

Advanced Semiconductor Engineering, Inc.
4th Quarter 2017 Earnings Conference & Conference
Call
February 1, 2018
3:00 p.m. Taiwan Time

Kenneth Hsiang, Head of IR of ASE Group: Hello. I am Kenneth Hsiang, the Head of Investor Relations for ASE. Welcome to ASE Group's fourth quarter 2017 earnings release. All participants consent to having their voices and questions broadcast via participation of this event.

Please refer to page one of our presentation, which contains our Safe Harbor Notice. I would like to remind everyone on this call that the presentation that follows may contain forward-looking statements. These forward-looking statements are subject to a high degree of risk and our actual results may differ materially from these forward-looking statements.

For the purposes of this presentation, dollar figures are generally stated in New Taiwan Dollars unless otherwise indicated.

For today's event, Dr. Tien Wu, our COO, will be making a brief presentation. I will then be going over the financial results. Afterwards, we will have a Q&A session with Dr. Wu and Joseph Tung, our CFO. Following the event, our VP in charge of public relations, Eddie Chang, will be available to address the media in Mandarin Chinese.

And now, Dr. Wu, our Chief Operating Officer.

Dr. Tien Wu, Chief Operating Officer of ASE Group: Good afternoon, everyone. 2017 has been a very challenging and rewarding year for ASE. I would like to take this opportunity to thank all of you for all of your support to the company over the very challenging but rewarding year. I would like to give you a brief presentation.

What I'll do is I'll start with the ASE & SPIL transaction update. Here's a list of all the approvals we have received from government, namely: Taiwan, November 16, 2016; United States, May 16, 2017; and, finally China, on November 24, 2017. We have received the MOFCOM conditional approval with a two-year restricted behavior. For more details, please visit the MOFCOM website.

The key dates which will follow will be:

- Jan 27 to Feb 9: We will go through the electronic voting period.
- 2018 Feb 12: Both ASE and SPIL will have the EGMs.
- Apr 17 (tentative schedule): It will be the last trading day of ASE and SPIL.
- Apr 30: That will be the effective date of the new corp., which will be named ASE Industrial Holding Company Limited.
- In 2019 Nov. 24: If we've complied with all of the regulations, the MOFCOM conditional approval restriction will be expired. Two years.

I would like to give you a brief recap of 2017. We have achieved record high revenue at the Group level, as well as the business level. In 2017, the Group revenue came in as US\$9.6 billion, up 12 % YoY. In Q4 of 2017, the Group revenue was US\$2.8 billion, up 14% QoQ; the EMS revenue came in as US\$1.4 billion, up 31% QoQ.

We have seen clear momentums in growing markets. 2017 ASE Group SiP business grew 42% YoY. We do expect to see the SiP growth continue in 2018, which we will elaborate in the Q&A session. The bumping, flip chip, wafer-level packaging grew 11%; we will also see the same momentum go into 2018. We have seen good signs of the new applications, we have seen strength in the broader-spaced, general semiconductor device, such as analog, MCU, PMIC, sensors, MEMS in all kinds of new applications, which are a very encouraging sign.

The profitability has improved. In 2017, the IC ATM gross margin would have improved under the constant currency, which Joseph will talk a little more later. In 2017, USI gross margin expanded to 10.2% from 9.8%. 2017 USI net profit reached a record high at US\$189 million, which is +65% YoY. Just to give you a recap. 2017 was a good year for ASE Group.

What we have seen in the macro trends is the following. We have seen more system companies designing sub-module and SiPs. We have also seen more IC companies as well as OEM and ODM companies designing the SiP and the modules. That led us to believe the theme of ASE growth for the future - system in package - is in the right sector, in the right area.

As a result of the last 5 years of endeavor with all the customers, we understand that the industry needs an open design flow and design tools. Today, at 2:45, we have made a press release with Cadence, announcing the next generation of SiP intelligent design. I believe the press release can be found on our website as well as the press. In the next generation of SiP design tool, ASE closely collaborates with Cadence over the last four years, together with many of our customers coming up to a very efficient, effective design tool, which is sponsored and backed by the ASE manufacturing database that we have collected over the last few years. With this tool, we believe that not only we will be able to integrate advanced packaging, we can also use the same design tool leading to more complicated SiP format as well as with sensors, MEMS, we will understand the performance as well as the potential yield during manufacturing. This also can greatly reduce design cycle time and time-to-market.

With that, I would like to offer you brief 2018 outlook. In 2018, we're optimistic we will continue to drive top-line growth and margin improvement across EMS as well as IC ATM. We do expect a strong pick-up starting second quarter of this year. We will continue to drive SiP business growth. We have also seen strong design-in pipeline across communication, automotive, memory and high-performance computing.

In 2018, we'll also continue our investment in strategic technologies for growth, as well as strengthen the SiP-id collaboration with Cadence, as well as all of our customers. We'll continue to enrich technology portfolio with embedded substrate, fanout, 2.5D, as well as the other relevant SiP building blocks.

And finally, we would like to thank SPIL team. Over the past year, they have closely collaborated with us to go through all of the government regulatory approval. And we would like to, on behalf of ASE, we would like to welcome all SPIL team that we can join hands to start a new year for ASE and SPIL. Thank you.

Kenneth Hsiang: Thank you, Dr. Wu. With that, let's start the financial overview. I think we will take a slightly different approach for the numbers at least for this presentation. Outside of the Group results, we will try to focus less on reciting the displayed results which you can all read, and, instead, focus on whether we can add any color to the information presented.

So, second page. So, I have here the foreign exchange implication. Before we get further into the results, I want to spend just a bit of time to highlight the impact of the NTD/USD foreign exchange rate on our 2017 results.

Here you can see our Group and IC ATM revenues for the year on a US dollar versus NT dollar basis. Given our purchase orders are predominantly received on a US dollar basis, we believe the 12% Group and the 6% IC ATM revenue figures more accurately reflect our true business performance.

The chart next to the revenue chart shows the NT dollar fluctuation's impact on Group and IC ATM margins. Through internal analyses we approximate that for every 1 percentage point the NT dollar appreciates, there is a corresponding 0.4 percentage point impact to IC ATM gross profit margins. And, similarly, we approximate for every percentage point the NT dollar appreciates, there is a corresponding 0.3 percentage point impact to Group gross profit margins. So, here, given the 5.6% NT dollar appreciation, IC ATM gross margins received a 2.3 percentage point impact while Group gross margins received a 1.5 percentage point impact.

Thus, in a flat NT dollar environment, we approximate Group and IC ATM gross margins would have been 19.7% and 26.6%, respectively. This represents increases of 0.8 and 1.7 percentage points increases to 2016 Group and IC ATM gross margins.

As we mentioned, towards the beginning of 2017, we believed that we would be able to improve margins during the year. We continue to believe there is incremental room for margin expansion during 2018.

Page 3. On a fully consolidated basis, for the 4th quarter, the company delivered fully diluted EPS of \$0.71 and basic EPS of \$0.74. Total revenues for the consolidated Group increased by 14% to a record \$84 billion. Our packaging and EMS businesses were up 1% and 31% while our testing and direct materials businesses were down 5% and 3%, respectively. Revenues for our EMS business unit was a historical record of \$43.3 billion. Gross profit for the Group increased from \$13.8 billion to \$14.8 billion with consolidated gross profit margin declining to 17.6%. The margin decline is mainly associated with higher EMS revenue mix during the quarter.

Operating expenses increased to \$7.1 billion primarily as a result of increased SPIL transactional costs. Operating expenses, as a percentage of sales, decreased 0.8 percentage points from 9.2% to 8.4%. Operating profit for the 4th quarter increased \$0.6 billion to \$7.7 billion, with operating margins declining to 9.2%. The operating margin decline was mainly driven by higher seasonal EMS revenue mix.

During the 4th quarter, we had a net non-operating gain of \$0.2 billion as versus a net non-operating gain of \$0.7 billion the previous quarter. During the current quarter...the current quarter's non-

operating gain includes the following:

- Net gain related to foreign exchange and hedging activities of \$0.6 billion;
- Net interest expense of \$0.3 billion;
- Income from SPIL, net of purchase price accounting, of \$0.1 billion; and
- Other non-operating expenses of \$0.1 billion including a goodwill write-down.

Pretax profit for the 4th quarter was \$7.9 billion. Income tax expense was \$1.1 billion in the 4th quarter. This amount and its corresponding effective tax rate were flat with the 3rd quarter. During January 2018, Taiwan passed legislation which increased corporate tax rates by 3 percentage points. As a result, we will recognize a \$0.7 billion impact for the revaluation of our net deferred tax liability position in the first quarter of 2018. Further, we estimate our ongoing effective tax rate will increase by 2.2 percentage points because of this legislation. Net income for the 4th quarter was \$6.2 billion.

Page 4, quarterly results on a year-over-year basis. On an NT dollar basis, our 4th quarter Group-wide consolidated net revenues increased by 9% compared with 4th quarter 2016. When taken on a US dollar basis, these revenues grew by 14%. Our EMS business grew in excess of our IC ATM businesses during the period. EMS strength was across the board, driven by its SiP, seasonal and traditional EMS products. Our packaging and testing businesses with differing end product concentrations declined 2% and 10% relative to the 4th quarter of 2016.

It should be noted that in addition to the NT dollar appreciating 5% during this timeframe, the 4th quarter 2016, in retrospect, is considered an overproduction/inventory-building period. Consolidated Group gross profit margin declined 2.3 percentage points to 17.6% primarily as a result of higher EMS product mix. In a flat NT dollar environment, we estimate our 4th quarter Group gross profit margin would have been 18.8%.

Page 5. On a full-year perspective, total 2017 Group revenues of \$290.4 billion was a record—improving by 6% over 2016. As mentioned earlier, in US dollar terms, 2017 Group revenues grew by 12% over 2016. Gross profit margins declined 1.1 percentage points which was primarily attributable to NT dollar appreciation and higher EMS product mix. And, as mentioned earlier, we estimate that in a flat NT dollar environment, 2017 gross profit margin would have been 19.7%, improving 0.8 percentage points.

Page 6. Our 4th quarter IC ATM net revenues were, as expected, flattish with the 3rd quarter at \$41.8 billion. Revenues for our IC packaging business were up 1% while revenues for our testing and direct materials businesses decreased 5% and 6%, respectively. Gross profit improved 4% sequentially to \$10.9 billion from \$10.5 billion, with gross margins improving 0.9 percentage points from 25.1% to 26%. The gross margin improvement was fundamentally the result of improved efficiency and a product mix shift resulting in lower raw material cost products.

Operating expenses edged up 0.1 billion to 4.9 billion for the period principally as a result of higher transaction related expenses. Operating margins ended up 0.7 percentage points to 14.4%.

Page 7. As with the previous 4th quarter year-over-year comparison, we are comparing the current period with a period of inventory build and one which the NT dollar was 5% weaker.

- Our total IC ATM revenues declined 4%. On a US dollar basis, IC ATM revenue grew by 1% year-over-year.

- Gross profit was down 7% with our gross margin declining 0.8 percentage points to 26%. Without the effect of NT dollar appreciation, we approximate our IC ATM gross margin would have improved by 1.2 percentage points year-over-year.
- Operating income was down 6% or \$0.4 billion with operating margin down 0.3 percentage points. Our operating margin decline was again principally attributable to NT dollar appreciation.

Page 8, IC ATM on a full-year. From a total-year perspective, our IC ATM revenues were relatively flattish with our packaging and direct materials businesses growing 1% and 11% while our test business declined 3%. On a US dollar basis, total IC ATM revenues grew 6%. The gross profit and margin movements are again primarily due to NT dollar appreciation. And, as mentioned earlier, in a flat NT dollar environment, we estimate IC ATM gross margin to be 26.6%, representing a 1.7 percentage point improvement as compared to 2016.

Page 9, packaging. During the 4th quarter, our packaging revenue improved 1% sequentially and was down 3% year-over-year to \$34.3 billion. On a US dollar basis, packaging revenue was up 2% year-over-year.

Our packaging gross margin improved by 1.6 percentage points, sequentially, and was down just 0.2 percentage points year-over-year. We believe that this is a significant accomplishment especially given the NT dollar decline during the year. Sequential margin improvement was mostly attributable to improved factory efficiency and a lower raw material product mix. Year-over-year improvement is primarily attributable to improved factory scale efficiencies.

During the quarter, capital expenditures were US\$103 million, composed of wafer bump, fan out and copper pillar equipment, at US\$46 million; and common, SiP and wirebond equipment, at US\$57 million.

We exited the quarter with a total of 16,076 wirebonders in operation. 8-inch wafer processing capacity remained at 104K wafers per month and 12-inch wafer processing capacity, including bumping, fanout and copper pillar, remained at 128K wafers per month.

Page 10, test. During the 4th quarter, test revenues were sequentially down 5% to \$6.6 billion. On a year-over-year basis, test revenues were down 10%. On a US dollar basis, year-over-year test revenues were down 5%. The US dollar revenue decline was principally the result of a major customer switching to a consigned tester business model. Under a consigned tester business model, our customer bears substantially more business risk; however, this results in lower revenues for our test business.

Test gross profit declined \$0.2 billion sequentially with test gross margin down 1.2 percentage points sequentially and down 1.8 percentage points year-over-year. Gross margins were down sequentially principally as a result of decreased loading during the quarter in a semi-fixed cost structure. Test gross margin declined year-over-year principally as a result of NT dollar appreciation. Outside of NT dollar appreciation, our test gross margins would have, instead, improved 0.4 percentage points year-over-year.

Overall, cost of services for test declined 0.1 billion sequentially and 0.3 billion year-over-year to \$4.2 billion. Our blended test utilization rate on a percentage basis decreased to the low 70's. Capital expenditures for the test business were US\$28 million in the fourth quarter. During the quarter, we added 61 and disposed of 40 testers, ending with 3,760 testers.

Page 11. During the 4th quarter, our materials business unit had revenues of \$2.1 billion, sequentially and, year-over-year, down 2%. On a US dollar basis, our materials year-over-year revenue would have improved 3%. \$922 million of revenues was from sales to external customers. This amount is a 3% decline as compared to the 3rd quarter. Our internal self-sufficiency rate, measured by value, remained at 25%. Gross margins were down by 0.9 percentage points sequentially and 1.6 percentage points year-over-year to 12.2%. The margin decline is in part the result of NT dollar appreciation and a higher manufacturing cost-oriented product mix.

Page 12. Sequentially for the 4th quarter, our market segment movements were not particularly dramatic, with communications decreasing a percentage point and computing increasing a percentage point.

Looking over the last 2 years, it does appear that the communications segment is becoming a smaller part of our revenues. This segment shift is not so much about the communications business shrinking in as it is about new generations of products beginning to ramp. Smartphones are the common platform in everyone's pocket. From an IOT perspective, the smartphone is becoming the ever more robust remote control to people's houses, offices and commerce. In particular, we see sensors and AI-type products like autonomous driving, which extend the limits of human capabilities and senses.

As mobile phones allowed people to communicate with people in new ways. We are seeing products which implement AR and VR allowing people to interface and communicate with the world of machines in new ways. Even passive forms of entertainment are increasingly being antiquated. Ask yourself this question: Who sits in front of a television at a set time for their weekly sitcom anymore? Streaming, live feeds and social media are examples of things increasingly driving servers and data centers to upgrade to offer more active and dynamic information. We believe we are on the cusp of the next wave of electronics. More units. More I/O's. More connections. More product complexity. More business for ASE.

Page 13. Here you can see the results from our EMS business. During the 4th quarter, we had record revenues for our EMS business unit, at \$43.3 billion. This is sequentially up 31% and up 25% year-over-year. The revenue growth was driven by various segments including consumer, communication, industrial, storage and automotive electronics products.

Our gross profit climbed 17% sequentially and 11% year-over-year to \$4 billion. As we expected, EMS gross margin declined to 9.2% from 10.3% sequentially as higher volume/lower margin product ramped during the 4th quarter. Relative to the previous 4th quarter, we had lower-margin...we had more lower-margin/high-volume products. We remain positive on our EMS business' prospects and expect positive growth momentum to carry into 2018.

Page 14. Here you will note that our consumer segment continued its 3rd quarter strength into the 4th quarter. During the 4th quarter, our consumer segment accounted for 32% of our revenues,

climbing 6 percentage points. And, even though computing, automotive and industrial segment shares were either flat or declining, from a dollar perspective, each segments' revenue increased. The EMS business' pick-up in the 4th quarter was seasonal but definitely broad-based.

Page 15, balance sheet items. At the end of the quarter, we had cash, cash equivalents and current financial assets of \$51.9 billion. Our interest-bearing debt decreased from \$82.5 billion to \$76.9 billion at the end of the quarter. Total unused credit lines amounted to \$174.2 billion. Our EBITDA for the quarter was \$16.1 billion.

Page 16. Machinery and equipment capital expenditures for the 4th quarter totaled US\$142 million, of which, US\$103 million were used for packaging, US\$28 million, testing, US\$7 million for EMS, and US\$4 million for interconnect and others.

For the full year of 2017, we spent a total of US\$639 million for CAPEX, of which, US\$468 million was for packaging, US\$134 million for testing, US\$26 million for EMS, and US\$10 million—US\$11 million—for interconnect and others.

Total-year CAPEX came in slightly below where we expected. Much of this has to do with a sizable chunk of CAPEX originally scheduled for 2017 being deferred into 2018. With that said, from a standalone entity perspective, we do expect our 2018 capital expenditures to continue our pattern of being above previous-years CAPEX but being below depreciation and amortization. In US dollar terms, EBITDA for the quarter was US\$537 million.

Looking out into the first quarter, we are of course going to be busy with all the logistical activities involved with preparing for a combined entity. If we hit all the dates on our tentative schedule, our first quarter earnings release should be close to the relisting date of the new ASE Industrial Holding Company. We are looking forward to and are excited by the opportunities of ASE and SPIL functioning under the same umbrella.

From the business perspective, we see a positive overall business environment for 2018. We see an above-seasonal pattern developing during the first quarter. And, at this time, we see a strong seasonal broad-based upswing starting in the latter part of the 1st quarter and carrying into the 2nd quarter. Cryptocurrency mining does play a part in this but even without such impact, we still see a healthy seasonal pick-up in front of us. Of course, the end markets will always dictate whether what gets made ultimately gets ordered and then re-ordered.

There is one note of caution though. The geopolitical environment appears to be creating extra volatility in foreign currencies around the world. As we've all seen, the NT dollar is continuing to be impacted. We don't believe we can properly forecast the impact of such movements. And, as such, we have provided our business guidance outside of such potential impacts.

With that, our guidance: In US dollar terms, IC ATM 1Q18 business should be slightly ahead of 1Q17 levels. Excluding foreign exchange impacts, IC ATM 1Q18 margin should be slightly improved versus the 1Q17 levels.

EMS. The 1Q18 EMS business should be slightly below 3Q17 levels, and EMS gross margin for 1Q18

should be slightly above 4Q17 levels.

Let's start our Q&A session. Question? This gentleman in the front. Name and company please.

Bill Lu of UBS Securities: Yes, hi. Bill Lu, UBS. Happy new year. So, it's been a year, and TSMC and UMC have both said that this year they expect semi industry to grow mid-single digits, foundries slightly outgrowing that. Can you give us your outlook for the assembly and the testing industry?

Joseph Tung, CFO of ASE Group: I think we're pretty optimistic about the year, and from the forecast we're getting from our customers, it seems to be that we'll start off with a above-season, seasonal, first quarter. And going into second and third, we'll see pretty strong uptick both on the top-line. I think the momentum we're seeing is—aside from communication—I think all the other sectors seem to be going pretty strong. And if, with typically OSAT grows two times the industry average growth, and we're pretty confident that we'll be staying ahead on that front.

Bill Lu of UBS Securities: So you're saying better than 5% then, right, for the industry?

Joseph Tung: I'm not saying. I'm implying.

Bill Lu of UBS Securities: (Chuckles) Okay. I guess, you know, what is a little confusing to me is TSMC saying that smartphone is flat, but HPC, bitcoin, these other drivers are taking off. I'm not really sure how that impacts the assembly and test industry because these businesses are, you know, smaller volume but very high ASP, right? So you would think that that's not so good for the packaging sector. That's more unit-driven. At the same time, these businesses are not as price-sensitive as, for example smartphones. How do you think about that change for your business?

Dr. Tien Wu: I think in Q4 2016 and Q1 2017, we have seen some clear buildup at the inventory for the cellphone. I think in 2017 we are actually working out all of the inventory level. So, entering into 2018, relatively speaking, we're much more comfortable about the inventory level, comparing to last year. So that comment was specifically for the cellphone.

So, let me address on the others. You cannot just think about packaging as a standalone component business. What we're implying here over and over again, and we've been saying this to all investors and I believe this is one of the reasons why we would like to invite SPIL to join hands with ASE. If you only focus on the legacy, which is within the current framework, then you can debate about the mobile phone application, you can debate about the chipset, you can debate about the number, the reduction principle. Three becomes two; two becomes one. And then you'll have a different picture about semiconductor.

But if you really look back to semiconductor over the last 50 years, it's always about innovation. The application that will be dominating in the next 10 years, we simply cannot see. What we're seeing today is we have more OEM, ODM, we have IDMs, and the system house do designing numerous new type of application. And those applications are real. Robot, AI, automation, electrical vehicle. We're seeing uptick on the standard MCU and power management chips that we already understand. We pretty much know what their volume, but we're seeing uptick of even the most traditional volume. And memory, MEMS, sensors. Not only we're seeing the new devices, we're seeing a new combination of different kind of devices for new application. And that really gets us very excited.

So, mobile phone we understand, and we're not gonna comment about the mobile phone, the smartphone, the 5G. I think too many people understand that already. But what we're seeing is from

the packaging universe, if you only focus your attention on the legacy, you'll have one set of resolution. But the world, the government regulation, and us, we have absolutely zero restriction on creativity and innovation. And that should be the area we should all embark, engage.

In 2018, I think you'll see a strong uptick of the ASE. I have to use the packaging, but the packaging with a slash, a nuances, of new business application, new model, and so we're very excited.

Bill Lu of UBS Securities: Thank you very much, Dr. Wu. Can I just sneak in one last question? So, margin, if you look at it in terms of US dollar basis, was quite good. Can you talk about the drivers behind that, maybe in terms of, you know, cost cuts, in terms of pricing environment, in terms of volume? What are some of the major factors?

Dr. Tien Wu: The pricing environment has always been as competitive as ever. The cost of goods sold - we all understand some raw material prices gone up. So the market environment has always been friendly or unfriendly, as always the stay point, is always like that. What we're seeing today is, because of the scale, because of automation, because of the factory process efficiency improvement, you will see a continue drive for output, mainly the efficiency. And we're pretty confident that we have seen good results starting from the rebalancing effort in 2016. I think that rebalancing effort, moving into 2017, even with the very, very adverse NT dollar environment, I think in 2018, if there's no major shipment changes, we should see another incremental improvement on our efficiency.

Rick Hsu of Daiwa Securities: Hi. Happy new year, Dr. Wu, Joseph, and Ken. This is Rick from Daiwa Securities. My first question, just to follow Bill's question, about your optimistic outlook for this year. I think apart from the application you mentioned earlier, do you foresee any market share gain or market share recovery for this year to drive your momentum?

Dr. Tien Wu: The market share gain is a very dangerous word, alright? The—what we are confident is the business demand from our end customer, and also our confidence in the pipeline, because of the technology content and the cost model that we have provided. Now, right now if you really look at the assembly and test world, you have a new emergency of—you have new emergence of subsystem or SiPs. And how do we really group that under the traditional component business? Or is that a EMS type of business? It's neither. So in terms of market share gain, we really have to further quantify that as new application, new devices that did not exist before. And those opportunities are in very, very large scale. If you can find the end customer that can drive the market, and have consumers willing to buy it. So, market share gain from that aspect, yes. But in terms of traditional business, becomes very, very convoluted, alright?

Rick Hsu of Daiwa Securities: Okay, um, second question is, I think we also talk about the new business, especially like HPC, this type of leading-edge products. But as far as I know, right now most of this product's leading edge, when it comes through the backend, is still quite, you know, captive, captive foundry space, including, for example, like inFO, or even CoWoS. So, I'm just wondering how you guys get a bus—no, get a piece of business from this?

Dr. Tien Wu: I will not comment on specific technology because it's too sensitive. But if you look at a segment, there's always reason why end customers would like to do turnkey at the beginning. Because the yield, the cycle time, the time-to-market, we understand that, alright. However, what I would like to advise is...the...to look at the real business, you have to look at the business at

saturation and maturity. If you always look at the leading edge, I do understand we're making a certain comment. And maybe the business rationale are completely correct for the new business.

What I would like to advise you is to look at the broader-based foundry, a broader-based business requirement, from much broader-based customers, then you ask the question: what would be the technology that can serve the mature market when it scales. I think those are the...in terms of role and responsibility, there's always overlap between IC, between OEM, ODM, between foundry and the...and packaging house. That overlap on the NPI, on the initial yield improvement and technology development, that is rightly so. We have to have that, otherwise there is no hand-shake from the whole ecosystem. But my comment has always been you have to look at a business at a scale and maturity, what would be the right business model, and who should be with what responsibility. Right? By that aspect, even high-performance computing on the fanout, on the 2.5D, I believe there's a broader base demand by different customers at different price points and different requirements, and different ownership about the sourcing, and also about all of the business decisions. So I think there's a place for all sectors.

Rick Hsu of Daiwa Securities: Okay, um, thank you so much. One last question is housekeeping. I think Ken had mentioned some answers, but I still want the whole picture. So your, you know, your utilization rates for Q4, among the three—packaging, testing, and, you know, bumping? And also...how many wirebonders you added in Q4? And how many you dropped, you disposed in Q4? And also the guidance, utilization guidance for Q1? Thanks.

Kenneth Hsiang: I actually misspoke on the testing utilizations. Actually, the mid-high 70s. Wire bonding was in the low-80s, non-wire bond was in the mid-80s. And then, substrate was mid-70s.

Rick Hsu of Daiwa Securities: Sorry, the substrate is how much?

Kenneth Hsiang: Mid-70s.

Rick Hsu of Daiwa Securities: Mid-uh, mid-70s. And the wire bond is at low-80s, right?

Kenneth Hsiang: Low-80s, yes.

Rick Hsu of Daiwa Securities: Okay. Thank you.

Ken Hsiang: (Whispering) Q4? How many bonders did we add?

Joseph Tung: I think we added three bonders in Q4, if that counts.

Kenneth Hsiang: That's a lot.

Sebastian Hou of CLSA: Thank you, Sebastian from CLSA. My first question is TSMC talked about semiconductor industry grew 9% in 2017. But if I calculate ASE, the IC ATM business in US dollars terms, probably around 6% to 7%. SPIL, even lower than that. Does that mean that...so, what's your numbers estimated for the OSAT industry growth in 2017? And why ASE, and both ASE—or probably

you cannot comment on SPIL now—but just ASE, lower, why, why is that the case? Lower than that?

Dr. Tien Wu: If you look at our business model, we rely largely upon our end customer. So if the 9% in 2017, logic semiconductor growth, is correct, then obviously, we undergrow, comparing to the industry, which means that some of our end customers, they basically undergrow, comparing to the industry in 2017. And that would be the explanation. Alright? And the...we cannot comment on specific customers, but the beginning of 2017, we have seen some slower demand pick-up by some of our customers, mainly in the communication area. Alright? However, if I follow the same logic, I would say that in 2018, we're cautiously optimistic that trend would be reversed. In this industry we don't always go by year-on-year. But if you look at over three to four, five years and ten years period, I think that relative comparison is pretty accurate.

Sebastian Hou of CLSA: Okay. So...is that more because...you expect your customers will have...will gain more share this year, so indirectly you benefit? Or is it because a lot of the IDM, they are so tight right now, so the excessive demand they have to outsource so you benefit, which one?

Dr. Tien Wu: I think both.

Sebastian Hou of CLSA: In terms of...second question is that earlier you mentioned about you have the high confidence for demand pick-up in second quarter and third quarter. I guess smartphone is still weak this year, presumably, so which application especially do you expect, and also that give you this high visibility for the pick-up in three to six months from now?

Dr. Tien Wu: Just a clarification, we did not say smartphone is weak.

Sebastian Hou of CLSA: Okay, so you...

Dr. Tien Wu: I did not say that. And I don't want to comment whether smartphone is weak or not. I can only comment on my end customer, the forecast, and the solid forecast demand, they gave it to us. And that actually includes smartphone, alright, so I actually cannot comment on that. I have seen strong in electrical vehicle, power devices, and of course the high-performance computing, or the cryptocurrency. We're seeing very broader base, and also optical sensors, and also memory. I will not comment...I would not comment, I would not give you a comment yes or no, up or down, on the smartphone. That question is just too sensitive, and I do not have enough information to make that comment.

Sebastian Hou of CLSA: Okay. So you mentioned about memory. So is it the discrete memory packaging or the memory goes with other logic?

Dr. Tien Wu: Both.

Sebastian Hou of CLSA: Okay. So is DRAM, NAND, or smaller density?

Dr. Tien Wu: It will be in the generic memory terms, in a hybrid, in a more advanced packaging type of format. It will not be the component level as we knew before.

Sebastian Hou of CLSA: Third question is on the capacity and...Do you experience or do you see any tightness in the capacity, or certain type of the packaging technology?

Dr. Tien Wu: Yes, we do. That's why, I think Ken commented, in this year, we do expect the CAPEX number to pick up. I'm not exactly sure how specific can we be, but this year we do expect to spend more CAPEX. And as a matter of fact, the...I'm not even sure we can talk about the CAPEX number, the CAPEX number will be the...in Q1, Q2, we will spend a good amount of CAPEX to ramp up the capacity, so it's real.

Sebastian Hou of CLSA: So can I ask in more details about the tight capacity is mainly in wire bonding or bumping or...in which packaging technology?

Dr. Tien Wu: I think you have to assume it's everything.

Sebastian Hou of CLSA: Last question from me is...that...I'm not sure if your early comment about the cryptocurrency mining impacts or demand...I wondered how...how does that impact your above-seasonal first quarter? How much is driven by that?

Dr. Tien Wu: It's part of the demand that we had. I'm not sure I have...I'm not sure I have the freedom to give you what percentage of our revenue. And I'm not even...have the knowledge to explain what the cryptocurrency, in terms of next ten years' outlook. But I only know the demand is very strong now, and the question is: do we have the supply chain? Do we have the capacity? And do we have the right margin structure to support that demand today. And how much confidence do we have about the requirement, the demand for the next two quarters or the next four quarters. And those are the judgment based on the capacity allocation, based on capacity utilization, the margin structure, then we will make a decision: who do we support?

Sebastian Hou of CLSA: Okay. So do you...how about...I think no one can predict that in ten years, how about just for this year?

Kenneth Hsiang: I don't think you can predict that, even for the year, right? Where do you think the bitcoin price is gonna be at tomorrow?

Dr. Tien Wu: No, no, I think what Sebastian is asking is, maybe if I know, is do we think the demand, at least for the packaging, is real for 2018? The answer is yes. The demand is real.

Sebastian Hou of CLSA: So if I tie this with your capacity expansion, are you adding capacity, or spending money for this incremental demand? Or no?

Dr. Tien Wu: We are expanding capacity for all customers. And they're part of it. I am not in the...I don't think I can give you a comment, are we spending CAPEX specifically, only for a particular customer in a particular sector about two quarters? I will not make that comment. But when we make a capacity expansion, we will look at the risk profile, ask what's the overall demand profile, are we buying the general capacity that we are confident, one year, two years, and five years out,

throughout the depreciation period. Do we have a good probability and confidence we can utilize in the right investment return. And the answer is yes. Okay?

Sebastian Hou of CLSA: Thank you.

Kenneth Hsiang: Do we have...okay, Bill?

Bill Lu of UBS Securities: Just a couple of follow-ups. Can you talk a little bit more about this SiP-id platform, as far as how many customers you have working with you on this platform right now?

Dr. Tien Wu: So I can tell you that in the last five years, you understand the ASE thesis has been SiP's brand new. It's fantastic, we're in the right position, alright, so I don't need to repeat that. Part of the issue we have dealt with is whenever we start working with customers, they love this technology, they love the...the projected performance, form factor, yield, integrated design, and also time-to-market.

The difficulty has been largely they do not have the right design tool. Now, if you were an ODM/OEM, a system guy, you really do not do the IC chip design. If you're IC design guys, you really don't do the PCB design. Both sectors, even if you know both, adding the exposed window for optical sensor, adding the conformer shielding, adding the built-in antenna, adding the RF power, low power, high power, latency, MEMS, memory, most people got lost, they don't understand the boundary, the ground rule, what if I do these ten components in A format, in B format, what is the yield projection? They start doing something random. And we have to calibrate it, explain that "you cannot do this, you cannot do that". Eventually you start building prototype and you realize you have a problem, especially in the RF. In a certain new form factor, that no one has experience before. So people start playing with all kinds of DOEs, so in the last five years, we've gone through hundreds of new product NPI with everybody. The demand is there, but the cycle time has been laborious. And also in the chip layout file, you send it to PCBA, you send it to SiP. You're not compatible. You got to do manual check.

So we finally get together with Cadence. We talked to Cadence about two and half years ago. And we put in a lot of engineers, worked with the Cadence team. We together lay out all my customers' issues, and start piecing together the ASE ground rule on PCB, on layout, on all kinds of experience that we already have. We understand this is the way you should do it, this is the way you should not do it. And Cadence, being the number one, they understand. They start piecing all of these together. So right now, the SiP-id, in the simplest way to understand, it is something you can design from beginning to end, using exactly the same platform. You don't need to change data file. They understand the beginning to the end. Whenever you want to make a software upgrade, design upgrade, the whole thing get changes right way. So, the simple fact that you have a common platform, you have the same template and format, you will save months in design time.

Now with this, our customer as well as the industry, they will have the freedom to start designing something out of their current experience-base. You have to understand that: the definition of SiP - it is something...there's a better, more efficient application that does not exist today. However, most of the component, the building block, is already exist, and much lower cost. So by doing this, we

believe we create a common design platform that can open up the imagination of the designer. I think the key thing is, you know, we have to let designer to use their imagination and help us. But this, I believe, is really a major milestone in this industry because this is the first one substantiated by the real manufacturing, empirical database and ground rule. And then all of the designer at all levels will have something they can use.

Bill Lu of UBS Securities: If I take that one step further, if you look at the SiP growth this year. Would it be fair to say that you've got some new customers that's layered into the growth? Or is that going to be later, and this year it's still gonna be your original customers?

Dr. Tien Wu: I think the...both answers are true. We will have multiple customer. The question really now is what application, what volume. And those are the area that we have struggled for the last five years. We were trying to get this and jump start it. We know this technology is good. It's good for the industry. It would be embraced by everybody. But the question now is: how do we really do this? Right? You really have to understand that. For any kind of emerging market, somebody has to take leadership. Infrastructure, design platform, is part of the leadership. What ASE would like to do different this time is we want to, you know, just, put a flag there: SiP is ASE. And this is the way we will work with everybody in the world to create the building block. Cadence on the design flow; TDK on the embedded system; and work with, you know, the other key players which we announced over time in terms of different geography, different business model. And this is really the campaign that we'll do for next ten years.

Bill Lu of UBS Securities: Is this, uh, exclusive? Can Cadence use the same platform and, you know, give it to somebody else?

Dr. Tien Wu: Okay. The way we do that is there will be a twelve-month period where ASE exclusively uses this with all of our customers. However, with the agreement of ASE, Cadence can sell the same tool. We're not trying to be parochial so that only ASE can use it. That was not the intent. However, I do need a twelve-month lead time for all of my customers to start enjoying this. And after twelve months, with the agreement of ASE, anybody can use it—that was the whole concept.

Bill Lu of UBS Securities: Sorry, I'm gonna ask you a question on the ASE-SPIIL merger. I know you're limited by what you can say, but the MOFCOM approval was with conditions. Can you just talk a little bit more about within the next two years, what you can and cannot do just in terms of, you know, synergies, or engineering costs, and all the good stuff?

Joseph Tung: Well, I think to put it simply, I think the restriction is really just put on us so that we remain as an independent operations between the two of us for two years. And we don't particularly feel very, very strenuous about complying with that. Because, you know, even under ASE itself, we have different profit centers in different sites, so we're very used to that kind of model. And adding SPIIL into the picture, you know, doesn't really change the fundamentals of how we work. However, with internal competition, of course, still exists, there's certain collaborations as well. And mainly it would be in the R&D area as well as in, to some degree, in terms of capacity, alignment, that sort of arrangement. So the restriction or the plan that the MOFCOM gave us does provide some flexibilities in these two areas. So I think given time, I don't...I can't tell you exactly when and how much, and

you know...or how we can achieve whatever synergies that can be created doing this restricted period. However there is room for us to collaborate. And you know...I think we're not in a hurry. I think we will let things progress naturally. And it will take some time for us to get used to each other and work together gradually.

Eventually we see good potential of synergies coming out of this combination. But, you know, saving a dollar here or a penny there, it doesn't make us rich. I don't think that is really the main purpose for us to have this combination. I think it's really for the longer term. I think eventually we need to have the scale to meet the challenges coming in the next five to ten years. We're seeing consolidation happening in our customers. You know customers they're getting much bigger, getting much more leveraged over us. We're seeing even in our own segment, we're seeing competitors are consolidating with each other as well, like JCET, STATS ChipPAC, Amkor buying J-Device, Nantong bought AMD facilities, and so on so forth. So you know a lot of upcoming challenges in front of us, and scale is really the way for us to meet those challenges. I think that's the ultimate goal for us.

Bill Lu of UBS Securities: Sorry, one last question. This is a follow-up on Sebastian's question, but if you look at HPC—I know you don't want to define bitcoin—but if you look at HPC overall, what is that as a percentage of your sales?

Tien Wu: We don't have the number.

Sebastian Hou of CLSA: One follow-up on the—if I can—on the, the issue with the upcoming merger with SPIL. Just want to clarify...So Joseph you mentioned that MOFCOM allows some flexibility in R&D and capacity alignment.

Joseph Tung: Uh yes.

Sebastian Hou of CLSA: Okay. So if I read through...I've read through the official documents from MOFCOM—sorry, I want to read this in Chinese to make sure that I don't misinterpret what is said because it allows some...some rights between you and SPIL during this restriction period. One of that is said that: 日月光和矽品研發相關計畫安排管理：在對方研發力量進行整合各項方案，可以在委員會協調。第一個部分。第二東西他提到的是雙方從事的封裝測試服務之外的業務相關事項，也可在這個委員會協調。

So my question is on the first related to R&D, the second related to non-packaging business—non-IC-packaging business—so I think Joseph you already talked about this: some flexibility on R&D integration. The second is that I wonder...the non-IC-packaging business cooperation—does that mean that SPIL can work with something with USI?

Joseph Tung: I think both of us can work with USI. There's no restriction particularly on that. It's just that if SPIL wants to work with USI, it has to work on its own. You know, without all three of us teaming up together. I think that's what the...that's what the restriction is about. But for that really is that...the reason why we have that clause in there is because at the holding level, we wanted both companies to kind of focus on its core businesses. So if one side wants to do something that's...you

know, considered first of all non-core or not even strategic, you know, the holding company need to have a say on that. I think that's basically why we have that clause there.

Sebastian Hou of CLSA: Okay, so how about the material? We know that ASE have the internal material substrate. So does that mean that SPIL can also...

Joseph Tung: If it's under a normal business transaction, you know, our substrate material can sell to whoever...including SPIL.

Sebastian Hou of CLSA: So, go back to the first flexibility that MOFCOM offers on the R&D integration. So, does that mean that there...before November 2019, we could also see some R&D efficiency improvements reflected on your numbers?

Joseph Tung: We will certainly hope so. Yes.

Sebastian Hou of CLSA: Okay, thank you.

Rick Hsu of Daiwa Securities: Hi, it's Rick again. Just a little...one little question. So when you say your...uh, the holding company will start effective on 30th April, and the new share will be also listed on same day, right?

Joseph Tung: Um-hum.

Rick Hsu of Daiwa Securities: Okay, thank you.

Joseph Tung: I think timing-wise, after the EGM on February 12th, we will start the process of both delisting and listing—delisting of ASE Inc. and SPIL, and the listing of the holding company eventually. And all will happen at the same day, on April 30th tentatively. On April 30th, ASE Inc. and SPIL will be delisted while the holding company will be listed.

Rick Hsu of Daiwa Securities: So I want a little clarify...clarification. So it's a dual listing right, both com...in Taiwan and in US, right?

Joseph Tung: Yes.

Rick Hsu of Daiwa Securities: Okay.

Kenneth Hsiang: Do we have any questions? I have a...I have a caller online, Steven Pelayo. Steven?

Operator: Yes, Steven is on.

Steven Pelayo of HSBC: Okay, great, thank you. I don't know if you're aware, but the audio was not working for the first 35 minutes of the call. So I apologize if this has been addressed. I also appreciate that if you and the management can maybe release transcript or something like that. But I'm curious on the CAPEX, you talking about increase in 2018. Can you just provide some qualitative

comments on that? ATM vs. EMS? Investing more in Taiwan vs. China? Particular package technologies? Can you give us some little bit of color on where you want to direct that increasing CAPEX in 2018?

Joseph Tung: I think CAPEX-wise for the year...as we said, it will be higher than last year but not over the depreciation and amortization put together. I think this time around, because of some push-out of CAPEX from last year, I think the total number will be much closer to our depreciation and amortization number. I think the bulk of it will still in pack... in Taiwan as well as in packaging although the...I think for test, it will be similar to last year's level. And there will be some spending on the...some of the new projects that we'll be taking on.

Steven Pelayo of HSBC: Given all the plans for increased foundry capacity in China over the next year or so—I think there's, I don't know, five to ten fab projects in various stages—are you going to be directing more CAPEX into the mainland as well?

Joseph Tung: Yes.

Steven Pelayo of HSBC: Can you quantify maybe a little bit relative to this year vs....(someone chuckles) ...next year?

Joseph Tung: Well I think right now the output from our China factories is about 16% of our overall. And we will just make the necessary CAPEX as we see the...the business go in China.

Steven Pelayo of HSBC: All right, maybe if I could just sneak one more question in. I'm curious about the new customers. You guys talked about ODMs, OEMs, system houses—how do we qualify that? Is there some way you can help us understand—I don't know if I heard an answer to Bill's question on what percentage was total HPC business, but if I'm looking at companies like Google and Microsoft—they do their own chip—how do I try to quantify that? Can you help us maybe color on what these newer customers might represent for you guys?

Joseph Tung: I don't think we can say that...

Dr. Tien Wu: We typically grew customer in the...we have system customers - the two examples you just refer to, I think they would be quantified as the system customers. The...also have some, you know, ODM, OEM customer. They're typically like the EMS or the ODM with their own brand. That'll be the second category. Then we also have the IC design house that could be the IDM and could be the fabless, and they sometimes would also like to design their own module for whatever reasons. And by the way, we did not offer the percentage of the HPC.

Steven Pelayo of HSBC: Oh, you did not. Okay. Can you offer how much revenues from system houses? How much you think that can grow this year?

Kenneth Hsiang: Um, that we don't. No, right? We do?...(softly) percentage of system...(whispering)

Joseph Tung: From a group perspective...

Steven Pelayo of HSBC: Okay, thank you very much.

Joseph Tung: I think it's over 20%.

Steven Pelayo of HSBC: Okay, over 20, thank you.

Kenneth Hsiang: Any additional questions? I guess that's it. Thank you very much for attending the ASE 4th Quarter 2017 conference call and earnings release. See you next quarter.

<End of Conference>