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Akoustis Technologies, Inc.

Second Quarter Fiscal 2019 Business Update Conference Call

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C O R P O R A T E   P A R T I C I P A N T S

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P R E S E N T A T I O N

Operator:

Good day, ladies and gentlemen, and welcome to the Akoustis Technologies Business Update Conference Call. As a reminder, this conference call is being recorded. At the conclusion of the Company presentation, Akoustis Management will take questions. To ask a question, please press star, one on your keypad to be placed in the queue. A replay of the call will be available on the Investor Relations section of Akoustis' website.

I would now like to turn the call over to Tom Sepenzis, Director of Investor Relations. Please go ahead, sir.

Tom Sepenzis:

Thank you, Operator, and good afternoon to everyone on the call. Welcome to Akoustis' Second Quarter Fiscal 2019 Business Update Conference Call. We are joined today by the Founder and CEO, Jeff Shealy, Interim CFO Ken Boller, and VP of Business Development, Dave Aichele.

Before we begin, please note that today's presentation includes forward-looking statements about our business outlook. Such forward-looking statements are predictions based on our team's expectations as of today and are subject to numerous risks and uncertainties. The Company and our Management Team assume no obligations to update any forward-looking statements made on today's call. Our SEC filings mention important factors that could cause actual results to differ materially. Please refer to our Form 10-K for the 2018 fiscal year filed with the SEC to get a better understanding of those risks and uncertainties.

I would now like to turn the call over to Jeff Shealy, CEO of Akoustis.

Jeff Shealy:

Thank you, Tom, and welcome, everyone, to our Second Fiscal Quarter Business Update Call. Today, I've organized my comments for this call into five sections: first, technology overview and market focus; second, a brief recap of the highlights of calendar year 2018; third, December quarter achievements and commentary; fourth; upcoming March quarter milestones; and, finally, milestones beyond the March quarter.

I will start with a technology overview and market focus.

Akoustis was founded in 2014 on the premise that, by utilizing advanced single crystal piezoelectric materials, we could create a unique manufacturing process to produce a new class of high-performance BAW RF filters that would exhibit differentiated and superior performance in the high frequency spectrum. What differentiates Akoustis is our high power, wideband width BAW RF filter technology, which we have branded and trademarked XBAW™. Our products currently target applications operating in the 1 to 7 GHz spectrum in the growing WiFi market, wireless network infrastructure market and mobile handset market, as well as the defense market, each application requiring characteristics that could include high power handling, wide bandwidth, reduced form factor, or a combination of all three, when compared to existing incumbent filter technologies.

Our patented and proprietary XBAW RF technology is based upon a novel combination of high-purity piezoelectric materials, combined with a MEMS-based wafer manufacturing approach. Our unique XBAW filter technology encompasses core substrates, nanomaterials, bulk acoustic devices, RF filters and sub-systems. Since the very early days at Akoustis, we have been amassing what we believe is both a substantial and valuable portfolio of intellectual property, which, as of January 31, includes 21 granted patents, an additional 38 patents pending, and numerous proprietary, unpublished trade secrets and so-called know-how.

I'd like to point out some important highlights about our XBAW process.

First, XBAW is a unique and flexible RF filter wafer process which can address a broad range of applications and frequencies.

Second, our single crystal XBAW filters exhibit up to 2.3 times higher power handling capability over the same filters constructed using polycrystalline piezo materials. Higher power handling translates into higher reliability. This is a key attribute as power handling is an extremely critical pain point and product requirement for our customers, because micro-filters are located between the high-power side of the power amplifier and the antenna in the system. This is driving high power requirements for next

generation mobile, infrastructure and WiFi applications, each of which we are uniquely positioned to address.

Next, a major benchmark in BAW technology is the resonator quality factor, referred to as the "Q". The latest Q of our XBAW resonator at 1.8 GHz is 4,253, a value that we believe is competitive against industry-leading commercial XBAW technology. I'd like to point out that this latest Q is 15% higher than the 3,685 Q we published last quarter in the 2018 IEEE IUS Conference. This increase shows that our technology and manufacturing process continues to improve and R&D efforts continue in this area. Furthermore, our Q at 5.2 GHz is currently 2,136, which we believe is the highest published Q at 5 GHz for any BAW technology in the industry.

Akoustis operates under a vertically integrated design and manufacturing, or so-called IDM, business model; that is, we internally control the design process and manufacturing flow in-house, which allows for very rapid response to customer demand. The IDM model creates an opportunity for differentiation and innovation at multiple levels in the supply chain. Our model allows cost-effective, turnkey integrated RF BAW filter solutions to be developed quickly without margin-stacking or risky supply chain delays. Our ability to deliver products with short cycle time is a key attribute in our business model. Our products are sold directly, as well as through distribution channels.

Next, I will discuss our market focus.

As I noted earlier, we are currently targeting applications in the growing WiFi CPE, wireless network infrastructure, mobile device and defense markets. Our product focus resides in the sub-7 GHz band, where we can provide superior performance using our RF filter solutions. We currently believe the addressable BAW RF filter market for each of these applications is as follows: the mobile handset market was approximately $3.2 billion in 2018, and is expected to grow to $4.3 billion in 2021; the wireless network infrastructure market was approximately $49 million in 2018, and is expected to grow to $432 million in 2021—this dramatic increase will be fueled by growth in both 4G LTE and new 5G content; the WiFi CPE market was approximately $347 million in 2018, and is expected to grow to $540 million in 2021; the military market was approximately $89 million in 2018, and is expected to grow to $119 million in 2021.

Let me summarize the importance of this opportunity. We estimate our addressable market was approximately $3.7 billion in 2018, and is expected to grow to more than $5.4 billion by 2021, per Mobile Experts 2018 Report, ABI's 2018 Report, and Akoustis' internal estimates. The BAW filter market is currently dominated by two multibillion RF module companies which, together, have dominated 4G LTE wireless. It is worth noting that we are currently the only company in the world which offers BAW RF filter solutions in several of the challenging sub-7 GHz band.

Next, I would like to take a moment to recap some of the important milestones achieved in calendar year 2018, which was a breakthrough year for Akoustis, as we began our transition from an R&D company to a commercial stage product company with multiple attractive markets requiring premium performance RF filters.

In March of 2018, we announced a significant milestone, that after more than three-and-a-half years of R&D we had completed development of our first generation XBAW manufacturing process and had begun qualification. We achieved our internal qualification of our materials and process in July of 2018, giving our Product Engineering Team the core technology to develop products with consistent performance. As of today, we are tracking seven priority products through our new product introduction system.

In March of 2018, we launched our first commercial filter product, the AKF-1252, the industry's first 5.2 GHz BAW RF filter for triband WiFi application. Since that time, we have shipped 5.2 WiFi filter samples to more than 20 OEMs, ODMs and SOC clients.

In May, we received an order to develop 3.6 GHz infrastructure filters using the Citizens Band Radio service, or CBRS, for last-mile wireless communication services.

Also in May, we received a development order for a 4G infrastructure customer to develop two filters for LTE band.

In June, we introduced a mobile version of our 5.2 GHz WiFi filter, the AKF-1652, which is being used to drive our mobile packaging solution, which is due later in 2019. Given the substantial market for mobile, driven by over 1.5 billion new handsets per year, this represents a large opportunity as a lead demonstrator for the 4G high band and 5G mobile markets.

One of the most important milestones in calendar year 2018 was achieved in September, when the Company generated its first commercial revenue from the sale of its 3.8 GHz filters for a military radar application. Since then, we have received two follow-on production orders from this customer.

Now, I would like to move on to the December quarter. Each quarter, we lay out milestones for our shareholders and the investment community to track our progress in execution based upon our business plan. For the December 2018 quarter, we highlighted the following four milestones.

First, we stated that we would secure our first WiFi customer for the 5.2 GHz filter. I am happy to announce that we were able to deliver our first pre-production order from a Tier-One SOC maker in mid-November for possible inclusion in a 4x4 and 8x8 WiFi multi-user MIMO reference design. Additionally, we shipped a significant number of samples to a Tier-One triband WiFi OEM, where we targeted our first design win opportunity with an expected ramp in the June quarter of 2019.

Our second objective, which we achieved, was to deliver the first samples of our 5.6 GHz WiFi filter product to customers by the end of calendar 2018. This 5.6 GHz filter is an important component of our WiFi filter opportunity, as the 5.2 and 5.6 filters operate in tandem to create the first triband BAW coexistence filter solution at 5 GHz, offering significant size advantage over existing dielectric resonator filters with up to 23 times smaller footprint.

The third milestone, which we achieved, was the delivery of two discrete Band 25 BAW filter samples for the LTE customer that we first announced in May. The two Band 25 filters were developed in under six months, a record for our Company, as our modeling software and tools continue to improve. We introduced both filters in October 2018. We're currently working with the customer to finalize the design and ramp into production later this calendar year.

Our last milestone for the December quarter was the delivery of our 3.8 GHz filters against two production orders, one of which was an add-on order which we announced in October. As we move towards volume manufacturing, we have been working with an experienced outsourced packaging supplier to improve the speed and scale at which we can deliver product to our customers. The timeline to transfer our packaging supply chain to our outsourced suppliers pushed the delivery of our 3.8 GHz filters into the current quarter. One important point to make regarding this delay, it has had no impact on our relationship with our customer. In fact, the relationship is getting stronger as opportunities with this customer are expanding, as I will detail shortly.

In addition to these milestones in the December quarter, we also announced our first 5G network infrastructure development contract from a Tier-One multibillion-dollar base station OEM. Akoustis was

chosen to develop 5G network infrastructure filters by this customer given the superior power handling capability of our XBAW filters over competing BAW technologies and our size advantage over incumbent cavity filters deployed today.

Given the early commercial stage of Akoustis, I think describing the sales cycle is important to allow investors to gauge our progress. Our typical sales cycle begins with sampling of one to ten units, followed by pre-production orders of 100 to 1,000 units for qualification into OEM products. Our objective is to fill our sales funnel with as many pre-production opportunities as possible, which provide us with diversification with respect to design wins and timing of commercial production. From time to time, we will update investors with respect to sampling, pre-production and production orders.

To provide color on our customer activity and sampling at the end of 2018, we exited the year with seven filter customers, up from three in 2017, and we sampled to over 20 potential customers, up from five at the end of 2017. As we exited 2018, we have pre-production orders, plus one pre-production shipment for WiFi, two production orders for military radar and one production order for 4G LTE infrastructure. In addition, we have several ongoing customer-funded development programs for our XBAW filters for multiple markets and applications.

I would now like to touch on our new investor milestones for the March quarter. At the beginning of each quarter, our Management Team assembles key objectives for the current quarter. Here are the top five objectives for the March quarter.

First, we had a goal to secure a second 5.2 GHz WiFi customer by the end of the March quarter. I'm pleased to announce we have already delivered on this milestone with the addition of a second WiFi SOC customer that we announced in early January. This customer will evaluate the 5.2 GHz filter for inclusion on a 4x4 and 8x8 reference design for multi-user MIMO-based access points and other devices.

Second, we expect to ship 5.2 GHz WiFi filters against multiple open orders in the March quarter, including our two SOC customers and our distribution partner.

Third, we expect to expand delivery of 5.6 GHz WiFi filter samples to a broader list of potential customers, as initial samples were sent in December to select customers based upon their product ramp timing. We currently remain on track to hit this milestone in the current quarter.

Fourth, we plan to complete two outstanding 3.8 GHz filter orders to our military customer in the current quarter.

Finally, given the size and performance advantages of our XBAW filters, relative to alternative solutions, we expect to expand our business relationship with our military customer beyond the 3.8 GHz filter, with a new RF filter order for at least one additional frequency band.

Next, I will touch on our long-range milestones. We are focused on initially ramping and achieving substantial revenue growth in WiFi and network infrastructure, with future revenue opportunities from mobile in 2020, and beyond.

First, we expect success in WiFi by completing the development of our 5.6 GHz filter product, which positions us to address the full market, with the first and only tandem BAW micro-filter solution. We plan to leverage our existing sales and marketing groundwork to secure multiple OEM product design wins later in 2019, and beyond.

Second, our path to succeeding in 4G and 5G network infrastructure markets begins with the completion of the three ongoing customer-funded filter development programs. We expect initial design wins with

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these customers to expand with additional opportunities. In addition, we plan to leverage our product performance and expand our product portfolio to secure customer engagement with other Tier-One companies. Thereafter, we plan to expand into mobile upon successful development of our wafer level packaging, or WLP, which is a micro-package technology that addresses size constraints for mobile devices. We have had several discussions with multiple Tier-One mobile handset OEMs for new and difficult 5G bands which require a high frequency, wide bandwidth and high-power handling, all of which align well with our XBAW technology and which we believe may be challenging for incumbent filter technologies.

To summarize, we are initially focused on winning in WiFi and network infrastructure, while positioning the Company to compete in mobile longer term.

Next, I would like to mention select financials from the December quarter.

Earlier today, we filed our 10-Q with the SEC for the second fiscal quarter ending on December 31. You can access the 10-Q from our website. From Management's perspective, we continue to control costs while investing in key RF filter product development and wafer fab capacity expansion to support future WiFi and network infrastructure revenue ramp. During the December quarter, we used approximately $4.5 million in cash, including cap ex, to support and expand operations, which we believe is in line with the expectations of our publishing analysts. We ended the quarter with approximately $42 million of cash on the balance sheet.

As we discussed in our previous conference call, in order to support our current engagements and emerging sales opportunities, we plan to increase manufacturing capacity by up to fivefold over the next two years. As part of that plan, last month we filed an 8-K outlining a purchase for a key piece of wafer fab equipment which carries a long lead time. This cap ex purchase is for a high-speed lithography tool which allows high throughput production of our XBAW filter wafers. This equipment is a key enabler to expanding our capacity from tens of millions of filters per year to hundreds of millions of filters per year.

In conclusion, we are working diligently to achieve each of our stated objectives and we expect to update you on our execution against our objectives each quarter going forward. I would like to thank all of you who have joined us on the call today.

Akoustis has come a long way over the past four-and-a-half years, since the inception of the Company. We are building our Company on four solid pillars, including strong management, patented XBAW technology, large and growing markets with limited historical competition in the high band, and our qualified wafer manufacturing operation which is ready to be expanded to address high-growth opportunities in our target end markets.

Finally, the customers we have engaged are market leaders and provide our Company with tremendous growth opportunities in high-performance, coexistence BAW RF filters. We recorded our first filter revenue during the September quarter and in the December quarter we grew our filter-related revenue sequentially, the number of filter customers and the percentage of filter-related revenue. We expect to deliver market-leading products to our current and potential customers as we continue into calendar year 2019, and beyond.

Before ending my remarks, I would also like to take a moment to thank our employees for their hard work and commitment to our mission and to our investors who have supported us during this crucial stage of development.

With that, I would like to open the call for questions from the investment community. Operator, please go ahead with the first question.

Operator:

Our first question comes from the line of Harsh Kumar with Piper Jaffray. Please proceed with your question.

Harsh Kumar:

Yes, hey, guys. First of all, congratulations. I know as a young company, it's hard to stick to sort of short-term and long-term goals, so you guys are doing, I think, a pretty good job just knocking out these goals and sort of meeting them. Jeff, I had a couple of simple questions. You mentioned you're working on quite a few new products. You would expect that as you get—your team gets more experienced, your time to put new products out should get shorter. Firstly, if this is the case, and then, secondly, if you could give us some metric and what is your bandwidth looking like in terms of pursuing new products, new opportunities, new bandwidth, etc., and I've got a follow-up?

Jeff Shealy:

Okay, Harsh, thanks for the question, and I appreciate your comments. In terms of—you mentioned the portfolio of products. As we mentioned in the prepared comments, we have seven new products that we're currently tracking in an NPI system that we use in our product management area. In terms of product time to market, we gave an example on the 1125 product, which was an infrastructure product. We developed that in approximately two cycles, that was less than six months, and as to your question regarding do we expect that to improve as we go forward, the answer to that is yes. As we continue to evolve the models across different frequencies, once those models are available to us, then we can readily make modifications to products. Whether they're improvements to current products or for new products that may be in adjacent frequencies within the spectrum, we expect to benefit in terms of time to market for those products.

Harsh Kumar:

Thanks, Jeff, and then I had a question on WLP. I've got more, but I'm going to let others get in line and then come back at the end of the call. On WLP, how hard is it for you to get to WLP-qualified or have sort of chips out? I guess what are the steps that are involved, and maybe what timeframe are we looking at, because we're thinking that 5G forms will probably start to come out the second half of this year by Tier-One guys and then sort of become massively of interest in next year second half, around that timeframe, so I was just curious what your timing would be like.

Jeff Shealy:

Okay, sure. Regarding wafer level package, I think the first thing to let people appreciate is there's existing technology out in the packaging houses, and these are very large commercial Asian packaging houses that produce many, many types of MEMS devices, such as microphones for consumer-based applications, and so what the Company is doing along those lines is we're leveraging those. We're actually working with the specific packaging houses that actually make MEMS-based packages, and specifically wafer level package. Where we start is with an existing set of design rules from those packaging houses. We just make our chips, the interfaces to our chips to those design rules, and then we can readily benefit from those previous investments.

In terms of the timeframe, we have on our updated milestones for the current quarter that the first half of this calendar year we'll complete our wafer level packaging design. As I said in the prepared comments, we have a 5 GHz product, the 1652, which is going through—which is the lead product through that

development. I would track, in terms of our progress there, first half of the year, certainly by mid-year to sample products based upon WLP, and then be in a position in the second half to be released, using WLP.

For those of you who aren't aware of what WLP is, it allows a very small form factor to fit the size constraints inside a consumer device. It's a miniature-based package which we're focused on for very size-sensitive applications.

Harsh Kumar:

Thanks, Jeff. I'll get back in line and let some of the other people ask questions.

Jeff Shealy:

Thank you, Harsh.

Operator:

Our next question comes from the line of Cody Acree with Loop Capital. Please proceed with your question.

Cody Acree:

Thanks, guys, for taking my question, and congrats on the progress. Jeff, either for you or Dave, if you could just talk about what the addition of 5.6 GHz has meant to your WiFi engagements with the addition of 5.2 and how those have been impacting your design wins.

Dave Aichele:

Hey, Cody, it's Dave. Thanks for the question. I think you're aware that within the WiFi market we're focused on two areas, as far as enterprise and then also retail. The reaction that we've gotten has been very positive on the 5.2, and the initial feedback we've gotten on the 5.6 samples that we put out have been positive, too, as well. If you break down the market and the interest in adoption rate, the interest is very high and the adoption rate is going to increase as we get the 5.6 out. We've announced the adoption that we've seen so far with the 5.2, and you can expect that to increase as we get the 5.6 sample out, as we're guiding right now. Part of that is driven by the interest of when they look at, I guess, the next level of designs coming out, that they want to have both the tandem pair for simplicity of designing their shielding their cans, and so forth. It's something that we're driving hard internally, and, as Jeff highlighted, we're focused on this as one of our primary markets.

Cody Acree:

Thanks for that, and then just secondly, just capacity. As you're looking at the $400 million to $500 million market opportunity in WiFi, the New York facility, do you expect, with the new tools, to be able to satisfy the designs that you targeting today or is it going to require significantly more cap ex?

Jeff Shealy:

Cody, thanks a lot. We remain on track with the numbers that we previously guided in terms of the expectations of the cap ex. As we've stated, moving from tens of millions of filters to hundreds of millions of filters is the plan that we're currently operating to, and we don't see any change in terms of how we've modeled the market or requirements that are going to require further investments as we see our plan

rolling out. We did mention the high-speed lithography tool in the prepared comments. What we're more managing is the lead time, that particular tool has a significantly longer lead time, and we're continuing to monitor from a capacity trigger chart tool to determine when we need to order tools and be in a position to make sure that we have the capacity we need when we expect to ramp.

Cody Acree:

Good, and I guess just lastly, do you expect your cap ex or your cash burn to stay in this range?

Jeff Shealy:

I'd like to let Ken comment on that.

Ken Boller:

Sure. Good afternoon, Cody. Our operating cash flow average for year to date has been about $4.3 million per quarter. We expect that to be relatively constant, outside of the cap ex spend which Jeff indicated, being about $20 million over the next two years, in order to achieve that five times capacity. We'll see some small increases here and there, but, overall, we don't anticipate increasing our headcount until we see indicators of revenue increasing. Other than that, we expect to pretty much be in line with what we've experienced so far.

Cody Acree:

Great, thanks, guys.

Jeff Shealy:

Thank you.

Operator:

As a reminder, if you would like to ask a question, please press star, one on your telephone keypad. For convenience, please limit yourself to one main question and one follow-up, so that others may ask questions, as well.

Our next question comes from the line of Rick Schafer with Oppenheimer. Please proceed with your question.

Rick Schafer:

Yes, thanks, guys. It looks like you've got a bit of a busy year in front of you, so good luck, and congrats on last year. I just had a couple questions. I guess the first, really, just kind of back on a little more color on the smartphone design win effort. It sounds like WLP really is the top hurdle left to sort of land that first Tier-One smartphone OEM. I mean, is there anything else in there that they're still working on. In the vetting process, are they still vetting out your process or your performance, or are they looking at capacity adds and monitoring that? Is there anything else in there to it or is it just as simple as us watching your WLP efforts?

Jeff Shealy:

Thanks, Rick. This is Jeff. I'll make a couple of comments and then hand it off to Dave specifically on the market engagements. Just to be clear to everybody, we talk about the WLP being a key package requirement. The second is capacity, and I think we've always told investors we're going to—our plan is to staircase our capacity with the WiFi and infrastructure market, to get traction in the market and then expand that into mobile, likely through a partnership. In terms of what activity we have on the engineering front, which customers are interested in, we have a key new radio band for 5G that is in development. We plan on using that as a lead product. I'll hand it off to Dave to talk about kind of what the key requirements for our customers are.

Dave Aichele:

Yes, Rick, the comments I guess I'll make on that is we're talking to both the OEMs and also the RF front-end module guys. When you're talking to the OEMs, they're going to dig into some of the things you brought up, as far as capacity, supply chain, quality. When you're talking to RF front-end guys, they'll absorb some of that responsibility into their own obviously quality and capacity constraints. We're having discussions on both sides. The good thing is the technology that we've been demonstrating is one that's getting all the attention at the high frequencies, so a lot of discussion around the WiFi and the other 5G bands that we're looking at. I think that box is checked and the technology is demonstrating best-in-class performance at that higher frequency, so now we're getting into, as Jeff highlighted, the WLT from a form factor standpoint, and then just aligning with the right platform or the right program. One of the things that you've got to think about is, you know, are you getting into a flagship program or product with high volumes, or is it going to be more of a regional phone, and those are the discussions we're having right now.

Jeff Shealy:

Rick, one additional thing to help you appreciate the sorts of things that are ongoing. The bandwidth requirements for these 5G bands are fairly wide, and I think one of the things that we've—one of the innovations that we've been able to bring to the customer is the engineering of these piezo-based materials in order to address these wide bandwidths, and that's a technical requirement and that's a pain point for these new bands that are being developed, and that's something that we bring the R&D to the customer in terms of being able to hit wider bandwidths and higher frequencies and higher power with our single crystal platform.

Rick Schafer:

Got it, and just a small question, but WLP, is it going to have to be hermetic, the packaging?

Jeff Shealy:

In terms of hermeticity, we address hermeticity at the die level in the wafer fab, is where the initial consideration is. There's a temperature humidity-based requirement which we have to pass, which we're focused on driving that into commercial-based package portfolios, and the Asian manufacturers that we're working with have those platforms available. If you look at kind of how we're driving, we're focused on the commercial-based platforms. If you do look on the military customer side, which is a consideration, they do have hermetic-based requirements. We do offer both, but for the high-volume consumer, it'll be in the low-cost Asian, low-cost packaging, module packaging approach.

Rick Schafer:

Got it, thanks. I'll jump back in queue, thanks a lot.

Jeff Shealy:

Thank you, Rick.

Operator:

Our next question comes from the line of Anthony Stoss with Craig-Hallum. Please proceed with your question.

Anthony Stoss:

Hi, guys. My congrats on the nice progress, also. Either for Jeff or Dave. On the triband WiFi router side, you've been sampling now for several months. I'm curious the feedback you're getting from those customers. Are you close to the tail end of fine-tuning and/or is it locked down? Then, also, I'd be curious if you had any new 5G/4G infrastructure guys show up or more engaged after the first initial one.

Jeff Shealy:

Tony, thanks for your comments. This is Jeff, I'll comment on the front end of this. In terms of the—I'll have Dave comment on the progress side of it, but in terms of the product design itself, we've used a— and we outlined this as really a three-stage sales funnel and gate system. As we said, just for all the investors, the 5.6, we commenced sampling during the December quarter, we shipped our first pre-production of the 5.2, and as we said in the prepared comments, we expect to ship the open pre-production orders in the March quarter, so the current quarter. That's the status. I would characterize the 5.2 chip design as done, completed, and we are again working with high-volume Asian manufacturing, where we ship our silicon filter wafers to them and they package them and send them back to us. I would characterize we're in the back end of that, receiving parts and then shipping those. In terms of the 5.6, I think we've been very open that we began sampling, and one of our current milestones is to continue sampling that product. We're working as hard as we can to catch that product up to the 5.2.

In terms of the engagements on triband, as well as additional 5G/4G infrastructure customers, I'm going to hand that off to Dave.

Dave Aichele:

Yes, Tony, on the WiFi side, I'll just echo what Jeff said, that we've locked down the design and I've been able to go back to the market and highlight that and increase the confidence with the customers. Everything that we're shipping them is spec-compliant, so that's something that they're happy about, because they don't want to see variability in what they're receiving. That's one of the advantages with our BAW technology that they like, as well, is the feedback I've been getting, which was not—one of the major drivers when we developed the product, a lot of it was better performance and smaller form factor, but what they're finding is that they get higher yields in their designs, so they don't have to tune, like they do with the competitive DR-type filters that are used. That's going to be amplified when they get the 5.6, as well. All the feedback is positive and, as I highlighted to the earlier question, is we expect the adoption rate to accelerate once we get both bands out.

With regards to infrastructure on the 4G and the 5G, we've got several things that are going on there which are good, is the existing customers that we engaged with last year, that we're delivering to right now and transitioning, hopefully, into pre-production with the one we mentioned, and then also with the other 5G customer, we expect to see new programs with them, as well, in addition to we're getting enquiries from other infrastructure customers, as well. A lot of this is being driven around the value proposition of the 5G infrastructure requirements on small cell deployment increasing significantly for

densification, and also the massive MIMO with the new 5G-type base stations, which increase the number of filters significantly, so they need a high-performance, lower cost smaller form factor from incumbent-type cavity filters or ceramic filters. This multiplier potential for us is pretty significant. We've obviously got to hit these first milestones and then we'll expand on that.

Anthony Stoss:

Thanks, Dave. Congrats, guys.

Jeff Shealy:

Thank you, Tony.

Operator:

Our next question comes from the line of Suji Desilva with ROTH Capital. Please proceed with your question.

Suji Desilva:

Hi, Jeff. Congratulations on the progress in '18. A lot of questions on the smartphone. I just want to kind of get the fine points here. What quarter range do you think is the timeframe when, best-case scenario, your smartphone revenues could start ramping, and is the capacity plan you already have in place capable of supporting one large customer, for example, or would you perhaps need to kind of boundary that if you had to, or you would have to increase the cap ex? What's the thought process for timeframe there and ability to handle the customer if it comes in?

Jeff Shealy:

Thanks for your comments, Suji, as well as your questions. First and foremost, I just want to reiterate to everybody our Company is hyper-focused on succeeding in the WiFi, as well as infrastructure markets initially. What we're currently working on, as I said, was we have a new product for a new radio band in 5G, which we're using as really a beachhead to gain interest in that market. The WLP is a table-stakes requirement for the packaging and having a wideband with solution is really the product requirement that we're working on. We make no change in the timeframes we've focused on. If you look at the milestones that we published, we've made no change to the WLP, as well as in the back half of the year focused on paying a design win from a mobile customer for likely one of these 5G bands. Please follow up if you have a follow-up question.

You asked me about capacity. I'm sorry, I saw my note here. In terms of capacity, we're continuing to act to capacity. I don't think—we're not in a position today, as I've stated, at hundreds of millions of filters per year, which is where we're headed. The capacity profile is going to need to look like in excess of a billion filters a year, and as I said, our strategy is to staircase that. With that being said, we can support levels into—we'd be prepared to support levels up to that hundreds of millions of filters per year type range. I also previously said that we would look for—the correct partnership would be one where we have a partner that is helping us solve the increased capacity requirement by either investing in equipment or investing in the Company to enable us to acquire the equipment. That's how we're positioned.

Suji Desilva:

Very helpful color there, Jeff. Then, you also—my second question on the new products, you talked about seven of them. Can you talk about whether those products are targeting broadly diversified across your

end markets or whether there's particular end market concentration in the new product pipeline across wireless network infrastructure, WiFi, military? Thanks.

Jeff Shealy:

Okay, thank you. In terms of the seven new products, I believe you'll find those—if you look in our presentation deck, you'll see those—we have those across frequencies and they range from 1.8 to 5.6 GHz. I believe you'll find they're distributed in—first and foremost, lead in the 5 GHz WiFi, I believe you'll find two of those at 5.2 and 5.6. Then, we have several in the—we have four in the infrastructure market that are focused—those range from 1.8 to 3.6, 3.7 GHz, and then the one military customer at 3.8 GHz.

I think we did note in our milestones for the current quarter, we are expecting to expand the engagement with a new order in the Q1 timeframe. That was one of the milestones that have put out there. We do see 3 GHz opportunities expanding and look forward to updating investors as that develops.

Suji Desilva:

Great, thanks, Jeff.

Jeff Shealy:

Okay. Thank you, Suji.

Operator:

Our next question comes from the line of Jaeson Schmidt with Lake Street Capital Markets. Please proceed with your question.

Jaeson Schmidt:

Hey, guys, thanks for taking my questions. I know you just started sampling the 5.6 GHz in December, but could you quantify how many customers do you expect to sample that, too, in the current quarter?

David Aichele:

Yes, Jason, it's Dave. Thanks for the question. I would say that if you looked at, I guess, the earlier remarks we made, we sampled over to 20 customers on the 5.2 GHz. The initial two customers that we sampled on the 5.6 have been able to provide us some good feedback as to where to optimize the design. The plan is, obviously, with this next iteration, that we increase the sampling size significantly beyond just those two, but not blanket it across all, because we've done this with 5.2, where we do several iterations with the customers to get feedback. I think what I'm looking at, with the next milestone, is we'll probably be in the five to ten range and then expand it beyond there, based on the initial feedback that they provide us. It gives us pretty good exposure across the SOC and the OEM manufacturers that we're talking to, as well as the RF front-end guys.

Jaeson Schmidt:

Okay, that's helpful. On the last call, I know you didn't provide formal guidance, but it sounded like you were pretty comfortable with sort of that $2.5 million to $3 million for fiscal '19 and $13 million to $15 million for fiscal 2020. Has anything changed over the past three months that causes you to back away from those targets?

Jeff Shealy:

Yes, Jaeson, thank you for the question. The Company has not provided any formal guidance on revenue and we're going to maintain our posture there. I think what we look forward to do is continue to be granular with you in terms of the number of products we're developing, how we're sampling those, the ordering pattern, as well as the customer acquisition as that develops. I apologize, but that's not a question that we can address. We just do not provide a guidance in that regard, but thank you for the question.

Jaeson Schmidt:

Okay, thanks a lot.

Operator:

Our next question comes from the line of Ashok Kumar with ThinkEquity. Please proceed with your question.

Ashok Kumar:

Great, thank you very much. This is a multi-part question. The first one is just housekeeping. In terms of the foundry revenue baseline ran rate, Jeff, could you just clarify does it still remain $2 million to $3 million annually, and what's the timeline for the trusted BAW foundry status, and just the other side of the question is the cash flow EBITDA breakeven.

In terms of your product pipeline, Jeff, could you confirm that the commercial opportunities that we're seeing right now across the 3.8, 5.2, 5.6 and the Band 25, are these all second-source opportunities, are any of them sole-source opportunities, and in relation to Band 25, as you indicated earlier, the first generation 5G forms will be out mid-year and the supply chain, they're usually frozen nine to 12 months, what are the odds you'll be in the running for the 2020 product cycle? Thank you.

Jeff Shealy:

Okay. Several questions we took there. In terms of the legacy MEMS foundry business, if you look at the pattern, that revenue was derived originally with the acquisition of FTC, when we acquired it approximately one-and-a-half years ago. That business, we've scaled that business down and focused on—quite frankly, focused those resources on bringing our BAW, our XBAW technology, and that remains our focus. There has been a couple of legacy customers which we continue to engage. I can tell you we have activity, we have quoting activity, and we certainly have some limited revenue remaining with those customers. We're still evaluating what we're going to be doing long term, we're in discussions with those customers over their programs, as well as our capacity planning that we have. I don't want to comment on anything that's still in progress and I would say we're still in progress with a couple of those key customers over what to do. That is not our core business. Our core business is RF filter product revenue. We're an RF filter company and we're going to continue to focus on premium-based filters. In terms of that, I think that addresses your question regarding the foundry.

Regarding the trusted foundry model, I'm going to—Dave has been leading that effort and can give just a brief update of where we are relative to being a trusted foundry. For those listeners who don't understand what that is, that's a designation by government military that we're a preferred supplier for certain government-based programs, communication programs and/or radar programs.

Dave Aichele:

Yes. The quick update on the trusted foundry effort. The wheels of government move so quickly. We're working within those boundaries of the U.S. government. The good thing is, is that we've gotten security clearance with the headquarters of Akoustis. We weren't able to really reuse any of the FTC, which is the acquisition we made in the middle of 2017, they had a trusted foundry capability, but what we have been able to do is get Akoustis moving forward with getting security clearance down at this facility in North Carolina, which is our headquarters, and the fab which is up in New York, we're now working with DSS and also with DEMA, which manages trusted foundry accreditation, to get that paper-work in place, as well. The guidance is that we believe it will be completed this year. That will definitely support, obviously, the current trusted foundry accreditation at FTC, which now Akoustis has, and then also with the BAW technology, as well. That is an attractive opportunity that we're going to promote within the primes and the government agencies, like DARPA, which is interested in having access to this type of technology, as well.

Jeff Shealy:

Okay, and your next question was regarding cash flow breakeven and I'll let Ken address that one.

Ken Boller:

Yes, I'd like to just add that we've been reviewing the model, the existing financial model, and there's no changes to the model that I see at this time. We are still going with that we anticipate being operating cash flow breakeven at the $13 million to $15 million revenue per quarter range, and there's no reason, I think, that we would deviate from that.

Jeff Shealy:

Okay. Your next question was regarding—in terms of our products, which ones are second-source opportunities by frequency, or which ones are second-source opportunities. Let me start with the 5GHz WiFi. That is with existing equipment OEMs that are using significantly larger—and by "larger," I mean about 23 times larger size solutions, using dielectric-based resonator filters. In terms of second-source, we're a primary solution to WiFi in the triband 5 GHz band, so that's both the 5.2 and the 5.6. In terms of the 3.8 or the 1938 product that we have with a military customer, we believe we're primary source for that product, that's a custom design with them, and we don't see that changing any time soon. In fact, we see only adding additional single-source or primary sourced products with that customer, as we said in our prepared comments.

In terms of the three 5G-based designs, those are in the 3 to 4 GHz range. Those products, those are for new developments and new hardware that are being deployed, and so we're positioning ourselves in that market to be the primary source of those. In terms of backup source, we believe those customers have alternatives, but they're significantly higher, in terms of significantly larger in size, and the supply chain of those can be challenging for what we've learned about their supply chain.

In terms of the Band 25 design that's done at 1.8, we believe there are existing commercials solutions in BAW that are available there and I would call us a secondary solution given that's an existing LTE band, but the customer is asking for higher performance, so that's what we're working on, is a performance differentiated solution for the Band 25 solution.

If you had a last question—I'm sorry, I wrote them down as quick as I could. If you had one, please follow up.

Ashok Kumar:

Thank you very much, Jeff. All the best.

Jeff Shealy:

Thank you so much, Ashok.

Operator:

Our final question comes from the line of Harsh Kumar with Piper Jaffray. Please proceed with your question.

Harsh Kumar:

Yes, hey guys. I had two simple questions. One is, the WLP process, once you achieve it, my understanding is this would allow you to sample potentially at multiple seller or customers, if needed. Is that a correct assumption, or would you have to change sort of the WLP specs for each specific handset. Then, the second question was are there any other bottlenecks? You obviously highlighted the high-speed litho tool that you need, but are there any other significant bottlenecks that you envision from you and Akoustis to be able to get to hundreds of millions of filters production?

Jeff Shealy:

In terms of the WLP first—I'll talk about the bottlenecks after Dave comments on WLP, but first, in terms of the WLP itself, from an engineering standpoint, that's an existing platform that the manufacturer supplies. Within our process, we add one layer that makes our product—and it's a metal layer that makes our chip compatible with the WLP process. There's no changes to our XBAW technology, beyond just the one metal layer.

In terms of form factor, I'll let Dave comment on the customer end of that, the engagement side, of what he's seeing.

Dave Aichele:

Yes. Harsh, two things. The good thing is that the phones that are being released, as you commented on, I think, early on, are not really having tough codes to spec, because there's really not a good solution out there for some of these difficult 5G bands, so that's what we're hyper-focused on, and what we've had is conversations with both the OEMs and also the RF module manufacturers, looking at using discrete filters, using potentially a filter in a receive module, or even in a (inaudible). The feedback that we've gotten on the form factor, that we're following right now, is getting to the height requirement is the most critical part, besides obviously the X and Y dimension, and everything that we're driving from a development standpoint meets all three, X, Y and Z, and the critical part on the height factor is being able to go into a module. Both of these, we're looking at doing a chip scale type design that they can fabricate directly onto a PCB or into a laminate module. Everything is then sent back to the Engineering Team, and with our partners that receives, and everything is looking good.

Jeff Shealy:

Okay, and you asked in terms of bottlenecks on capacity to get us to the hundreds of millions of filters per year. As we outlined, we have a capacity plan in place, where we're going to be adding approximately $20 million of cap ex over the next two years. The way that is managed is, if you take our factory floor, the tools in that factory floor all have a capacity available to them, and so we've modeled our factory floor by

tool, down to the detail of the tool. That gets loaded into what we call a trigger chart, and as capacity is needed—we also model in that trigger chart what the lead times are. As capacity is needed, we work from the trigger chart and release the orders. We have to factor in the lead time. Sometimes, you have to order ahead of the capacity demand to make sure you have the tool in place in order to have the overall factory capacity necessary. There are bottlenecks. The ones that we work from are typically short lead time at this point, things like testers, and things really on the back-end of the process, which don't have as much lead time, and we try to stay ahead of anything with a long lead time.

Harsh Kumar:

Great, thanks, guys. Thank you and congratulations again.

Jeff Shealy:

Thank you, Harsh.

Operator:

That was our final question and I would like to turn the call back over to Management for closing remarks.

Jeff Shealy:

Okay. Well, again, I'd like to thank everyone for your time today. We've completed our first of four milestones for the March quarter and we plan to continue to update you on further progress as the quarter progresses. We look forward to speaking with you during our next update call to discuss the current quarter execution against our milestones and future expectations. I wish everybody a good evening. Thank you very much.