Constellations Podcast

Episode 143 – Global Connectivity, Low Latency and Supporting Government Sectors in LEO

Speaker: Kevin Steen, CEO, OneWeb Technologies – 21 minutes

John Gilroy: Welcome to Constellations, the podcast from Kratos. My name is John Gilroy and I'll be your moderator. Today, we'll go over the use of LEO constellations by the U.S. government, and we've invited Kevin Steen, CEO of OneWeb Technologies to cover this topic. Kevin, we're going to jump right in here, buddy. You just came on board with OneWeb Technologies. OneWeb is a communications company that aims to build broadband satellite internet services. Can you tell us a bit more about the difference between OneWeb and OneWeb Technologies?

Kevin Steen: Certainly, certainly. Thanks for having me. OneWeb Technologies, we're a wholly owned subsidiary of OneWeb. It's in a structure that is relevant for folks, companies that are doing business with the U.S. government, U.S. entity, but they have a foreign parent. It's called a proxy company. There are other substructures within those categories, but we're a full proxy versus an SSA. There's different classifications. But basically, it's a structure, we have our own board, designed to protect the interest of the U.S. government when they're doing business with a U.S. entity that is owned by a foreign company.

John Gilroy: Good. Everyone knows there's two separate companies.

Kevin Steen: Correct.

John Gilroy: OneWeb Technologies is taking LEO constellations to the U.S. government. Tell us more about that?

Kevin Steen: You bet. For folks who are familiar enough with the satellite industry, the demand for connectivity continues unabated. Enterprises want to be connected, individuals want to be connected, governments want to be connected. They're folks that are either they're military personnel or they're other government oriented agencies, no matter where they are, they want to be connected. Satellite technology has evolved over the past 30 years. The concept and the benefits of a LEO constellation was developed several years ago.

Kevin Steen: At OneWeb Technologies, we're focused on delivering secure, resilient connectivity to support the U.S. government requirements based on a LEO constellation. I'm sure we'll talk about more what a LEO means in a little bit. For

the connectivity element combined with, we deliver, our connectivity element based on a LEO constellation with the value-added services that we wrap around it. We'll go through that in a little bit, I'm sure. But it's an exciting time. LEO constellation's a little bit of a buzz right now, but technology is proven and we're rolling out.

John Gilroy: I've interviewed a few people from the DoD, several generals, resiliency is a big subject for them, they've been out in the field. That really is the motivator for them, resiliency.

Kevin Steen: Absolutely. That is paramount for them when you think about their mission, what they're trying to do to be successful. Resiliency is hyper critical.

John Gilroy: Yeah. I have a friend who's a high level person over at FEMA. They really depend on communications. They want resiliency too. Believe me, FEMA does because there's a storm going on. They're trying to save lives. I don't think the DoD is the only place in the federal government, it's really important for a lot of these agencies to have this communication. What sectors, within the U.S. government, is OneWeb targeting?

Kevin Steen: So, we just touched upon military branches obviously, and then other government agencies, three letter agencies and such. But think about border protection, border patrol. Think about locally funded state initiatives. Prison bureaus, policemen, firefighters, first responders. You just put FEMA maybe in that category. Then civilian programs that are federally funded. We're doing a great project in Alaska to connect schools to the internet to give them reliable connectivity from an education perspective.

John Gilroy: Right. I think there's an increasing emphasis, since COVID, on state and local applications. There's tons and tons of applications. If you look at the United States, Wyoming, there's huge amounts of veterans in rural areas and they need that service, don't they?

Kevin Steen: Yep. That is absolutely correct. There's multiple states with those types of initiatives to connect those. From a go-to-market perspective, we're not necessarily a consumer oriented company. But, we do look at those types of programs that are all from federal funded all the way to state funded to see what we can do to help. But, we're focused more on the enterprise military oriented aspects than we are in individual consumers.

John Gilroy: Yeah. I just want to maybe set the stage before we focus in on military folks. They're just up the road, so they're listening. We know that. Why are military customers seeking low latency satellite broadband?

Kevin Steen: I want to just make sure we use broadband in the right vernacular. Broadband to some folks means just straightforward connectivity. To others, it means consumer oriented connectivity. We use it in the straightforward connectivity context. But, it's low latency for mission critical applications that require it. Modern applications that are being developed require low latency. They assume low latency in their design. That's number one.

Then number two, it's connectivity in places that they currently don't have for broadband. Think about polar regions. Polar orbits or polar connectivity. GEO constellations typically don't provide coverage that far north, whereas LEO constellations might give you that connectivity no matter where you are on the globe, in essence. There's a very interesting applications, such as ISI used to be known as UAV applications as an example. There's a real time application that they need connectivity for real time decision-making. That is why a military customer, and the U.S. government in a broader context, is looking for low latency satellite broadband.

John Gilroy: The obvious here is that the U.S. military doesn't pick the venue for the fight. The fight comes anywhere and we just don't know where it's coming. Polar, it's such a broad reaching area that they have to have that low latency because there's so many IoT devices out there. Increasingly, there are people living on the edge, edge computing's coming in there. They have to make decisions based on information coming from the edge, whether it's a sensor, whether it's from something that's in the air, something that isn't. We talked about some of these basic concepts here. What other types of specialized services is the military looking for?

Kevin Steen: You just hit on a key element of it. Real time. IoT itself is not the reason that you would have a LEO constellation, because some of those sensors out there are fine with low data rates. It's certain applications within. But it's really, it's the support for time sensitive, critical decision-making, having the data available to support the decision. The bandwidth and the latency are both key. At OneWeb technologies, we refer to this as information, time, and intelligence. It's the right info at the right time with the right intelligence. Those specialized services.

Then I mentioned, one, polar coverage. Another example would be, with LEO constellations, you can bring to market even smaller, lightweight ultra-portable terminals that LEO enables. Not just for IoT, but actually for folks who would use them wherever they need to go. Then there's the notion or the capability around unmanned applications, both land, sea, and air. You can think about, and you can probably internalize real quickly why that real time connectivity, low latency is paramount for something around an unmanned application. Then it goes to other capabilities, say connectivity between satellites. There's some specialized services where you could, instead of sending the traffic to the ground, satellite then to ground, or between satellites. Those are the kinds of specialized services that they're looking for as satellite becomes a true broader

domain or a bigger requirement, if you will, in defending our country and protecting our interests.

John Gilroy: Let's go back to this latency and resiliency, these two important words down at the Pentagon. How do you ensure the communication link in a LEO constellation to provide certainty that the U.S. government and users have that communication?

Kevin Steen: That's a good question. At OneWeb Technologies, we have a history and experience in tailoring our commercial solutions to meet or exceed the U.S. government and critical business infrastructure security needs. We're developing capabilities that meet or exceed the U.S. government's requirements. We meet NIST, National Institute of Standards Technology and CMMC. The broader, the more advanced cybersecurity maturity model requirements. We're fully committed to meeting the IA pre-requirements. Those are the new broader requirements coming out of Cisco. And then we continue to make investments necessary to accomplish all of this.

It's people. It's infrastructure. It's processes. At the end of it, when you think about it, our link quality or link capability is getting closer and closer to terrestrial levels, and we continue to push those boundaries. That all around then ensures that communication link is reliable, resilient, and secure. That's paramount as we opened up the conversation, from those U.S. military folks is resiliency is paramount. Those are the investments we are making now and continue to make.

John Gilroy: You mentioned, LEO, let me ask you a question about LEO here. As LEO begins to proliferate and commercial consolation grow, how do you see that competing with government owned LEO constellations?

Kevin Steen: The U.S. DoD today has their own constellation, it's in GEO orbit. But, they augment that with commercial bandwidth today. Their demand profile consistently outstrips what they can serve in their own GEO constellation. That'll happen again in LEO. It's an opportunity for us and as an industry to collaborate more closely with the U.S. government, and we really look forward to doing that. But, I see that trend or that philosophy will continue. If they stand up, the U.S. government stands up their own LEO constellation, they will continue to augment it with commercial oriented bandwidth and commercial oriented capabilities and technologies. It frankly gives them access to a broader, big breadth or big swath of commercial technology that is much more than they could probably develop on their own, faster time to market and such. It will give them flexibility, diversity in their portfolio and their ecosystem of technologies. But, I see that as more of a partnership and collaboration than it is a competition.

John Gilroy: We're setting up this commercial versus government owned network question. This leads to the natural one everyone's thinking here. How does OneWeb differ from Starlink as a commercial provider?

Kevin Steen: I get asked that a lot, both from colleagues and also from customers. I'll go in through no particular order. These things just come into my mind. Number one, we're not a consumer play. We're not providing broadband, if you will, to the individual homeowner. We do offer SLAs and commitments on our bandwidth. It's not a best effort service. When you sign up with OneWeb technologies, it's a committed bandwidth that we provide to you. We back it with our SLAs. We're horizontally integrated versus Starlink. We've got an ecosystem of solutions and partners and terminals that bring to bear. Starting is very vertical oriented, vertically integrated, sorry about that. We don't go to a market also as a loss leader. Today they have their terminal out there, they're selling it in the $500-$600 range, but they're acknowledging they're not making money on that.

Kevin Steen: That's a loss leader. That's not a long-term viable business model. Whereas out of the gate for us, we're focused on the right business model. We do offer 24/7 support for our customers. When they call and they need help, they need help, whatever time it is, no matter where they are. We don't do a best effort support. It's 24/7 mission critical. We're there with cleared personnel, as needed. Many of our employees come from the U.S. military. They've left the armed services and we're honored to have them as employees. There's another example maybe of some of the differences. But, our focus here at OneWeb Technologies is 100% on the U.S. government, be it those branches that we described for the military or those government agencies or federally and state funded programs. That is 100% of our focus.

John Gilroy: Did you know we launched the Constellations podcast back in 2017? It was a small step for man, but a giant leap for podcasting. Today, thousands of people from all over the world listen to Constellation. And thanks to you, we've grown into more than just a podcast. Now you can sign up for the Constellation newsletter at constellationspodcast.com to access original articles, podcast summaries, and contributed posts.

John Gilroy: Now, here we are in December, and I'm sure companies are looking at projecting for next year, the next five years. They do the same thing in the federal government. They have to budget allocation for the next few years, because a lot of these projects are just massive projects. What do you think the expectation and possible investments the U.S. government should make with commercial SATCOM companies when the government may need their services in time of conflict?

Kevin Steen: That's another good one. I would say that the U.S. government has a history of funding, if you will, funded R&D for new capabilities. That must continue. But if you think about the time of crisis, as you just said, we don't know when it's

coming or where it's coming. How do we react faster, I think is the gist of your question. The funding for joint testing. Get those capabilities we have out there, let's test it, make sure it works, make sure that it works the way that the soldiers, if you are look at who going to use it or are going to depend on it, are comfortable with it. Then I think we get to flexibility in funding vehicles when needed. They need to be able to move quickly. With new approaches, when it comes to, say, contracting or acquisition. We have these capabilities or processes out there on SBIRS and OTA.

Kevin Steen: That's a step in the right direction. But, we need to ensure in times when we need to react quickly, that the ability to contract or handle an acquisition can be done very rapidly, almost, in essence, a commercial style. When you think of how fast you can go out and buy something, click through a house, whatever it is, you've got a process and a framework in place as a consumer or as a commercial entity, you've got that framework. I think they're going to need to move closer to that if they want to get things done rapidly in a time of crisis.

John Gilroy: We have listeners all over the world. And when you said SBIR, I'm sure they're trying to figure out, look it up in the dictionary. S-B-I-R, it's a small business initiative of the federal government. S-B-I-R.

Kevin Steen: Sorry.

John Gilroy: No, nothing to be sorry about. My daughter just finished a master's degree in finance and she took courses in Python. She also took a course in risk management which I want to talk about here. Let's apply it to you. Who handles the risk here in all these plans for networks here? Who handles the risk? The U.S. government or a satellite communication provider? If the government buys capacity or capabilities in crisis with a company whose security is commercial best practices, who's responsible for the security here? It's a tough question.

Kevin Steen: Actually, for me, it's not. Given that at OneWeb Technologies, they are our sole customer. They are our ‘sole mission’. What we have done, what we have built, what we have designed, what we have architected is based on their requirements. We bear that risk. We are, our whole network, if you will, is focused on the U.S. government and all those sub entities under it. We bear that risk. That's how we designed it. We designed it to their standards and requirements. It's front and center, I guess, is how I'd say it. Our architecture and design. Their requirements are front and center and not an afterthought. We don't scramble to catch up to those requirements. We step forward and take the ownership and the responsibility for those requirements.

John Gilroy: Here in the Washington DC area, we've got NIST, we've got associations, we've got agencies. This is ground zero for standards battles. There's no more swords than you like to see in the movies. Few people get in a room and they have

these battles, throw chairs, and yell and scream. There's all kinds of standards here. This is leading to the question of course, is that, so what do you think about baseline security versus standards for security?

Kevin Steen: This question around standards has waged in the satellite industry now since I joined. It's a hot topic when you think about, we're all used to our phones working everywhere no matter where. Everywhere we go on the planet. Standards is a great discussion. They provide clarity on requirements and how to meet them. Absolutely. Everyone then does it the same way. But when you think about it, in one way, standards can stifle innovation. But, they do solve interoperability requirements. Think of it like McDonald's versus Morton's. Every time you drive around the country, go to McDonald's, you're going to get the same thing, but you're going to get what's on their menu. You go to maybe a Morton's or others, you got to find them. It's going to cost you a little more, but you're going to have some pretty interesting experiences. I think there's the ying and the yang around it. If the government is going to specify standards, Then they have to respect them or stick with them during the contracting process so that there's a level playing field.

Kevin Steen: If you give an exception at the very end, you then put those that didn't adhere to the standards in a more advantageous space. Because those who adhere to the standards brought it to bear and they developed their solution around them. But, then they're not required to deliver those at the end. They now have a higher cost than those who did not or got the exception. I think standards do, they provide a great way to think about, digest, and ensure you've developed the requirements and they're well understood. Then you look at how are they going to be implemented, and what are the degrees of freedom you give the companies who are bringing that solution to bear, and how hard do you hold them to the standards.

Kevin Steen: Setting the playing field at the beginning, I think, is paramount. I do think that for the U.S. government interoperability is key. There's been a big shift in the U.S. government over the past, I'd say, five years. I think standards drive or provide that way that they can achieve their interoperability requirements. Then it's all around what technology can you layer on top of it while still meeting the standard but differentiate from your competitors and also provide the best capabilities you can to the U.S. government. I think it's a hot topic, but again, from my point is, if we're going to set that bar of these are the standards, then let's set that all the way through the contracting process. We don't put some folks inadvertently at a disadvantage.

John Gilroy: Kevin, some people say that the discipline gives you the freedom, and if you have that discipline, then you can actually perform better than not having any swim lanes here.

Kevin Steen: Yes, I would agree. It does set an expectation of what they're going to receive from a capability, a product, or a solution. It does put everybody in a level playing field, and then you differentiate in the areas that are then where your freedom should be set. I'm with you.

John Gilroy: This is a part of the interview where I quote a famous philosopher, and you have to reflect on this. It's going to be very serious here. The philosopher I chose is Yogi Berra, and he famously said, "Prediction is difficult, especially about the future." There's a Yogi Berra question for you, Kevin. Let's look, four or five years down the road, where do you see OneWeb Technologies flourishing? Or what do you think is going to happen here?

Kevin Steen: If I look into the future, I would say that the demand for connectivity continues. The capabilities and what satellite communications can do, the problems they can solve are going to continue to expand. We'll solve more and more problems. Five years from now, a satellite that simply couldn't be solved previously due to technology advancements. At OneWeb Technologies, we subscribe to that. We're focused on what are the incremental and new capabilities that we can bring to market, that the commercial world is bringing to market, and how do we apply those to the U.S. government? Our focus is not going to waiver. That is our single sole customer today, the U.S. government. I think from our perspective then, we will continue to enhance, augment, and build on that secure network that we have built. It will become more robust, even more resilient. It'll have a broader footprint, if you will, to deliver new services that the U.S. government says, "Hey, I would like to take advantage of this or this or this."

Kevin Steen: One of our key strategies is to ensure that we can adopt additional technologies as they come to market. Not paint us into a corner. But also, really overachieve on what the U.S. government is looking for out of the things we talked about relative to resiliency and security. For us, we're looking to be a premier provider and a trusted partner to the U.S. government. They can rely on us. They can trust us when we say we're going to deliver X, we're going to deliver X. We're not going to let them down. That's front and center for us. That's the most important thing. Then the business side of it will take care of itself if we do our job.

John Gilroy: Kevin, I think you've given our listeners a deeper understanding of OneWeb Technologies. I'd like to thank our guest, Kevin Steen, CEO of OneWeb Technologies. Thanks, Kevin.

Kevin Steen: Thank you very much.