has been widely recognized. The Massachusetts Institute of Technology's *Technology Review* recently named SpaceX one of the 50 most innovative companies in the world. *Popular Science* recognized the Falcon 9 launch vehicle as part of their Best of What's New 2010 awards. *Popular Mechanics* gave our Dragon spacecraft one of their 2011 Breakthrough Awards. And just this October, the *Wall Street Journal Magazine* named Elon Musk, SpaceX's CEO and CTO, Innovator of the Year in Technology.

Importantly, our innovations are a result of our focused investment in research and development, and our unique collaboration with NASA. Our Falcon 9 launch vehicle was developed from a blank sheet to first launch in approximately four and a half years for just over \$300 million. Similarly, our Dragon spacecraft was developed from a blank sheet to its first demonstration flight in just over four years for about \$300 million. These innovations (among others) have pushed us to the forefront of space exploration technology.

II. SpaceX protects many of its innovations as trade secrets.

At SpaceX, we believe that we must protect many of our innovations and new technology as trade secrets.

The space race has always been international in nature: the U.S. went to the moon as part of a drive to beat the Russians. Today, SpaceX also competes against foreign companies (and nations), to include France-based Arianespace and the People's Republic of China. Due to well-known difficulties associated with enforcing patent rights in certain foreign jurisdictions, patents alone cannot adequately protect our technology. Moreover, patent specifications provide a roadmap to unique technological advancements. The best way to ensure that our investment in ground-breaking research and development stays safe is to keep it confidential. Therefore, we rely heavily on trade secrets to prevent our innovations from being taken outside the U.S.

III. Our trade secrets help ensure that America is internationally competitive and help create jobs here at home.

At the same time that we have been protecting our innovations as trade secrets, SpaceX has been rapidly growing as a company. We have approximately \$3.5 billion in contracts with government and private customers. And we have facilities and offices around the country, including Hawthorne, California; McGregor, Texas; Houston, Texas; Cape Canaveral, Florida; Vandenberg Air Force Base, California; Chantilly, Virginia; and Washington, D.C.

We also have grown in terms of jobs. Founded in 2002 with a handful of employees, we now employ more than 1,500 people across the United States. These are extraordinary, highly skilled and high-paying jobs. Our emphasis on developing U.S. engineering and manufacturing capabilities has resulted in deep in-house expertise in propulsion, structures, avionics, safety, quality assurance, mission operations, launch, mission management, and systems integration.

Our innovation helps to keep the U.S. competitive in the evolving and perpetual space race because our products result in cost-effective space transportation. For example, as noted above, SpaceX spent just over \$300 million to develop its Falcon 9 launch vehicle to first launch. Under NASA's own estimates, had the Falcon 9 launch vehicle been developed under a traditional NASA approach, it would have cost approximately \$4 billion. Even using traditional commercial models and assumed factors, the cost would have been approximately \$1.7 billion. SpaceX built the Falcon 9 launch vehicle at a fraction of those costs. Such cost savings make us competitive on the commercial market and can help our current and potential U.S. Government customers – NASA and DOD – to save taxpayer dollars relative to the status quo.

A case in point is astronaut transport to the International Space Station. With the recent retirement of the Space Shuttle fleet, the U.S. currently relies exclusively on the Russian Soyuz spacecraft for such transport, costing American taxpayers as much as \$63 million per seat in the coming years. By comparison, our Dragon spacecraft is designed to carry seven astronauts at a time and, when

available for manned flight, will cost approximately \$20 million per seat. Simply put, we offer space launch services at the best prices in the world. And the world has taken notice. At the National Space Symposium in April 2011, Chinese officials acknowledged our low prices and conceded that they couldn't match them. And for the first time in more than three decades, America has begun taking back international market share in commercial satellite launch.

The technology and innovation we protect as trade secrets are important to this success.

IV. Robust prior user rights under the new first-to-file system facilitate meaningful trade secret protection.

Robust prior user rights under the new patent act are important to protecting a company's trade secrets. Indeed, Congress was specifically concerned with the interplay between trade secrets and the patent laws when it expanded prior user rights. In remarks on the act, Congressman Lamar Smith (R-Tex) stated that "[t]he inclusion of prior user rights is essential to ensure that those who have invented and used a technology but choose not to disclose that technology – generally to ensure that they not disclose their trade secrets to foreign competitors – are provided a defense against someone who later patents the technology." (Cong. Rec. Extension of Remarks, E1219, June 22, 2011). For a company with a trade secret practice and intense foreign competition, this is a critical issue.

Robust prior user rights need to address coverage for innovations already in use as well as those being developed and prepared for such use. It takes time to develop complex technologies such as ours. For example, our next generation launch vehicle, the Falcon Heavy, was announced earlier this year, but will not be first launched until approximately late 2013 or early 2014. Falcon Heavy will be the most powerful rocket in the world, capable of carrying 53 metric tons to orbit. Prior user rights protection must span the entire range of research and development to ensure that we are able to take our innovations from inception to commercial development without being pressured to disclose information that would

undermine our ability to compete, and thereby lose the very benefit the new act was intended to convey.

Again, we thank Undersecretary Kappos and the members of the USPTO for your consideration of our comments on this important issue.