

UP TO SPEED LIVE  
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>> What is 5G? For most people 5G means faster. You might have heard the example of how fast you can download a movie. There is more to it than that. 5G stands for fifth generation, the next evolution of wireless technology and represents a massive step forward. Not all 5G is the same in fact, most of what's advertised as 5G is only slightly faster than current 4G. With Verizon 5G ultrawide band, we built something completely different. Our 5G runs on radio frequencies just like 4G but at a higher frequency known as millimeter wave and thanks to our spectrum asset at a much larger bandwidth. The fastest 5G anywhere in the world with more speed, more capacity and lower latency than traditional 4G. All that translates to experiences even closer to realtime which means it can do things like bring augmented virtual and extended reality vividly to life.

Increased speed and accuracy for all types of industries like health care and smart manufacturing and support massive IOT deployments to change how we live, work and play. Just like we heard a lot about 5G, you may have heard about something called edge computing. Multi-access edge computing or MEC for short. Takes the burden of computing power and -- off the device and out of the business' office and puts it all in the cloud. Instead of that cloud server being hundreds or thousands of miles away, MEC brings the computing power as close to the end user as possible or as one might say right to the edge of the network. End result is that consumers and businesses get access to cutting edge processing power without constantly having to upgrade system, download applications or invest in expense of equipment and the close proximity the edge computing is being performed means the data has a shorter round trip which means for instantaneous responses.

There are other benefits, by off loading the processing burden from the end device you open the door to a number of exciting possibilities like new form factors, better battery life and lower cost options. Within you put that computing power at the edge of network, the network you are using matters more than ever. You need

5G. Massive increases and feed and number of supported devices and dramatically reduced latency. Think of it this way, if MEC is the rocket, then our 5G ultrawide band is the rocket fuel. Our 5G ultrawide band network provides the perfect platform to harness the full potential of edge computing. We partnered with Amazon web services to bring our platform to developers everywhere. Across all of our strategic partnership and our innovation programs we are enabling the next generation of innovators to push the limits of 5G and edge computing. Here are just some of the use cases in development. Augmented commerce. Realtime quality control, AI assisted health care. Public safety. Drone automation and inspection. On-line and mobile gaming. And autonomous fields. That's just the start. Every day the demand for realtime enterprise keeps growing. And 5G ultrawide band edge computing will be there to meet it.

>> I'm CEO and co-founder of ice mobility. Ice provides chain services to all of the resale department. The goal is to make sure that customers have the right product on their shelves when they need to sell it and we make sure that we double-check every single shipment so it has the right product in the box this can add a lot of time and a lot of cost. One thing that's really exciting is that we are working with Verizon and Microsoft using 5G and edge computing to automate and improve our quality control process through computing vision. We are able to do this by installing high definition cameras across every one of our lines and these cameras are powered by the 5G MEC network. We are seeing in the video is automation for what people are doing before. Matching the data for that particular order to what the high definition cameras looking at inside the box to validate that it's the right material. And that flagging if it's not. The great thing about the MEC is that it literally knows the entire journey of the box. Knows the product and knows the customer and it knows what the worker is putting in the box. It literally eliminates quality control step. Increases accuracy because now you have validated process doing it without the 5G MEC we couldn't do this.

I had a 37 year relationship with Verizon and the first place I went. When I heard they were partnering with Microsoft and it sealed the deal for me. We have been a Microsoft house for everything that we do in our business and it became a natural selection at that point. The next step really is the transformational step. Learning the full power of the 5G MEC network to be doing things completely different. Using our high definition cameras for many different things such as security, social distancing and contact tracing, frankly, we are just getting started. There is a long list of opportunities created by

the technology.

>> And you can be watching live football on your phone with your friends. Download the app. Allow your location. And get live local and prime time game to watch together, start a room, pick a game, invite your friends and catch the action together because on the Yahoo! sports app, you get free live football with friends.

>> I'm a Verizon engineer and I am part of a team the 5G network. Today is a big day for us. Because today we are turning on 5G across the country. And this is the 5G America has been waiting for with the coverage of 5G nationwide and in more and more cities the unprecedented performance of ultrawide band, the fastest 5G in the world. 25 times faster than today's 4G network. 25 times. It's pretty incredible. I'm excited about how it will change your phone and how it will change the way businesses do everything. I'm proud because we didn't build this the easy way. We built it right. This is the 5G America has been waiting for. Only from Verizon.

>> This year teachers are learning new ways to teach. Parents are learning to lesson plan and young minds are learning a new normal. This year we are all students. At Verizon, we are enabling the education that students deserve with credential teacher training, free lesson plans for parents and it's citizen Verizon in action. Our plan for economic, environmental and social advancement.

>> My name is Ross and I'm one of the founders and Presidents of TD sports and our basketball product is called shot tracker. Shot tracker is a sensor based technology. Tracks statistics and analytics providing realtime data to coaches, broadcast partners with sub second latency. Basketball is constant activity up and down. Latency is so, so critical. One thing that we are doing that's really exciting is demo'ing our shot tracker technology with Verizon 5G and AWS wave length. It allows us to see the delta between the traditional process which is 4G and this accelerated amplified process that utilizes both the 5G and MEC. You can distinctly see the difference in the speed of ball movement. When I think about what 5G and edge computing can, do I think about coaches. I think about them getting access to this video and data anywhere in the facility. It may be in the locker room at half time or sitting on the bench during the game. All delivered in realtime. When you think about being able to take this data and incorporate it into the broadcast, latency is even more important. We are really excited about what 5G and MEC will provide to the market. We have been waiting on this for so long and the time is now. It's finally here. And it will revolutionize the fan experience, the viewing experience and how we consume data and sports for the rest of our lives.

>> I didn't know I was going to be the opening speaker in the March in Washington, D.C.

I don't think anybody knew what we were walking into other than the feeling it was necessary and we had to be there.

>> I see this as a moment of taking feminism back. Making feminism a project that all of us can share.

>> When I put the hashtag in front of Black Lives Matter, I was like we will make this thing go viral.

>> I remember the exact moment when we hit the publish button.

>> We watched with wonder as the story started to take off like wildfire.

>> Everybody is like, look, we have a movement. And I'm like, no, me too is a tiny part of a large movement that's been happening for decades.

>> I got a call saying a bunch of us are going to gather. Do you want to come over and join us. I said yes because I was mad.

>> This is before we had the name. Times up. Time is up on all the of the behavior. And that was like, oh, that's our name.

>> A renaissance that's happening inside of Hollywood.

>> I remember calling my attorney and saying, like, if I say this, are we sure that it's true?

>> On behalf of women everywhere, I will brag I am the highest paid show runner in television.

>> The United States Congress certainly was not built for young women. But it's really young women of color who have pushed forward for so many changes and that has just turned the power dynamic in Capitol Hill on its head.

>> The world and this country is changing. It's been changed. And I think that we have an opportunity this time to do it right.

>> There are some people who think that we are post civil rights. We are post feminism and therefore we are post intersectional. I can't see how we are post anything and I can't see how we can possibly think we are done.

>> You never want to see a change on your account -- you never want to see a change on your account you didn't make. We double-check and ask you to approve requested changes on your account before they happen, not after that way if something happens if you ship out something to a different address or change your user ID or add someone on the account we will make sure it's you. No one else. Introducing double-check, extra layer of security so you never have to worry.

>> I'm Chris Rock. Oh, it's not about me. Zoom in on it the new iPhone 12 pro meets Verizon 5G ultrawide band. Pow! Is that game changer. 5G just got real, man. Remember when the song in the summer took the whole summer to download. One time I waited 51 minutes to download. That's longer than the whole album. These Gs don't blink. iPhone and Verizon ain't playin' around. Remember when you tried to watch bigger and blacker and by the time it was older I was older and thinner? Now done. Remember when you could only watch the NFL on TV? Remember when you didn't have five different camera angles and replays. Football just got 5G real. Remember when the only way multi-playing gaming worked, legendary fast with Verizon 5G. Remember when you found out -- was real thing and people were making twice your salary.

>> Yup.

>> Remember when I tell you to clean your room?

>> Nope.

>> You remember when your allowance is due. Never forget that.

iPhone and Verizon 5G. This is going to change everything. 5G just got real. Pow! 5G ultrawide band. Now in more and more cities.

>> Joining us ...

>> I promise you will score big points with them in just a few minutes. Yes, get your kids over here they will want to see our live guests. Coffee clink to all of you. Keep those mugs handy and here is why. We are days away from wrapping up the year and gearing up for a strong 2021. The best way to gear up for the new year is to join Hans and our leadership at our kickoff web cast. The 2021 kickoff with Hans and our leadership team will take place Monday January 4th noon eastern, 9:00 a.m. Pacific and new for this kickoff watch the web cast to learn how you can land an opportunity for a virtual coffee break with Hans. Yes, get those coffee mugs there and the only way to find out how to land this opportunity, of course, is to watch the web cast.

We will see you right here on Up to Speed Monday January 4th noon eastern for our 2021 kickoff webcast and you can potentially land a little coffee with Hans.

Moving on, some 5G news to share with you on the heels of our recent 5G announcements with we work Walgreens SAP. It is clear our enterprise customers are recognizing the transformational value of 5G and are ready to work with us right now to explore how our technology will transform industries. It's a great position that our VBG team is in so let's take the next slide and announce our newest partnership with Deloitte to explore new solutions using 5G and MEC starting with trials in the manufacturing and resale industries. They are a big shout out to our Verizon teammates. Way to go that's what we will be talking about in 2021 making sure that not only our V-team family thinks about 5G and gets excited but our customers do as well.

Next up a very special holiday message from our leaders. Now this is in the form of a holiday cookbook. Something different this year. So if you ever wondered what our Verizon leaders like to prepare and enjoy as we head toward the holidays, let's go to the next slide and now is your chance to find out. Nothing brings us closer together than food, of course, and our leaders share with us some of their favorite holiday recipes. They inspire us in the workplace and now they just might inspire you in the kitchen. Taking the next slide for a sneak peek there from Hans' mushroom risotto which looks fantastic. To Tammy's cinnamon roles, Ronan's bacon and cabbage. So much more. And you can find more in this very special food inspired holiday message from our leaders to you. V-team you should have gotten an e-mail about this and check out the cookbook. What a way to upgrade your holiday feast this season.

As most of us plan to partake in some high calorie holiday traditions it's imperative we balance it out with a little fitness. Lucky for us we partnered with two of our customers who happened to be celebrity fitness experts. Mother and daughter team Katie and Denise Austin. You might remember Denise from the fitness shows on ESPN. Her video were in high school libraries as well. As we take a look at these next slides here we are getting re-acquainted with Denise and daughter Katie as they use their Verizon powered iPhone 12. Using those devices the mother and daughter team helped lead a 30 minute workout to help our V-teamers be fit. Grab your family and friends for a fun virtual heart pumping workout. They posted on YouTube and we will post the link to you for that workout in the web copy of this episode. Those extra cookies will thank you.

If your little ones are close by, call them over right now because we've got some very important business to talk about concerning the big guy in the North Pole. As most of our boys and girls know, it's a very busy time for Santa. Make his list and check this twice so when it comes to taking phone calls and tracking where he goes, Santa needs help making sure those cool toys make it to your homes. As we take the next slide Verizon is playing a big part in this year's NORAD track Santa program. We have been a part of it since 2002 providing the toll-free hotline used by children around the world who want to ask about Santa's whereabouts and perhaps they are making their final case for placement on the nice list that phone number is how they are reaching out to Santa and his elves.

Now the number will be in operation for calls beginning at 6:00 a.m. eastern time on December 24th, Christmas Eve. And a funny story behind how this all started. It's got to do with a phone number. Back in 1953s -- 1955, Santa placed a fun little message in Colorado Springs. The problem was the phone number to get to Santa was one digit off in that advertisement. So let's check out the ad. So instead of reaching Santa's elves at Sears toyland, they dialed a number that went to a top secret military line and the calls went to a confused U.S. Air Force colonel Harry Shoup. Colonel Shoup decided to preserve the spirit of Christmas and make sure all of the messages indeed got to the big guy himself. Now Colonel Shoup's troops were on board with the mission and the rest is history. Our service men and women at NORAD have been tracking Santa's sleigh ever since, 65 years later those calls continue to come in from boys and girls everywhere and we are so proud to be a part of this really heartwarming program here. As you can imagine Santa needs quite a few elves to take those calls. Amid COVID-19, many of those elves are offset volunteers. Verizon is sharing phones pre-loaded creating a virtual call center to help field calls for NORAD's Santa operations center. Helping us learn more about our involvement, Jordan from our VBG federal defense team is with us. Jordan, thank you for joining us. Welcome to Up to Speed live.

>> Thank you for having us Up to Speed. Happy to join you guys.

>> This is such a cool thing that we do when we help with NORAD. And kids all over the world get to track Santa. For folks who don't know what exactly is the NORAD track Santa program?

>> Essentially, so NORAD deploys a call center each year and in this call center what they do is they take hundreds of thousands of calls from kids all over the world to track Santa's whereabouts, where his



sleigh is and his reindeer are. Goes live starting Christmas Eve at 6:00 in the morning through Christmas. Kids can track Santa very joyous event that Verizon has been affiliated with for a long time.

>> It's awesome. Since 2002 we have been a part of it and kids if you are wondering where exactly Santa is right now-- Santa is right now, live from the North Pole is Kris Kringle himself. Santa Claus on up to speed live. Ho, Ho, Santa. And welcome to Up to Speed. How are you, sir?

>> Ho, Ho, Andy and Jordan and everybody in Verizon land. Hello today and merry Christmas. I'm here at my house here in the North Pole.

>> I was going to say the office looks great and I'm sure that because of COVID even Santa has to work virtually sometimes. How is the toy building? How are the elves doing. Everybody staying safe?

>> Very safe. We were using all of the protocols but it's a busy time of year. We are making all of the gifts and toys for all of the kids around the world and the grownups like you, Andy, too.

>> I will make my case for that nice list here in the coming days. Jordan, we will send it back to you. Santa is very excited to be partnering with us here at Verizon. Tell us about more of Verizon's involvement with this program. What exactly are we doing here for our 18th year?

>> Sure. So 18th year we have been part of this since 2002. We provided the toll-free 800 number that kids across the world call into. There is a lot of work is that done behind the scenes. Really a great example of everybody coming together on a Verizon side. A lot of work between VBG, wireless, our Verizon business side and we got love from the Verizon response team. A lot of stuff going on behind the scenes. Normally you would see people from all segments of Verizon go down and volunteer. This year is different with COVID. So we are just supporting the NORAD employees and their families that are supporting this mission.

>> For years since 1955, Santa, NORAD and our service men and women are tracking the whereabouts and helping you travel. Were you nervous this year and how much did Verizon stepping up help in terms of making sure that those connections were good to go? It must have taken a little stress off your hands as you checked the list there, Santa. Santa, I think you are on mute there. Must have been a BlueJeans elf. There we go.

>> That was a BlueJeans elf got me again. I want to thank all of the volunteers that are answering the questions here from NORAD and our friends at Verizon who are making this go virtually this year. It's so important. And I like to thank all of my elves. Making my job so much easier.

>> Awesome. Awesome. Santa. Jordan, when we talk about the volunteers here a lot are using phones now. They are virtual. How many calls are we talking about and where are they coming from and I'm sure the questions run the gamut.

>> Yeah, absolutely. If we look at last year's call volume, you know, the teams took over 130,000 calls and we think this year it will eclipse close to 150,000 calls that are coming in to the call center. So this year is very unique. Typically we would have a packed house down in Peterson Air Force base with hundreds of people coming in. So from a Verizon solution standpoint we helped them take that call center remote. We worked with Amazon. We worked with our Verizon business team. And we integrated our one talk solution with all NORAD leadership so they can take calls across their houses and in the comfort of their living room to make sure the program is on par with what it's been.

>> That's awesome. And Santa, just to talk a little bit more about some of the hot questions this year, I know that some kids are wondering, Santa, so does Santa wear a mask during Christmas and how this is all going to work out. I'm sure you are working out the details. Any insight as to the operational portion of Christmas this year?

>> Well, up in the North Pole we are wearing masks and social distancing and we do that when we deliver our toys, too. There are a lot of great virtual things happening this year. You can go on our website and see how we celebrate Christmas around the world.

>> That's awesome. And Jordan, just some final thoughts, anything else you would like to share from our VBG team and our involvement with NORAD track Santa.

>> I want to thank everybody that was involved on the NORAD track Santa. It's great to be part of Verizon to support this program. It's been great. Everybody that we partnered with on as I mentioned the one talk Derreck Peabody, Randy Johnson, the Department of Defense, a lot of work with those guys to make this happen to bring this home. Last

thing if you have kids make sure to check the NORAD track Santa website and also show channels that are available but a lot of good programming content for Santa to deliver presents this year.

>> Very cool. Jordan, thank you to you and your team and that information and we will provide on VT web as well. One last final thought from Santa. Santa, I know it's been a tough year for moms and dads, boys and girls and in our conversations previously you talked about making sure all of our boys and girls think about kindness and the true meaning of Christmas. Any lasting thoughts as our boys and girls try to make that nice list with a few days to go.

>> Absolutely. You just said it all. Be kind, be kind, reach out to those who can't be together this Christmas and most of all have a wonderful Christmas and happy new year. Thank you.

>> Thank you very much, Santa. Live from the North Pole. Thank you to Jordan and a special thank you to our communication colleague Matt Davis who has the direct line to Santa. It's weird because you never see the two in the same room he is always missing out. I will let Matt know, Santa, you say hello. Thank you to our team on the NORAD track Santa website as well as a busy day coming up Christmas Eve, Christmas morning with Santa. Thank you. I hope all of your travels are safe. And I know both of you are very busy preparing for Christmas. We appreciate your time. In the spirit of good holiday communication, if you are looking to connect virtually with family and friends this holiday season, put your BlueJeans on and make sure to sign up for a free seven day trial of BlueJeans video conferencing. It's what we use right here on Up to Speed to connect with you folks. You use your personal e-mails to sign up for an account to talk with family and friends near and far. It's a great way to connect as you can see we have the long distance connections to the North Pole as well. BlueJeans is the way to go. And we will be sending you more details on how you can sign up shortly here.

Closing out this episode since we are in the holiday mood, we leave you with a twist to a classic holiday song put together by some very talented business V-teamers in New Zealand. Please enjoy this jolly tune courtesy of Andy Bell, Jessica Gough, Ed Serra and Ray Hidyat. Until then, boys and girls, you are Up to Speed.

¶[ MUSIC ]¶