BY JOHN STEARNS

Space Place

In a move that will add to Redmond's space-technology sector, Amazon will headquarter key satellite internet operations in the city

Redmond's constellation of space technology companies is growing with word in December that Amazon this year will locate key offices for its Project Kuiper satellite operation in the Eastside city.

Project Kuiper, first announced in early 2019, is an initiative to launch more than 3,000 low-Earth-orbit satellites that will provide low-latency, high-speed broadband connectivity to unserved and underserved communities around the world. Kuiper Systems LLC is a wholly owned subsidiary of Amazon.com Services.

Redmond will be the primary headquarters for Kuiper's research and development, as well as its primary prototype manufacturing and qualification facility, Amazon said in a December news release. The facility will comprise about 219,000 square feet of leased space in two buildings now being renovated.

Amazon isn't yet sharing additional details on the office's specific location or when the site will open this year, but a spokesperson did say in late December that more information on timing would come soon. *GeekWire* reported in December that the Redmond Commerce Center "seems the likeliest prospect" for the Kuiper office, adding that two buildings totaling about 219,000 square feet, at 18340 and 18460 N.E. 76th St., recently were leased and being renovated.

Amazon seeks Federal Communications Commission authority to launch and operate a Ka-band non-geostationary satellite orbit (NGSO) fixed-satellite service (FSS) system to provide high-speed, low-latency broadband services to consumers, businesses, and other customers worldwide, according to documents filed with the FCC. Amazon's Kuiper System will consist of 3,236 satellites in 98 orbital planes at altitudes of 367 miles, 379 miles, and 391 miles.

"Amazon's mission is to be Earth's most customer-centric company, and the Kuiper System is one of our ambitious projects to fulfill this mission," according to the FCC documents. "The Kuiper System will deliver satellite broadband communications services to tens of millions of unserved and underserved consumers and businesses in the United States and around the globe. ..."

Amazon will help close the "digital divide" by offering fixed broadband communications services to rural and hard-to-reach areas, including homes, schools, hospitals, government offices, businesses, first responders, and disaster-relief operations, the documents said. Kuiper also will enable mobile network operators to expand wireless services to unserved and underserved mobile customers and provide high-throughput mobile broadband connectivity services for aircraft, boats, and land vehicles.

"Amazon seeks to maximize the potential of spectrum and orbital resources available to advanced NGSO broadband constellations — providing high-quality broadband service to customers while simultaneously enhancing spectrum efficiency and spectrum sharing with other authorized systems," according to the documents. "The Kuiper System will do this by combining advanced satellite and Earth station technologies with an innovative constellation design and software defined network control functions. With the Kuiper System, Amazon will unleash opportunities for learning, employment, entrepreneurship, communication, and economic growth across the United States and globally."

Amazon's announcement excited OneRedmond, the city's combined economic development enterprise, chamber of commerce, and public foundation. OneRedmond also is a strategic partner in the Eastside's Innovation Triangle, a concentration of technology companies and workforce talent in Redmond, Bellevue, and Kirkland.

"Redmond is the perfect choice" for the Kuiper facilities, Kristina Hudson, executive director at OneRedmond, said in an email.

She said Amazon's Project Kuiper is a welcome addition to Redmond's other players in the commercial space cluster, including SpaceX, Aerojet Rocketdyne, Honeywell Aerospace, and RBC Signals.

PHOTOS COURTESY NASA

"Former Mayor (John) Marchione describes it this way: If extraterrestrials ever came to Earth, they would come straight to Redmond, as our ZIP code is on every satellite system launched in the United States ... "

The launch of a SpaceX Starlink satellite.

PHOTO COURTESY SPACEX

"Redmond has strong history in space technology innovation and manufacturing," Hudson said. "Former Mayor (John) Marchione describes it this way: If extraterrestrials ever came to Earth, they would come straight to Redmond, as our ZIP code is on every satellite system launched in the United States, thanks to the propulsion systems by Aerojet Rocketdyne. This, along with the sensors from Honeywell Aerospace, the Starlink broadband satellites by SpaceX, and the space communications by RBC Signals, makes the City of Redmond one of the largest clusters of space companies and employees in the state of Washington."

Hudson added that Redmond and the Eastside are "well-positioned to be world leaders in the future of this industry, as we have the technology and aerospace talent that companies require."

Amazon said in its news release that its Kuiper team has made significant progress toward its goal of bringing internet access to millions globally and had outgrown its current facility. As to where that is, the Amazon spokesperson would say only that the majority of the team works in the Seattle metro area. It's unclear how many people work on Kuiper now or will work at the Redmond facility since Amazon, as a matter of company policy, does not share details on team sizes. Amazon listed 153 open positions on its Kuiper team in early January, mostly in Bellevue.

Kuiper will add to an Eastside workforce that includes about 140,000 aerospace workers and more than 99,000 in technology, according to Hudson. The Puget Sound region has about 3,000 commercial space-related jobs, with at least 1,000 based in Redmond. Statewide, there are about 6,000 employees in the commercial space sector.

More broadly, Redmond's daytime employment population is estimated to be 84,547, of which 63.8 percent are technology workers and 12.6 percent are manufacturing employees, Hudson said.

"Redmond is proud to be the home of genuinely pioneering companies that are creating the technology now that will positively impact not just Redmond or Washington state, but the entire world and beyond," she said. "Our job at OneRedmond is to support all of our companies, including those in this highly specialized industry, through connections we can help make across the industry networks, with local, state, and regional government partners, and through education workforce and quality-of-life initiatives."

Amazon has filed applications for its satellite project with the International Telecommunication Union (ITU) and FCC, including seeking a waiver from FCC rules on processing round procedures for NGSO systems.

"The FCC may waive any of its rules for 'good cause' and generally does so where — as is the case here — the relief requested would not undermine the policy objective of the rule in question and would otherwise serve the public interest," Amazon wrote to the FCC. "Waiver in this instance advances the public interest and is consistent with FCC policy objectives."

Several companies with internet satellite operations, including SpaceX, have opposed Amazon's waiver request and have already received FCC approval for their satellites after applying in 2016 ahead of a November 2016 FCC deadline. SpaceX has launched 120 of the 12,000 low-Earth-orbit satellites it's received FCC approval to operate, Vice News said in December.

"Amazon wasn't one of the original licensees," Vice News said. "It didn't submit its application until nearly three years after the deadline, along with the request for a special waiver to join on equal footing with the original licensees."

In a filing with the FCC in November, Space Exploration Holdings LLC (SpaceX) said the FCC "should reject efforts by Kuiper Systems LLC ... to circumvent the Commission's rules and reopen a proceeding that closed over three years ago. Amazon's overt attempt to override long-standing rules would undermine confidence in Commission processes, harm competition, and eliminate broadband options for consumers. ... Rather than give the preferential treatment to which Amazon claims it is entitled, the Commission should instead take the pro-competitive step of putting Amazon on equal footing with any other applicants in a new processing round. Amazon's own filings demonstrate that its system is fully capable of succeeding as part of a later processing round."

The FCC declined to comment on Amazon's Kuiper Systems application because it is still pending.

Amazon's spokesperson said, "We look forward to continued engagement with the FCC regarding our license application. Amazon is focused on innovating on behalf of our customers, including realizing our vision for Project Kuiper."

Kuiper isn't the only space venture in the region with an Amazon connection. Amazon CEO Jeff Bezos started and privately funds Blue Origin, his Kent company developing rockets to launch people and payloads to space, including the moon.

Blue Origin envisions millions of people living and working in space, and is building reusable rocket engines and launch vehicles to lower the cost of access to space, its LinkedIn page said. ■