Morning, everyone.
See here.
Hey. Oh.
Okay. Started here in just one minute. This one's a little bit earlier than others, so we'll let everybody get their coffee.
You are all muted as usual. So but if everybody can hear me, can somebody give me the thumbs up for a cla pping hand or fireworks, whatever you got?
Oh, hi, Natalie. Sorry. You shouldn't be muted, sweetie. Hold on.
Perfect.
And then all over your hand.
K.
Okay.
We're gonna wait just one more minute here just because we're early. I know.
Okay. I'm gonna throw some stuff here in the chat, and we'll start in just about two minutes here, guys and ga ls, boys and girls.
Move over that hand.
Give everybody just one more minute. I know it's early. It's an early one on the whole West Coast Surru.
Okay. Let's see here.
Okay. We'll go ahead and get started. I know we'll see people just kind of pouring in here.
Hi, everyone. I'm Emily. This meeting is being recorded.
We really appreciate everybody being here. We've done quite a few of these webinars now. We're very excit ed. This is our first one that we're doing with external to Delta participants. So if we have any technical errors, just bear with us on that because we are gonna be switching presenters a few different times.
So today, we have our equip webinar. We are going to do just a very brief overview of what the equip progra m is. If those of you who are on here don't know, but I would assume everybody does. But Jo will just give us an overview of that.
And then we have two of our equip partners. We have both Milesight and Cetra. They'll give us kind of a an o verview, some of the Delta applications, some of their applications, some of their customers and use cases, and all that good stuff. And then Khalid will actually walk us through some of the technology of Delta with Mil esight and that integration.
We'll have a q and a session for both, and everybody can see kind of the agenda. I pasted it in the chat there .

Again, all of this is always being recorded, so you'll get the PowerPoint, the transcripts, the q and a, everythin g like that. It gets rolled up in an email to you with a short survey about a week after this, so bear with us on t hat as well.
As a reminder, join us for our next webinar.
That one will be oh gosh. When is that? Oh, no. Well, the link for it's in the chat. So everybody click that link f or it in the chat.
I think it's June seventeenth. It is June seventeenth, ten to eleven.
And that'll be Dave Steven, and he is going to be going over the future of buildings. So this will kind of be an i n-
depth look at Delta iBT strategy and where it's going, a lot around AI, a lot around building Canvas, some of t he digital twin stuff. So that will be June seventeenth. There is a link in the chat to preregister for that one. So everybody, you know, go preregister now for that one.
If there are any questions, what we're gonna do is just have you put them in the chat. You are all muted. So j ust put them in the chat throughout as the presenters are going, and then we'll just go through all of those dur ing the q and a time frame. If we don't get to them, we'll just answer them via email, put them in a document, and then, again, send that out afterwards.
If anybody has any questions, just raise your little hand, and we should be good to go. So with that, Jo, take us away.

Speaker 2
Thank you, Emily.
Hi, everyone. Welcome to the Ecwid webinar. I will quick start by introducing the Ecwid portfolio and also wh at's the update in our portfolio. I'm Jo Chen. If you do not know me, I'm the product portfolio manager of the E QIP program.
So I'm going to share with you what's new in our portfolio.
So you can see on the screen, those yellow are the new one, the new vendors that we recently bring in.
No.
Jo, we're
Speaker 1
not we're not seeing your screen.
See, first technical difficulty every is everybody else seeing her screen, is that just me?
Speaker 2
Do you see my screen?
Speaker 3
Yeah. I can see it.
Speaker 2
Me again.
Speaker 1

Oh, gosh. Okay. Just me then. Alright.
Speaker 2
No. Sorry.
Speaker 4
Go ahead, Jo.
Speaker 2
Okay.
Yep. Sounds good. Everyone can see it. So we have Milesai. And today, we are happy to have Milesai to intr oduce their IoT wireless solution to us. And what's new, we also have Teraby. Teraby is a funds based comp any which focusing on occupancy and also people counting sensors.
And for ControlWAFS, we now carry Bray.
And BREY is very specialized in its Butterfly WAFs. And for the initial launch, we bring in the commercial Butt erfly WAFs free air series and also the high performance Butterfly WAF MK series.
But we are not just limited to these products. Actually, we can sell any brace product if we have a request, lik e the control WAFs, the group WAFs, pressure independent control WAFs, and the piping packages.
And what else? And, Neil, to take care of the regional specific needs, actually, we bring in the m bus solution from Delta Controls Germany, and particularly for Asia Pacific market and also for Europe because mBus is v ery is a common protocol that used in the metering applications.
And what else for HMI, we are going to release the XTOR HMI early next month.
For the lighting solutions, we are happy to now have Amelux lighting solutions in our portfolio.
We're offering the, downlight, linear, and also, for taking care of the projects for lighting, requirements.
And what's next? Actually, we have a target to bring in more regional specific products.
Especially, we want to bring in some cost effective solutions alternatives compared to today's portfolio. So las t month, actually, we participate in the China refrigeration trade show and to explore more potential vendors.
With that, we are evaluating some opportunities and also reviewing on clicking start the onboarding process of some of the new vendors that we source.
That's pretty much a quick overview and also the future plan for the equip program. Now I will pass it on to W eng Chi from my side.
Speaker 4
Hello. Hello, everyone. I will take over the share.
Okay.
Can everybody see my screen right now? You're good to go. Okay.
Alright. So thanks for invitation of MiOSIGHT to this, I would say, a co webinar in between us. And we're hap py to cooperate with Delta and to build more, like, new potential digital sensing market and also solutions.
So my name is Renfi Chen. So I'm from outside. I'm the IoT partner executive. So what I'm most doing is to s hare all of those, like new products and the product solutions with our partners and the future potential partne rs. So today, I will basically give you a general idea of what Milesight has been doing right now and what are those kind of solutions we can be offering to help you to build your, like, popular some scenarios, like for BM

S and also for the building management, space management, also energy consumption management and so on, using LoRaWAN based and also other protocol based solutions.

So MaoSight, actually, we have been doing digital sensing market for over fifteen years. And we build our team specifically at the IoT department since twenty seventeen.

And at the beginning, we chose LoRaWAN as one of our main technology and protocol to do our wireless IoT product portfolio. So by now, we had already been deployed like over one million sensors and devices all over the world and also being able to cooperate with global partners. So all of our products you might can find in different regions, even in your city or places.

So here is a general product metrics of Mao Sized product portfolio. So we have various products, solutions, product lines.

Generally, we will be separated in them under different vertical industries. And two of the most focused one for us are the smart building and the smart retail. And also, we are thinking about because if we wanted to build more things in the building scenarios, we should have to make our connection being more compatible. Like our gateways, the LoRaWAN gateways, you can see here, and also the building IoT gateway. They are capable of transferring not just the wireless solutions, the LoRaWAN, but also being able to get connected with Modbus, BACnet and also Niagara drivers and also many, many of those different kinds of BMS preferred protocols. So that's why we think we can help to break the boundary in between wireless and wired systems.

So I will get a quick overview of all of the solutions. I would like to give you an idea of what we are doing based on the exact the success stories we have. So we'll basically have the logic while speaking of all of those successful stories and get you to know some of the highlighted products we are using there.

First of all, it's about the smart integrated HVAC and the facility management solutions.

Since right now, we find more and more existing buildings that are facing the troubles to do the rewiring and sometimes they only wanted to do is to do the retrofitting of their existing systems. So in that time, what do we they wanted to do is to choose to use some of the new thermostats, some kind of the wireless thermostat solutions in replace of some of their existing systems. Since based on the, like, wireless solutions, you are able to do the remote management and also being able to set your schedules there. So in that time, we had got some of the different scenarios using the HVAC control system operating.

So for example, this is one of our exam one of our case in France. And what they were trying to do is they wanted to improve their, like, building automation and to help us to improve their existing system. What they're trying to do is, first, they wanted to control and to know the occupancy detection since once we know there are how many people there, we can be able to know what is the best temperature in this place and area. And second thing, they do not want you to waste too much energy.

If that's in the winter season, if the window or the door is always open, that will be causing a lot of trouble, waste of energy. So in this case, they have chose, like, one of the PIR and the motion sensor, which it would be able to detect the occupancy status, and they're choosing one of the magnetic contact switch to detect the window's openness and then to use the thermostats, the smart thermostats to do the control of the heaters the

re. So in that case, all of those wireless sensors work independently and doing the transfer through the LoRa WAN protocol. And then the UG685, the LoRaWAN gateway, will collect all the data and to input all the data t o their existing BMS or the on premise systems they already have.

So with this kind of an upgrade end solution, we can know it could be able to save them more time and do no t need extra maintenance of the like, they they do not need a lot of things and times and codes to replace the ir existing things, but just to do very quick settings of their wireless sensors without doing some rewiring work s.

So in this case, we can see we have hot water radiators using that. And besides that, we actually have multip le different HVAC controlling thermostats depends on what kind of HVAC types you're using. So that varies fr om, like, for PTAX control, heat pumps, boilers, and also for fan coil units, split AC, different kinds of HVAC u nits can find their wireless solutions.

Besides that, we offer two different ways for you to manage your thermostats.

First, you can choose the all in one HVAC thermostats, and you can also be choosing the split version, which we separated the controlling panel and the controller independently since we found in some of the hotel sce narios, people would not like to go inside of each room to do the rewiring or maintenance checking somethin g, so they prefer to have the controller separated and just to place those controllers in those central like, cent ral place to do the management and to have the panel independently working in different hotel rooms. So tha t's why we are giving different options for the thermostats for choices.

And this one actually for while we're speaking of the facility, we fund not just the HVAC system, but meter ma nagement is one of another important things. But it's quite very hard to do the replacement of all existing met ers. So and people all wanted to do is they wanted to have some kind of the meter readings that data can be collected by an integrated system. So what can Mousai solution do is we can be able to use, like, the IoT con troller.

This is speaking of the UC three hundred. So this is an IoT controller, which is kind of like, playing the role of as a translator in between the Modbus and the LoRaWAN. So in that case, you can directly get connected wi th your metering, and you can transfer it into a LoRaWAN speaking products. So you can receive the data fro m your metering even that is just a traditional meter.

So you can collect all of the data and being able to collect it into your system or your platform, depends on w hat you want, their on premise or cloud version are available for you to do the connection. Another thing is th ey wanted to do is to do the quickly pulse reading. The pulse counter, this is directly EM three hundred, the D I pulse counter, which can be directly reading from some of the some of the water meters, so they can be abl e to get this kind of data to your system also. Besides in LoRaWAN, or I've mentioned the wireless solutions, one of the good thing is you can keep always, like, keep adding new things inside.

Since once you are getting a gateway, you build a LoRaWAN network, you can always add, like, more senso rs if you want. Once you find, maybe we need extra staying of the IQ. We may need the occupancy detection . You can always add the LoRaWAN based sensors inside of your private LoRaWAN network.

So that will be helpful once you need it to add some of the solutions. They doesn't need, like, extras things or extra gateways, just depends on the space you have.

So in this case, we can find there are multiple different sensors, not just wirelessly using, but you can use the m in wired way. What they are doing is to make sure your traditional system can be getting inside of the conn ectivity with those wireless network, so all of the data can be collected. So these are all of the IoT controllers I mentioned, which can be directly getting connected through the model bus protocol so you can be able to re ad your traditional water meters, electricity meters, and so on. So that will be a new major retrofit and the wid e system upgrades from the LoRaWAN based sensors and solutions.

So the second part we are hearing is about the energy. Since we find the energy is one of the most important things once we are thinking about in the building or in the retail market. And here is one more thing I added here is about the space efficiency. Since we fund all of those energy consumptions are made by people, so t hat's why we shouldn't have to know where do people goes, moves. So that's why we can be able to adjust t he, like, the HVAC system, the lighting system, and also being able to improve the efficiency of your building usage.

So in this case, this is in very old, like, think it's in concert hall. So in that time, what they wanted to do is they fund. They have like more like higher electricity fees coming every month. So what they wanted to do is they wanted to know where do they spend most of the energy in.

So that's why they are adding an energy monitoring transformer, the current transformer in there. So this is a very easy and simple product, which can be just directly cutting on the circuit. So and it can be able to read h ow much current has been using going through this circuit. And you can get the estimated power consumptio n, so you can be able to know which part of this area had been spent the most energy.

And also in the concert hall, we know people are moving there all around. So they will also wanted to know m aybe the where is the most crowded area. So when should we send more, like, cleaning stuff or help, like, so me of the stuff to there to help. So that will be giving them more database decisions.

And also in this kind of place, what else they wanted to do is to control or manage the environment. So they s hould have to know the indoor air quality and also like the sound net level. Is that noisy or is that being good f or people who are in here, the audience's feeling? So that's why they are adding more environmental manag ement systems here.

So in this kind of integrated story, we can see many things we are concerned in including like people number , people flow, the current, like the energy usage as well as the indoor environment. Do people feel good in thi s area or not? So this will be a tendency in the market. More and more places are keep on looking for a high er standard, not just for the basic energy and also for some of extra, like, people's billing and the comfortable ness inside of this building or area.

So this will be some out extra point added. And, also, I will say why do wireless solution can be an extra add ed into your existing wired system? Since we know we cannot be be be able to replace all of the existing syst ems since they have already been used for long years, and it will be causing troubles if you wanted to replac

e them all and cost too much money. So in that time, you can do some retrofits by adding some of the wirele ss sensors in it.

Since in the beginning, I mentioned we had our connectivity being able to be the translator in between the wir ed and the wireless protocols. So in that case, all of your data can be translated to the most acceptable langu age, like you're you're using VetNAT. You can be able to use the VetNAT to transfer all of those wireless sen sors data to your platform, and you can be able to replace and retransfer them in between.

So in this case, this is an an old building. It's pretty have a very long history, so it's very hard for them to repla ce the existing system. But what they are doing is to add some of the wireless sensors, including for the moti on detection, people numbers detection, and also most importantly, the environment sensing products. And f or some of their appliances, they are using the IoT controllers to make sure they can do the centralized envir onment and energy control.

Finally, with all of those different pieces of sensors of Johannes, they can use only four LoRaWAN gateways to get them connected. Since LoRaWAN is a quite a special LPWAN technology, which can be able to cover a very large space, That's why it's very suitable for the building scenarios and even for the outdoor scenarios. You can have, like, only four of the LoRaWAN gateways can be able to cover and connect all of those senso rs, and it will be able to cover the full space.

Finally, all of those sensors data can be transferring to your, like, preferred, like, BMS or the cloud systems fo r your extras, like, settings or reporting, and you can keep looking for the tendency and keep looking the elect ricity usage in different area. So those are all traceable. So that's why we said it can be generally improved th e energy efficiency at that time. So these are all the products we mentioned in these success stories, which i ncluding all of like the sound level for environment, the motion sensor for people counting and the people pre sence detection and the CT and CTH series, those products are specifically working for energy reading. So t he current transformer is only for current, but the power monitor hub, one of our new products, which is being able to read your voltage and also being able to report you as much parameters as the soft metering are doi ng.

Last but not least, I would think the last solution will be in the next level while we're speaking of the fundamen tal of the facility and then the energy for saving and bringing back enough ROI for your investment.

And the third part is for more for, like, security and comfort of people in these different areas. So once we're t hinking of this, like, this is the kind of a very, like, typical solution we might find in some of the areas. So peop le are sometimes facing the troubles of the water leakage. Sometimes they will penetrate the floor and to bro ke your assets.

So at that time, what they wanted to do is firstly to save your assets. And the second thing is they need to do some extra settings for do the control. Like, once the leakage happens in some degree, it should have turned off your water bottle. So that will be one of the settings we can use the wireless systems in.

So in this case, what they're doing, they have used over one thousand two hundred spa leakage detector.

This is the detector, which has the probes on the top, so it can get in contact with the conductive water, so they can read if that's water leakage happens. And they have been put in some of the areas, which have been frequently found, water leakage happens like the bathrooms, laundry rooms and so on. And the second and third pictures are what they are doing is to use the IoT controller, and they add their relays to make sure the controller can be able to turn on or off their water valve. So in that case, what they're doing is once the water leakage happens, they can send the data directly to the IoT controller and then shut off the water valve to make sure they can be controlled and managed remotely.

Once the water leakage happens, of course, you will be receiving the alarming to your platform, email or the mobile, depends on where you're setting. So those data are very easy to track back and easy to set in your logic properly for not just prevention of some of the like water acid damage cases, but also for some extra long resistance.

So these are one of the our water leakage product metrics. We have pretty much a lot of different kinds of water leak.

This kind of the sensors like this one is the cases using for spot detection and also we have this rope shaped, it's for zone leakage detection. Just use the rope to put into the place. You might be wanting to do the detection. And we also have the membrane.

This can be pasted. Like for the celling, you can be pasted on the celling so you can be able to detect if there will be some area happen, water leakage. And the last one is the which is movable mini leak detection sensor. Mostly, they're using for some commercial buildings and put it on the corner of the restroom some places.

So these are some of our product metrics for the water leakage detection. Another successful story is for airport. What they wanted to do is to improve the passengers' experience. So they are thinking of, firstly, the bathroom is one of the place which might have different odor and also need to do some frequently cleaning.

So the first thing they wanted to do is to check if that's in a good environment. And secondly is they wanted to know how many people have been using some of these areas so they can be sending the cleaning staff to go there to do the cleaning. So if that's frequently used, that should be sending a cleaning staff more frequently. If some of the area in this some of the bathroom in this airport had not that frequently used, they can be saved more time.

So in this case, what they are using, the first, the GS301, that is an outdoor detector, which can be able to detect the two mostly, like have outdoor in the bathroom, the ammonia and the hydrogen sulfide. And they also have a professional IAQ sensor to monitor like carbon dioxide, PM2.5 and other parameters for dynamic adjustments. If that environment is not that good, they can be able to trigger the ventilation system, for example.

And the VS350, this is the battery powered dual PIR based people counter, which would be able to put it on the lobby of the of the bathroom, and they can be able to detect how many people are going and in and out. That will be able to giving you, like, the frequency, like, people are you using this bathroom area.

So that can be able for them to put everything in their existing platform and then be using some of the data to trigger, like, the cleaning stuff, to go there to checking, and also trigger the ventilation system. So everything

are working automatically. So once you have been doing the settings yourself, you can do some if then logics . If something happen, then they will do some extra work.
So that will be save you a lot of time and efforts while you are you wanted to build your autonomous working IoT solutions. That's what I think IoT solutions can bring more to people, and they keep learning, of course. S o in that time, they can keep learning and to get used to this environment and then to work better in the futur e time.
In this case, what we mentioned is the this outdoor detector, and it can also be detecting the temperature hu midity, and that will be able to give you, like, extra settings and data collection.
Besides, we have some extra, like, gas detector, which is for detecting vaping and smoking. This one has be en mostly being asked for, like, some high schools or universities. They wanted to know if there will be somet hing happens. And this is privacy a hundred percent privacy consent.
So there's no no camera, no anything inside just to detect inside of those different gas in between. So, like, v aping, smoking, temperature, humidity, TBOC, PM one point o, PM two point five, and PM ten. So that's the only thing it can do. So this would be some of the gas related solutions we can offer to the IoT, like, wireless systems.
So fine last but not least, I think the last one just wanted to pay some attention to saying we are not just doin g the building scenarios, but we also have good products for the retail markets, especially for people countin g and space management. So as you can see, all of those products are focusing on the people counting, occ upancy detection. We have different technology. You have one hundred percent privacy concern because all of those people counting sensor will be applying for the GDPR compliance.
So no worries of any privacy issues. And we have TOF based products. We have different base like Binocula r, PIR, IR, RADAR. You can find battery version, type c version, and you can find different year different year s of battery life even for the product lines here.
So we what we have mostly doing, like, this is one in the market, actually, it's an old market. So they are usin g the Versus one hundred twenty five, the people counter, to do the detection and counting of the people and those of the people who are working through and being able to know the travelers in the market and being a ble to give them the data back.
And also for this kind of products, they can be used and managed in the buildings, like it especially for office buildings, you can be able to know, like, the usage of your meeting room, if that's occupied or not. You can b e knowing, like, where are most people being occupied and what's the number of people in the meeting room to help you adjust everything. So this would be some examples you can see. You can get more data value fr om those people counting or people present sensors.
And this one is what we wanted to further extend is to do the people caring since we found in some of the bui ldings, like old people who are living alone or something happens in the hospital.
So we have a full detector, which will be able to know if there will be some trouble happens.
It will be having these three levels of logics to detect
Speaker 1

and they're
Speaker 4
staying here to judge if they are facing some dangerous situation, if that's an emergency or not, to help you t o manage some of the specific place.
So for people counting people occupancy, we are focusing on three levels, not just occupancy, not just counti ng, but also carrying people's safety in different space. So this can all be collected into the space comfort and to help people to get, like, better feelings in different areas. So here is the space management product metri cs. I think I have spent a lot of time to talk about all of those solutions because right now, I can't be able to se e your questions. So if you have any questions I'd like to answer right now.
Speaker 1
We're actually first, before we go into questions, let's let Khalid go ahead and do his of how Delta and Milesig ht integrate really quick, and then we'll go into the questions. So take it away, Khalid, real quick.
Speaker 3
Okay. Just let me share my slides. Do you see them? It's saying they're up?
Speaker 1
Yep. All good. Yep.
Speaker 3
K. Perfect.
So hello, everyone. I will be talking from the application engineering team. Good morning if you're on the We st Coast or the East Coast. If it's good evening to you, take that instead. As mentioned in the introductions, m y name is Khalid Kondekar, and I'm the application engineering lead. The reason I'm here today is to walk yo u through why we're so excited to bring Milesight into the portfolio, what the application team saw during testi ng, what stood out to us that we thought was very special, and why we think this partnership complements o ur system.
One thing, Rainfi went into it much more than I think I was even planning to hear, but the the biggest thing wit h Milestone was the incredible depth and vertical alignment of the products that they're bringing to us. They h ave things for leak detection, power consumption, occupancy and fall detection, people counting, lighting, te mperature, IAC, and humidity. And the the key thing they have is a centralized gateway that would be our ce ntral hub. Everything we did when testing, we would direct through that. It is BACnet IP native, and we can u se that to talk directly to Intelliweb. So that allowed us to really segment the LoRa side and the the BMS side and stick to our more traditional model of how we do things in the partnership.
Alongside that, LoRa as a protocol is probably the one with the the loftiest ambitions for range. You see reall y big numbers for how far the LoRa can go. But in a building, the environment changes quite a bit. You might have motors. You might have a vending machine. You might have metal in the walls. They offered things lik e signal repeaters and field device testers that I'll go into a little bit later that I really appreciated.
I had a slide that went through in the different products that I was going to mention in the last with the rope, t he the membrane, the different ways that they do temperature monitoring, the the fan coil, the heat heat pum

p thermostats that they have, and the various power. But I think Renfi went into it more than I could at a dept h that I can't really capture in this slide. So I'm just gonna kinda skim over this one.

Three things that I think really pertain to the application side for Delta that you can do with these are you can play in the reset, the retrofit, and the temporary diagnostics with wireless in a way that you can't necessarily with wired.

Doing things like using c o two readings from a wireless sensor to inform a ventilation reset or being able to u se remote temperature sensors in different areas over time to trim supply air, being able to simplify retrofit in areas where running wire just isn't really possible, something to complement if you end up using t one l, etcet era.

You're able to use wireless things from Milesight to complement instead of, either push out the BMS as we k now it. And then lastly, being able to do temporary diagnostics and investigate a comfort complaint, trend dat a, prove whether it's a control issue or build a building envelope issue, and being able to pull it when you're d one. If the data supports it, you can choose to run a wire later, or if the wireless sensor as MiloSight has batt ery powered options on twenty four volt depending on the material. They they might have four different SKUs of different ways to power this. You could also leave a wireless option there.

Going into how we set it up with the Milesight system married to the Delta control system, through the Milesig ht gateway, we're able to convert all the lower communication on the site to BACnet IP. You can set up the s ensors in one of two ways, either manually adding the serial number or Milesight also has a NFC app. So the re's a pretty rapid way to scan each sensor. The common setup that they had through their, their entire syste m is something that we really appreciated, and it makes quickly adding devices even on larger deployment pl ease feasible so you're not diving into each wireless component and trying to fight with it. And then once the sensor information is in the gateway, you can create BACnet points based on what you wanna bring into the BMS from that sensor. And from that point forward, you can treat them as traditional BACnet objects, and yo u can go from there.

As most of the people on this call know, we we treat Intelliweb as where the operators see the data, where th ey trend, alarm, do analytics, and diagnostics. A wireless temperature reading would look the same on a gra phic from a wired sensor or a LoRa sensor.

So I think the the key differentiator as we started diving into Milesight as an option for both application engine ering, potential future solutions that they had was the infrastructure that built confidence that we could try and design something that is repeatable.

So they have a gateway that Rainfeet dive into and that we use quite a bit that's able to receive and decode all the LoRa information that we have. It's what's used for device onboarding, payload decoding, health visibil ity, and it's all in the central gateway. We treat this as a critical component. We think you need this. They hav e a variety of gateways for different applications. They also have signal repeaters to help with areas where y ou have RF challenges.

As I said, motors, concrete, steel, elevator shafts. If you've done wireless projects in the past, these, although you have line of sight of two kilometers, you can't go to the room three doors beside you because they're going through through three layers of metal.
The repeater bridges those gaps so you're not deploying sensors into marginal coverage areas that report intermittently. And most importantly, the the thing that made me feel that I could trust Milesight in these applications is they have field tools.
So the the f t one zero one is a device so that you can before you put anything on the site, you can put that gateway in and you can determine if you have coverage there.
And they also have a a mass deployment tool with the s e two one zero one.
With the FTU one zero one helps with that. You can walk the building. You can test signal at any candidate sensor location, and you get a clear pass, marginal, or fail reading before you mount anything. The three together, the gateway, the repeater, and the field tools really, in my opinion, is what validates all of this.
The the last thing I wanna go in is a application group and, I guess, product solutions group effort that we're working on. This is still in progress, but it's a direction that we're committed to for specifically products like this where we're trying to bring an entirely new protocol and give partners the confidence to use it. We we wanna develop frameworks and give partners as much information as possible to confidently pick up and deploy products like this. If we can offer clear boundaries, approved, restricted, or conditional uses that are at least from our part suggested so the partner knows before the first project that they try and use these on where wireless is a good fit and where the risk is higher, we think that they'll they'll land a little better.
And then if we can encourage when you bring in sensor points to also bring the existing health data that most of these LoRa devices have within their payloads as objects, be it battery level, signal quality, online status, stale data flags. The the BMS should know when a wireless value is trusted and when it can't, and that should be part of best practice.
And lastly, we wanna include some guidance on layered wireless troubleshooting, how to isolate the LoRa side from the the VMS side, how to focus on the sensor to the gateway.
And so when something is going wrong, you're not guessing which layer the problem lives in. The the larger goal is for things similar to this where we're adding a whole new vehicle that we we give you, engineered application workflow, and it's repeatable. It's affordable.
And, yeah, sorry. I tried to go a little quick there, but hopefully that gives you a little bit of context of what we appreciate as an application engineering team.

Speaker 1

That's perfect. And actually that gave Renfi a little bit of time to answer those questions in the chat.
So just in the effort of time here making sure that we get CETRA on the docket, let's go ahead and just Renfi, if you wanna answer that final question in there, and then, Maja, if you wanna bring up your slides, we will jump into CETRA.

Speaker 4

Yeah. I think I have answered mostly of the questions, and we'll keep typing in the chat box and for some ext ra questions. I think later, Emily will get in contact with you so we can be having all solve. And I think I have b een asked mostly of the questions.

And, Laura, I think it's some kind of a new thing that I introduced to the BMS systems. I will pay more, like sp end more time to illustrating how does it work and to give you more ideas. I think I have already answered th at. Okay?

Thank you.

Speaker 1

Perfect. Thanks, Renfi. We appreciate it. Alright. Over to you, Mai.

Speaker 5

Alright.

Thank you. Hey, everyone. Thank you for joining today. My name is Mai Nguyen, and I'm the product manag er for monitoring solutions here at Etcetera.

So today, I'll give an overview of environment monitoring in health care, with a focus on practical requirement s, common applications, and where Sentra's monitors and sensing solutions fit into those spaces.

And before we get started, I just want to, thank Delta for having us. We're very excited to partner on today's s ession.

So just a quick note, today's discussion does assume that the audience have some general understanding of commercial ventilation monitoring, management, and control. So I'm not going to spend too much time on H VAC fundamentals. So instead, I'll focus on how these concepts apply specifically in health care environment s where pressure, temperature, humidity, air changes, and local indication are critical.

And so with that said, this is our agenda.

Quickly on who Cetra is, environmental monitoring in health health care, critical environments, the what, the why, and the how, standards and accreditation, requirements and best practices, common applications, and how to select the right monitor and sensor suite. And then we'll wrap with Sentra solutions and product overvi ew, followed by q and a.

And then two last quick notes that this is a high level overview. So we're not going to dive deep into every par ameter or ventilation design detail, and the content here reflects best practices but not official positions from t he ASHRAE, ISO, or USP bodies.

So for anyone who are less familiar with SETRA, we were founded in nineteen sixty seven by two former MIT professors of engineering. And we became part of Danaher and Fortive in two thousand and one and more r ecently part of Rallyand in twenty twenty five, and we're headquartered in Boxborough, Massachusetts.

And our focus is premium sensing solutions, especially for high consequence environments like health care. And that includes pressure, temperature, humidity, airflow, particle counting, and continuous monitoring softw are.

So now on to the core topic. What are critical environments in health care?

So we refer to these, as high risk and high consequence basis. Right? You wanna think about operating roo ms, isolation rooms, central sterile, and compounding pharmacies.
So if conditions aren't controlled properly in these spaces, you have a risk of contamination, felt isolation, and ultimately patient or staff harm.
And so these are also the most commonly monitored spaces. So we'll keep coming back to the to to them.
So on the other side are what we call noncritical spaces, but that by no means means unimportant. Right? B ecause we're talking about sweat linen storage, clean linen storage, labs, work rooms. And while these place s have lower risk, they still have a real impact on your facility performance and compliance. And these space s are getting more and more attention as facility facilities look for better visibility and fewer manual checks.
And so just for context, there are actually over eighty plus, defined places, spaces in health care standards.
So why do we care, and why do we monitor these environments? Right?
The first and most critical reason is obviously infection prevention, and then safety of patients and staff, and t hen finally accreditation, which directly ties into Medicare reimbursement for these facilities.
And for compounding pharmacies specifically, it's also about product integrity and making sure that medicatio ns are safe and uncontaminated.
And how do we manage that?
Right? So you want to control the key environmental conditions in your spaces. I mentioned these a few time s before.
It's pressure, temp, humidity, air changes, air filtration. And pressurization is really the most critical here beca use it ultimately controls where the contaminants go. So the best practice is really straightforward. We want t o have continuous monitoring with automated visibility and alarms in all of these spaces.
So the next question is what actually drives those expectations. Right? And that's where the standards and th e accreditations come in.
So on the standard side, the big ones are the ASHRAE one seventy and the FGI for health care ventilation, a nd then USP seven nine five, seven nine seven, and eight hundred for compounding.
And on the accreditation side, we have joint commission, DMV, boards of pharmacy, and sometimes FDA ov ersight.
So the Astray one seven e is really the primary ventilation standard with FGI building on top of it for design g uidance. So with that context, let's translate those into what actually needs to be monitored day, day to day.
So the next few slides stick into the environmental conditions and monitoring needs for spaces. So we won't go into the details of exactly how that is achieved, and it should be noted that these are not the only ventilatio n requirements for these spaces, but those that need to be maintained and monitored. But I'll be happy to foll ow-up afterwards if you'd like to, dive a little bit deeper into the details.
So this table here summarizes typical requirements for critical spaces. And these represent minimum require ments based on standards and common design practice.

And compounding is the main area where you see things vary a bit here because requirements really depend on the clean room specification, classification, and implementation and layout.
So from a practical standpoint, you want to monitor these parameters continuously, provide local display, and alarming.
And many facilities also now would monitor their HEPA filter status, typically using differential pressure, whic h we highly recommend.
And then the same concept here for noncritical spaces.
These are minimum requirements and not exhaustive. Right? But they do reflect common real world design.
And while monitoring, isn't always required in these spaces, it is increasingly expected, especially during insp ections.
And we've seen that facilities with simple and continuous monitoring systems tend to perform much better du ring joint commission reviews.
So that essentially covers the what. Right? So let's move on to how this look in some real applications.
And before that, I just wanna flash a quick legend so that the next slides are a little bit easier to follow, and thi s shows the typical sensors and monitors that we use.
So the FLAC stands for our multi parameter, room pressure monitor. The SETRALIGHT represents a simple DP only monitor. The SRVH stands for, velocity probe and airflow station.
And then when we have SRH simple, it is representing basic accuracy temp and humidity. The SRH two hun dred represents high accuracy temp and humidity. And then SPC five thousand is our nonviable particle coun ter solution.
So the first example here is airborne infection isolation, and the goal here is to protect staff and the public by containing airborne contaminate, contaminants. And this is typically achieved with negative pressure. So the air flows into the room and not out. So you'll usually see a wall mounted temp and humidity sensor, some airfl ow validation in your ducts, and a room pressure monitor outside the room for staff visibility and alarms.
And it's good to note here that local visual alarming is usually is required, but audible is best practice.
So now we flip that concept for an operating room, and the goal here is to protect the patient. Right? So we u se positive pressure instead to keep the contaminants out.
And typically, you'll have monitoring inside the room and sometimes particle counting as well and full environ mental tracking. So the best practice again is local visual and audible alarms, and the principle is the same, j ust inverted airflow.
This slide is one of my favorite here because it's really just a quick cheat sheet. Right? So across these spac e types, you see that the building blocks are very similar. You have pressure monitoring, temp and humidity, airflow, and then sometimes particle counting. And the level of accuracy and complexity scales with how criti cal that space is.
And cost effective solutions work well here in noncritical areas. Right? Well, multi parameter systems such as our flex solution are a little bit more common in critical spaces.

And so that leads us to the key question of how do you go about in choosing the right system?
So now that we've seen the application, how do you actually select the right monitor and sensor setup? Right ? So we usually start with a few core considerations.
And the first one is, is the space critical or noncritical? And what regulatory requirements would apply?
And that typically drives accuracy requirements and whether monitoring is required, compared to best practic e.
And then how many spaces are involved? Is it a single room or a suite like an anteroom and a primary space where pressure relationships have more significant impact?
And then what parameters actually need to be monitored? Right? Pressure is almost always their starting poi nt, but temperature, humidity, airflow, and sometimes particle count may also be required.
And from there, we look at the end user needs as well.
So things like local display, audible alarms, or compliance features such as audit trails or data logging.
And then finally, you want to have the balance between cost versus best practice.
Are we solving for minimum compliance, or are we trying to reduce manual checks, improve visibility, and ma ke inspections easier?
And so that framework usually would help you narrow down to the solution pretty quickly.
So with that in mind, here's how Sentra's solutions map to those needs.
So at a high level, the system is made up of a few core building blocks, differential pressure, temp and humid ity, airflow for air changes, and particle counting where required.
And these are tied together through room monitors and then optionally into our SETRA SEMS Connect or SE MS Diligent systems for centralized monitoring and compliance tracking.
And in most cases, the monitor becomes the decision point because it defines how users interact with your s ystem, what they see, how alarms are handled, and then how multiple parameters or rooms are managed.
So this slide shows how Setra room pressure monitor have evolved over time, and this is the, product portfoli o that I personally manage. Originally, it was very simple. Right? Our SRPM has pressure only monitoring. S o this was one room, basic alarming features, either analog or BACnet output.
And then we moved into multi parameter systems with the SRCM in twenty twelve. So we have pressure plus temp humidity and additional inputs typically across one or two rooms.
And then today, flex systems can handle dozens of parameters across multiple spaces.
It can integrate with both Sentra and third party sensors and support network communication like BACnet, M STP, and IP.
At the same time, right, there's still also a strong need for simpler solutions, So which is where products like t he Sentra Lite comes in. And where where if all that's needed is reliable, single room pressure monitoring wit h local indication, then that's a great solution.
And then from an integrate integration standpoint, the system is really designed to be flexible. So we support BACnet, Modbus, and analog outputs, like four to twenty milliamps or zero to ten volts, and that allows these

devices to tie directly into building management systems or third party controllers and also bring in data from external sensors. So in most cases, we're working within the existing infrastructure rather than requiring syst em.

So the Flex, I've mentioned that a few times, and that is our multi parameter environmental monitor and really acts as the hub for the room that it supports.

Right? It takes inputs, like pressure, temp, humidity, airflow, and display all of them locally in a single interfac e.

It also supports multiple rooms, typically up to three and multiple parameters per room, which is essentially u seful in setups like clean rooms with empty rooms or compounding suites.

And then it also provides both visual and audible alarms on any parameter and integrate directly into building systems via BACnet, both IP and MSTP, with a high accuracy point twenty five percent sensor, accuracy.

And it's also important to note that, we also offer multiple installation options for the Flex to manage the wall t hickness and locations, and their hot wire retrofit options are also available if you have legacy options in exist ing facilities.

And so the value here is really consolidating these environmental data into one place with clear visibility and control for your end user.

But on the simpler end, we have the central light. And the central light is a pressure only room indicator, and i t provides also continuous monitoring with a very clear visual status. Right? So pass fail through the ring light , plus optional audible alarms, and it's typically used in noncritical spaces as a replacement for manual press ure checks, giving staff immediate visibility, without needing to perform daily or weekly verification steps.

And then it can also be used in critical spaces as a local status indicator even when the larger monitoring sys tem is in place as well. So this solution is really about simplicity, visibility, and reducing operational burden.

So temperature and humidity are the next layer, especially in compounding pharmacies, clean rooms, and op erating rooms.

And these sensors provide high accuracy readings and can be integrated into the overall monitoring systems or used independently. So in many cases, maintaining tight environmental control is just as important as pre ssure, right, particularly for compliance with USP standards or to prevent conditions that support contaminati on or microbial growth.

And then finally, we have particle counting.

So particle counting is typically driven by regulation in pharmaceutical manufacturing and clean rooms where continuous monitoring is required, but we're also seeing, growing adoption in health care. So, for example, in operating rooms, which are often described as dirty clean rooms and in construction zones within hospitals where contamination is a little bit more critical.

So particle countings really help your you add another layer of visibility beyond that pressure and airflow, hel ping your facilities really understand the actual air cleanliness over time. And these systems can store and tr ansmit large volumes of data, which supports both real time monitoring and, compliance documentation.

So the slides here have a few options of our particle counter offerings, wall mounted bench top, you know, ha ndheld.
So that's it. That's the overview.
Happy to dig in if you have any questions. And if something comes up after, my contact info is right here. So f eel free to reach out directly as well.
Speaker 1
Thank you. Perfect. Thanks, Mai. Yeah. Appreciate it.
Did anybody have any questions? We kinda got way off track on the the Miles site in the chat there, but I did n't see any come in for Sentra. Does anybody have any right off the bat? I also wanted to put in we did actual ly do a short, like, case study with one of our partners ATS with the Cetraflex.
So I just put that in the chat there for everybody to see the video with them. So this one was at an operating r oom up in Boise, Idaho. And so it's just a little bit around, you know, why it's actually useful for our partners. So everybody check that out as well.
But I know we're kinda running right at time, so that's actually really good. I didn't think we'd do this. So yay. Yes.
Did anybody have any questions for Cetra before we close this out?
Oh, Blake actually asked if you guys are gonna be at the ASHE show.
And I think it's in Minnesota. Oh, you're on mute. But, yes, they will be.
Speaker 5
Yes. Sorry. We will be, and I will be there as well. So looking forward to to meeting you if you will attend.
Speaker 1
Perfect. Perfect.
Anything else from anybody?
I really appreciate everybody hopping on. I know this one was a little bit earlier than our others. So, you know , I I know that, you know, it's it's tough, but we will be sending out the link, if anybody needs it.
I think other than that, we'll we'll close it up here.
Again, remember to go, oh, three or four rooms for the flex, and how do we get in touch with oh, three or four rooms for the flex.
Speaker 5
Yes. Great question. It's three rooms for the flex, six parameters each, so you get eighteen parameters overa ll.
And then how do you get in touch with the reps? I can put in our reps information here or also send it to Emil y for follow-
up. We have different reps for different regions. So depending on where you are and and what regions you're looking for support, we'll give you the right contact.
Speaker 1
Yeah. That's an excellent point. Maybe we'll we'll include the contact sheet with all of the roll up there.
Yeah. I can share all of the RSMs, information.

Perfect. Mike said that he saw on one slide, it said three or four rooms. Is there one that does four rooms?
Speaker 5
No. So the the mass that we do per flax is three rooms.
Speaker 1
Okay. Yeah. Three rooms.
Okay. He accepts. Mike accepts. Thanks, Mike.
Okay. Well, yeah, with that, again, everybody just remember to go up in the chat and register for our next on e on June seventeenth. As always, any feedback is always welcome. If you guys have anything that you wou ld like to see, we will be doing a couple more of these equipped ones. Like they said, they'll be at ASHI, and and I know, like, last year, they were at our global conference. So we always like to do these with our partner s. So if anybody has anything like that, as always, let us know.
Alright. Guys, we did this on time. I'm very proud of us. I really appreciate it. Okay, everyone. Closer up.