Episode 210 – Accelerating Space Innovation, Bridging the Gap and Partnerships

Speaker: Matt Magaña, President of Defense and National Security, Voyager Technologies – 29 minutes

John Gilroy: Welcome to Constellations, the podcast from Kratos. My name is John Gilroy and I'll be your moderator. Today we are going to discuss how partnerships are accelerating space innovation, strengthening the industrial base, and helping to deliver critical capabilities. Our guest is Matt Magaña, president of Defense and National Security at Voyager Technologies, a company focused on defense and space technology. Matt, I understand your business segment defense and national security was only recently stood up. Can you share why it was done and what's the significance?

Matt Magaña: Yeah, definitely. First of all, thanks for having me on and very excited to talk to you guys about partnerships here today. When I came into Voyager, we had a significant amount of defense business within Voyager Technologies. Actually, it was Voyager Space at the time. And when you looked across the portfolio, there's a lot of technology that was not really getting rolled up into one so we can focus on the defense business. And so we really looked across the business, pulled all of our defense thing. It really made up about half of the business.

We were originally a space infrastructure business and obviously with the budgets that are coming out of the government and the focus again on the defense side, it was just obviously natural for us to really focus our efforts on both development and the front end of the business to really focus on those areas in which that we knew there was market. And as we talk about partnerships, almost developing our own internal partnership between what I would say civil and the NASA commercial market and the defense side.

So it was very natural for us to kind of break it out as its own piece of business. And we did that back in November timeframe. And subsequently, the company at the time was named Voyager Space, again, primarily because we were a space infrastructure business and obviously expanding into the defense and being half of our business, we changed the name of the company into Voyager Technologies.

John Gilroy: So Matt, I looked you up on LinkedIn. You've got a pretty deep experience in this industry here, and let's talk about partnerships over time here. So why are partnerships becoming more critical in the space industry today than even four or five years ago?

Matt Magaña: I'd say if you look at the way in which the government procured, say 10, 20 years ago, obviously very large, massive programs ran by primarily large primes. With the commercialization of everything, the speed of technology, that just doesn't work going forward primarily as fast as technology is getting developed. We got to be able to move faster. Price points are definitely changing, and it is really hard for the primes to do that primarily because of the infrastructure in which they have and just how large the companies are.

So these partnerships started to evolve early on and there's a lot of active work from what we'd say the venture world small companies. And now it's really how do you go take the agile, nimble ability of VCs, merge with the larger primes of what we previously had and be able to go do real, agile, quick tech development and innovation into the procurement and lifecycle of these programs. And really, for me, it's going to be partnerships just because of the sheer structure and the speed in which that we have to bring innovation to the table.

John Gilroy: Well, let's latch onto that five-year mark. Over the last five years we've seen all kinds of startups. I mean really incredible compared to the last 15 or 20. So how can non-traditional companies or startups play a larger role in national security space missions through these partnerships you're talking about?

Matt Magaña: It's critical. It's the only way that we're going to be successful. Again, primarily because of the agility that the small companies have. They're very unique in the ability to bring the innovation. I mean, the hard part for them is usually around the scale and scalability to those. And so our focus from a Voyager Technologies perspective is how do I bridge that gap of capability from being a very, very agile, quick and nimble company, but be able to have the ability to produce the things that we need at rate.

And primarily when you look at space and the space industry, we've slightly gotten away from very, very large, massive satellites that take 10 years to build and have a ten-year life cycle on orbit to very small agile dispersed constellations. And so we got to be able to rapidly insert new technology, but you have to be able to scale these things and then build these things at production rates.

John Gilroy: Well, I'm in the Washington DC area and people talk about acquisition here all the time. You're on the West Coast here. From your perspective, what are the biggest blocks to delivering capabilities quickly in today's space acquisition environment and how can this collaboration partnership thing work?

Matt Magaña: I mean the hardest part is that the innovation side, when you look at the VCs and these small companies, they can be very, very nimble. The hard part of that, the government has not really gotten as nimble yet. They've done a lot of great things. I think we're going to talk a little bit about later, OTAs and contracting

avenues that are happening today. But for these small companies, the hard part for them is getting consistent contracts so that they can scale a company or they can scale their capability.

They can develop technology, they can invest money into their products. And so where I see that partnership happening is the fluctuation between these contracts. When you have partnerships and you divide up some of that work scope into where some of these small companies, if you look at a lot of these VCs, they have one to two small technology capabilities, but that doesn't give them a really big steady base of work coming into again to scale and to get more engineers in, to get more manufacturing capabilities.

So the partnerships between multiple companies where it's a one plus one, as I say, always equals three in these type of partnerships and trying to find those so that we can bridge that gap because not all of them are a hundred billion dollar companies that have profit that they can keep dumping into their tech. They've got to be able to go out and raise it and they got to go out there and they can't do it across every single technology. If they're going to do satellite, they can't go by buses and do payloads and do solar arrays. It's hard for these small companies to do.

John Gilroy: You just mentioned tech and I'm sure you're up to speed with all the new terminology. There's a public cloud, private cloud, hybrid cloud, there's the alt cloud, maybe there's graphics cloud, who knows what's out there.

Matt Magaña: There is.

John Gilroy: So with all this talk about hybrid architecture, how do partnerships help connect legacy space infrastructure with these newer technologies, new commercial technologies?

Matt Magaña: I think that it's going to be the wave of the future. And obviously we see here today on the ground, data sets. I mean big data that started years ago, and I think you saw obviously with some of the election data where they're taking these large massive data lakes and putting it into one area and slicing and dicing it in ways that we never have done before. We haven't got there on the space side, obviously that is what everybody is racing to now.

We've been doing that with our partner Palantir and looking at how do I go take existing data off of our space station and then do some of that and it's going to do just like it did here. It's going to unveil a whole bunch of capabilities and data and information that we never even knew was happening even in space. From space, there's gobs and gobs of data. And if you actually... The sensors that we have today that are up there, we hardly get that data down.

So as we take that legacy data where we can pump it down to the ground and then do these large infrastructure data lakes, it's going to help us understand where those partnerships might be weaker, where we can grow them, where we can go bring new technology to bear by taking that relationship data and then making new information out of it. Because there's a lot there, I mean, it's an unbeaten path, that's for sure. There's a lot of space data that's out there. Nobody's touching it.

John Gilroy: So Matt, I had a guest maybe two episodes ago where she said, "It's not a data lake, John. It's a data ocean out there." So how does data sharing across partner networks accelerate innovation in space technologies? I mean, we can get a whole laundry list, APIs, cloud native platforms, mission data integration. How does this all fit together in a puzzle?

Matt Magaña: The funny part is that nobody... I mean, again, we do it here on Graham, how that's going to work in space and how all of those things are going to interact with each other and the uses of those things are going to change. I mean, if you look at the infrastructure for telecommunications today, I mean you're having massive amounts of data move around, primarily trustfully and obviously now space to space through a lot of these optical terminals in the future. Even just those types of things, the data relationships between what data's moving, what type of data that you're handing off those data.

And my buddy would just say, obviously in the future, everything is running, whether it's a commercial piece of data or a defense piece of data, it's all going through the same satellites eventually. And how do we differentiate between what's a critical missile warning message that says, "Hey, you've got incoming from this vector and here's a trajectory." Versus you sending a note to your kids saying, "Hey, I'm going to come home for the weekend and we're going to go hang out at the park," or whatever. That's all of the relationships around those data, how that data gets stored, how it gets moved.

It's going to be a critical way in which that we're going to have to determine in the future how all these things get meshed together, where that data gets stored, and then how do we make partnerships again that we probably never realized that we had to go make from a commercial to defense to all different types of sector relationships that aren't there.

John Gilroy: Matt, we're talking about partnerships and maybe even scalable partnerships, but what my listeners are going to say is, "Give me successful models of this." Or maybe even a case study perhaps from other industries or within the space sector so they can learn what exactly do you do? How do you build a scalable partnership environment? I mean, it's got to be difficult.

Matt Magaña: I think that's... I'm sure on your podcast, you guys had a lot of conversations around the valley of death, especially for these smaller companies, and again, the government side and even on some piece of the commercial side, the way in which that the money is flowing in obviously fluctuates quite a bit. So if you're trying to build and scale a company, it becomes very hard. And if you're trying to do 10 things at the same time, it becomes even harder. And so everybody was...

When you look at other companies that are commercially backed, they take a lot of massive amounts of investment that they're doing in order to scale these things across multiple different technologies. Say just a telecommunication satellite, they're buying payloads, they're making their own buses, they're making their own solar panels, they're doing everything vertically. While in most of these smaller PCs, that's really hard for them to be able to do a loan by themselves primarily because the capital raises that they need to go do that.

They don't have multi-billion dollar telecommunication backing for all of these things. And so you got to figure out how do you get these folks out of that valley of death? And part of that is again, back to the how do you fund these things and how do you grow them. If you look at things like Toyota and Subaru, they started doing joint partnership in which that they can share technology. They reduced their costs when they're really developing electric vehicles, where they were breaking up the work share of who was designing what.

You can say the same thing for as we go into Golden Dome, as we go into the future space infrastructure, how do you go divide up these partnerships and then say, "Hey, look, if you're going to do this piece, you might do propulsion." And another company that has technology on other payloads, you create those partnerships where any one of these companies don't have to do these massive rates and take on a whole bunch by themselves is that they have the ability to put all these things together and share the cost of those and then scale as partners.

John Gilroy: Matt, you mentioned the valley of death. That's always interesting, but I think in the Beltway here, people say, "No, the real value of death is procurement." That's the real problem there. So how can the government better structure their procurement models to take advantage of collaborating industry partnerships? How do they invite feedback or ideas around OTAs?

You talked about them, other transaction authorities and Agile contracted, you mentioned Agile and mission-based awards. This is the brave new world for a space guy. We didn't talk about this 10 years ago.

Matt Magaña: It was. I will say first of all, that the government is still learning. I was in the Pentagon on Thursday with members of Space Force, and that's part of the conversations is continued conversation between industry and the branches on

how do we actually go bridge that gap. And what does that mean? Clearly, like you said, the procurement cycle is the hardest piece because it's budgets. How do you get the budgets in place? How do you ensure that that money keeps flowing? So again, that these smaller companies, VCs or even the Bigs, can make a big investment into the technology to go help drive the gap on whether it's technology or rate production capability.

I'll say that they're still continuing to ask the question on how do they help, but again, as you said, they're doing a lot of things contractually. They can get stuff on contract very quickly through OTAs and through all different types of avenues, lots of partnerships, conversations that we had was really around access. Especially in the space domain, there's a lot of things that are in the classified realm of stuff. How do we get some of these smaller companies into those areas so that they know and understand where the technology is going, what needs to happen from a classified perspective?

And that's obviously really hard from infrastructure. And so they've got a lot of programs, these bridge programs to go help some of those smaller companies so that they can get access to this information. But at the end of the day, even our conversations on Thursday around Golden Dome and the budget and what's coming out, I mean, that's obviously a lot of folks back there, at Pentagon working hard to get that out here in the next couple of weeks, but in some cases, they don't have control of all those things. And there are laws and rules in place for how these procurement cycles happen, and that's just natural.

That's part of the checks and balances, which is good, but it also makes it really hard for us to do some of these longer investment plans, especially if they're smaller companies. And so that's kind of the conversation that keeps happening is how do we find ways in which that we can get investors comfortable with the money that may come and when it might come, and then how do we get some guarantees around that so that people can move out? Otherwise, we're in the stagnant waiting for budgets to come and hopefully the money gets in the right place.

And so all the guys at Pentagon, and gals, are really trying to go make that happen. But again, it's something they don't have control over for the most part.

John Gilroy: So Matt, many years ago when you were in college, you probably read Stephen Covey talk about keep the end in mind. Start with the end in mind, and let's talk about the end in mind here. So we talk about acquisition and technology and people and partnerships, but we hear a lot about the speed to orbit, but how do partnerships shift? Is the focus from just launching hardware to delivering usable mission ready capabilities? That's the end in mind, isn't it?

Matt Magaña: And I think that's... Actually, it was the blessing and the curse, I'll say over the last five years. The blessing was that there was a accepted risk tolerance that happened, and a lot of these small VCs lean very, very far forward in developing technology, rapidly getting on orbit. Problem became, like you said, is that technology ready? Is it working? And there's a lot to be said in the cycle of, "Hey, put stuff up, test it, see how it works, put something else up, and then just keep that cycle so you can rapidly get technology on orbit." Problem becomes is that that's not a model.

I'll say the investor side is as a fluid width, they do like it, but there are very long cycles on the space side just from the time that it takes to develop technology, get a ride up on into orbit, do some testing, get the data down and do analysis. So that cycle is much longer than a normal... If I was doing biotech or those type of things, it's very, very rapid. I can rapidly do that here, trustfully. And so that's really a cycle that has driven part of this issue around the time in which that it takes for us to get the capability up and running and validate it.

And so these partnerships are having to... Because a lot of that stuff happened and not all the hardware worked. Investors backed off a little bit and just dumping money everywhere because again, the cycles that were in there and these partnerships can help us bridge those gaps. And again, back to, "Hey, you're not going to take all the risk on yourself as a small company." We can distribute that across multiple companies for the particular tech that they're going for and not put it all on one investor to go cross your fingers and hope that it works.

But there's also to the flip side of that is we just got to keep putting more stuff up and testing, seeing how it does, rapidly get more up there, and then keep the innovation moving that way. And it's happening. I mean, obviously with things like Starship coming along. Even today there are things going up there with spots available primarily from a schedule and timeline. So to me, the industry is not producing enough, fast enough to get... There's more spots to go on orbit, but it's just not enough money, time, and focus on some of these technologies to get them up there fast enough.

The industrial base is not all there. And that's part of the conversation with folks is how do we go grow that industrial base to make sure that we have scalable rate as we get in the space.

John Gilroy: Matt, if you get a bunch of innovators in a room and you want to rain on their parade, just mention the word standards and the room may empty quickly. So what about standards? So what role does standards play in accelerating capability delivered through these partnerships?

Matt Magaña: I'm probably one of those people that have run out of the room myself because I'll say in my career that I was always big on trying to develop those standards and you quickly define that the standards continue to morph. And in the areas that which we're going in, rapid innovation is key. So when you do standardization, you also lock yourself into a set of things that sometimes limit you on innovation. So I'm much more trying to find the balance of what those standards are.

And I think part of... If you look at SDA and what came out from the GAO around communication standards, there are pieces like that that do need to happen so that as we build out these constellations and we move data from one to the other, how do we do that rapidly and how do we make sure that there's multiple people that are going to have access to moving that data, storing that data? And there's a lot of value in having standards around that. The question always becomes is who gets to set those standards?

Is it the commercial side? Is it the military side? Who gets to do it? And usually the people that are paying for it, if they're paying it on their own dime, they're making their own standards. I think that's the issue that we're having now is everybody's off doing their own thing, primarily because everybody's raising their own money to go put up these constellations and the government's trying to help manage those things. But it's a very, very hard problem. There's value in it, but there's also value in the innovation without standardizing everything.

John Gilroy: Matt, you mentioned you were in the Pentagon last week and you kind of touched upon the subject of acquisition and timeline. I have a question about balancing here. There's a lot of balance to take place here, especially with partnerships. So how do partnerships help bridge the gap between commercial innovation cycles and then on the other hand, government acquisition timelines? So it may not match up.

Matt Magaña: Not at all. And I think that's actually the fun part about this. I mean, I look at... Right now everything that's going on, if you look at what is happening with Golden Dome and the plan and path for us to rapidly innovate some of these technologies, a lot of these things are things that we have been working for many, many years to go solve and some of it's acceleration of those schedules so that we can actually bridge that gap between rapid innovation and these big long time programs.

So for me, it's very exciting to watch and see how the government is trying to morph and shift, and obviously driven by the administration probably this time, but especially from the acquisition side, it's much needed and like, "Hey, we got to put budgets. Budgets need to get put. We've got to be able to rapidly move that money into where they need to move." But at the same time, we're all

looking at a mass amount of technology that needs to get and scalability of all these things.

And there's no way that... There's just not enough companies and capability, say between the Bigs, Lockheed, Northrop, Raytheon, Boeing, all have the capability to do some of these things. But if you look at the sheer volume of all the pieces that need to happen from effectors to space assets to terrestrial assets, to all of those things, it's so much stuff and there's no budget that would allow us to do it the traditional way in which that we did it.

And so these partnerships are critical for us to be able to bring the capability that we need and what's being asked within the Golden Dome at a price point, looking at just some of these interceptors, prices for interceptors that if you look over the last 20 years, multiple million dollars an interceptor. How do you go get those prices down to a couple of hundred thousand dollars to less than a million dollars? Which is, it's very, very hard for us to do that independently, whether you're big, whether you're a small company.

So these partnerships are going to be the only way that you're going to bridge that gap and then be able to actually make the capability at the scale. When you look at the numbers of some of these things in order to proliferate the space side, you're docking thousands and thousands of satellites. If you're talking about very tactical weapons, it means low cost weapons, but distributed. So you need to make a lot of them and they need to be just look at things from rocket motors to electronics. All of those things need to find ways in which that you can scale them all.

And again, that's going to happen through the partnerships because nobody can do it by themselves at the price point that we need to be at.

John Gilroy: Well, Matt, you seem to be pretty up-to-date with current partnerships, but that's not good enough. What about the future? So looking ahead here, what kind of partnerships will be necessary to maintain technological advantage in space? And by the way, you haven't said AI yet. It's mandatory on these podcasts, we say AI every 13 seconds or something.

Matt Magaña: It's not a podcast if it doesn't have AI.

John Gilroy: So what about future partnerships? How's it going to change?

Matt Magaña: Probably if I was sitting in the seat two years ago, the amount of energy and focus that even my business has had around AI and even previously in other roles know AI was a much, much more distant thing than what reality is now. All very real. And the reality becomes, especially on the space side here, treasury, that massive, you can see some of these mega projects that are going on to be

able to really process the amount of data that's happening here locally, that's just massive, massive. Server farms in space that's not there today. So for us to be able to do the same thing in space means a very, very large hardware infrastructure.

And this is where those partnerships that are really non-traditional partnerships between space hardware and people... We have very tight partnership with Palantir where we're looking at how do you take these terrestrial AI engines and software stacks and then put those into space? How do we take the data off of our future state and commercial space station? What is going to get done on orbit and what's going to get done here treasury? And out of that, there's a lot of partnerships that you would never have put together from a space related...

And if you look at our Starlab project, which is the next commercial space station, even with those, the partnerships with biotech and pharmaceuticals, how do you go separate proteins in orbit? There's partnerships that are going to become much, much stronger. And again, with the AI back to all the data that's getting generated commercially is going to be available for new type of patents and new type of technology that we'd never thought was there before. Today you primarily run that through NASA and through the government side.

In the future, it's commercialization. As you know, commercialization, capitalization is the engine of technology here. And as all of these other bioforma, biotech, and AI starts realizing the capabilities that you have in space, and even looking at how we manufacture and build stuff. If you look at fiber optics, you can make fiber optics in space that almost has zero defects. So if you're going to move data at speed in the future, looking at... Here today, you get small little imperfections. And when you make fiber optics in space, it's purely in a vacuum.

So if you're making fiber optics in space, it becomes almost a perfect fiber, which allows us in the future as we get into these much more advanced computer systems and capabilities. Technology like that is going to be a real enabler to how we continue to evolve this thing. And that's just one that we know today as we get the space station up, and as we start doing these, there'll be a million more. I mean, look at how when we started making the shuttle, all of these new technologies, coatings and new materials. You're going to now have the ability on orbit commercially to go do science and capability, keep that IP, have the IP where it's owned by capitalized companies and make new tech out of it.

There's a lot of money to be made there. So obviously as you know, there will be lots of investment into it. So there'll be plenty of interesting and crazy partnerships coming out of it. Obviously, even as we speak, there's a lot of conversations that we have on the Starlab side of who's coming to the table to

be the first ones on these commercial space stations, and then what does that evolve and what does that look like, and how do those partnerships, which are again, people that normally wouldn't be sitting in rooms together, are now sitting in rooms talking about what's the art of the possible?

John Gilroy: Well, Matt, I think you've given our listeners a better idea of the value of partnerships in our current industry. I'd like to thank our guest, Matt Magaña, president of Defense and National Security at Voyager Technologies. Thanks, Matt.

Matt Magaña: Thanks. I appreciate you guys having me.