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IIVI - Q1 2019 II-VI Inc Earnings Call

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**Mary Jane Raymond** *II-VI Incorporated - CFO, Treasurer & Assistant Secretary*

**Vincent D. Mattera** *II-VI Incorporated - President, CEO & Director*

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## PRESENTATION

### Operator

Good day, ladies and gentlemen and welcome to the II-VI Incorporated Fiscal Year 2019 First Quarter Earnings Conference Call. (Operator Instructions)  
As a reminder, this call is being recorded.

I would now like to introduce your host for today's conference, Mary Jane Raymond, Chief Financial Officer. You may begin.

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### Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

Thank you, Sarah, and good morning. I'm Mary Jane Raymond, the Chief Financial Officer here at II-VI Incorporated. Welcome to our first quarter earnings call for fiscal year 2019. With me today on the call is Dr. Chuck Mattera, our President and Chief Executive Officer; Dr. Giovanni Barbarossa, our Chief Technology Officer and the President of the Laser Solutions segment; and Gary Kapusta, our Chief Operating Officer.

This call is being recorded on Thursday, November 1st, 2018. Just as a reminder, any forward-looking statements we may make today during this teleconference are given in the context of today only. We do not undertake any obligation to update these statements to reflect events subsequent to today.

With that, let me turn it over to Dr. Chuck Mattera. Chuck?

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### Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

Thank you, Mary Jane. Good morning everyone, and welcome to our call today, which we are holding from our new II-VI Technology Center Silicon Valley in Sunnyvale, California. We thank our new colleagues here at the former CoAdna site for hosting us today. We had a really great quarter, and we ended the quarter with a record backlog.



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Our revenue of \$314.4 million grew 20% over the same quarter last year, and we had a book-to-bill ratio of 1.04. Our EPS of \$0.40 per share grew 25% over the prior year, and the non-GAAP EPS of \$0.56 per share grew 12% compared to the same quarter last year.

Compared to Q1 FY '18, the communications end market grew 20%, our military business grew 30%, our industrial end market grew 10% and 3D sensing grew over 200%. Sales of silicon carbide substrates grew more than 50%, and we continue to expand our manufacturing scale in order to position us to capture longer-term opportunities as 5G and electric vehicles that incorporate silicon carbide electronics begin to ramp.

Military growth was a particular highlight in the quarter. With 30% year-over-year growth, we are beginning to see the benefits from the early ramps of multiple new programs that we won over the last 12 months. Many of these programs are part of strategic airborne and space platforms that enable surveillance, reconnaissance and targeting.

Increasingly, we are seeing interest from military customers in the integration of high-power lasers and optical solutions for directed energy systems.

To strengthen our platform portfolio for these emerging applications, during Q1, we acquired Optonicus, an innovator in phased array technology for coherent beam combining. We expect this technology will enable and further differentiate our directed energy subsystem platform that we're developing.

We are also very proud of the strategic collaboration around Wide Band Gap RF electronic devices that we announced on Monday. We have already begun working with Sumitomo Electric Device Innovations, or SEDI, to develop and qualify our Warren, New Jersey fab to manufacture state-of-the-art GaN on silicon carbide, high-electron mobility transistors or HEMT devices that enable 4G and 5G wireless networks. Market studies estimate that SEDI holds the #1 market share for GaN RF devices and our market-leading semi-insulating 150 millimeter substrates. Coupled with our epitaxial and wafer fab capabilities and SEDI's technology leadership in GaN HEMT devices, will allow us to expand and scale our vertically integrated 150 millimeter platform for these new compound semiconductor devices.

We are also excited that this coming Monday, we will host the opening ceremony for our new II-VI Asia Regional Headquarters in Fuzhou, China. This facility will house 300,000 square feet of additional new manufacturing space in order to assure our customers that we will have the product portfolio and manufacturing scale needed to serve their needs. It's really an exciting time for our company and our employees around the world. I look forward to participating in this event to celebrate and to discuss our planned future investments and capital allocation to support our growth plans.

4 years ago, we embarked on a multi-year commitment to transform our overall quality and dedicate ourselves to offering customers the best products that money could buy. Increasingly, we have been recognized by our customers for these efforts. For example, we are proud to have won in October, the 2018 Nokia Quality Awards Competition for Supplier Excellence held at Nokia's headquarters. This incredible achievement and honor is attributed to the II-VI's worldwide and their relentless work over the last 5 years to grow and strengthen our partnership with Nokia.

Finally, with 1 month already behind us, we are really looking forward to a strong Q2. At this point in the quarter, we have nearly 90% order coverage for our revenue and have over 11,000 fully engaged and energized employees worldwide, focused on delivering and setting the stage for our continued growth.

With that, I'll turn it over to Gary. Gary?

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### **Gary Alan Kapusta** - II-VI Incorporated - COO

Thank you, Chuck. Our communications business experienced very strong bookings and revenue growth once again this quarter, particularly in products for ROADM systems.

In the industrial business, Q1 bookings and revenues were solid with continued high usage of industrial laser systems and steady, seasonally adjusted demand. In fact, laser diode shipments for industrial applications increased 30% to prior year.



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In both communications and industrial, the effect of tariffs on our order book and our results were immaterial, and we expect they will continue to be immaterial under the existing tariff structure.

For the quarter, as a function of our total revenue, communications was 40% of revenue; industrial, including automotive, was 30%; military was 11%; semiconductor capital equipment, including EUV, was 8%; and 3D sensing and consumer were 5%.

Silicon carbide across all end markets was 6% of revenue.

Geographically, Q1 revenue was distributed 39% in North America, 22% in China, 21% in Europe, 8% in Japan and 10% in the Rest of the World.

We expect to invest \$150 million to \$170 million in capital this year. A good part of this will go into capacity expansion, both equipment and facilities for 980-nanometer pumps, silicon carbide and diamond optics, among other components. In fact, we just signed a 5-year agreement with one of our major laser and EUV components customers, which has a potential to nearly double EUV-related revenue from this customer to nearly \$70 million within 5 years.

We continue to work on our operational simplification. As noted in the press release, we finished the integration of our optical isolated crystal growth into Performance Products and moved our Laser Systems Group into Photonics, since most of those operations are in China. We continue to advance our integration approach and had about \$1 million in consulting expenses to drive simplification in our business systems platforms.

With that, I turn it over to Giovanni for highlights of new products.

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### **Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

Thank you, Gary. We had a successful show at EuroBLECH last week where we introduced multiple products, including our HIGHmotion 2D remote processing head for laser welding batteries, including those for electric vehicles. This innovative head, which has a power rating up to 6 kilowatt, enables high-quality aluminum-on-aluminum welds required to produce reliable car batteries in volume manufacturing.

We introduced our DirectProcess 900 Direct Diode Laserengine, with active rectangular beam shaping for micro material processing, including noncontact localized soldering, bonding and annealing on microelectronics components.

We are investing in direct diode lasers, which are intrinsically the most power-efficient material processing tools enabling unique beam geometries that delineate process areas precisely and are virtually maintenance free.

We also introduced the 12-kilowatt BIMO-FSC laser cutting head, with entirely redesigned zoom optics capable of independently adjusting the focal diameter and the focal length over extended ranges in just milliseconds. Such capability enables faster material processing with longer up-time and lower cost of ownership.

At ECOC, we launched our 400 milliwatt Uncooled Micro-Pump Laser to meet the demand for embedded optical amplification driven by terabit per second transmission rates. This Micro-Pump is also being developed as part of a roadmap to address the emerging autonomous vehicle market. With respect to 3D sensing, we are seeing the benefits of having established a world-class, vertically integrated epitaxial and wafer fab operation on the 6-inch gallium arsenide platform.

We continue to be engaged in the development of several next-generation laser devices for consumer, automotive and industrial end markets that seeks to differentiate products and services through innovative augmented reality functionality.

We have recently seen an increase in customer interest for laser arrays to enable 3D sensing applications with time-of-flight technology. And we shipped prototype laser devices to several large customers, including OEMs and module integrators.



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We expect to have production for some of these customers by the end of calendar 2019. And so we're working to qualify additional capacity at our fab in the U.K. to serve the growing 3D sensing markets.

With that, let me turn it over to Mary Jane.

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### **Mary Jane Raymond** - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

Good morning. Thanks, Giovanni. The company's overall gross margin for Q1 was 39.4% and the operating margin was 11.8% or 12.4% adjusted for M&A expenses for CoAgn. The EBITDA margin was 19.7%.

Regarding the segment operating margins, Laser Solutions saw the benefits of 3D sensing, EUV and growth in optical communications with an 11.6% operating margin compared to 5.3% in Q1 of FY '18.

Photonics adjusted operating margin of 13.2%, excluding transaction cost, compares to last year's exceptionally high margins, as we noted at the time.

The Performance Products operating margin advanced to 12.3% due to a combination of favorable mix and higher operating efficiencies. The Q1 backlog of \$480 million consists of \$193 million in Photonics, \$170 million in Performance Products and \$117 million in Laser Solutions. The backlog contains orders that we ship over the next 12 months.

Capital expenditures this quarter were \$36 million. The Q1 FY '19 tax rate was 19%, and we expect a tax rate of 18% to 20% for the year.

The reported EPS in the quarter was \$0.40 a share and \$0.56 a share on an adjusted basis. The adjustments include \$5.3 million in share-based compensation, \$3.7 million in amortization and \$1.9 million in transaction costs. Our cash is \$271 million and our debt -- net debt position is \$265 million. We did not repurchase any shares this quarter and still have \$31 million remaining on our authorization.

Turning to the outlook. The outlook for the second fiscal quarter ending December 31, 2018, is revenue of [\$330 million] (Sic-see press release "\$333m") to \$345 million and earnings per diluted share of \$0.44 to \$0.48, including \$0.05 a share for onetime and transaction costs for our transactions and collaborations recently announced.

On an adjusted basis, earnings per diluted share is estimated at \$0.65 to \$0.69, which includes \$0.10 for share-based comp, \$0.06 for amortization and \$0.05 for onetime and transaction costs as we noted, but excluding any refinements to the transition tax as the company finalizes its implementation of the Tax Cuts and Jobs Act. This is all at prevailing exchange rates.

The weighted average share count is 66.2 million shares. This quarter, the convert remains slightly anti-dilutive, so we need not add back the 7.2 million shares.

For comparison to the prior period, the results for the second quarter ended December 31, 2017, were revenue of \$281.5 million and GAAP diluted earnings per share of \$0.15. This \$0.15 includes \$0.24 for transaction tax under the 2017 Jobs Tax Act, \$0.08 for stock comp and \$0.06 for amortization for an adjusted EPS of \$0.53.

Now as we turn to the Q&A for this call, remember that our actual results may vary based on changes in product mix, customer orders, competition and general economic conditions. I'll also remind you that our answers to your questions today may contain certain forward-looking statements which are based on our best knowledge today only, and for which, actual results may differ materially. In addition, during the Q&A, we will abide by our obligations to protect our customer confidentiality.

With that, Sarah, you may open the line for questions.



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## QUESTIONS AND ANSWERS

### Operator

(Operator Instructions) Our first question comes from the line of Dave Kang with B. Riley FBR.

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**Lee T. Krowl** - *B. Riley FBR, Inc., Research Division - Associate Analyst*

This is actually Lee Krowl showing in for Dave Kang this morning. Thanks for taking my questions. Just really quick on 3D sensing, just curious if you could maybe talk about at a high level, the Android mix of business, because it looks like you guys are starting to get some good traction. And then just kind of curious if the 3D sensing business will experience what we have observed as a seasonality component and towards the end of the year if you expect kind of a more linear ramp as we go into calendar 2019.

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**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

So regarding the mix of -- there's still -- we're engaged with a number of customers, across the several platforms in consumer and automotive and even industrial for 3D sensing. So I wouldn't necessarily talk about any particular platform like you mentioned Android, we see a lot of interest in time-of-flight as we said in the script. In terms of the -- the revenue outlook, we would -- we expect a little bit higher revenue for Q2, then maybe Q1 as we experienced last year. So this is kind of -- probably a repeat of last year, but with higher numbers and then we'll see what happens in the next following quarters.

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**Lee T. Krowl** - *B. Riley FBR, Inc., Research Division - Associate Analyst*

Got it. And then I know you guys kind of talked about it last quarter, just from a modeling perspective, but could you maybe just run through the impact of foreign exchange?

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**Mary Jane Raymond** - *II-VI Incorporated - CFO, Treasurer & Assistant Secretary*

So this quarter, I would say the foreign exchange has significantly neutralized. We probably had maybe at -- about \$1 million I'd say in total of FX in the quarter. That's certainly less than we had seen in prior quarters given that the R&D has weakened a little bit against the U.S. dollar.

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**Lee T. Krowl** - *B. Riley FBR, Inc., Research Division - Associate Analyst*

Got it. And then just last question. You guys kind of just talked about the silicon carbide opportunity and the qualification process for your fab. Just maybe could you talk about the timing of that and maybe beyond the timing when, how quickly revenue comes after qualification?

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**Vincent D. Mattera** - *II-VI Incorporated - President, CEO & Director*

When take it in 2 parts, first of all, we already began the expansion in our Warren, New Jersey fab, which is required in order to keep pace with what we expect to be the forecasted demand running through the fab, including for GaN on silicon carbide. We will run through with our partner, a very, very methodical approach to the final process integration and qualification, and we're expecting that above mid-calendar 2020, we should be qualified and begin the ramp.

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### Operator

Our next question comes from the line of Meta Marshall with Morgan Stanley.



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**Meta A. Marshall** - *Morgan Stanley, Research Division - VP*

I just wanted to get a sense of -- on the laser -- on the industrial laser side, just if you could kind of talk about the trends, and apologies if you did already, of kind of the CO2 laser side and kind of what you're seeing as far as renewals there versus the fiber laser side?

**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

There's no much difference than in the past. We still -- still see a good balance between the fiber and CO2 in our revenue kind of, pretty similar, and as you know we -- on the CO2, recall that our EUV revenue is basically CO2 laser revenue, even if it's not -- we don't categorize it as an industrial revenue. We've definitely seen a pickup, particularly in China on the fiber laser market and we have enjoyed the -- I would say 30%, a little bit more than 30% yield-to-yield growth by supplying, particularly laser pump devices to the China fiber laser market, which is growing pretty nicely there. Obviously, we're taking advantage of all these new commerce growing in China as you know they don't have semiconductor laser pump technologies. So we are enjoying their growth by supplying them the laser diode engines, the laser diode pumps for their products.

**Vincent D. Mattera** - *II-VI Incorporated - President, CEO & Director*

I would just like to add there -- thank you Giovanni. I'd like to add that the centerpiece of that opportunity for us is our differentiated semiconductor laser. The benefit we get is that we have a suite of related optical components that allow us to be a one-stop supplier for people, including isolators, high-power isolators, acousto-optic modulators and other related components that are required by the fiber laser builder.

**Meta A. Marshall** - *Morgan Stanley, Research Division - VP*

And then maybe on the silicon carbide side, obviously you guys, it's kind of major announcement on the wireless side ahead of the quarter. That had been kind of running at more of a 50-50 mix between wireless and electric vehicles, or at least that was kind of what I had understood. Like -- where should we think of the growth primarily coming from in the next year, could we kind of stay at that mix?

**Vincent D. Mattera** - *II-VI Incorporated - President, CEO & Director*

Meta, I would say if you just -- if you allow me just go out, even if with a longer time horizon of 2 years or 3 years or 4 years or 5 years, the mix is going to be dominated by the power electronics market. And as in any given point in time in the near term, we expect as the power electronics market grows and our silicon carbide business grows, that mix is going to diminish of -- with semi-insulating substrates for RF. It's going to become a smaller and smaller fraction. So today, it might be, maybe 2/3 part or 1/3 semi-insulating and it bounces around based on inventory builds and strategic reserves. But long term, the only thing that matters is that A, our semi-insulating business will grow, it is going to grow and I expect it to grow faster than the rest of the market and the power electronics market is going to grow even faster.

**Operator**

Our next question comes from the line of the Fahad Najam with Cowen.

**Fahad Najam** - *Cowen and Company, LLC, Research Division - Associate*

A clarification first. Can you please remind us your silicon carbide revenue in the quarter, did it grow 50% year-over-year to 6% of total revenue?



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**Mary Jane Raymond** - *II-VI Incorporated - CFO, Treasurer & Assistant Secretary*

Yes, that's what we said.

**Fahad Najam** - *Cowen and Company, LLC, Research Division - Associate*

Question on -- in terms of your China industrial business, can you help us understand relative to commentary from your peers, you've been having recent challenges in China. What sets you apart? Is it that you guys have significantly different end markets in China from these competitors? Just help us understand why you haven't seen any of the weakness that some of the peers have highlighted and regarding the slowdown in China, it appears that you guys are very [bullish related] in that market, so can you help us on that?

**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

Well, it's pretty simple, we don't compete with them, we supply to them. So if they grow, we grow.

**Fahad Najam** - *Cowen and Company, LLC, Research Division - Associate*

Got it. So in terms of -- if (inaudible) and ITG is having weakness in China, it's because they're competing in local Chinese suppliers and you end up supplying to the Chinese suppliers, so you're growing your business that way?

**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

Well, as I mentioned earlier, these -- most of these, I would say, the vast majority of these fiber laser companies, some of which went also public in China, don't have semiconductor laser technology. They don't have, some -- as Chuck mentioned, some of the key optical components that are required to build the fiber laser, right. So that's what they need and we supply and we enjoyed the growth, particularly the growth in the China market.

**Mary Jane Raymond** - *II-VI Incorporated - CFO, Treasurer & Assistant Secretary*

I would also say that, just keep in mind with our business, that a good part of our industrial business is driven by the usage of the laser in place. So unlike perhaps others, we don't -- we are not necessarily or even at all dependent on new laser system sales. Often-times when new laser systems sales are lower, lasers that are in place are used more. So keep that in mind, that's an important part of the industrial laser business for our company.

**Fahad Najam** - *Cowen and Company, LLC, Research Division - Associate*

Got it. If I may ask one more question on the partnership you announced with SEDI, how should we think about your implications to your merchant silicon wafer business? Does that in any way -- or any exclusivity clause where SEDI has first right on your wafer capacity or how should we think about your merchant wafer business from this partnership?

**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

Full steam ahead.

**Operator**

Our next question comes from the line of James Kisner with Loop Capital Markets.



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**James Martin Kisner** - Loop Capital Markets LLC, Research Division - SVP

So just first one, I want to drill down on Laser Solutions, maybe doing some math here, you can correct me if I'm wrong, but basically, when you said about 3D sensing being up 200% and I think you said it continued 5% of sales for the company in this quarter. And getting Laser Solutions is kind of up just mid-single -- oh sorry, low single digit sort of ex 3D sensing and that -- I think that's a pretty decent -- it's a pretty big deceleration. Obviously still much better than peers, but only can I confirm that, but just [ant kind of confirm that that just more broadly, can you just] comment and in terms of you outperforming your peers, but are you indeed seeing a bit of it a deceleration in Laser Solutions or ex 3D sensing, I want to clarify that.

**Vincent D. Mattera** - II-VI Incorporated - President, CEO & Director

No, just the opposite.

**Mary Jane Raymond** - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

So I mean, we talked about the industrial business growing 10% for the quarter. I think we have answered the question.

**James Martin Kisner** - Loop Capital Markets LLC, Research Division - SVP

Okay, I'll take that offline, but you said more about the tariffs. You said you've had -- you're not seeing any impact and you don't expect any impact. Can you clarify that too? And I know you -- precisely this is largely based in China, is it because your products are not classified as being subject to tariffs, mostly is it, because, not that much is leading China and going to the U.S. and just, are you still also -- did that comment kind of hold, even if the tariff is going to 25% and you're not worried about any incremental impact as the result of tariffs going up?

**Mary Jane Raymond** - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

So for our company, I would say that, first of all, everything that happens in our company that is either made in China, let's just say that, it's not necessarily imported. So that -- the incoming goods are not necessarily imported from the U.S., that's the first thing. The second thing is not everything shifts directly out of China to the customer. Finally, I would say that in cases where the customer is the importer, we have been working very, very hard with our customers, since the beginning of the tariffs to look at what the options are. As we have said all along, for the management of the tariffs whether that's an operational option or a allowable regulatory option, whether that changes in the HTS code that have been promulgated recently or the filing for certain exclusions. So we have won that gamut on pretty much everything we have, we still have many exclusions filed that have not yet been rolled on, but so far we've been relatively successful in dealing with and using the opportunities at our disposal to minimize tariff.

**James Martin Kisner** - Loop Capital Markets LLC, Research Division - SVP

And just one more if I could, just -- could you comment on just general demand, hyperscale in China separately, I'm not sure if you really talked about either one of those, but both are areas of concern for investors of late and I'll pass it.

**Mary Jane Raymond** - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

Sorry, James. Just repeat that question.



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**James Martin Kisner** - *Loop Capital Markets LLC, Research Division - SVP*

Yes. You're kind of (inaudible) and markets and investors have been kind of skittish about of them. One is hyperscale, just the Web 2.0 companies, there's been a number of companies that talked about slowing there and also just, I don't think you talked about demand trends in China in general either. I'd just love to hear, just your short update on those 2 end markets, if you could.

**Mary Jane Raymond** - *II-VI Incorporated - CFO, Treasurer & Assistant Secretary*

Sure. Let's talk about the demand trends in China as a general matter. I mean I would say that we've continued to see pretty decent Chinese demand across the board. So keep in mind, China is a big market for us, it's both industrial and it's optical as well. So we saw obviously, the typical seasonally adjusted industrial demand, but I would say China was as a general matter, a relatively strong market for us remaining in this quarter. And then with respect to hyperscale, Chuck?

**Vincent D. Mattera** - *II-VI Incorporated - President, CEO & Director*

Yes, I'll just add. I would say, with regard to our business in the interim data center, it was flat you know quarter-over-quarter, but what we experienced both for DCI and for ROADMs were really strong.

**Operator**

(Operator Instructions) Our next question comes from the line of Sidney Ho with Deutsche Bank.

**Shek Ming Ho** - *Deutsche Bank AG, Research Division - Director & Senior Analyst*

My first question is on your strategic collaboration. That's been asked a couple of times. Maybe give us a little more color, it sounds like it's co-development of product and now you -- I know you talked about qualification by mid-2020, but is there any dedicated wafer supply agreement? What's the duration of the contract and more importantly, who owns the IP that's coming out of it? And do you expect future partners will do some more kind of arrangements?

**Vincent D. Mattera** - *II-VI Incorporated - President, CEO & Director*

Well, first of all, we're not going to be able to get into the details of the agreement that we have with them, except to say it's strategic, it's broad and it's deep. And it involves the incorporation and integration of our GaN on silicon carbide technology and their GaN on silicon carbide technology for the purpose of producing GaN on silicon carbide devices for the communications market today. And we -- we have a very close relationship with them. We've been planning this for quite some time. We're really excited about it and we think the time is right. We think the relationship is right and we love both enabling the market leader and growing with the market leader in this regard.

**Shek Ming Ho** - *Deutsche Bank AG, Research Division - Director & Senior Analyst*

Okay, that's fair. Maybe my next question is, as you talk about the overall revenue guidance being up 5% at the midpoint, can you give us a little color on that guidance by end market either quarter-over-quarter or year-over-year? I ask that because it seems like there could be a wide range of outcomes this quarter given all the other noise out there.

**Mary Jane Raymond** - *II-VI Incorporated - CFO, Treasurer & Assistant Secretary*

Well, first of all, we don't, we don't -- guide by end market and we don't guide by segment, and could there be a wide range of outcomes? There always is a possibility of a wide range of outcomes. I would say though that, as have already discussed, I mean we have some very nice light on



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here with respect to optical communications, the same thing with military, industrial is really hanging in there and -- next upcoming quarter tends to be as Giovanni mentioned, a reasonably good quarter for Q3. Could any of those change, sure. But at least that's the way it looks right now.

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**Shek Ming Ho** - *Deutsche Bank AG, Research Division - Director & Senior Analyst*

Okay. Mary, the last question is on the semi-cap side, you talked about EUV being pretty solid and your long-term agreement with this EUV partner. Can you talk about some of the trends outside of the EUV and remind us what kind of lead times you have for this segment and if it's the same for EUV products and non-EUV products?

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**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

So Sidney, you said the -- can you repeat? You said the lead times?

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**Shek Ming Ho** - *Deutsche Bank AG, Research Division - Director & Senior Analyst*

Yes, the last part of the question is more about the lead times, because very clearly a lot of -- lot of concerns in the capital, the semi-cap side of the OEM side of demand. Just trying to get a sense from what you guys are seeing?

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**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

Well, first of all, we have seen an increase, a change in the forecast that we have seen over the past few months versus the forecast it was received in the past and we understand that these were primarily -- the increase in the forecast was that primarily driven by the elimination of bottlenecks. The supply chain of the EUV and customer and that wasn't us and so now we are enjoying the -- that specific bottlenecks being eliminated and then we can, we can take advantage of our capacity to increase the forecast. So we -- of course, we are supplying parts. They go into one laser, these laser pumps and other laser and the laser goes into the EUV tool. So we are pretty at the bottom of the food chain, if you like. And so the time that it will take for our product to make into the EUV system, will actually been pretty long. But we are definitely in terms of our component lead time, we are always shipping there, we have capacity available as it comes up, and as we see the demand coming from the end customer. So, at least from our standpoint, we don't see that being a challenge at all.

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**Gary Alan Kapusta** - *II-VI Incorporated - COO*

Let me add, Sidney. We go into this semiconductor capital market in a number of different -- from a number of different channels. Giovanni's comments as they relate to EUV are really exciting. In addition to that, since we go into the EUV market by 3 separate routes. In addition to EUV, our normal DUV that is immersion lithography, we have our normal, ongoing business. All we've seen is a continued steady increase in demand. And as far as the back end of the line goes, we have a number of new developments that we have underway for next generation back end of the line including NV factors and those types of products and we're using this time to qualify -- to develop and qualify our manufacturing chain so that when back end of the line demand increases over the next 6 months to 12 months, we're ready for that as well. We are not seeing any impact other than steady or increased demand across the product portfolio for that market segment.

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**Operator**

Our next question comes from the line of Mark Miller with The Benchmark Company.



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**Mark S. Miller** - *The Benchmark Company, LLC, Research Division - Research Analyst*

Congratulations on your quarter and guidance, it's refreshing compared to what we've heard so far this year for this quarter. Could you comment on the ROADM market, how that's going for you?

**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

Yes, we actually are pretty involved, particularly as you know, after the acquisition with -- of Kaiaam than we are today. We have seen definitely an increase in the demand and it was a gap that we had in our product portfolio and with the combination of required platform, I think we can see now a little bit more interest by customers. And there is clearly a -- the beginning of a demand for generally speaking within the management in the backhaul of 5G networks, particularly in -- with the first deployments in Korea and Japan. And so, we are somehow participating to that revenue opportunity. With a combination of the partners, we already had and as I said, with the addition of the acquired a platform.

**Gary Alan Kapusta** - *II-VI Incorporated - COO*

I would add to that -- good morning, Mark. Thanks for your comments. I would add to that, that across our portfolio, including the switches, but also the 980 pump lasers, the integrated passes, the optical channel monitors, we are seeing a very strong demand across the entire component segment of the market and also in the integrated sub-systems, including the amplifiers and in some cases line cards. We are really quite busy. And by any measure including the fact that we have 90% order coverage at this point in time for the quarter and taking on additional RFQs every day with people asking us if we can pull things in, is an exciting moment for us in this space.

**Mark S. Miller** - *The Benchmark Company, LLC, Research Division - Research Analyst*

Okay, in the terms of the silicon carbide, we realized we're just starting to ramp, what percent of revenues were 5G related this quarter, and where do you expect us to go, say, a year from now?

**Vincent D. Mattera** - *II-VI Incorporated - President, CEO & Director*

On silicon carbide, we -- first of all, we don't make a differentiation at least as it relates to our semi-insulating substrates because our customer at the moment is making GaN, is the market leader at GaN HEMTs. And their customer are deploying both 4G and steady increases in quantity, as well as preparing the way for 5G. So we don't make a distinction in our semi-insulating silicon carbide substrates as to which are for 4G or which are for 5G. They will enable both.

**Mark S. Miller** - *The Benchmark Company, LLC, Research Division - Research Analyst*

Finally, I apologize for the hectic morning. Could you give me the backlog again in terms of Photonics performance laser?

**Mary Jane Raymond** - *II-VI Incorporated - CFO, Treasurer & Assistant Secretary*

Yes, of course, it's \$480 million total for the company in Q1 and Photonics was \$193 million, Performance Products with \$170 million and Laser Solutions with \$117 million.

**Operator**

Our next question comes from the line of Richard Shannon with Craig-Hallum.

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**Richard Cutts Shannon** - *Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst*

I do want to touch on fiber lasers again, following up a couple of other questions earlier in the call. I think what IPG suggested on their recent call is they are continuing to see issues in China competitively, but they were going to be more aggressive there. I'm wondering if you are seeing any effects of that, whether your customers are reporting that and whether you're expecting growth in that market sequentially in the December quarter?

**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

Richard, this is Giovanni here. So as I mentioned earlier, we see very nice demand from a very broad and continuously growing set of fiber lasers and direct diode laser customers in China and are only. These players which just didn't exist, just maybe some of them just 5 or 6 years ago and that growth in China is pretty outstanding. And as I said earlier, we just are participating to that growth. We're enjoying by supplying to them in a way of components from the semiconductor lasers to just passive optics that are necessary for making the lasers. We're enjoying the growth with them and I think it is a new dynamic. And of course, other companies to which we don't necessarily supply the same kind of policy and then they have them internally, obviously are being challenged by the combination of our strength in technology components, and then the local marketplace in China enjoying the growth there with the wind industrial market.

**Richard Cutts Shannon** - *Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst*

Question on silicon carbide. I guess either for Chuck or Giovanni, is this market constrained in capacity today? Do you expect it to be for any period of time?

**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

I would definitely say that the -- we have been investing in capacity for the past several years, and we will continue. And so we definitely, I would say we are sold out. We've been sold out for a while and we feel we're going to be sold out for a while because -- in the future, because we have to ramp in add furnaces, we make our own furnaces, our proprietary furnaces, so we have to keep investing, but we definitely believe that it's got -- the market is constrained.

**Richard Cutts Shannon** - *Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst*

Can you give us a sense of how much you're attempting to grow capacity for silicon carbide in the next 12 months for this fiscal year, either way you want to talk about?

**Mary Jane Raymond** - *II-VI Incorporated - CFO, Treasurer & Assistant Secretary*

Well, as we talk about in terms of capacity expansion, our main goal is to -- anywhere in the company is to break bottlenecks. I mean, over the last 18 months, we've probably almost doubled the capacity. I'd say going forward, I would expect that we would increasingly expand, at least to keep pace with the market, which might be in the neighborhood of 50%, but the goal isn't that you take all your machines right and multiplying by 50%, right. I think the whole goal with us on the vertical integration strategy is to break bottlenecks. But we do expect to continue to see nice growth in silicon carbide and it is a market that allows for the capacity to go in as the demand develops as opposed to it all be in at once. So I would expect this to pretty much keep pace with that demand, if not a little bit ahead of it.



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**Vincent D. Mattera** - *II-VI Incorporated - President, CEO & Director*

I would add, for us everybody or everyone asks us about capacity all the time is, it's an important question and it's understandable. We have a technology roadmap, we have a product roadmap, we are focused on yield to throughput, not just solving capacity constraints by adding equipment, and we're focused on a road that can ultimately deliver the very best, highest quality silicon carbide substrates so that our customers can make the most reliable devices and their customers can make the most reliable inverters, so that their customers can make the most reliable cars. And all of that starts with the substrate, that's why it's so critical as a foundation for this entire transformation happening in the market.

**Richard Cutts Shannon** - *Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst*

My last question is on that 3D sensing. Actually a couple different sub questions here. You talked about having a strong growth last quarter on a year-on-year basis, wondering if you could tell us what you expected to grow here near in the December quarter? Any sense of customer profile -- number of customers that you're shipping to and whether you're dealing with or engaging on any world-facing types of 3D sensing opportunities in the mobile space?

**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

I would say that we are engaged in most if not all kind of applications out there. It's so diversified whether it's front-facing, rear-facing, whether it's consumer electronics, smartphones or whether it's cars, whether it's industrial applications, what is our own laser heads, where we integrate machine visions with 3D sensing for sim welding. And so far, there is a sim welding tracking. We have a very diverse set of applications. So it's kind of -- we have to wait and see which one will be the top performance terms of revenues so far. We are really busy and as a said to you in the script, we are in the process of being up to speed through qualifying our fab in the U.K., because we are -- we have basically run out of space and borrowing capacity in New Jersey with our Warren fab. So that's why we made that strategic acquisition. Some time ago, we anticipated this demand to come and it's taking time to obviously qualify the new lines, but I think we have put together a world-class vertically integrated, ATM fab capability that I think is currently paying dividends, and we continue to be a major growth engine for the company.

**Operator**

Our next question comes from the line of Troy Jensen with Piper Jaffray.

**Troy Donovan Jensen** - *Piper Jaffray Companies, Research Division - MD and Senior Research Analyst*

So a lot of my questions have already been kind of asked and answered here. I was wondering if -- maybe on EUV, I know you guys have been kind enough to give us another contribution that you guys get from silicon carbide from 3D sensing. Could you size how big EUV is for you guys?

**Mary Jane Raymond** - *II-VI Incorporated - CFO, Treasurer & Assistant Secretary*

So I think we said EUV was about 3% of revenue.

**Troy Donovan Jensen** - *Piper Jaffray Companies, Research Division - MD and Senior Research Analyst*

Okay. And how about -- maybe for Chuck here. I mean the telco market has been very, very strong for you guys for a long time. I think for the industry now it's primarily been 2 quarters. I want to just hear your thoughts on this, the sustainability of that. I mean, are we in front of -- this is for energy cycles, is this 5G deployments, just in the visibility or your conviction that the telco segment will remain strong.



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**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

Well, again, depending on the geography of cost of these all different dynamics, but we think this is going to last for quite some time until at least the -- especially 5G would be fully deployed. You just think about the number of base stations that 5G network, just for -- will be required in China. Talking about maybe up to a minimum base stations in China, they will have to be connected, traffic has to be routed and this is starting now. I mean, it's really the beginning. How fast this will happen, it's kind of a little bit of challenge to figure it out, but we believe that the combined demand driven by 5G, and then of course, all of the connectivity required being between and within data centers would also drive additional demand. So we think it is -- we believe it's quite sustainable, and there would be quarterly adjustments here and there, but I think the growth should be there for quite some time.

**Operator**

(Operator Instructions) Our next question comes from the line of Jim Ricchiuti with Needham.

**James Andrew Ricchiuti** - *Needham & Company, LLC, Research Division - Senior Analyst*

I'm looking at your Laser Solutions book-to-bill of just below 1, and I mean there are several pieces to that and I'm wondering if there's a way for you to help us think about the book-to-bill in the traditional industrial portion of that and you've talked about the fact that you're still seeing good strength in industrial. But I'm just wondering if there is any differences in the various pieces of that Laser Solutions business?

**Mary Jane Raymond** - *II-VI Incorporated - CFO, Treasurer & Assistant Secretary*

I do not think so. I mean, looking at it, I wouldn't say every single piece is the exact same bookings, but book-to-bill, I mean, but I'd say generally speaking, it's very, very steady across all the pieces that go into Laser Solutions.

**Giovanni Barbarossa** - *II-VI Incorporated - CTO & President of Laser Solutions Segment*

I just want to add, just keep in mind that a good portion of the Laser Solutions revenue is pretty much retail. We have a very large portion, which we call book and ship and so this develops typically throughout the quarters kind of very seasonal, but sometimes hard to predict, but it's within 24 hours kind of book and ship kind of dynamics. So they are different than anything else we do in the company.

**James Andrew Ricchiuti** - *Needham & Company, LLC, Research Division - Senior Analyst*

And just a follow-up question. I don't -- we don't normally ask you a lot of questions about your military business. But that was a fairly strong growth rate, and I'm wondering how we should think about that. Is this -- is this -- are you seeing the impact of the increased budget? Is this just more of a lumpy business where quarter to quarter we're going to see a lot of variability, where are we at the point where you're seeing some real sustained growth in that part of the business?

**Vincent D. Mattera** - *II-VI Incorporated - President, CEO & Director*

Yes, it's a mix of everything you asked. First of all, we do have -- our bookings can be lumpy. Our customers from time to time place very large orders with us and we report those as such. And then we may find the bookings roll off for the next couple of 3 quarters. What I would say is, this business, we expect to be a steady grower and an important part of the diversification of this portfolio. The transformative power of the technology that the -- that our customers are investing in and expecting, we are differentiated in many of those components. And so we have been working for quite some time on a roadmap that will enable our customers and as you know many of these programs were either thought about or are being -- many of the programs for the next 5 or 10 years are being conceived now. And we are an important part of those -- those discussions. We acquired



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our Optronics as a complement to gain the complementary technology that we need to unlock other elements of our portfolio. This is an important, exciting area and it's an area of focus that's simply going to increase.

### Operator

There are no further questions at this time, I would now like to turn the call back to Mary Jane Raymond for any further remarks.

### Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

Thank you very much, Sarah. We'd like to thank all of you for joining us today and I would say that this ends our call. We look forward to giving you an update on our second fiscal quarter for fiscal year '19 on our conference call that is scheduled for Thursday, January 31, 2019 at 9 o'clock in the morning Eastern Time. Thanks again for joining and have a good day.

### Operator

Ladies and gentlemen, thank you for participating in today's conference. This does conclude today's program. You may all disconnect. Everyone have a great day.

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