

# **AIXTRON SE**

## **Analyst Earnings Conference Call**

**First Half 2020 Results  
July 23, 2020**

Prepared Remarks

### **Executive Board**

**Dr. Bernd Schulte, President**

**Dr. Felix Grawert, President**

### **Finance & Administration**

**Charles Russell**

The spoken word applies

## **Slide 1, 2 – Operator & Forward-Looking Statements**

### **Operator**

Good morning and good afternoon, ladies and gentlemen, and welcome to AIXTRON's second quarter 2020 results conference call. Please note that today's call is being recorded. Let me now hand you over to Mr. Guido Pickert, VP of IR & Corporate Communications at AIXTRON, for opening remarks and introductions.

### **Guido Pickert**

*Investor Relations & Corporate Communications*

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Thank you, operator. Let me start by welcome you all to AIXTRON's presentation of our half year and Q2/2020 results. Today, I'd like to welcome our Executive Board represented by Dr. Felix Grawert and Dr. Bernd Schulte, as well as our VP of Finance and Administration, Charles Russell.

As the operator indicated, this call is being recorded by AIXTRON and is considered copyright material. As such, it cannot be recorded or rebroadcasted without permission. Your participation in this call implies your consent to this recording.

As with previous results conference calls, I trust that all participants have our results presentation slide deck, page 2 of which contains the usual Safe Harbor statement. I would like to point out that this applies throughout the conference call.

You may also wish to have a look at our latest IR Master Presentation with additional information on AIXTRON's markets and its technologies. It's also available on our website.

This call is not being immediately presented via webcast or any other medium. However, we will place an audio file of the recording or a transcript on our website at some point after the call.

I would now like to hand you over to Bernd Schulte for opening remarks. Bernd?

## Slide 3 – Q2 2020 Highlights & Operational Performance

### Dr. Bernd Schulte

*Executive Board*

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Many thanks Guido! Let me all welcome you to our results presentation of the First Half of 2020 and I will start, as usual, with an overview of the key developments in the second quarter on **slide 3**, before handing over to Charles and Felix.

With orders of nearly 70 million Euros, we had a continued solid quarter for order intake.

In Q2, revenues came in at 56 million Euros, which was higher than the previous quarters' revenues but – as expected – still not at the level as last year's quarter. However, this is a result of the corresponding order intake during the relevant period of last year.

As a consequence, revenues in the second half of the year are expected to grow significantly compared to the first half in order to achieve our full year's guidance.

During Q2 – upon request of our customers – we experienced a few delays of commissioning of tools caused by the Pandemic. For the second half of the year, we see local lockdown measures ending and an overall relaxation of travel bans. Therefore, we expect no significant influence related to COVID-19 on our entire Fiscal Year 2020. However, we will continue to watch the development of the global pandemic very carefully and we remain to be ready, to take measures if necessary.

In the second quarter, our other key financials were largely in line with our plans. With a gross margin of 41% we are back to the usual levels. We finished the quarter with an order backlog of 157 million Euros which is 42% over the same period last year and gives us confidence that we can meet our 2020 full year guidance which we communicated to you on our last call and which Felix will re-iterate to you later in more detail.

The renewal of our entire MOCVD product portfolio has been continued, is making good progress and is in an advanced stage. We remain confident about our prospects in our addressable markets with our new products, as we believe that this will open new market opportunities for our equipment and get our business in an even better position in the future.

At this point, let me now hand you over to Charles for a more detailed overview on the Q2 2020 numbers. Charles?

**Charles Russell***VP Finance*

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Thanks, Bernd, and hello to everyone.

Starting on **slide 4**, our income statement. Total revenue for the quarter at 56 million euros was higher than the 41 million euros of the previous quarter, reflecting the phasing of orders from 2019. The abnormal under-utilization of production and service which we reported in Q1/2020 has now been eliminated. The resulting 5% improvement in gross margin is largely attributable to the increased volumes.

Operating expenses in the quarter of 20 million Euros were higher than the 16 million Euros in Q1 2020. The difference between the two quarters operating expenses is down to two factors: firstly, selling expenses in Q2 include a 0.5 million Euros external sales commission, and secondly, the Q1 OPEX included a one off credit in Other Income of 2.9 million Euros from the reversal of an impairment charge.

EBIT was 3.3 million Euros compared with a loss of 1 million Euros in Q1.

The tax rate is very low in both the quarter and the half year because the 2.9 million Euros gain on reversal of impairment is not a taxable transaction.

Therefore, net profit was also slightly above 3 million Euros in the quarter.

Turning to the balance sheet on the next slide.

Inventories of 91 million Euros are higher than previous quarters in preparation for the scheduled high level of shipments in the second half of the year. The level of prototypes in inventory fell from 12 million Euros to 9 million Euros in the quarter.

On an actual basis, receivables of 24 million Euros represent 30 DSO, the same as at the end of Q1.

Other assets have increased slightly in the quarter to 13 million Euros, from 5 million Euros at the end of Q1. This is mainly because of some routine tax paid ahead and VAT and grants which had not been received at the end of June.

Customer deposits remained stable at 61 million Euros in Q2 compared with 50 million Euros at the end of Q1 reflecting our growing backlog.

Moving to **slide 6**, our cash flow statement

We had a negative free cash flow of 11 million Euros in the quarter, which was mainly due to the increased working capital I have just mentioned. Our overall cash balance at the end of the quarter was 289 million Euros.

And with that, let me hand you over to, Felix.

**Dr. Felix Grawert**

*Executive Board*

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Thank you, Charles and welcome to you all.

I will give you a short overview of developments within our portfolio, of our approach to handling the pandemic and of our outlook.

Let me first speak about our OLED business at APEVA. We are going through the qualification process with our Korean customer and continue to make good technical progress. We have achieved a number of technical specifications and work towards achieving additional ones. Furthermore, we are now starting discussions with our customer on the next steps of our joint OLED project.

In our MOCVD business, we are seeing solid interest around our Datacom-Laser solutions driven by the ever growing need of fast data communications. Our equipment for the production of LEDs for fine-pitch or mini LED displays and mini LED backlighting units continues to see healthy demand. In addition, we have sold a good number of upgrade kits for the production of UV-C LEDs. UV-C light can be used for disinfection of air, water and surfaces. This does not represent a large portion of our revenues, but gives a good contribution to profits and helps to further strengthen our position in the market.

In Power Electronics, we see strong demand in particular from our existing SiC customer and a growing demand for tools to produce GaN power devices. These devices are used for example in highly efficient power supplies and in compact fast charging devices for consumer electronics such as mobile phones or laptops.

Let me now give you some background information on how we handle the COVID-19 challenge.

Our production remains to be up and running without interruption or delays: As you know, we had implemented a number of measures early on in the crisis and our supply chain has proven to be very stable without major shipment delays.

Since early June all our employees are back in the office working in an increased distance to each other and wearing masks wherever proximity to others cannot be avoided. Since the return to the office, we did not have any additional cases of COVID-19 infections in the company.

As a result of the above described market demand and our stable operations, we can again confirm and reiterate our guidance for the year 2020 as illustrated on **slide 7**.

You may have noted on our guidance slide, that we are now showing orders and backlog figures which are to be converted into revenues during 2020 rather than just looking at the timing of shipments. We have made some changes to the way we put together our guidance slide. We have now based our assumptions of what we previously called "shippable" order intake and backlog on more exact data, namely on what we believe will be converted into revenues this year. This means, that we are not assuming 100% revenue generation on shipment of a tool anymore, but rather 90%. Generally, this is what we are actually booking on shipment which makes the figure more accurate which is the reason why we have introduced this change.

With this, we continue to expect **orders** and **revenues** to be in a range between 260 million and 300 million Euros, a **gross margin** of approximately 40% and an **EBIT margin** between 10% and 15% of revenues for the full year 2020. This expectation is based on our solid order book at the end of this quarter and a healthy level of customer inquiries particularly around next generation power electronics, lasers for optical data transmissions and Specialty-LEDs for display applications.

Our forecasted, US-Dollar denominated Orders and Revenues for the remainder of the year, are as always based on an exchange rate of US-Dollar 1.20 per Euro.

With that, I will pass, back to Guido, before we take questions.

### **Guido Pickert**

*Investor Relations & Corporate Communications*

Thank you very much, Felix, Charles, Bernd. We will now take questions, please.

## **Question-and-Answer Session**

### **Andrew Gardiner, Barclays Capital**

If I could ask two; firstly, just a quick one. Bernd, you've referenced some slight delays in second quarter primarily at the customer request. Can you give us a sense as to what market that might have been in and whether it was significant in terms of revenue? And are you expecting to get that back in third and fourth quarters? And also just around the reframing of guidance and the backlog that you've got to ship later this year. What kind of longer term visibility, do you have at the moment, as we looked at the start of 2021, and some of the relative strength, the different end markets? Thank you.

### **Dr. Bernd Schulte**

Thank you, Andrew, for the questions. The delays I mentioned in my presentation, were pretty much in the first quarter, and they were mainly in China. You could not travel to China or even within China, our Chinese team could not travel and that delayed a few shipments to China and installations, which in the meantime have been shipped and most installations have been made in Q2.

And in the second quarter, it was more installations dedicated for U.S. and Europe for the same reasons. And it is not a huge number in terms of revenue as we invoice 10% of the order value with achieving the final acceptance. This we get, once we finish the installation and meet the final acceptance requirements. So, the total number is not big, but it is important for us in terms of profitability. So, it is a small one digit million number which we talk about.

Secondly, our longer term visibility remains low. We are certainly looking into market analysis and this is, of course, not based on bottom up approaches, more on longer term expectations for market developments in specific sectors, and there we are very optimistic in the growth opportunities of the areas as mentioned by Felix.

The difficulty is the timing meaning when does it really come and when does it kick off. So is it next year? Is it maybe somewhat later? It really depends on which end application drives the demand and when. So, we can speak more about the long-term perspective, which looks very positive and in the short term, which also looks very positive. It is in between which is quite difficult to say.

### **Andrew Gardiner, Barclays Capital**

Understood. After that just follow up on that last point quickly. You mentioned greater interest in tools for mini and micro LED, moving towards fine pitch displays. If you guys feel we're getting closer to an inflection point there, there's obviously a lot of talk about it within the market. I'm just wondering in terms of whether you feel like we're



still in the prototyping phase or is there sign that you might start to see orders for more production volumes?

**Dr. Bernd Schulte**

Andrew, this is little bit more complex. First of all, there are now Mini LED products sold by our customers to end users. So in these cases, it's beyond the feasibility stage. It's happening now. But you have to differentiate between the different LED colors. Particular for the blue and green color, the customers are using installed capacities which they have acquired for general lighting in the past. So, they have enough capacity for blue and green also for this display application.

However, for red, it's different. For red you need additional capacity simply because the red LED capacity is fully utilized. You don't need red for solid state lighting, therefore there is not such a big installed base in contrast to capacities for green and blue. And that drives demand for fine pitch and mini LED, for which you need the red LED systems. And we received orders and we're going to ship tools in the second half of this year in particular for this application, so it's ongoing now.

**Uwe Schupp, Deutsche Bank**

Also questions from my side, please. Firstly, on the gross margin and related to LED as well and secondly on fast-charging. So, first on the gross margin, if my math is correct, you actually had roughly 50% revenue from LED in the second quarter. And in the past, we have been told that LED orders are typically carrying a much lower gross margin, yet, the gross margin in Q2 was much better than in Q1. So just my question is how to square this up with what we are seeing and maybe that is related to the comment you already made that really LED is no longer LED i.e. for modern goods have maybe a higher margin? Any color on that would be appreciated. And secondly, on fast-charging and gallium nitride, can you just brief on, how much of the CapEx for this opportunity, do you think have you seen, have your customers already been spending in terms of number of mobile phones for 5G that can be penetrated just on color on that to be efficient? Thank you.

**Dr. Bernd Schulte**

Okay. Let me start with the, your first question about gross margin in particular why Q2 was so good, having such a high LED content. The reason is very simple. The LED content in Q2 was not so much for fine pitch or mini LED applications, it's been a customer who is ramping up for the Micro LED opportunity in China. Ramping up for Micro LED requires a high performance, high-end MOCVD tool, which is fully automated. And with that, the micro LED tool prices are more like prices we are used to in power electronics et cetera, meaning they have a higher margin. I'm afraid you may see a slight drop in gross margin in Q3, because then quite a few systems for red

LED will be shipped to China for fine pitch and mini LED applications. So that's the explanation.

### **Dr. Felix Grawert**

Let me come to your question on fast-charging based on gallium nitride. GaN based power electronics have multiple use cases. Fast-charging is now the first use case that we see going into volume. Here, we clearly have seen the inflection point and we see that the market is in full ramp. We see that right now and further in 2021, many smartphone models are equipped with quick chargers based on gallium nitride power electronics. Interestingly, it is mostly Chinese MOCVD customers, taking the lead on this one and Chinese smartphone makers leading the adoption. In this area, , we talk about smartphone makers such as Huawei, VIVO, Xiaomi, OPPO. I think, some of the global brands will follow later.

However, I think we should not reduce gallium nitride based power electronics to fast-charging only - that would be too little. Fast-charging is the first application that is adopting gallium nitride power electronics in volume. Here, gallium nitride has a good value proposition. Furthermore, the reliability requirements of the consumer electronic markets are relatively low, such that a new innovative materials find fast adoption.

I'm personally expecting the second wave of gallium nitride based power electronics to be in highly energy efficient power supplies of data centers, such as the data centers of Google, Facebook, Amazon, and alike. Furthermore, as part of the second wave, we can expect usage of GaN based power electronics in on-board chargers for electric vehicles or hybrid vehicles.

Later on, we can expect the third wave of gallium nitride based power electronics to be integrated power circuits, also called "smart power" by some customers. These are exploiting the capability of GaN that on one die you can integrate multiple switches.

In summary, we are seeing the starting point, the inflection point, and expect a multi-year growth opportunity from GaN. Coming back to your question, I would not want to define the total market as X many units, it is too early to quantify that precisely.

### **Uwe Schupp, Deutsche Bank**

Can I ask just one follow up on to each of you? First, Bernd, I actually remember that you were during various conference calls, there is no true Micro LED in China. Is that statement now still valid, post your comment you made a minute ago? And then secondly, Felix, you said that the Chinese smartphone makers have actually leapfrogged the other with the fast-charging, but is it true that your customer base is sitting more in Taiwan and they will be shipping those chips to the Chinese smartphone makers?

### **Dr. Bernd Schulte**

About the comment to Micro LED in China, I'm afraid, this statement still holds up. There's quite some ambition in China to develop Micro LEDs. And even if you have a Micro LED capable tool and just to start producing with this tool, first, what we would rather call mini LED. But they are having a roadmap to reduce the size of the chips going more towards Micro LED. I think this is the plan, which the customers are following. So, it's true, there is no true Micro LED product out of China - yet.

**Dr. Felix Grawert**

Into the second question where our customer base is located. Our customer base for gallium nitride is split into two waves. The first wave of customer installations was in Europe in the U.S. and in Taiwan, as your question is indicating. And in fact, one of our Taiwan based customers are currently running in very high volume, producing gallium nitride based chips, many of them are being used in China based smartphone models. However, in the last one and a half years, we have also seen very strong demand for gallium nitride tools our G5 plus tool from China mainland itself.

Overall, we have easily shipped one or two dozen of tools in the last 1.5 years to mainland China, not only to one customer, but to a number of China-based startups, midsize players by now. Not to forget that in mainland China, there's a very strong and deep knowledge of compound semiconductors, which has been grown over the last decade in the blue LED industry, which was also based on gallium nitride material system. And we are now seeing also local production of local China customers jumping on that bandwagon. So China is becoming a market for gallium nitride by itself.

**Malte Schaumann, Warburg Research**

The first one is on the order pipeline. How is your confidence on the sustainability of your order pipeline for current and future projects? So you feel quite confident which potentially kind of similar order level in the second half does -- do order levels or does the pipeline change frequently. So what is the certainty or uncertainty you see in your order pipeline for the short-term?

**Dr. Bernd Schulte**

Thank you, Mr. Schaumann. So far the inquiry and quotation activities continue on a similar level like in the first half of the year. So, it's of course, difficult to say what will happen in the next quarters, but currently we see similar levels.

**Malte Schaumann, Warburg Research**

Okay. Is there a shift in applications, meaning LED was pretty strong, especially in the first quarter, probably in the second, as well. So is that shifting towards another application or is that remaining stable?

**Dr. Felix Grawert**

Based on the inquiries we receive, I think we see a similar mix in the second half as in the first half, which is strong on the power electronics side, both GaN and SiC. Secondly, lasers for optical data communications; and thirdly, mini- and Micro LED, which we largely discussed in the last couple of minutes.

**Malte Schaumann, Warburg Research**

Yes, good. Then, on the OLED project. Are you still prepared to make a decision this year, if in the case an order will not follow up or do you see any kind of postponement in the project that might lead to the delay in the sudden taking?

**Dr. Felix Grawert**

So, we are now about to complete the Gen2 project. As we wrote in our report, we have achieved a couple of specs. We are working with our customer on achieving additional ones and closing the specification list and based on that finishing the project.

With that, we are now starting discussions with our customer on a follow-on project, which once again will be an R&D type development project, however, scaling up to a larger display size. So, in the first one, on the Gen2 project, we've generally proven the feasibility of the OVPD technology. And the next stage, which is then to come in 2021, is about proving that this can also work at large scale substrates that would be the next step towards production qualification of our technology. We are now starting these discussions. They could conclude by the end of the year or move on early into next year. The outcome largely depends of the technical discussions. With a project of such breakthrough novelty, the scope of follow-on discussions is not limited to commercial discussions, price negotiations and signing a P.O. Instead, in this case there are a lot of technical discussions about the specifications to achieve, and the fit into the customers' production strategy and its manufacturing lines. Only when those technical details are sorted out, we can expect to close the deal. Those discussions are now starting.

**Malte Schaumann, Warburg Research**

Okay, good. And then last one quick one on the financials. Over the past kind of six quarters, you had an average R&D funding of €2 million per quarter. Is that the number I should also expect going forward?

**Charles Russell**

I think that we could expect a similar level of R&D funding for the rest of the year, really.

**Malte Schaumann, Warburg Research**

And any change going into next year or it is early to tell?

**Charles Russell**

I don't think there's much change to be expected into next year.

**Janardan Menon, Liberum**

Good afternoon. Thanks for taking my question. Just one question on the silicon carbide side, you said your orders are still coming from your existing customer. Can you give us an update on how the qualifications with the other customers are proceeding and when you might expect a decision on that to be made?

**Dr. Felix Grawert**

Yes, thank you for that question. So, as mentioned with our existing customer, we clearly see that this customer is in a ramp phase and is placing orders continually, every quarter a few tools, which is very good. We are positive on concluding the qualification with the other customers. And I think it's mostly a question of their volume ramp and the production facility expansion plans WHEN an order is going to be placed. It's not a question WHETHER an order will be placed. Follow-on orders could be placed as early as Q4, or also wait until Q1/Q2 next year. This depends mostly on volume and capacity needs of our customers.

**Janardan Menon, Liberum**

So would those new customers be having a sort of a dual platform strategy you and your competitor or would they be moving entirely to you?

**Dr. Felix Grawert**

The existing installed base is with our competitor which already is a number of tools. So, I would expect the largest part of the ongoing expansion to be with our tools once we convince the customers of our tools. Our objective is clearly to have a tool with lower cost of ownership. There should not be a reason to buy a competitor tool again once we are qualified.

**Janardan Menon, Liberum**

And this is with one company or is it with multiple companies?

**Dr. Felix Grawert**

Multiple companies.

**Janardan Menon, Liberum**

So, can we assume therefore that have these new facilities start expanding sometime in the next 12 months or so, maybe first half of next year, is when you will see an inflection of orders beyond your existing customer?

**Dr. Felix Grawert**

I think in the first half of 2021, we should clearly see demand from our customers, yes.

**Janardan Menon, Liberum**

Understood. Just on the OLED side. I understand from your comments that the customer is now convinced of the technical capabilities of the Gen2 machine and therefore is keen to proceed on to the bigger machine whether that is a Gen6 or a Gen8? I mean, that question mark is now no longer there anymore. Now, it's only a matter of finalizing the price and the technical qualifications or specifications of this larger machine?

**Dr. Felix Grawert**

I wish I could look into the head of my customer because then I had a clear advantage in a price negotiation. I cannot answer that for you because only my customer knows.

**Janardan Menon, Liberum**

Okay, but the very fact that he is willing to engage in this discussion should imply that he is interested, presumably?

**Dr. Bernd Schulte**

Interested, I would definitely say so. So otherwise he wouldn't be talking to us.

**Janardan Menon, Liberum**

And the last question is, I mean, to hit the high end of your sales guidance for the year, you will probably have to be shipping in excess of €100 million worth of systems by Q4. Do you have the sort of capability in terms of supply chain deliveries and space et cetera due to deliver that sort of because you have not delivered that kind of revenues for almost a decade now? So is that possible at this stage?

**Dr. Felix Grawert**

We have Q3 and Q4 ahead of us, right. We are clearly expecting an increase in shipment levels in Q3 compared to Q2. And we clearly expect that increase in shipment levels in Q4 over Q3. And given from the fact that we have now confirmed and we iterated our guidance, yes, we are very confident that we will meet at least the €260 million in revenues this year. And that applies. 97 was in the first half, yes, so in order to make that we have to make at least 163 in the second half, and we are very confident to make that number. Otherwise, we wouldn't have we reiterated our guidance.

**Dr. Bernd Schulte**

And of course Janardan, you're right. If we look in the entire range of our guidance of 260 to 300, this would imply 100 each quarter. And I think it's not so likely that we will get to the upper end of the guidance. I think as Felix indicated. But if we want to achieve, let's say the lower or midpoint of the guidance, I think one quarter should get into the 100 million range, and yes, this is the plan.

**Charlotte Friedrichs, Berenberg**

You've covered actually most of my questions. Just one follow-up on any additional color that you can share on the third quarter besides from expecting, perhaps this largely softer gross margin because of LED shipments?

**Dr. Bernd Schulte**

Yes, as I mentioned, in Q3 we are going to ship quite a number of red LED tools to China for mini and fine-pitch LEDs. And traditionally, our average selling price is a bit lower than in other applications. So, we expect a slight reduction in gross margin in the third quarter due to the fact that we will be shipping quite a number of red LED tools.

**Jürgen Wagner, MainFirst**

First, a follow-up on your OLED answer, you mentioned that the Gen2 project is now about to conclude all the discussions, all the development. How much revenue will you book for that, this year? And then you also mentioned that your portfolio will be upgraded or completed, the upgrade will be completed soon, what could be the impact on gross margin and OpEx leaving OLED aside in '21?

**Dr. Felix Grawert**

So let me take your first question on the OLED topic. In the moment when we are completing the project, this will not lead to a jump in revenues or sudden one time effects. We have booked revenue already while completing the project. So there's not going to be a one-time effect out of it.

**Jürgen Wagner, MainFirst**

So, you have been recognizing sales already this year. Is that right?

**Dr. Felix Grawert**

Earlier in the project.

**Jürgen Wagner, MainFirst**

And how much was that?

**Charles Russell**

In fact the revenue from the system was booked in an earlier year. What we've been doing is a joint development program, which is a joint expense between us and our customer. So there was no revenue booked so far in 2020 for the Gen2 system as it has been taken in prior years, when the system was physically shipped to the customer.

**Jürgen Wagner, MainFirst**

And this means that you don't expect any revenues from that in the second half, is that right?

**Charles Russell**

That's correct.

**Jürgen Wagner, MainFirst**

Okay. Thank you.

**Dr. Bernd Schulte**

As mentioned, we are working to renew our entire MOCVD equipment portfolio and that is nothing which happens overnight. We have launched the new silicon carbide equipment in fall last year. And we are still talking about getting the first repeat order probably early next year. So, this gives you a feeling, about the period from introduction to the market until you're really seeing sales, and with the other products, it's similar.

So, we are now in the process to ship first demonstration tools to customers for our next generation gallium nitride tool, which is targeting power electronics and eventually blue/green Micro LEDs; here we will start with power electronics.

And it is similar for lasers and for red color Micro LEDs; here we will start with Micro LEDs due to customer demand. But these tools will first be shipped maybe in the beginning of next year.

So then you have to go through the qualification cycle. Until you really see the impact of volumes going through our P&L, this takes a while. So I am mentioning this more for you to understand why our R&D numbers are going up. So we're now spending the money to develop these tools. And you see this in our P&L in the increased R&D. And when you see the increased R&D – it's not coming from OLED, indeed OLED is reducing, it's really coming from our efforts of developing new MOCVD platforms.

And that is an investment to address increased market demand and increased customer demands, in terms of performance. Secondly it is also an investment to stay ahead of competition. That is basically what we do here. So don't expect immediate impact this year, next year.



**David O'Connor, Exane BNP Paribas**

Two on my side, if I may. Firstly, on the OLED side. So, the next stage of OLED, on the R&D, the proving as you talked about scaling to larger substrates. What's the timeframe for this next stage? That's my first question. And then secondly, on the 3D sensing Opto side, Q2 orders, €9 million down quarter-over-quarter and year-over-year. What's your overall general expectation for 3D sensing, from your discussion with Opto customers, as you go into the second half and maybe further into next year? Thanks.

**Dr. Felix Grawert**

Coming to the first question about the timeframe. I think this is going to be a project which will run through the 2021 roughly. And then it is to be seen what exactly will be the scope of that project; is it finishing towards the end of '21 or early '22. This will mostly depend on the mutually agreed scope with the customer.

**Dr. Bernd Schulte**

David, on 3D sensing, it is basically still in the situation that there is capacity for the end products which are in the market. The existing capacity is enough. And it really requires an uptick in demand coming from end applications - meaning more cell phones and in particular more high volume cell phones using face- and worldwide 3D sensing applications, because that's what's driving the short term demand in 3D sensing.

Nevertheless, we are very optimistic about the long-term demand in 3D sensing, looking at industrial and automotive applications. But this is more in the long term. In the very short term, we are selling 3D sensing tools here and there. And it's mostly to customers in China or Taiwan. In the moment, the established suppliers in the iPhone supply chain are not giving us an indication for fast need of capacity. However, from the past, I remember well, this can change overnight. So, this is because these tools do not require any development anymore. You just place an order now it's going to be delivered as fast as possible.

**David O'Connor, Exane BNP Paribas**

And maybe one follow-up on the power side of things. Last quarter, I think you indicated the split in power orders and about 50-50 between silicon carbide and gallium nitride. Could you give us any indication of what it was in Q2? Thanks.

**Dr. Felix Grawert**

I think it was a bit more on the gallium nitride side.

**David O'Connor, Exane BNP Paribas**

Okay, that's quite helpful. Thank you.

**Guido Pickert**

Yes, thank you very much, Bernd, Felix and Charles. And thank you for your sustained interest. This ends today conference call. I wish all of you a nice summer. Stay safe, and hopefully, see you again soon maybe even in person. Thank you and bye, bye.