Intel

Create Safer Communities Using Edge Insights and Collaboration

CORPORATE PARTICIPANTS

Lilian Veras
Moderator

Rodrigo Calderon
Austin GIS – President Smart Cities SBU

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PRESENTATION

Lilian Veras

Welcome everyone to the Intel Network Builders Webinar Program. Thank you for taking the time to join us today for our presentation titled Create Safer Communities Using Edge Insights and Collaborations.

Before we get started, I want to point out some of the features of the BrightTALK tool that may improve your experience. There's a Questions tab below your viewer. I encourage our live audience to please ask questions at any time. Our presenter will hold answering them until the end of the presentation. Below your viewing screen, you will also find an Attachments tab with additional documentation and reference materials, including a number of websites and documents mentioned in this presentation.

Finally, at the end of the presentation, please take the time to provide feedback using the Rating tab. We value your thoughts and we'll use the information to improve our future webinars. Intel Network Builders Webinar Series takes place live twice a month, so check the channel to see what's upcoming and access our growing library of recorded content.

In addition to the resources you see here from our partners, we also offer a comprehensive NFV and SDN training program through Intel Network Builders University. You can find the link to this program in the Attachments tab, as well as the link to the Intel Network Builders newsletter.

Intel Network Builders partners have been working to accelerate network innovation by optimizing their solutions on Intel technologies. These industry leaders are recognized in our Winner Circles Program and Austin is a member. Learn more about our INB Winners Circle program by clicking on the link in the Attachments tab.

Today we are pleased to welcome Rodrigo Calderon from Austin. Rodrigo is a passionate entrepreneur focused on the tech IoT industry. He currently serves as President of the Smart Cities vertical at Austin GIS. He is Co-Founder and former CEO of Energetika Tech, an energy IoT management company with more than 10 years in the market, ranked top three in Mexico. He is also Co-Founder of RADAR, the first collaborative security platform in the world with more than 15,000 cameras in the network. In addition, Rodrigo co-founded R2 Call Center, a service center with more than 800 employees.

Welcome Rodrigo, thank you for taking the time to join us today. And over to you to start off.

Rodrigo Calderon

Thank you, Lilian. Thank you for the introduction. Hello everybody, very nice to meet you. As Lilian mentioned, I'm Rodrigo Calderon, President Smart Cities business unit at Austin GIS.

So, let me tell you a little bit about us. Why Austin GIS? Who we are? Austin GIS, it's an Infrastructure-as-a-Service company. We are digitalizing and supporting companies and governments around the world with their digital transformation. And we're making it easy to consume, removing friction and working it as a service. Our goal is to build a converged IoT/AI/5G business around the different IoT far edge nodes around the world. We are supporting different verticals. We have a smart city vertical, we have a retail vertical, we have a 5G vertical, and we have an industrial vertical. So, we're supporting different industries in this new era of digitalization and smart edge nodes, and everything worked as a service. Our goal is to do scalable projects. That's one of our key advantages. We do everything at scale, and we support companies and governments to leverage projects that are big scale.

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So, today I'm going to talk to you about our RADAR solution. RADAR, it's the first collaborative security solution. And the whole system, it's built around data and AI. So, RADAR, as you can see here, we work with the citizens. So, we're creating communities, we're connecting families in a virtual community around the world. We're making it accessible for the different players to have information and to be able to acquire data. Use this data to be preventive instead of reactive. And also, using AI to leverage and to reduce the time that alerts and different first responders can act on different situations. So, RADAR is the solution that we're using in our approach where we have collaboration, and we have edge compute on the cities.

Let me let me play a little video, so I can give you more context on how the solution is approached.

Voice-over

Today, the average citizen's involvement in security strategy plays a very passive role and heavily relies on police. Not just that, conventional camera surveillance consists of just a few people looking at a lot of screens at the same time. What's more, a family that buys security systems mostly uses it for indoor purposes with basic streaming services and zero data analytics.

What if we give families the power to take care of their security and their communities and have more eyes on what's happening outside? What if families could collaborate with law enforcement to prevent crime with the most advanced technology serving security accessible by any person with a mobile phone? Now we can.

RADAR is the world's first socially connected security network and brings you the concept of collaborative security to prevent crime. Featuring the first security digital community powered by families and police with the integration of intelligent edge computing, Wi-Fi 6 and artificial intelligence with the help of just a mobile phone.

With the help of intelligent edge and AI, the police central is now digitized and able to see what is happening at every door in real-time and provides an end-to-end connection to the families. We build a network in which a family has immediate access to a digital neighborhood to keep their homes safe. Due to this, a community can now share video clips and data through the RADAR app within conversation threads that can help identify potential threats in the vicinity, and gather this information to help the police with prevention strategies. RADAR Security also helps you with custom video and data sharing settings with anonymous setting option, police being able to visualize every authorized shared camera real-time, a Follow Me feature that provides digital surveillance from point A to B. Safe routes with real-time data about security alerts beforehand and selected routes and destinations. A panic button that alerts central police directly in case of an emergency, while sharing location and personal medical data, and patrol ETA tracking for families to know the live location of the dispatched patrols.

What's more, all data generated from every user allows RADAR to learn patterns, people movements, events, and create customized alerts before any probable security event could ever happen. Imagine the result of having millions of families connected via cutting edge technology, data analytics and intelligence, all with the same purpose, giving our families a safer world.

This is real prevention. RADAR, the world's first socially connected security network. RADAR is already changing security in the world. Visit our website to know more.

Rodrigo Calderon

Thank you. So, well, that's a snapshot of the solution. And that's a snapshot of how we are approaching. We have this different approach of merging collaboration with data analytics and smart edge processing.

Telling you a little bit about our solution. We connect the different players that act on a city and that supports security. Now, of course, the families is the most important using our app. Families can collaborate, and via our secure platform, can share information about things that are happening in their communities, and that are incidents that are not a typical use case. So, they can collaborate with the police, so they can create these insights on top of what the AI algorithms are doing.

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The cities, their approach is that the cities are able to capture data. So, they're able to use these network of cameras and start capturing data on traffic analytics, parking enforcement. Using these analytics, we can also do weapon detection, so we can have safer communities. The police get these insights and they are able to properly assess what is a real alert. There is a lot of information that is going to be driven within these insights. So, the police is only attending real alerts, reducing the false positives that the police is working on.

On top of this, there's a Wi-Fi 6 mesh network that is connecting the smart cameras, and that it's being used also by the communities, so they can connect properly and use the advantages of high speed internet.

Within the monitoring centers, we are synchronizing all of these events, all of this information, making it an easy way to access and to connect to the families around the communities.

So, our base solution, we have two base products, we have RADAR Home, and we have RADAR City. In our RADAR Home, what we're doing is we're using existing infrastructure that the houses are already leveraging like the internet from the citizens. So, we're connecting digital cameras to this existing infrastructure, and we're giving it the power of AI. So now, every citizen can use their perimetral surveillance to report incidents and also to gather data on a secure system. Also, that it's anonymous, it cannot be accessed unless they require any support from the police. So, the camera that is always looking outside of the houses, just doing perimetral surveillance, it's locked, so the police cannot look into it unless there is an alert, and there is a situation where it requires information, and that the police needs to come and support.

We're also connected right now, interconnected with 911inform and RapidSOS. So, we have direct collaboration with first responders. And these are secure platforms that are very interconnected and validated by 911 support.

Our City solution, we are connecting, we are creating hubs of 50 cameras that are connected to a smart edge node. So, we reduce 90% the cost of connectivity, creating these mesh networks and these groups of cameras, so 50 cameras. So, we can cover a radius of almost half a mile within these smart nodes and reduce the costs of data transportation. Using our edge node, we are also able to compress and to process data and store data. So, we have only one single point to stream information and to reduce the traffic. That's a very important part of our solution where we are also attacking how we can reduce costs for the city to have a very extensive network of cameras, and smart microphones. So, we created this mesh network where we connect smart cameras that are processing on the edge, all the information, sending metadata, and then connecting directly to the smart hubs.

From our lineup, as I was saying, on the Home, we have cameras, we have AI, we have edge nodes, we have a Wi-Fi 6 mesh network, we have edge processing, and we have some sensors. We are also supporting some lighting in certain cities that are requested to improve the quality of vision outside of the houses. This gives a sense of security in most of the cities where there is a lot of trees, and there's places that are dark. So, in some places, we're supporting them as well with residential lighting.

On the City side, we're using smart cameras that have the Intel Movidius chip, and we're doing the analytics on the edge. So, the metadata is processed and it's being moved to the central smart server. Everything connected with Wi-Fi 6 mesh network. And using our edge node, we're processing the rest of the analytics. We also have smart microphones that are detecting and doing shotgun triangulation. We're also processing other algorithms like crash, car crash or glass breaking, this is smart microphones.

And then everything connects via this platform that it's accessible for the citizens through an app. Only citizens that are enrolled will have the ability to use our digital panic button or to collaborate through the collaboration and information platform. On the side of the police, they will have our RADAR GUARD and RADAR SYNC platform where they can have geolocation of the cameras, real-time streaming, a 90-day storage of video, and all the analytics and dashboards required to do the proper enforcement of all these insights.

Here's a snapshot of the architecture that we're hosting, that I've been talking about. For the first time, we are joining forces to have a more dense and a bigger footprint. As an example, one of our clients before had only 300 cameras, and after our solution, we were able to deploy 3,000 cameras in this region with a population of 1 million people. The change was impressive, and I will talk about some of the results that is happening. But using the same infrastructure, before they had 300 cameras, these 300 cameras, where each of those

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were connected using a fiber optic cable. So, what we did is we took these 300 cameras and we made them smart, we connected through our Wi-Fi 6 mesh network, and then we added another thousand smart cameras using that infrastructure and that same budget. That's one of the powers of this transformation that we're doing, we are reducing the transportation costs 90%, we're able to add more cameras and make them smart at the same way.

And then on the other side, if you can see on the bottom of the screen, we are also involving the communities and using the residential broadband to connect cameras and also making them smart. Just using perimetral information, never going inside of the houses, just perimetral. And the data and the storage of the video, it's only accessible if the citizen is requesting support, if there is an alert. But what this is supporting as well is to acquire more data and to have a more dense footprint. And also, for example, in the case of the project that we recently made by adding 3,000 cameras, that means we're adding 3,000 citizens that are also supporting and giving us insights. While the edge nodes and the AI analytics is giving insights on as well, we have now the police supporting the communities giving insights, an AI algorithm as well giving insight, so that's the power of creating collaboration and creating a network that is different. And that has a different approach, and it's giving different results. It's really giving these different results to the different players around the world that we're supporting.

As a snapshot, we have our architecture where we're leveraging the edge nodes, we're using the AI, we have a wireless network that people can connect, not only the cameras, but also we're giving free Wi-Fi within the cities. As you can see in one of the snapshots, here's one of our smart edge nodes where we are giving first-class Wi-Fi internet access. We're having smart microphones, we're having smart cameras, and we're gathering information. For example, here, we're supporting smart parking around the park. We are also collecting important information about traffic at different peak times, supporting different strategies with the city to reduce the CO_2 pollution. Also, within certain areas, how is – we're supporting the police to do crossroads enforcement, and gathering insights around the cities while making them a more secure and a more livable place around these different cities.

One of the most important things that I want to highlight is the increase in data and the increase in the perception of security. That is really transformational.

Here's an example of the city that I was telling you. This was one of the most dangerous neighborhoods within Mexico City. So, they had a real challenge. It was at the epicenter of Mexico City, there was a lot of crime happening. There was a lot of complaints and people were not feeling secure. So, by giving this different approach, by connecting people, by using AI insights, by giving the power to the police to be able to react more in time than just – in a different way, we were able to either reduce the crime 40% And that's a real insight, it's public. It's been public by the National Statistics Institute. We were, of course – one of the key insights is that people feel more secure.

Why those people feel more secure? Because now people are collaborating. It's not just that the police has to act, or just the city has to solve the problem. If we want to have a different approach, we need everybody to collaborate. But we need to have it within a secure environment where the data is protected, where all the video is protected, and is not accessible only if it's required. We need a platform that is also – that has an approach where people can give insights. And we'll need, of course, the smart edge nodes and technology to process this metadata, have no latency, and give accurate information and insights on a timely manner. So, creating these digital neighborhoods, we are able to reduce crime and to make people feel more secure. Those are the most important.

Here are some actual data points that we have from this neighborhood. This has been published by the city. And these are the tangible results. These are actual crimes that are being reduced. So, we went from 319 crimes that were happening within the city to only 108. After two years of working, the solution of collaboration, of getting insights, of getting all of this information, the city was able to actually reduce crime by 70%, which is an outstanding number never seen before. The city went from being the number 16 within the Mexican neighborhood, to be the most secure neighborhood in Mexico City. So, it just went from last to first after doing this approach. Of course, the police and all the involvement within the city and the collaboration of all citizens made this possible. So, these are actual results.

And also, it's very important to talk about the perception. So, there's two things. First is what are insights and how police can approach, and how police can solve problems that are actually happening, and solve crimes, and be able to detect persons that are committing and bad actors. But the other thing, very important, is that with collaboration, people feel more secure. So, this is a graph that represents how people start feeling more secure within this neighborhood. So, the perception of security went from 51% to 72%. So, that's a 50% increase on the percent on how people was feeling and preceding the security within these neighbors. So, those are the most important key points. So, we are able to get information and act. And we're also enabled to connect people and make them feel secure.

We are also working in other projects that are not just cities. So, we are able to leverage all this infrastructure and leverage all this smart infrastructure to be able to do smart facilities. So, that's very important, we're working with a global customs organization. So, we are supporting 330 locations that they have. And we are supporting them to get information about the different places where they have trading. So, we're getting insights on objects left behind, we're getting insights on LPR, we're supporting them as well on weapon detection, on acquiring certain demographics. And this is leveraging their existing infrastructure. So, what we're doing is we're making smart, we're making older cameras smart. And we have a roadmap to add AI cameras, and also Wi-Fi 6 mesh networks, so they can have a cheaper way to connect.

So, this is it, this is our smart collaboration platform that we wanted to introduce for all of you today. If you have any questions, I will be here to support on these questions, of course.

Lilian Veras

Fabulous. Thank you, Rodrigo, for sharing such great information with us all. We do have a few questions that have come in while you were presenting. So, let's get started on Q&A.

The first question I have here, "How does the solution differentiate from the rest of the cloud surveillance solutions?"

Rodrigo Calderon

That's a great question. I think one of the key factors is collaboration. But I think that another key factor is that we're not a conventional cloud surveillance solution, we are a hybrid cloud solution. We're using the far edge nodes. We're using the cloud. And we're using the smart edge storage and support to be able to get insights and secure the information for our clients, for our citizens. So, I think that's one of our key approaches and differentiators versus a traditional cloud surveillance solution.

Lilian Veras

That's great. Thank you. Another one, "What's the value of the edge nodes on the architecture?"

Rodrigo Calderon

The value of the edge nodes is that we're able to reduce cost. So, we're able to reduce costs, we're able to process metadata and reduce latency. And we're also able to add value to our customers by placing edge nodes that can support other applications. So, I think we have three key advantages, which is reduced cost, reduced latency, and process more information, and then being able to support scalable solutions that have other applications for the cities and our customers.

Lilian Veras

That's awesome. One last question. "How can cities leverage this architecture on their smart city roadmap?"

Rodrigo Calderon

That's a very good question. Right now, we have worked with many cities, and we're working and supporting them on their roadmaps. We see that our approach on the security side is we are leveraging, and we're working with the highest data and broadband

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transportation element that a city can carry, which is video. Video consumes a lot of data, and needs a lot of bandwidth to be able to transport.

So, we're leveraging that, helping them reduce these transportation costs, but at the same time, we're planting, we're seeding these smart edge nodes. So, these smart edge nodes are being carried and supported by this video project, let's say, but at the same time, we're giving the cities the opportunity to have a roadmap that can be supported on these smart edge nodes.

So, let's say, that a city wants to do other data acquisition within the city, so we are supporting them to create this high density of connection points with a Wi-Fi 6 mesh network, and we're using this to connect the cameras and to transport the video. But at the same time, all of these cameras and all of these points become a data entry or a connectivity point. So, a city now can use these points to connect other sensors. So, they can connect the sensor for smart waste management. They connect sensors to measure the flow of water, so they can do water management. They can connect the sensor for electricity, so they can know a power outage. They can connect the sensor for pollution. They can connect it for air quality.

So, now, all of these points become points of connection where data can be acquired. And then the beauty of a smart edge node and the scalability supports the processing of that data and generates insights within those smart edge nodes. So, the information doesn't have to flow directly to the cloud, it flows to the edge nodes, it gets processed, and then it gives insight. So, these smart brains that we're placing around the cities supports them in a roadmap, because they can do many things with them. And we've heard many ideas and all of them can be supported through these smart networks.

So, that's how we're supporting and that's how the smart edge nodes can support a smart city roadmap today.

Lilian Veras

That is awesome. Rodrigo. Thank you so much. That was our last question. So, I'd like to thank you again for joining us today, and for such an insightful presentation.

I'd like to ask our audience to please do not forget to give our team a rating for the live recording so that we may continuously improve the quality of our webinars.

Thank you again. And this concludes our webcast.

Rodrigo Calderon

Thank you very much, Lilian. Thank you, everybody for your time and we're here to support.

Lilian Veras

Thank you, bye.

Rodrigo Calderon

Bye-bye.