ALPHAWAVE IP GROUP PLC
Company Number 13073661

ALPHAWAVE SEMI
AUDITED RESULTS FOR THE YEAR ENDED 31 DECEMBER 2022

- Invested US$439m[1] of cash in the acquisitions of Precise-ITC, OpenFive and Banias Labs to extend and expand technology leadership in connectivity silicon technology.
- Technology leadership and product portfolio underpin broader customer base of 80 (FY 2021:20)
- 28 design wins with two in 3nm; 75% of Licence and NRE bookings from North American customers (FY 2021: 21%)
- Backlog excluding royalties of US$365m (FY 2021: US$169m)
- Total headcount of 695 (FY 2021: 149)
- Revenue doubled year-on-year to US$185m reflecting 33% organic growth and US$66m revenue[2] from the acquisitions of Precise-ITC and OpenFive
- Operating profit of US$38m; US$36m in FY 2021
- Adjusted EBITDA[2] of US$47m and adjusted EBITDA[2] margin of 25% compared with US$52m and 58% in FY 2021
- EBITDA[3] of US$49m above US$39m in FY 2021
- Loss after tax of US$1m compared to a profit after tax of US$9m in FY 2021
- Cash flow from operating activities before tax of US$8m (FY 2021: US$27m) including US$28m of deferred compensation payments related to the acquisitions of Precise-ITC and Banias Labs
- Net debt of US$24m following successful debt raise of US$210m to fund the acquisition of Banias Labs
- Guidance unchanged

LONDON, United Kingdom and TORONTO, Ontario, Canada 19 May 2023 - Alphawave IP Group plc (LSE: AWE, the "Company" or "Alphawave Semi"), a global leader in high-speed connectivity for the world's technology infrastructure, has published its results for the year ended 31 December 2022.

The Company has applied to the FCA for the restoration of its ordinary shares to the standard listing segment of the Official List of the FCA and to trading on the Main Market of the London Stock Exchange. A further announcement in this respect will be made in due course.

Financial Summary and APMs[3] – US$m	**FY 2022**	**FY 2021**	**Change**
Licence and NRE	137.6	89.9	53%
Royalties and silicon	47.8	-	nm
Total Revenue	185.4	89.9	106%
Operating profit	37.6	36.0	4%
Operating margin	20%	40%	
EBITDA[3]	49.3	39.2	26%
EBITDA margin	*27%*	*44%*	
Adjusted EBITDA[2]	46.8	51.8	-10%
Adjusted EBITDA margin	*25%*	*58%*	
Profit/(Loss) after tax	(1.1)	9.4	nm
Profit after tax margin	*nm*	*10%*	
Pre-tax operating cash flow	7.8	26.5	-71%
Cash and cash equivalents	186.2	501.0	-63%
Net cash/(debt) balance	(24.0)	501.0	nm

Bookings[4] and Design Win Activity – US$m	**FY 2022**	**FY 2021**	**Change**
Licence and related	131.3	72.9	80%
Royalties and silicon[5]	96.8	24.0	304%
New Bookings (excluding VeriSilicon and WiseWave multi-year subscription licences)	228.1	96.9	135%
WiseWave and VeriSilicon multi-year subscription licences	-	147.8	nm

[1] Net of cash acquired and including approximately US$28.2m of deferred compensation payments related to acquisitions which are expected to be settled over time until August 2026.
[2] After consolidation adjustments at Group level.
[3] See note 4 Alternative Performance Measures (APMs). Adjusted EBITDA and Adjusted Profit after Tax exclude IPO-related non-recurring costs, foreign exchange adjustments, share-based payments, M&A transaction costs and one-time fees associated with WiseWave.
[4] Bookings are a non-IFRS measure representing legally binding and largely non-cancellable commitments by customers to license our technology. Bookings comprise licence fees, non-recurring engineering, support and, in some instances, our estimates of potential future royalties.
[5] In FY 2021 there were no silicon bookings. The amount reflects only those instances where potential future royalties could be estimated based on committed prepayments or customer volume estimates.

Additional design win activity – FSA drawdowns and China re-sale licences[6]	23.2	3.9	494%
Number of revenue generating end-customers	80	20	

Due to rounding, numbers presented in the table may not add up to the totals provided and percentages may not precisely reflect the absolutely figures. 'nm', where referenced, means 'not meaningful'.

Tony Pialis, President and Chief Executive Officer of Alphawave Semi, said: "In 2022 we delivered another set of strong results, doubling our revenue year-on-year while investing to support our growing pipeline and future revenue growth. During the year, we welcomed almost 400 employees from the acquisitions of Precise-ITC, OpenFive and Banias Labs. In 2023, we will consolidate our vision for the business and will set the foundations from which we can continue to deliver growth."

John Lofton Holt, Executive Chairman of Alphawave Semi, added: "2022 has been an important year for Alphawave Semi. We made a substantial investment in three acquisitions and made great progress on our vision for the business. Our leading connectivity technology combined with the continued strong execution of our team gives us confidence in the long-term potential of our business."

FY 2022 Results Highlights

- FY 2022 revenues of US$185.4m, representing 106% growth year-on-year. The acquisitions of Precise-ITC and OpenFive contributed US$66.1m in revenue[7] in FY 2022. Organic revenue growth in FY 2022 was 33%
- WiseWave revenues of US$37.5m (FY 2021: US$29.8m) (excluding re-seller revenue[8]), of which US$31.1m (FY 2021: US$27.7m) related to the multi-year subscription licence
- Adjusted EBITDA[1] of US$46.8m and margin of 25% (FY 2021 US$51.8m and 58%), reflecting accelerated investment in R&D and change in business mix including revenue from IP licences and silicon
- US$36.8m exchange gain due to the weakening of GBP against USD on USD cash balances held at Alphawave IP Group plc level denominated in GBP
- M&A costs and professional fees of US$17.0m and share-based payment of US$15.7m
- Cash flow from operating activities before tax in FY 2022 was US$7.8m (FY 2021: US$26.5m) including approximately US$6m one-time payment of M&A related expenses and professional fees and US$28.2m of deferred compensation payments related to the acquisitions of Precise-ITC and Banias Labs
- Cash and cash equivalents of US$186.2m. Net debt of US$24.0m

Business and Technology Highlights

- In 2022, the Company invested approximately US$439m[9] of cash in the acquisitions of Precise-ITC, OpenFive and Banias Labs, consolidating our vision for Alphawave Semi
- In October 2022, the Company announced a non-binding agreement with a leading North American hyperscaler with sales potentially ramping to over US$300 million
- Alphawave Semi maintained its technology leadership with 28 design wins of which two were design wins in 3nm and two for opto-electronic products targeting next-generation 800G ethernet applications
- The Company delivered silicon tapeouts for its next-generation 224G, PCI-Express Gen6, HBM3 and UCIe interface IP in both 5nm and 4nm processes. 224G, PCI-Express Gen6, CXL3.0, HBM3 and UCIe are next generation networking, memory and chiplet interfaces that are critical for AI, server, storage and networking devices deployed heavily by hyperscalers.
- Alphawave Semi continued to expand its IP product portfolio to over 220 IPs at the end of 2022
- During 2022, the Company expanded its revenue-generating end-customer base to 80 (FY 2021: 20 customers; H2 2022: 28 customers). 53% of FY 2022 revenue was from existing customers.
- Continued to build sales and R&D capabilities with new offices in San Jose, US, and Ottawa, Canada. Geographical footprint expanded into India and Israel through acquisitions
- Closing headcount increased by 546 people globally, bringing the total headcount to 695 (2021: 149), of which 376 employees joined through the acquisitions of Precise-ITC, OpenFive, and Banias Labs

Outlook

- Alphawave Semi reiterates its FY 2023, mid-term and long-term outlook communicated at the Capital Markets Day on 13 January 2023
- The outlook for 2023 remains unchanged. Alphawave Semi expects 2023 revenue of US$340m to US$360m and adjusted EBITDA of approximately US$87m (or approximately 25% of revenue), which is at the mid-point of the revenue guidance range

[6] Both FSA (Flexible Spending Account) drawdowns and China re-sale licences convert previously announced contractual commitments included within bookings reported in prior periods to new product design wins which will be recognised as revenue over time.
[7] After consolidation adjustments at Group level.
[8] For further details see note 5 Revenue.
[9] Net of cash acquired and including approximately US$28.2m of deferred compensation payments related to acquisitions which are expected to be settled over time until August 2026.

About Alphawave Semi (LSE: AWE)
Alphawave Semi is a global leader in high-speed connectivity for the world's technology infrastructure. Faced with the exponential growth of data, Alphawave Semi's technology services a critical need: enabling data to travel faster, more reliably and with higher performance at lower power. We are a vertically integrated semiconductor company, and our IP, custom silicon, and connectivity products are deployed by global tier-one customers in data centers, compute, networking, AI, 5G, autonomous vehicles, and storage. Founded in 2017 by an expert technical team with a proven track record in licensing semiconductor IP, our mission is to accelerate the critical data infrastructure at the heart of our digital world. To find out more about Alphawave Semi, visit: awavesemi.com.

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This document may contain forward-looking statements which are made in good faith and are based on current expectations or beliefs, as well as assumptions about future events. You can sometimes, but not always, identify these statements by the use of a date in the future or such words as "will", "anticipate", "estimate", "expect", "project", "intend", "plan", "should", "may", "assume" and other similar words. By their nature, forward-looking statements are inherently predictive and speculative and involve risk and uncertainty because they relate to events and depend on circumstances that will occur in the future. You should not place undue reliance on these forward-looking statements, which are not a guarantee of future performance and are subject to factors that could cause our actual results to differ materially from those expressed or implied by these statements. The Company undertakes no obligation to update any forward-looking statements contained in this document, whether as a result of new information, future events or otherwise.

End Market Drivers Remain Strong

Against the backdrop of an uncertain economic environment, digital infrastructure markets remained strong. Our core markets continued to provide compelling opportunities for growth. For example, in Q3 2022, the US cloud hyperscalers, Amazon, Google, Meta and Microsoft, increased spending by 24% year-on-year and the top three US cloud service providers had a combined market share of 66%[10]. Not surprisingly, the amount of data created, captured, replicated and consumed each year is expected to more than double in size from 2022 to 2026[11] and we expect our addressable market to grow at approximately 20% CAGR over the 2023-2026 period[12].

Early in 2023, we saw the introduction of language-based AI models like ChatGPT and Bard. Our business is well positioned to benefit from the ongoing rollout of AI. As AI technologies become more powerful, the demand for data will become even greater and, more crucially, this makes data speeds, bandwidth, and latency essential to the future of AI technology. Thousands of components, wires, switches, ports and more are organised in data centres to connect everything together. Improvements in these technologies allow for faster data speeds and bandwidth.

Cloud, AI and software providers will also benefit from the advantages of chiplet architecture and optimising silicon to their specific requirements, which will provide multiple opportunities for our custom silicon offering.

Our pipeline of customer opportunities reflects these trends. Our customers continue to seek differentiation and enhanced performance by transitioning faster to lower design nodes. Almost two-thirds of our design wins in 2022 were in 7nm and 5nm manufacturing processes, and we also had our first design win in 3nm in H1 2022. Alongside this, we continued to see hyperscale data centre providers reducing reliance on networking ASIC vendors.

The ongoing constraints on the semiconductor supply chain and the ubiquitous presence of semiconductors in our lives continue to reinforce the importance of semiconductor technology on a global scale. As the digital infrastructure continues to grow and makes the transition to utilise leading and more efficient technologies, we remain confident in the long-term outlook of the business.

FY 2022 Financial Performance Summary

At the end of 2022 backlog was US$364.5m representing a significant increase year-on-year (FY 2021: US$168.6m). The increase was partly driven by the backlog acquired with OpenFive and Precise-ITC of US$168.3m of which over US$100m was in our backlog as at the end of 2022.

New bookings excluding multi-year contracts in 2022 totalled US$228.1m up 135% year-on-year (FY 2021: US$96.9m). Total bookings were below US$244.7m in FY 2021. Licence and NRE bookings in 2022 were US$131.3m of which approximately three quarters came from North American customers, a significantly larger contribution than in the prior year (FY 2021: 21%). Royalties and silicon bookings in 2022 totalled US$96.8m, compared to US$24.0m in 2021. Over three-quarters of these bookings relate to pre-existing custom silicon designs in production for Chinese customers.

Revenue in 2022 was US$185.4m up 106% year-on-year. Excluding the revenue contribution from OpenFive and Precise-ITC of US$66.1m[13], year-on-year revenue growth was 33%. During FY 2022, we recognised revenue from 80 customers, compared to 20 customers in FY 2021. Our FY 2022 revenue continued to be heavily weighted to our core markets of data networking and cloud compute. 57% of revenue in the period was generated from Chinese customers, including the custom silicon business from the acquisition of OpenFive. Revenue excluding China was US$80.7m up 72% year-on-year (FY 2021: US$46.9m).

Gross margin in 2022 was 67% compared to 94% in 2021. The decrease reflects the diversification of our business into custom silicon development and silicon products. Through the acquisition of OpenFive, we inherited a number of contracts with gross margins below our Group targets.

The year-on-year increase in R&D, S&M and G&A expenses was primarily due to the increase in our headcount from 149 employees at the end 2021 to 695 at the end 2022, together with associated software tool costs which scale with our R&D/engineering headcount. The increase of 546 full time employees includes 376 employees who joined as part of the acquisitions of OpenFive, Banias and Precise-ITC. In addition, we invested in support functions and scaled our finance, HR, legal and corporate marketing teams, reflecting the increased complexity and the extended geographical footprint of the Group. In 2022 we capitalised US$7.2m of R&D expenses related to the development of our opto-electronics products (FY 2021: US$nil).

[10] Synergy Research Group (srgresearch.com) https://www.srgresearch.com/articles/q3-cloud-spending-up-over-11-billion-from-2021-despite-major-headwinds-google-increases-its-market-share.
[11] The Data Center Journey, From Central Utility To Center Of The Universe (semiengineering.com). Source Statista https://semiengineering.com/the-datacenter-journey-from-central-utility-to-center-of-the-universe/.
[12] Semico Research Corporation, December 2022, IPNest and LightCounting
[13] After consolidation adjustments at Group level.

In 2022 we saw a credit of US$4.2m in other expenses due to the US$36.8m of exchange gains which resulted from the strengthening of USD against GBP, as the Company held a significant USD balance at the Plc level, which is a GBP denominated entity. M&A and professional costs in 2022 were US$17.0m related to the acquisitions and the debt funding. Stock-based payment costs of US$15.7m in 2022 reflect our increased headcount, equity grants awarded to employees joining from OpenFive and Banias, as well as significant one-time grants awarded to new members of the senior management team who joined us in 2022.

Operating profit was therefore US$37.6m in 2022, up 4% year-on-year. Operating margin in 2022 was 20%, significantly below FY 2021 (FY 2021: 40%).

Adjusted EBITDA in 2022 was US$46.8m (25% margin) compared to US$51.8m (58% margin) in 2021. The decrease in adjusted EBITDA margin was expected and reflects the early stage of our migration to a combined IP licensing and silicon model through our acquisitions and the scaling of our engineering capabilities to support our pipeline of opportunities.

Finance income in 2022 was US$1.7m, compared to US$0.3m in 2021. The increase was largely driven by cash proceeds from IPO being invested in interest-bearing accounts.

Finance expense in 2022 was US$3.6m, US$3.3m higher than in 2021. The increase was driven by interest associated with the five-year term loan obtained in October 2022.

Share of the post-tax loss of equity-accounted joint ventures was US$18.5m, compared to US$12.9m in 2021. At the end of 2022, the Group owned 42.5% of WiseWave, a newly formed company established in China in Q4 2021 to develop and sell silicon products incorporating silicon IP licensed from the Group. The five-year subscription licence agreement is being capitalised and amortised over the life of the agreement by WiseWave.

Profit before tax in 2022 was US$17.2m compared to US$23.1m in 2021. Tax expense in 2022 was US$18.3m (FY 2021: US$13.7m), being 106% of profit before tax, or 36% after adjusting for the loss from WiseWave and stock-based compensation expense, both of which are not deductible for tax purposes. The Group incurred a loss after tax in 2022 of US$1.1m, compared to a profit of US$9.4m in 2021.

Cash flow from operating activities before tax was US$7.8m compared with US$26.5m in 2021. During the period we saw a cash outflow from working capital of approximately US$43.2m. In 2022 there was a one-time payment of approximately US$6m relating to M&A and professional fees. It also included a US$28.2m cash outflow related to deferred compensation payable as part of the acquisitions of Precise-ITC and Banias Labs which are classified as compensation payments in lieu of share-based remuneration or payments conditional on continued employment with the Group. Excluding this last item, cash flow from operating activities before tax in 2022 was US$36.0m.

In 2022, the Group generated a net cash outflow from operating activities of US$12.1m, compared to a net cash inflow of US$18.9m in 2021. Income tax paid in 2022 was US$19.9m, well above US$7.6m paid in 2021. Capital expenditure during 2022 totalled US$15.5m (US$2.2m in 2021), comprising US$4.2m of plant, property and equipment and US$11.3m of intangibles. The increase in plant, property and equipment was mainly due to purchases of lab and test equipment as we ramp our own product development capabilities.

We closed the period with a cash and cash equivalents balance of US$186.2m compared to US$501.0m at the end of 2021. During 2022 we invested US$438.7m[14] of cash in the acquisitions of Precise-ITC, OpenFive and Banias Labs. In October 2022 we acquired new debt for an amount of approximately US$210m to finance the acquisition of Banias Labs. As a result, at the end of 2022 we had a net debt position of US$24.0m.

In 2022 we recognised aggregate goodwill of US$331.9m from the acquisitions of Precise-ITC, OpenFive and Banias Labs.

Accrued revenue, where revenue recognition conditions are met under IFRS 15 but we have not billed or collected any amount, increased from US$31.7m at the end of 2021 to US$58.5m at the end of 2022. This increase was a function of our revenue growth and the timing of invoicing milestones on specific contracts, primarily for our IP sales. WiseWave accounted for US$20.2m of our accrued revenue balance at the end of 2022.

Investments in equity-accounted associate, namely the value of the investment in WiseWave was reduced from US$9.4m in 2021 to US$nil in 2022, as a result of equity accounting for losses at WiseWave during the period. The value of the cumulative losses incurred by WiseWave exceeds the cumulative value of our investment into the business.

During 2022, current trade and other payables increased from US$5.8m to US$83.1m. This increase was predominantly due to higher purchasing levels as the business has scaled.

Deferred revenue liability, where we have invoiced or received money for products or services where revenue recognition conditions are not met, increased from US$12.7m at the end of 2021 to US$91.7m at the end of 2022. This increase was due to the order intake for

[14] Net of cash acquired and including approximately US$28.2m of deferred compensation payments related to acquisitions which are expected to be settled over time until August 2026.

custom silicon products where in some instances customers are required to make advance payment ahead of silicon being shipped to them.

Principal Risks and Uncertainties

The Group faces a number of risks and uncertainties that may have an impact on our operations and performance. These risks and uncertainties are regularly assessed by the Directors. The principal risks and uncertainties affecting the Group are as follows:

Risk	Description
Managing our growth	We have a limited operating history and are growing rapidly. If we do not manage our growth successfully, fail to execute on our strategy, or fail to implement or maintain governance and control measures, our business may be adversely impacted. We have rapidly expanded our headcount and the complexity of our business and operations, both organically and through acquisitions.
Competition and failure to maintain our technology leadership	We seek to maintain our competitive advantage by being first to market with new IP as data speeds increase and manufacturing sizes decrease. If these industry transitions do not materialise, or are slower than anticipated, our competitors may be able to introduce competing IP which may diminish our competitive advantage and selling prices. Our ability to maintain our technology leadership is further dependent on our ability to attract R&D and engineering talent.
Customer dependence	Our products and technology target the data centre and network infrastructure markets, where there are a limited number of customers. Further, the cost and complexity of developing semiconductors targeted by our IP limits the number of our potential addressable customers. In any reporting period, a substantial part of our revenues may be attributable to a small number of customers.
Customer demand	Demand for our technology is dependent on the continued global growth in generation, storage and consumption of data across our target markets, as well as the increasing cost and complexity of designing and manufacturing semiconductors. We may be impacted by our customers' demand sensitivity to broader economic and social conditions. Our potential customers may seek to develop competitive IP or semiconductors internally or acquire IP or semiconductors from our competitors.
Risks associated with WiseWave	WiseWave is today an important element of our strategy to monetise our IP in China and we are a significant minority shareholder. We may be limited in our ability to influence strategy, operational, legal, commercial or financial matters. The Group and WiseWave may also face regulatory risk in terms of transfer of technology into China. There is a risk that the bookings from WiseWave do not translate into revenues and we are unable to realise the full value of our investment on exiting the joint venture.
Dependence on licensing revenue	Our financial performance is highly dependent on licensing revenues and we do not anticipate a material contribution from royalty revenues for some years. If our customers delay or cancel their development projects, fail to take their products to production or those products are not successful, our royalty revenues may be delayed, diminished or not materialise
Reliance on key personnel and ability to attract talent	We rely on the senior management team and our business could be negatively impacted if we cannot retain and motivate our key employees. Our ability to grow the business is also dependent on attracting talent, particularly in R&D and engineering, and if we are unable to do so, our business may be negatively impacted.
External environment and events	Semiconductors are becoming increasingly important as countries and regions seek to guarantee supply and build domestic supply chains, as well as restrict outside access to their domestic technologies. Our business could be impacted by the actions of governments, political events or instability, or changes in public policy in the countries in which we operate. The current conflict in Ukraine potentially has wide-ranging impacts, including global economic instability, increased geopolitical tensions and disruption to supply chains.
IP protection and infringement	We protect our technology through trade secrets, contractual provisions, confidentiality agreements, licences and other methods. A failure to maintain and enforce our IP could impair our competitiveness and adversely impact our business. If other companies assert their IP rights against us, we may incur significant costs and divert management and technical resources in defending those claims. If we are unsuccessful in defending those claims, or we are obliged to indemnify our customers or partners in any such claims, it could adversely impact our business.
Reliance on third-party manufacturing foundries	We rely on third-party semiconductor foundries, both as customers and as manufacturing partners to our customers. If foundries delay the introduction of new process nodes or customers choose not to develop silicon on those process nodes, our ability to license new IP and our selling prices may be adversely impacted. By pursuing a vertically integrated model and supplying silicon products, we are reliant on the foundries' capacity for a portion of our revenues and this reliance may increase as royalty revenues become more material to us.
Reliance on complex IT systems	We rely heavily on IT systems to support our business operations. The vast majority of our design tools, software and IT system components are off-the-shelf solutions and our business would be disrupted if these components became unavailable. If our IT systems were subject to disruption, for example through malfunction or security breaches, we may be prevented from developing our IP and fulfilling our contracts with our customers.

Letter from our Chair

Consolidating our vision for Alphawave Semi.

John Lofton Holt
Executive Chair

Dear shareholder,

2022 was our second year as a public listed company, a year during which the business made significant progress towards consolidating our vision to be a leading provider of connectivity technology for digital infrastructure markets. In support of our vision, we took the first steps towards a vertically integrated business model with the acquisitions of Precise-ITC, OpenFive and Banias Labs, as well as the announcement of a large non-binding multi-year agreement with a leading North American hyperscaler.

To reflect the enhancement in our business model, on 13 January 2023 we announced the rebranding of our business to Alphawave Semi, previously Alphawave IP. On that same day we also hosted our first Capital Markets Day, during which we shared our vision and long-term strategy with analysts and investors.

At our Capital Markets Day in January we outlined our new accelerated strategy to implement the vision we have held since our IPO in May 2021 – to become a vertically integrated semiconductor company focused on delivering the world's most advanced connectivity solutions. This accelerates our ambitions to provide the world's leading connectivity solutions through IP, custom silicon and silicon products. IP innovation, which has largely driven our success to date, remains core to our business leadership in each of these areas.

This has been a year of significant strategic progress, which has embodied our purpose to create value for our stakeholders in pursuit of our ambitions. Whilst we remain mindful of the challenging global macro and geopolitical environment, we are well positioned to continue the delivery of our strategic priorities in 2023 and beyond.

Financial performance
In 2022 we made a significant investment in future revenue growth. We completed three acquisitions (Precise-ITC, OpenFive and Banias Labs) and deployed US$439m of cash to realise our ambition for Alphawave Semi. We also raised US$210m in debt to maintain a strong balance sheet.

Bookings for the full year were US$228.1m. Excluding multi-year contracts, FY 2022 bookings were above the prior year (FY 2021: US$96.9m).

Alongside the growth in bookings, excluding multi-year contracts, we delivered another year of robust revenue growth. We delivered revenue of US$185.4m, up 106% year-on-year, a significant achievement for the business. Adjusted EBITDA was US$46.8m, 10% below the prior year while adjusted EBITDA margin was 25%, significantly below 2021 (FY 2021: 58%). The decrease in adjusted EBITDA margin was due to the expansion of the business both organically and through acquisitions. EBITDA in 2022 was above 2021 at US$49.3m (FY 2021: US$39.2m).

People, culture and values
As we welcome the teams from Precise-ITC, OpenFive and Banias Labs, the number of employees increased significantly from 149 to almost 700 at the end of 2022. Our Vice President of Human Resources, together with the leadership team, has worked hard to welcome all new employees to the Group and ensure a smooth integration.

Our culture and values inform the way we conduct our business, ensuring we are mindful of the impact we have on society and the environment, and that we build strong relationships with all our stakeholders. They also form the foundations of our innovation-driven ambitions to be a leading provider of connectivity technology.

Our ongoing business success would not be possible without the commitment and passion of all our employees, and on behalf of the Board I would like to express our sincere gratitude for their hard work during a particularly exceptional period of business expansion.

Governance and oversight
In 2022 we continued to evolve our governance capabilities as Michelle Senecal de Fonseca became the voice for employees at Board level, working closely with our VP of Human Resources, Maia Jones. We further enhanced our team with the appointment of Kim Clear as our Company Secretary and Head of Governance, and Jose Cano as our Global Head of Investor Relations.

Relationships with our stakeholders
As a company we seek to establish strong and responsible relationships with customers, partners and the communities in which we operate. Our values extend to the way we engage with our stakeholders. As a result of the acquisition of OpenFive, we welcomed new customers as well as new partners in the value chain – such as test and assembly companies.

We contribute to society mainly by promoting diversity, fostering the next wave of innovation and innovators and playing our role in tackling climate change. We do this both through our own activities and in collaboration with our customers and other stakeholders, for shared success.

As a fabless business, i.e. we do not own any manufacturing facilities, we collaborate with multiple stakeholders in the supply chain, playing our role in promoting responsible business practices (see Supply Chain section). As the business grows and matures we will continue to enhance our policies and practices in this area.

In 2022, we put the building blocks of our sustainability strategy in place, identifying our core sustainability issues as well as the management approach and reporting. In addition, early in 2023, the Board approved the ESG Policy, setting the framework for all sustainability-related activities in the Group (see ESG section).

Simplifying our China go-to-market strategy
Since the Group launched its China go-to-market strategy in 2017, the geopolitical and macroeconomic situation has also had an impact on our industry. This has resulted in significant changes to the semiconductor industry. In 2022, in recognition of these external changes, the Group announced two major simplifications to its China strategy. First, Wise Road Capital significantly reduced its ownership of Alphawave Semi shares and sold its investment to large western institutional funds. This means that the Company no longer has significant investments from any Chinese institutional investors.

Second, we announced that we would make very little, if any, investment in WiseWave (formerly called the China Product Partnership) and that the Company would seek to sell its equity stake in WiseWave over the next two years. With these changes to the Group's go-to-market strategy in China, we will continue to execute against the market opportunities in China in a simplified way that respects the evolving geopolitical and macroeconomic environment.

Outlook 2023 and beyond
On 13 January 2023, we hosted our first Capital Markets Day in London. At the event, members of the management team shared their views on our markets and the medium-term potential of our business. We laid out our first medium-term financial model which targets 2025 revenue of US$500m and adjusted EBITDA margin of approximately 30%.

We are executing on our strategy, creating a leading semiconductor business in high-speed connectivity, building on our strengths and aiming to generate value for shareholders and other stakeholders over the long term.

On 4 May 2023, the Company announced that the Board had agreed with Daniel Aharoni that he would step down as CFO and as an Executive Director of the Company following the publication of the audited results of the Company for FY 2022. The Board has already commenced the search for his successor. In the interim, Christian Bowsher, Senior Director of Finance at Alphawave Semi, will serve as acting CFO to support myself and Tony Pialis to enable an orderly transition. Christian is an experienced member of Alphawave Semi's finance organisation, and he will be further supported by Raj Mahadevan, co-Founder and Senior Vice President of Operations, who managed the finance function from 2017 to 2021. Daniel has been a key part of our journey since our IPO in 2021 and during the three transformational acquisitions we undertook in 2022. On behalf of the Board, I would like to thank Daniel for his contributions and wish him all the best for the future.

As a result, this Annual Report and the Financial Review are signed off by the Chief Executive Officer of the Company, Tony Pialis. The Primary Statements and Certification are also signed off by Tony Pialis as a Director of the Company.

John Lofton Holt
Executive Chair

19 May 2023

CEO Q&A

Building a global provider of leading connectivity technology for digital infrastructure.

Tony Pialis
President & Chief Executive Officer

Q. What would you highlight about the business performance in 2022?
2022 has been an important year for the Group. We have delivered a strong set of results, doubling our revenue from 2021 while investing in R&D. As a result, adjusted EBITDA and margin decreased from 2021. Profit before tax in 2022 was also below 2021 at US$17.2m (FY 2021: US$23.1m).

Through organic development and M&A we have consolidated our vision for the business. In 2022, we invested US$439m in the acquisition of three companies, enabling the transition from an IP business to a vertically integrated business. With an enhanced product portfolio, we can further monetise our IP in the form of custom silicon and other connectivity products, allowing us to gain greater scale and enhance our competitive position.

The number of employees has also significantly increased, from 149 at the end of 2021 to almost 700. In 2022, we welcomed almost 400 employees from the acquisitions of Precise-ITC, OpenFive and Banias Labs. In addition, we opened our second office in Canada, Ottawa, and our first location in the US, San Jose.

The success of the business would not be possible without the commitment and support of all our employees and I would like to express my sincere gratitude for their hard work during this period of accelerated business expansion.

Q. How do you see the digital infrastructure markets evolving?
Against the backdrop of an uncertain economic environment, digital infrastructure markets remained strong. Our core markets continued to provide compelling opportunities for growth. For example, in Q3 2022, the US cloud hyperscalers, Amazon, Google, Meta and Microsoft, increased spending by 24% year-on-year and the top three US cloud service providers had a combined market share of 66%[1]. Not surprisingly, the amount of data created, captured, replicated and consumed each year is expected to more than double in size from 2022 to 2026[2] and we expect our addressable market to grow at approximately 20% CAGR over the 2023-2026 period[3].

Early in 2023, we saw the introduction of language-based AI models like chatGPT and Bard. Our business is well positioned to benefit from the ongoing rollout of AI. As AI technologies become more powerful, the demand for data will become even greater and, more crucially, this makes data speeds, bandwidth and latency essential to the future of AI technology. Thousands of components, wires, switches, ports and more are organised in data centres to connect everything together. Improvements in these technologies allow for faster data speeds and bandwidth.

Cloud, AI and software providers will also benefit from the advantages of chiplet architecture and optimising silicon to their specific requirements, which will provide multiple opportunities for our custom silicon offering.

Our pipeline of customer opportunities reflects these trends. Our customers continue to seek differentiation and enhanced performance by transitioning faster to lower design nodes. Almost two-thirds of our design wins in 2022 were in 7nm and 5nm manufacturing processes, and we also had our first design win in 3nm in H1 2022. Alongside this, we continued to see hyperscale data centre providers reducing reliance on networking ASIC vendors.

The ongoing constraints on the semiconductor supply chain and the ubiquitous presence of semiconductors in our lives continue to reinforce the importance of semiconductor technology on a global scale. As the digital infrastructure continues to grow and makes the transition to utilise leading and more efficient technologies, we remain confident in the long-term outlook of the business.

Q. How do you see business in China evolving over time?
In 2022, revenue from China was US$105m or 57% of the total. The increase in revenue from China was mainly driven by the multi-year contracts with WiseWave and VeriSilicon and the custom silicon revenue contribution from the acquisition of OpenFive. We expect a decline in revenue from China over the longer term, which will be mainly offset by revenue from North American customers.

China is an important market for the semiconductor industry and, like many other companies, we seek to establish long-term commercial relationships with Chinese customers. The Group will continue to comply with all applicable rules and regulations to ensure we can create sustainable customer relationships in all geographies.

Q. What did the acquisition of OpenFive bring?
With the acquisition of OpenFive we welcomed a team of over 300 employees with custom silicon expertise who have been working with global customers over the past two decades. In line with our 'land and expand' strategy, OpenFive substantially expands our customer base and addressable market in a market expected to grow 16% CAGR over the 2023-2026 period[3].

This acquisition also enhances and expands our product portfolio, doubling our IP portfolio, including, amongst others, storage and die-to-die connectivity IP. As a combined group we can now bundle our IP and expertise to win larger and more complex custom silicon opportunities at leading-edge process nodes.

Q. What was the strategic rationale to acquire Banias Labs?
Banias Labs' coherent DSP was designed with data centres in mind. Combined with Alphawave Semi's industry-leading analog components, it expands our addressable market into opto-electronics products, which are expected to grow 36% CAGR over the 2023-2026 period[3]. Alongside this acquisition we signed a non-binding multi-year agreement with a leading North American hyperscaler. With this framework agreement, we have an opportunity to develop a product roadmap and ship at least US$300m worth of products over the next several years with the added potential to grow significantly beyond this. The framework agreement reflects the synergies of our vertically integrated business model, with the potential to scale our revenue and cash flow streams.

Q. What are the main sustainability priorities for Alphawave Semi?
In early 2023, the Board approved our ESG Policy, which puts our people, business ethics, the advancement of technology, and the environment at the centre of our business model.

As a provider of leading connectivity technology, our products contribute towards the deployment of a more efficient digital infrastructure, enabling the transmission of data faster, more efficiently and consuming less energy. Our commitment to sustainability extends to our ongoing operations, as we seek to maintain high standards of business conduct across our value chain.

In 2022, we enhanced and expanded our sustainability reporting (see ESG section) and we will continue to do so over the coming years.

Q. What's next for Alphawave Semi? Is the Group considering further acquisitions?
During 2022, we invested a substantial amount of capital in the expansion of the business. In 2023, we will consolidate and fully embed the acquired businesses.

Despite an uncertain macro environment and challenging financial markets, our customers continue to invest in leading technology. This investment provides a solid foundation from which we seek to create long-term value for our shareholders and other stakeholders. I look forward to the future with confidence.

1. Synergy Research Group (srgresearch.com) https://www.srgresearch.com/articles/q3-cloud-spending-up-over-11-billion-from-2021-despite-major-headwinds-google-increases-its-market-share.
2. The Data Center Journey, From Central Utility To Center Of The Universe (semiengineering.com). Source Statista https://semiengineering.com/the-data-center-journey-from-central-utility-to-center-of-the-universe/.
3. Semico Research Corporation, December 2022, IPNest and LightCounting.

ESG

Our People

Context
In 2022, the Human Resources (HR) function played an important role in support of our growth strategy, enabling continued hiring and the integration of over 540 new employees, of which almost 400 came from business acquisitions.

As a result, our total employee closing headcount grew from 149 in 2021[1] to 695 as of 31 December 2022.

Supporting this level of business expansion while ensuring the wellbeing of all our employees was a key priority. For this purpose we hired three new employees in the HR team.

The HR team remains focused on supporting the successful execution of our business strategy, while creating an inclusive work environment in which innovation and innovators can thrive.

Management approach
Responsibility for our people sits with the Vice President Human Resources (HR). She is supported in this role by the wider HR team, who focus on:

- the application of human resource policies, tailored to reflect local legal requirements, business priorities and labour markets;
- a Code of Ethics and Business Conduct, which sets out the required basic standards guiding our behaviour, including in relation to labour and human rights;
- talent planning and development;
- diversity and inclusion to facilitate an environment in which different perspectives are valued;
- delivering employee engagement and communication strategies to support business objectives;
- enabling knowledge sharing and collaboration;
- caring for the wellbeing of our employees and creating a supportive environment; and
- rewarding high performance through effective and targeted compensation and benefits programmes that enable our employees to share in the value they create.

Our people are our most important asset and a key component of our success as a company. We seek to create an entrepreneurial and dynamic culture, where the best in our sector want to work and develop their careers in advanced technologies. We have built our company of the foundations of diversity and inclusion, where our employees can share their ideas and concerns.

Our workspaces aim to offer our employees the highest standard of safety, comfort, technology and accessibility, with additional measures to ensure employees can successfully work remotely as required. In 2022, we opened new offices in Ottawa, Canada, and in San Jose, US. In December 2022, we began the refurbishment of our offices in Pune, India.

Our employees are mostly located in North America (Canada and the US), India and Israel. How we treat our employees and how our employees engage with each other impacts not only our business, but our stakeholders and the communities in which we operate.

We support internationally acclaimed human rights, including labour rights such as freedom of association, and aim to ensure that our employees benefit from excellent working conditions, across all geographies.

The management team interacts daily with all employees and operates a dedicated HR function at its key sites. Management has implemented employee policies and procedures that are appropriate for the size of the Company and meet the requirements of applicable local legislation.

Our goal, reflected in our policies, is that our employees can openly communicate and share any ideas and concerns with management regarding working conditions and management practices without fear of discrimination, reprisal, intimidation or harassment.
The Company has in place a formal grievance escalation procedure which is covered in the Workplace Violence and Harassment Policy as well as in the Code of Ethics and Business Conduct (see policies at **https://awavesemi.com/company/esg/**).

1. FY 2022 and FY 2021 headcount numbers throughout the report exclude interns. In FY 2021 there were five interns who were previously reported as R&D headcount.

Diversity

Total employees gender diversity
Male | 80%
Female | 20%

Senior management gender diversity
Male | 92%
Female | 8%

Board gender diversity
Male | 60%
Female | 40%

Interns gender diversity
Male | 77%
Female | 23%

Number of employees

FY 2022	Female	Male	Total
Board	4	6	10
Total employees	141	554	695
Senior management[1]	1	11	12

FY 2021	Female	Male	Total
Board	4	6	10
Total employees	21	128	149
Senior management[1]	—	5	5

1. Senior management diversity reflects the composition of the leadership team, including the CEO and the Executive Chair.

Number of employees (closing)
695
FY 2021: 149

Employee turnover
10%
FY 2021: 7%

Employees based outside of North America
379
55% of total number of employees

Performance
Our Equal Opportunities and Dignity at Work Policy (see **https://awavesemi.com/wp-content/uploads/2023/04/Equal-Opportunities-and-Dignity-at-Work-Policy-v2.pdf)** stresses the value and importance of diversity in the workplace and highlights our strict stance against discrimination, harassment or bullying in the workplace.

We respect and uphold internationally proclaimed human rights principles (universal declaration of human rights) and in 2022 (the first year after our IPO) we put in place an Anti-Slavery and Human Trafficking Policy, which applies to both employees and others through whom the Company conducts business. The Company may perform investigations and audits to verify that business is being conducted in compliance with this policy. For more information see **https://awavesemi.com/wp-content/uploads/2022/10/policy-against-trafficking-of-persons-and-slavery.pdf.**

Disclosure regarding employment of disabled persons
In accordance with our Equal Opportunities and Dignity at Work Policy, we give full and fair consideration to applications for employment made by disabled persons, having regard to their aptitudes and abilities. We remain committed to any employees who become disabled during their time with us, ensuring they receive the support and training they may require. Promotion and development opportunities are provided for all employees without discrimination. All these topics are covered in our Equal Opportunities and Dignity at Work Policy and Alphawave Semi Accessibility Plan (see all People-related policies at **https://awavesemi.com/company/esg/**).

Key issues/initiatives

Employee wellbeing
The Company has the wellbeing of all its employees at heart. During 2022, our employees continued to work following a hybrid model, working remotely and in our offices.

We put in place multiple initiatives and activities to make the most of the time our employees spend at our offices, creating opportunities for social interaction and promoting a healthy and supportive environment.

The Company has in place a Right to Disconnect Policy (**https://awavesemi.com/wp-content/uploads/2023/04/The-Right-to-Disconnect-Policy-2022.pdf**) which recognises that every employee has the right to, and should, disconnect from work outside of their normal working hours unless there is an emergency or agreement to do so, for example while ‘on call’.

Talent identification and recruitment
We believe our employees are our best ambassadors and that is why the Company has an internal referral programme in place. Employees who refer successful candidates receive a reward. In parallel, we have social media campaigns targeting specific skills and roles.

Employee learning and development
Facilitating learning and sharing across the organisation are key aspects of employee development. Our in-house experts have a wealth of knowledge and experience. Alphawave University is an internal programme that aims to give employees the opportunity to learn different aspects of our Company and its technology. The programme consists of regular sessions where a range of technical and non-technical topics are discussed. Presenters are mostly members of the management team and the Board.

The Company has an employee education programme in place which reimburses employees upon completing relevant courses successfully. Employees identify their learning and development needs on a regular basis (both technical and non-technical) and agree these with their line manager.

Leadership development
In 2022, we introduced a new leadership mentor programme in which Board members are paired up with high-potential leaders in the organisation. The programme consists of monthly meetings covering a range of topics most relevant to each individual.

We believe this is a great way to leverage the experience and expertise of our Board to support the development of the next wave of leaders.

Diversity and inclusion
The majority of our independent Board members are women and 20% of our employees are female.

We closely monitor our salary systems, regular reviews and processes, which have been designed to avoid any gender-based discrimination.

Alphawave Semi is not legally required to submit the Gender Pay Gap data as it does not have the minimum required number of employees in the UK. The Company has a Diversity and Inclusion Policy in place which is available on our website at **https://awavesemi.com/wp-content/uploads/2023/04/Equal-Opportunities-and-Dignity-at-Work-Policy-v2.pdf**.

Alphawave University – A roundtable discussion with Susan Buttsworth
Our Non-Executive Director (NED) Susan Buttsworth was the main speaker in a virtual meeting with employees, part of the Alphawave University programme. As well as presenting how she became a Board member, Susan also explained the role of NEDs and how it ties in with what employees do. This session was extremely well attended and employees had a chance to ask questions and engage in a lively discussion with Susan.

Internship programme
Alphawave Semi has internship programmes in Canada and India, the two countries with the highest number of employees. As of 31 December 2022, there were 47 interns in the Company.

In Canada, we welcome interns from the universities of Toronto and Ottawa and the programme runs for a period of twelve to 16 months. As of 31 December 2022, there were ten interns in Canada, of which three were female.

The programme seeks to encourage the next generation of engineers and innovators, giving them an insight into the wide range of engineering careers and illustrating the valuable contribution they can make to the advancement of technology.

The main objective of our internship programme in India is to identify high potential students in their final semester or year of their undergraduate or masters degree, with a view to future employment within the Company. As of 31 December 2022, there were 37 interns in India. Around 40% of the existing engineering employees in India joined the Company through this programme. The programme engages with universities such as KLE Tech University, University of Burdwan and CVR College of Engineering in Hyderabad. Students come from different socio-economic backgrounds and approximately 22% of the 2022 interns were female.

Welcoming the teams of Precise-ITC, OpenFive and Banias Labs

In 2022, we welcomed almost 400 new employees to the Company as a result of the acquisitions of Precise-ITC, OpenFive and Banias Labs. Precise-ITC employees are based in Ottawa, Canada. The team from OpenFive is primarily located in Bangalore and Pune, India and the team from Banias is based near Tel Aviv, Israel. The challenges of ensuring the smooth integration of such a high number of employees were somewhat eased by the lack of geographical overlap.

The successful integration effort of all our new employees was one of the key achievements of the HR team in 2022.

Reward and recognition

We offer market-competitive pay and employee benefits, along with opportunities for individual and team recognition, all within a supportive working environment. We regularly benchmark our pay and benefits against the employment markets in which we operate.

This includes an in-depth analysis of the total compensation offered by our direct competitors, both global and local, to ensure that our offering remains competitive. This includes a range of other non-salary benefits and work/life balance.

In 2022, we introduced best-in-class employee benefits prioritising employee health and wellbeing in Canada, the UK and India (such as extended health insurance benefits and access to mental health support). We are planning to roll out similar benefits in the US and Israel in 2023.

Our compensation programmes include long-term share and short-term cash-based bonus plans that allow us to differentiate levels of reward, recognising critical skills and performance levels. In early 2023, the Company introduced an enhanced performance appraisal process with clear objectives across the new businesses and aligned with the overall Company objectives agreed by the management team.

The majority of our employees participate in our long-term incentive programme to engender a shared sense of ownership. The majority of the hires we made in FY 2022 were given equity incentivisation through our long-term employee share programme.

In December 2022, our shareholders approved an amendment to the dilution limits in our Long-Term Incentive Plan (the 'Share Plan'), by removing the separate 5% dilution limit for discretionary awards, such that all awards granted under the Share Plan are subject to a 10% dilution limit in any five-year period, with no separate limit for discretionary awards. This will ensure we can continue to issue awards to employees under the Share Plan in the ordinary course, which in turn helps us maintain innovation and growth for the long-term benefit of our shareholders.

Employee engagement and communication strategies

We encourage ongoing employee engagement and communication through town halls, employee forums and local events with the participation of the senior management team. We keep employees updated on the strategic progress of the Company, as well as financial results and key areas of strategic focus for the business.

In August 2022, we undertook our first employee survey, which was conducted by Best Places to Work in the US, Canada and the UK. Employees in India and Israel joined the Company after the first survey took place, through the acquisitions of OpenFive and Banias Labs (September and October 2022, respectively).

The response rate was 80% and the feedback from our employees was extremely positive. Amongst some of the positive messages, our employees trust the leadership team and are willing to go the extra mile to get the job done.

We have also identified that employees would like to keep informed on a more regular basis about important Company issues and changes, as well as continue to enhance work/life balance and development programmes.

The results of the survey were presented back to the Board and employees, and have informed changes to, for example, the frequency and content of our internal communications.

The Company is now certified as a Great Place to Work® in Canada and the US. We currently do not have the minimum number of employees required in the UK to be certified.

The CEO has regularly appeared in virtual meetings to all employees, providing a summary of business performance, sharing his views, and addressing questions on other topics. In those virtual meetings, the CEO welcomed employees from Precise-ITC, OpenFive and Banias Labs.

Michelle Senecal de Fonseca was appointed in 2022 as the Board's designated Non-Executive Director representative for workforce engagement.

Forward focus areas in 2023

- Rollout of best-in-class employee benefits in the US and Israel.
- Extend annual employee survey to all new locations.
- Introduction of an enhanced performance appraisal process.
- Rolling out enhanced HR systems across the Company.

Alphawave University – Machine learning with our CTO, Tony Chan Carusone

During the talk, our Chief Technology Officer, Tony Chan Carusone, explored how machine learning is already being applied to some of our most challenging optimisation problems. The call was well attended and employees raised interesting questions on the impact of machine learning on the long-term potential for the business as well as to their daily activities.

Environmental Responsibility

Context

Our connectivity technology contributes towards the development of a more efficient digital infrastructure.

Although fabless, we are making ongoing efforts to minimise our carbon footprint, which has significantly changed in 2022 following a period of rapid business expansion.

Management approach

We operate responsible practices within our own business. Following the expansion of our business into custom silicon with the acquisition of OpenFive in September 2022, we are seeking to promote them across our supply chain.

Responsibility for environmental performance sits with the Board. We govern our environmental responsibility through the application of the ESG Policy which was approved in early 2023 and addresses our key priorities. The Company is committed to carbon neutrality.

Performance

Metrics and targets

For the second consecutive year, the Company appointed Carbon Footprint Ltd, a carbon and energy management company, to independently assess its greenhouse gas (GHG) emissions in accordance with the UK Government's 'Environmental Reporting Guidelines: Including Streamlined Energy and Carbon Reporting Guidance'. The GHG emissions have been assessed following the ISO 14064-1:2018 standard using the 2021 emission conversion factors published by Department for Environment, Food and Rural Affairs and the Department for Business, Energy and Industrial Strategy.

We use Scope 1, Scope 2 and partial Scope 3 emissions as our metrics. In addition, we use the intensity ratio per employee as defined in the table below. We also consider ESG ratings that include climate-related risk management indicators.

The assessment follows the location-based approach for assessing Scope 2 emissions from electricity usage. The financial control approach has been used.

The table below summarises the GHG emissions for the 2022 reporting year. Due to the recent expansion of the business FY 2022 emissions cannot be set as the baseline for the Group. For FY 2022, the scope includes UK and non-UK operations, including India, Canada and the US. The emissions from our acquisition of Banias Labs, based in Israel, have not been included as the acquisition closed late in the year. The 2022 baseline includes annualised figures for those locations in scope, including those which we acquired through OpenFive on September 2022. Scope 1 includes emissions associated with gas consumption. Scope 2 includes emissions associated with electricity consumption. Scope 3 includes those emissions associated with business travel and also includes electricity consumption attributable to our utilisation of servers within our third-party data centre provider.

As a fabless semiconductor company we have a low carbon footprint relative to companies in other segments of the value chain. Alongside the benefit our products bring to the overall energy consumption in digital infrastructure applications (such as data centres, 5G base stations and artificial intelligence) we are committed to minimising and reducing our carbon footprint.

Activity	Baseline year 2021	**Baseline year 2022**
In metric tonnes CO_2e		
Total Scope 1 emissions (natural gas)	14.18	**208.86**
Total Scope 2 emissions (electricity consumption)	6.33	**341.49**

Total Scope 3 emissions (transmissions and distribution, non-controlled electricity, hotel stays, homeworkers, well to tank, flights, hire car, taxi and grey fleet travel)	45.33	**601.67**
Total gross (Scope 1, 2 & 3) location-based emissions	65.84	**1,152.02**
Intensity ratios		
tCO_2e (gross Scope 1, 2 & 3) per employee	0.49	**1.78**
tCO_2e (gross Scope 1, 2 & 3) per US$m revenue[1]	0.73	**nm**
Underlying energy consumption (kWh)		
Total global energy consumed	285,414	**2,618,460**
Total UK energy consumed[2]	273	**na**
UK-based emissions	0.1%	**nm**
UK-based energy consumption	0.1%	**nm**

1. tCO_2e (gross Scope 1, 2 & 3) per US$m revenue reported as nm in 2022. Group FY 2022 revenue includes revenue from the acquisition of OpenFive from 31 August 2022 (closing date) but FY 2022 emissions baseline includes annualised contribution from the related locations in India and US. Considering the annualised contribution of these locations allowed for a more meaningful tCO2e (gross Scope 1, 2 & 3) per employee comparison.
2. UK energy consumed in 2022 was calculated based on the kWh for home-working and it represented an insignificant portion of the total energy consumed. In 2021 it was calculated based on grey-fleet car mileage.

In the second half of 2022, two of our acquisitions, OpenFive and Banias Labs, significantly changed the perimeter of our business activity, from a pure IP player to a fabless provider of connectivity semiconductors. In addition, our headcount increased from 149 to 695 employees based in countries where we did not have any presence before, such as India and Israel. For these reasons, we are planning to use our 2023 emissions to establish a baseline carbon footprint to identify opportunities for improvement over the short, medium and long term and set specific reduction goals in 2024.

Alongside this, we are gradually rolling out activities to ensure we minimise our GHG emissions:

- actively manage e-waste, with robust product lifecycle management programmes for our computer and IT resources;
- reducing business travel to when it is essential;
- locating our offices in energy-efficient buildings and where possible sourcing from renewable energy; and
- offsetting our GHG emissions (Scope 1, 2 as well as travel included in Scope 3).

Our reporting is consistent with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and provide the following information on our approach to assessing and disclosing climate-related risks and opportunities in accordance with Listing Rule 14.3.27R, except for the following matters:

- disclosure ('strategy c') – we have not performed a quantitative risk assessment or climate-related scenario analysis.

See full compliance statement included in appendix.

Risk management

Our process for identifying and assessing climate-related risks and opportunities follows our Group-wide risk assessment and management process. These risks, together with mitigations, are discussed by the executive management team and the Board. Given our fabless business model, the Group's exposure to climate-related risks is considered to be low and not currently classified as a significant risk. In addition, the ESG Steering Committee supports the identification of ESG risks and opportunities.

We have determined our climate-related risks and opportunities as follows:

Related to the transition to a low-carbon economy

Risks	***Opportunities***
Policy and legal Low	***Resource efficiency*** Low
Alphawave Semi is a young and high-growth company setting the foundations of its reporting on a range of environmental, social and governance topics. In 2022, we used the Sustainability Accounting Standards to guide our reporting. In 2022, our business model expanded from IP to silicon. We continue to adapt and comply with regulatory standards, including evolving product standards. As a fabless business with low capital intensity we do not have a significant amount of assets at risk of impairment or early retirement as a result of changes in environmental legislation.	Our technology contributes to improving the energy efficiency of the digital infrastructure, enabling savings in the amount of energy required to transmit data in data centres or 5G base stations.
Technology Low	***Energy source*** Low
Alphawave Semi is at the forefront of connectivity technology.	All our premises are leased. Our offices in Canada (Toronto and Ottawa) and the US (Milpitas and San Jose) are based in modern,

Our leading-edge technology advances push the boundaries of wired connectivity capabilities, enabling data to travel faster, more reliably, and using lower power. Our focus on connectivity and R&D investment seeks to ensure we remain ahead of our competitors.	smart buildings with energy-saving systems and modern HVAC systems. Our premises in Pune and Bangalore, India, which we brought in with the acquisition of OpenFive in 2022, were evaluated. Energy from renewables is not available in all our locations, but where possible, we try to improve the mix of purchased energy towards renewables.
Market Low	***Products and services*** Medium
As a fabless business, energy costs are not a major direct cost driver. Our business has a low risk exposure from scarcity of 'rare Earth materials'. Higher energy costs could potentially impact the direct costs of our manufacturing partners. Our foundry partners are the leading manufacturing companies in the industry and continuously invest in the adoption of next generation manufacturing technologies.	The semiconductor industry is well placed to support the transition to a lower carbon emission economy. Our technology enables semiconductors with lower power consumption, contributing to a more energy-efficient digital infrastructure, such as data centres, 5G base stations and other data intensive applications.
Reputation Low	***Markets*** Medium
Although our direct carbon footprint is relatively small compared to other business activities, we have committed to work towards achieving carbon neutrality. In 2023, we intend to baseline our activities and define a clear level from which we can define specific environmental goals.	We work with the leading companies in the semiconductor industry, as well as hyperscalers. Our connectivity technology aims to address the hardest-to-solve problems for customers in digital infrastructure markets. We have not identified any opportunities to access new low carbon emission markets.
Related to the physical impact of climate change	
Acute risk (event driven)	Low to Medium
As a fabless semiconductor company, our own operations are unlikely to face any specific material risks as a result of the physical impacts of climate change, such as property damage due to extreme weather events (such as changes in temperature, wind patterns, or water-related). We have not yet formulated a science-based study to assess current and future climate risks, acute and chronic, in our most critical locations. The purpose of such a study would be to inform the risk assessment of business interruption, mitigation and adaptation plans, as well as any other resilience issues.	All our employees can work remotely and the majority of our offices are located in city centres. Our manufacturing partners have implemented multiple initiatives to reduce their carbon footprint, review water and energy usage, and understand and manage the effects of climate change on their own operations. We work with leading companies like TSMC, which follow the recommendations of the TCFD and have initiatives in place to manage these risks. Our key assets are our employees, our intellectual property and our expertise.
Chronic risk (long-term shifts in climate patterns)	Low to Medium
In the longer term, changes in greenhouse gas emissions regulations could result in increased costs in our supply chain due to higher compliance, raw materials or energy costs to our suppliers.	It could potentially become more difficult or expensive to insure certain locations.

Dependency on natural, human and social capital

Climate change would not create any new direct dependencies on natural, human or social capital. Our business model relies on our ability to keep at the forefront of connectivity technology for digital infrastructure markets such as data centres, artificial intelligence or 5G.

Our highly skilled engineers and talented employees are vital to ensure we can deliver innovative products. Electronic engineers are in high demand and companies outside the semiconductor industry are establishing engineering departments to design some of their semiconductor requirements.

Governance

The Board has overall accountability for the management of risks and opportunities, and the Board's consideration of significant risks impacting the Group includes assessment of risks associated with climate change.

Our Chief Financial Officer is responsible for our risk management framework, including the assessment and management of climate-related risks. The ESG Steering Committee supports and guides the execution of our environmental activities.

In 2022, we hired our Global Head of Investor Relations, who is also responsible for leading our climate change agenda and managing our policies and practices across sustainability and ESG matters. Our Senior Facilities Specialist is responsible for all our facilities and our IT Director is responsible for our IT resilience and IT end-of-life policies.

Strategy

We have not identified any short-term climate-related risks that are likely to have a material and direct impact on our operations. We are potentially exposed to medium and longer-term climate-related risks of a global/macro nature that impact society in general, together with risks which may impact our end-customers and the broader semiconductor supply chain.

Our exposure is mitigated by the fact that we are a low carbon intensity business, delivery of our technology to customers is through virtual and not physical means, and our value chain has worked effectively through the COVID-19 pandemic, to execute remotely and from alternative locations. Therefore, we regard our exposure to direct physical climate-related risks as low.

Further, the impact of any transitional changes upon the Group and its operations is considered to be low compared to those businesses that have more direct dependencies on manufacturing, distribution or fossil fuels.

In preparing the consolidated financial statements, the Directors have considered the impact of climate change on the Group and have concluded that there is no material impact on financial reporting judgements and estimates (as discussed in note 3 to the financial statements). This is consistent with the assertion that risks associated with climate change are not expected to have a material impact on the longer-term viability of the Group.

Furthermore, the Directors do not consider there to be a material impact on the carrying value of goodwill, other intangibles or on property, plant and equipment.

Forward focus 2023

- Develop training and reporting requirements to collect and monitor emissions data across the Group's locations on a quarterly basis.
- Develop emission-reduction strategies for each of our main locations.
- Set baseline using 2023 emissions data.
- Evaluate additional requirements to undertake climate-related scenarios.

Supply Chain

Context

With the acquisition of OpenFive in September 2022 we welcomed a team of engineers with custom silicon expertise. This included a team responsible for managing the manufacturing process that is outsourced to foundries as well as semiconductor assembly and test (OSAT) partners.

As a fabless business, successfully managing our supply chain is important in ensuring our commercial success.

It reflects our current effort to not just minimise any reputational, commercial or contractual harm but also the importance given by stakeholders to the need for our company to identify and proactively manage related sustainability impacts.

As well as minimising the potential disruption risk, this also includes certain sustainability aspects such as:

- impact on human and labour rights (aligned to national legislation);
- health and safety performance of our partners; and
- environmental impact.

Our main foundry and OSAT partners, which are the leading companies in their sectors and much larger organisations, have longstanding environmental programmes in place.

Management approach

We outsource the production of our semiconductors to the leading companies in the industry, such as TSMC. They provide high-quality products and have the ability to meet both our stringent qualification requirements and our tight deadlines.

Assembly and test functions are also outsourced to leading companies in the sector, such as ASE.

We still retain advanced packaging expertise in house, such as 2.5D and 3D technologies, as this is an area of vital importance in the development of new architectures, such as System-in-Package and chiplets.

Our manufacturing operations are ISO 9001:2015 certified **https://awavesemi.com/custom-silicon/#supply-chain-management**.

Our Vice President of Silicon Operations is responsible for all manufacturing-related activities, including the management of our foundry, assembly and test partners.

We manage our value chain through:

- requiring all our fabrication, assembly and test partners to be ISO 9001 certified;
- screening all partners against our manufacturing partner assessment survey;
- annual audits (audit-light approach) of our major partners through the assessment survey checklist including training and development of staff, working conditions and the traceability of materials, as well as a range of topics directly related to the quality and control of their activities; and
- weekly business and performance reviews with our regular partners and annual meetings with our major vendors.

In addition, certain customers carry out due diligence on us and our suppliers to ensure adequate systems are in place to monitor ongoing performance, ensuring it is in line with expectations and that the products supplied meet all requirements.

In 2022, we performed eleven audits, covering the majority of our manufacturing partners as well as our main foundry partner.

Performance

On Time Delivery (OTD)

OTD measures supply chain efficiency, whether or not the Company is meeting its goals in regard to agreed delivery times. It is also important for maintaining customer satisfaction. From 1 September to 31 December 2022, the average OTD was 99%.

Conflict minerals

We support international efforts to ensure that the mining and trading of tin, tungsten, tantalum and gold (known as 3TG) from high-risk locations do not contribute to conflict and/or serious human rights abuses in the Democratic Republic of the Congo (DRC) and the Great Lakes region of Africa (or elsewhere). We have a Conflict Mineral Policy in place which is available on our website:

https://awavesemi.com/wp-content/uploads/2022/11/QAP-0019-01_Conflict-Free-Minerals-Sourcing-Policy.pdf

Alphawave Semi extends this obligation to our suppliers, to reasonably assure that the tantalum, tin, tungsten and gold in the products they manufacture are conflict free. The Company also expects its suppliers to establish their own due diligence programme to achieve conflict-free supply chains.

Since we became a silicon provider in 2022, we have not identified any instances where tungsten, tin, tantalum and gold (3TG) that are integrated into our products have supported armed groups in the Democratic Republic of the Congo (DRC) or adjoining countries. All our 3TG minerals are from Conflict Minerals compliant smelters.

Environmental management

It is important that our fabrication partners demonstrate environmental leadership. This is why, in line with our Environmental Compliance Policy, we only work with suppliers who are committed to environmental preservation, and who comply fully with environmental laws, regulations and industry environmental guidelines. We continue to work with our manufacturing partners to adopt advanced process technologies that will have an ever-decreasing impact on the environment, world-wide.

It is vital that we can identify and safely manage hazardous materials. This includes the provision of relevant materials declarations under EU Directive 2011/65/EU (Restriction of Hazardous Substances or 'RoHS3') and the amendment EU Directive 2015/863. Our products are halide free, containing very low concentrations of halogens (fluorine, chlorine, bromine and iodine), well below the internationally suggested limits.

Our products are also fully compliant with EU Regulation (EC) 1907/2006 (Registration, Evaluation, Authorisation and Restriction of Chemicals or 'REACH').

Forward focus 2023

- Continue to deliver high levels of operational performance (On Time Delivery).
- Evaluate possible areas of improvement, such as establishing a Supplier Code of Conduct.
- Expand the team to support the Company's growth strategy.

Case study

Alphawave Semi is a member of TSMC's Value Chain Alliance

TSMC's Value Chain Alliance (VCA) programme aims to serve a broader range of customer. Through the acquisition of OpenFive, Alphawave Semi's custom silicon business is a member of the VCA.

As a VCA member we work closely with TSMC to help system companies, ASIC companies and emerging start-up customers bring their innovation to production.

We integrate design enablement building blocks within TSMC's Open Innovation Platform® (OIP) and provide specific services at each link in the semiconductor value chain.

For more information see: **https://www.tsmc.com/english/dedicatedFoundry/oip/value-chain-alliance**.

Intellectual Property

Context
The protection of intellectual property is vital for any business focused on the creation of innovative and high-value technological solutions.

Any failure in this regard could have profound consequences for the value of our inventions, products and our Company.

Furthermore, we have access to and work with our customers' intellectual property and/or commercial and technological secrets.

We recognise the high degree of trust that this requires on the part of our customers, and this reflects the value we seek to add in these relationships.

Management approach
We are advancing wired connectivity technology for digital infrastructure. Given the rapid evolution of technology and increasing customer requirements, the sustainability of our business relies on us staying at the cutting edge. Our engineering teams seek to innovate in ways that grow the business, help our customers and keep the Group at the forefront of the connectivity market. As a result, we invest a significant amount into R&D. In FY 2022 we expensed US$69.4m of R&D activities or 37% of revenue (FY 2021: US$29.4m or 33% of revenue).

Our Chief Technology Officer (CTO) works with Alphawave Semi innovators to define our technology vision and roadmap, as well as drive innovation across the Group.

The IP Committee is responsible for:

- advising the CTO on how to best combine trade secrets, patents and public disclosures to lead in a competitive environment; and
- reviewing and ensuring the correct implementation of applicable policies and procedures.

The CTO chairs the Committee, and its members include representatives from our Engineering, Marketing and Legal teams. The Committee meets on a monthly basis.

We ensure that all intellectual property is safeguarded through the application of:

- a dedicated Invention Disclosure Policy as well as related procedures. The Invention Disclosure Policy is intended to ensure all innovation is recognised and properly managed. Together, these address issues such as data security and incident management;
- an incentive policy for innovations submitted to the IP Committee as well as recognition awards;
- a Public Technical Disclosure Policy, covering the regulation of public technical disclosures to standards bodies, consortia, customers, vendors, partners and other public venues;
- related restrictive provisions in our contracts of employment;
- robust information technology systems to prevent data leakage; and
- access controls to specific project data for employees and third parties.

In line with our Company culture to foster innovation and support the next generation of innovators, each innovation disclosure submitted to the IP Committee by employees is considered for an Innovation Award. Recipients of these awards are recognised at an all-hands event with a commemorative plaque and US$2,000 bonus shared equally among inventors.

In 2022, we awarded the first Alphawave Innovation Award. The award recognised three innovators for an invention that lowers the power consumption of our DSP products. We look forward to recognising many more of the outstanding innovations across the Company in 2023 and beyond.

Key issues and initiatives
Positive product impacts
The technology that we develop and market can be optimised to our customers' precise design needs, helping to bring applications to market quicker. Our multi-standard silicon IP solutions enable data transmission faster, more reliably, and at lower power, offering proven solutions to many of the world's most complex connectivity challenges.

Being particularly energy-intensive, the data centre industry accounts for 1-1.5% of global electricity use. The data centres and data transmission networks that underpin digitalisation accounted for around 300 Mt CO_2-eq in 2020, equivalent to 0.9% of energy-related GHG emissions or 0.6% of total GHG emissions[1]. Connectivity accounts for much of the power in data centres, and our technology is helping to drive that down.

Reliable and power-efficient data transmission is at the core of industry efforts to improve energy efficiency and help reduce climate impacts. As published by the Global

Semiconductor Mobile Association in the State of the Industry on Climate Action 2022 report, artificial intelligence, machine learning and virtualisation are helping to optimise power use in equipment, centralising network resources (enabling synergies) and avoiding unnecessary heating or air-conditioning[2]. Our technology enables the flow of data necessary to enable this.

Minimisation of negative product impacts

We are advancing connectivity technology and operate at the bleeding edge. The nature of our integrated circuits means that their actual and potential negative impacts are relatively limited. Nonetheless, we design our products in a way that helps to minimise any negative impacts they might have over their lifecycle. This includes efforts to reduce the size of our integrated circuits, thus reducing the amount of input materials required.

In addition, and as described above, we aim to make our integrated circuits as energy-efficient as possible – while also enhancing the energy efficiency of the digital infrastructure into which they are incorporated.

Focus areas in 2023

- Agile innovation recognised in our core values.
- Integrate IP procedures and policies across the Company.
- Fostering collaboration across teams to foster more innovation.

PipeCORE PCI-Express and CXL PHY

PipeCORE PHY IP is a high-performance, low-power, PCIe Gen1 – Gen6 PHY, that is capable of also operating at 64Gbps PAM4 PCIe Gen6 rates. The PCIe 6.0 specification **doubles the bandwidth and power efficiency of the prior generation**.[3]

1. IEA (2022), Data Centres and Data Transmission Networks, IEA, Paris https://www.iea.org/reports/data-centres-and-data-transmission-networks, License: CC BY 4.0.
2. https://www.gsma.com/betterfuture/wp-content/uploads/2022/05/Moble-Net-Zero-State-of-the-Industry-on-Climate-Action-2022.pdf.
3. https://pcisig.com/pci-express-6.0-specification.

Business Ethics

Context

We work with leading-edge technologies and seek to establish long-lasting relationships with our customers, partners and suppliers. Our Code of Ethics and Business Conduct guides:

- adherence to technical, ethical and commercial requirements;
- protection of our intellectual property; and
- strict compliance with national legislation of our host societies, including those relating to anti-bribery and corruption.

Any breach of our legal obligations or our customers' and partners' trust has the potential to compromise our business, either in terms of the loss of valuable commercial relationships, loss of our reputation or the application of official sanctions.

Management approach

We manage business ethics through the application of the Code of Ethics and Business Conduct, which addresses a range of issues including:

- respect for the individual;
- creating a culture of open and honest communication;
- ethical and fair competition;
- proprietary information;
- conflicts of interest;
- corporate record keeping;
- protection of the Company's reputation; and
- selective disclosure.

For further information on our policies see **https://awavesemi.com/company/esg/**. Our Code of Ethics and Business Conduct is also available at **https://awavesemi.com/wp-content/uploads/2023/04/Business-Code-of-Conduct-v2.pdf**.

The application of our corporate Code of Ethics and Business Conduct – Human and labour rights

Our Code of Ethics and Business Conduct is directly informed by international, industry and customer standards.

Responsibility for reviewing and updating the Code of Ethics and Business Conduct sits with our Chief Financial Officer.

Given the highly specialised nature of our industry, we believe our supply chain has relatively low levels of slavery and human trafficking risk. Our Policy Against Trafficking of Persons and Slavery reflects our ongoing commitment to a work environment that is free from human trafficking and slavery, including forced labour and unlawful child labour. The Company is also committed to remaining vigilant through compliance monitoring and verification, especially in selecting new suppliers.

For further details on our Policy Against Trafficking of Persons and Slavery see our website at **https://awavesemi.com/wp-content/uploads/2022/10/policy-against-trafficking-of-persons-and-slavery.pdf**.

Anti-bribery and corruption
Compliance with global anti-bribery and corruption (ABC) legislation is vital in our approach to business dealings and forms the basis of our Anti-Bribery Policy. We will uphold all laws relevant to countering bribery and corruption in all the jurisdictions in which we operate. However, we remain bound by the laws of the UK, including the Bribery Act 2010, in respect of our conduct both in the UK and abroad. Training on this policy forms part of the induction process for all new employees. Additionally, all employees will be asked to formally accept conformance to the policy on an annual basis.

Responsibility for this framework sits with our Chief Financial Officer.

For further details see our Anti-Bribery and Corruption Policy on our website at **https://awavesemi.com/wp-content/uploads/2023/04/Anti-Bribery-Policy-v.1.1.pdf**.

Anti-fraud and dishonesty
Compliance with our Anti-Fraud and Dishonesty Policy ensures transparency and accountability in how the administrative processes are carried out and the decisions we make. This policy includes topics such as fraud, theft and abuse of position.

The Company fosters honesty and integrity in its entire staff. Directors and staff are expected to lead by example in adhering to policies, procedures and practices. Equally, members of the public, customers and external organisations (such as suppliers and contractors) are expected to act with integrity and without intent to commit fraud against the Company.

As part of this, the Company provides clear routes by which concerns may be raised by Directors, employees and associates. Details of this can be found in the Company's Anti-bribery and Whistleblowing Policy.

Overall responsibility for managing the risk of fraud has been delegated to the Chief Financial Officer. The day-to-day responsibility has been delegated to the Senior Director of Group Finance to act on behalf of the Chief Financial Officer.

For further details see our Anti-fraud and Dishonesty Policy published on our website at **https://awavesemi.com/wp-content/uploads/2023/04/Anti-Fraud-and-Dishonesty-policy-v1.1.pdf.**

Whistleblowing
Employees or associates that suspect a potential issue including bribery, facilitation of tax evasion, fraud or other criminal activity, can report it to the confidential email address **ombudsman@awavesemi.com** or by contacting the Senior Independent Director. Employees or associated persons who report instances of potential issues in good faith will be supported by the Company. The Company will ensure that the individual is not subjected to detrimental treatment as a consequence of his/her report and any instances of such behaviour will be treated as a disciplinary offence.

For further details see our Whistleblowing Policy published on our website **at https://awavesemi.com/wp-content/uploads/2023/04/Whistleblowing-Policy-1.1.pdf**.

Performance
In 2022, all new employees and those welcomed through acquisitions covered our Code of Ethics and Business Conduct as part of their induction.

During the year we also published our Policy Against Trafficking of Persons and Slavery and reviewed and updated our key policies, such as the Anti-Fraud and Dishonesty Policy and our Anti-Bribery and Corruption Policy.

Focus areas in 2023
- Annual review of relevant policies.
- Review of training requirements.

Community Engagement

Context
In 2022, we officially kicked off our community engagement programme across the Company.

As an organisation, it is important to us that we engage with the communities in which we operate.

Our community engagement activities seek to improve the welfare of the communities where we work and live.

This programme creates a platform for our employees to donate their time and support to a range of local and not-for-profit organisations that are of interest to them.

Management approach
The community engagement programme is co-ordinated by local representatives who meet remotely twice a year to share experiences and co-ordinate Group-wide initiatives.

Responsibility at Group level sits with our Senior Facilities Specialist who is part of the Human Resources function.

The goal of our community engagement programme is to support local and non-for-profit organisations that are of interest to our employees, promote the wellbeing of local residents and align with our corporate values, such as Inclusivity, Integrity and Collaborative.

Key initiatives
Our corporate giving programme provides additional support by matching employee donations to local charities and organisations.

In 2022, the Company donated approximately US$30,000 globally to support local organisations and charities.

Additionally, our internship programmes in India and Canada work with local universities and organisations to ensure we make a positive contribution to the promotion of Science, Technology, Engineering and Mathematics (STEM) education and careers in engineering, supporting the next wave of innovators and expanding the talent pipeline. For more information see our People section.

In 2022, we also hosted our first 'bring your kids to work' day in Toronto and Ottawa. As part of the activities we shared some basic insights about our company and the industry, and there were multiple creative activities with a link to science (such as building specific structures). The day ended watching 'Dream Big', an engineering movie. This event was also part of an official educational day in Ontario.

Forward focus areas in 2023
- Track number of hours involved in community engagement activities.
- Assign country-specific budgets.
- Facilitate employee participation through online tools where employees can register to volunteer.

Case study
Supporting local food banks
In October, our Toronto and Ottawa offices housed food donation boxes in support of the Toronto Daily Food Bank and the Kanata Food Bank. All donations made by employees were matched by the Company, raising a total amount of over US$16,000.

Financial review

2022 was a year of rapid expansion for the business.

2022 was a year of rapid expansion for the business – both organically and through acquisition – in terms of technology, competencies, customers, regions, engineering headcount and support functions. We completed three acquisitions during 2022, deploying US$439m of our IPO proceeds to realise our ambition for Alphawave Semi and raised US$210m in debt to maintain a strong balance sheet.

The foundation of the business remains our leading connectivity IP, which we can now monetise not only as IP licensed to customers developing their own chips, but by integrating that IP into custom silicon or own silicon products. The acquisitions of Precise-ITC and Banias Labs added complementary connectivity technology to our portfolio. Alongside the acquisition of Banias Labs, we announced a multi-year purchasing agreement with a leading North American hyperscaler to develop and sell a portfolio of optical products and DSPs.

With the acquisition of OpenFive, we acquired custom silicon development capabilities and complementary connectivity IP. We also acquired a significant backlog of business and customer contracts, some of which will impact our margins in the near term. However, and as evidenced by some of our recent custom silicon design wins, as we execute on new business more aligned with our strategy and Group margin targets, we expect a steady improvement in margins.

2023 will be a transition year as we continue the integration of our acquisitions and deliver on our growth strategy. The legacy custom silicon business acquired with OpenFive will be an important element of our revenue mix and our margin profile for the year.

Contracted order book and backlog
FY 2022 bookings totalled US$228.1m, of which US$131.3m represented IP licensing and NRE orders and US$96.8m represented royalty and silicon orders. This compares to US$244.7m of total bookings in 2021. However, US$147.8m of our 2021 bookings was generated from the multi-year licensing and resellers deals with WiseWave and VeriSilicon. Excluding those one-time deals, year-on-year bookings growth was 135%, comprising 80% growth in licensing and NRE orders and 304% growth in royalty and silicon orders. The performance in our royalty and silicon orders was driven by silicon orders in our custom silicon group following the acquisition of OpenFive.

North America was the largest contributor to bookings in 2022, representing 46% of the total. It was followed by 39% from China, 9% from EMEA and 6% from APAC excluding China. Our China bookings in the period were largely driven by custom silicon orders from customers acquired through the acquisition of OpenFive.

Backlog represents the value of contracted bookings over the life of the Group excluding potential royalties not yet recognised as revenue. At the end of 2022, our backlog was US$364.5m, more than double the backlog at the end of 2021 of US$168.6m. The increase was partly driven by the backlog acquired with OpenFive and Precise-ITC of US$168.3m, of which over US$100m was in our backlog as at the end of 2022. US$69.8m represents future revenue to be recognised under the subscription deals with WiseWave and through VeriSilicon.

Revenues

Revenues for 2022 reached US$185.4m, 106% growth compared to US$89.9m in 2021. The strong increase was driven by organic growth and acquisitions:

- Acquisitions – The acquisitions of OpenFive and Precise-ITC contributed US$66.1m of revenues after consolidation entries at Group level. Our revenues excluding OpenFive and Precise-ITC were US$119.3m, with organic revenue growth of 33% compared to 2021 (US$89.9m).
- Customers – In 2022, we recognised revenues from 80 end-customers, compared to 20 end-customers in 2021. This included new tier-one customers licensing our IP as well as customers acquired with Precise-ITC and OpenFive. 53% of our 2022 revenues were from existing end-customers, with 47% from end-customers new to Alphawave. End-customer revenue concentration decreased during the year. Our top five end-customers generated 47% of our 2022 revenues (2021: 62%) or 39% excluding revenues from the WiseWave subscription deal (2021: 51%).
- Regions – In addition to WiseWave and VeriSilicon, the contribution in 2022 from China (57%) was driven by significant outperformance of custom silicon products in the region. Absent this, our regional mix was comparable to 2021. Over the long term, as the silicon product revenues ramp with hyperscalers and other large, predominantly North American customers, we expect the mix of China revenues to gradually decrease to 10% of sales or lower. North American revenues grew 36% from US$37.6m in 2021 to US$51.4m in 2022, and APAC (excluding China) revenues grew 84% from US$9.2m in 2021 to US$17.0m in 2022. We also saw our first revenues from EMEA of US$12.3m in 2022, largely driven by our IP licensing business.

We recognised a small amount of royalty revenue in 2022 based on early production volumes from a specific customer. Given the long design cycles at our customers, we expect royalties to gradually increase and contribute to earnings in the medium term. Further, as we seek to monetise our IP through silicon and achieve greater revenue scale and higher absolute earnings, we expect the contribution from IP royalties to be less significant to our Group results.

Operating expenses and profitability

Gross margin in 2022 was 67%, with cost of sales primarily reflecting silicon manufacturing costs and custom silicon development costs, as well as sales and reseller commissions on IP sales. In 2021 gross margin was 94%. Gross margin in 2022 reflects the diversification of our business into custom silicon development and silicon products. Through the acquisition of OpenFive, we inherited a number of contracts where gross margins are below our Group targets.

EBITDA[1] in 2022 was US$49.3m (27% margin) compared to US$39.2m in 2021 (44% margin). On an adjusted basis, EBITDA in 2022 was US$46.8m (25% margin) compared to US$51.8m (58% margin) in 2021. The decrease in adjusted EBITDA margin was expected and reflects the early stage of our migration to a combined IP licensing and silicon model through our acquisitions and the scaling of our engineering capabilities.

Reflecting the continued scaling of the business and our acquisitions, operating expenses in 2022 were US$87.0m compared to US$48.7m in 2021.

1. See note 4 (Alternative performance measures) for reconciliations of EBITDA to adjusted EBITDA.

R&D/engineering expenses in 2022 were US$69.4m (37% of revenue) compared to US$29.4m (33% of revenue) in 2021. In 2022, R&D/engineering included US$5.5m amortisation of acquired intangibles. For the first time, in 2022 we capitalised US$7.2m related to our own product development activities (2021: US$nil).

Sales and marketing (S&M) expenses in 2022 were US$4.6m (3% of revenue) compared to US$1.3m (1% of revenue) in 2021.

General and administrative (G&A) expenses in 2022 were US$17.2m (9% of revenue) compared to US$5.4m (6% of revenue) in 2021. G&A expenses in 2022 included an expected credit loss of US$2.2m based on our assessment of our potential credit loss on overdue invoices and accrued revenues. Excluding this, our G&A expenses for 2022 were US$15.0m (8% of revenue).

The year-on-year increase in R&D, S&M and G&A expenses was primarily due to the increase in headcount from 149 full-time employees at end 2021 to 695 at end 2022, together with associated software tool costs which scale with our R&D/engineering headcount. The increase of 546 full-time employees includes 376 employees who joined as part of the acquisitions of OpenFive, Banias and Precise-ITC. In addition, we invested in our support functions and scaled our finance, HR, legal and corporate marketing teams, reflecting the increased complexity and geographical spread of the Group.

In the medium term, we anticipate only modest growth in our headcount as we believe the Group is right-sized for the opportunities ahead.

Other expenses in 2022 totalled a credit of US$4.2m. M&A and professional costs in 2022 were US$17.0m related to the acquisitions and the debt funding. Stock-based payment costs of US$15.7m in 2022 reflect our increased headcount, equity grants awarded to employees joining from OpenFive and Banias, as well as significant one-time grants awarded to new members of the senior management team who joined us in 2022. Exchange gains in 2022 were US$36.8m, driven mainly by the strengthening of USD against GBP in H1 2022, as the Company held a significant USD balance at the plc level, which is a GBP denominated entity.

Other expenses in 2021 were US$12.6m, comprising US$10.0m of non-recurring IPO costs, US$0.5m one-time M&A/professional expenses, US$6.1m share-based payment costs and US$4.0m of exchange gains.

Operating profit was therefore US$37.6m in 2022, US$1.6m above 2021.

Finance income in 2022 was US$1.7m, compared to US$0.3m in 2021. The increase was largely driven by cash proceeds from IPO being invested in interest-bearing accounts.

Finance expense in 2022 was US$3.6m, US$3.3m higher than in 2021 (FY 2021: US$0.3m). The increase was driven by interest associated with the five-year term loan obtained in October 2022.

Share of the post-tax loss of equity-accounted joint ventures was US$18.5m in 2022, compared to US$12.9m in 2021.

At the end of 2022, the Group owned 42.5% of WiseWave, a newly formed company established in China in Q4 2021 to develop and sell silicon products incorporating silicon IP licensed from the Group. We equity account for the investment as a joint venture, resulting in a US$18.5m loss (US$12.9m loss in 2021). The five-year subscription licence agreement is being capitalised and amortised over the life of the agreement by WiseWave.

Tax expense in 2022 was US$18.3m, being 106% of profit before tax of US$17.2m, or 36% after adjusting for the loss from WiseWave and stock-based compensation expense, both of which are not deductible for tax purposes.

In 2022 we incurred a loss after tax of US$1.1m compared to US$9.4m profit for the year in 2021.

On an adjusted basis, profit after tax in 2022 was US$6.7m, compared to US$22.0m in 2021.

The exchange loss of US$75.0m in other comprehensive income is predominantly a result of the Company, a GBP-denominated entity, having net assets (including a large cash balance being the remainder of our GBP proceeds raised at IPO) translated into USD, our presentational currency. This is re-translated again for presentational purposes into USD at the year end. Over this period the USD strengthened against GBP from 1.4134 to 1.2058, a 15% increase.

Balance sheet, liquidity and cash flow

At the end of 2022, we held US$186.2m in cash and cash equivalents and had borrowings of US$210.2m, comprising a revolving credit facility of US$110.0m, a term loan of US$98.8m and other long-term borrowings of US$1.5m. During 2022, our net cash position decreased from US$501.0m to a net debt position of US$24.0m. During the year we deployed the proceeds of our IPO, investing US$438.7m on acquisitions, net of acquired cash.

During 2022 current trade and other receivables increased from US$13.1m to US$104.6m. This increase was primarily due to prepayments of US$50.9m from the OpenFive acquisition, which represent advance payments to foundries to reserve fab capacity and are predominantly covered by advance receipts from customers and other prepayments of US$19.7m (2021: US$2.5m).

Following the acquisition of OpenFive, at the end of 2022 we held physical inventory of silicon devices with a value of US$18.1m (2021: US$nil).

At the end of 2022 the carrying amount of intangible assets was US$161.4m (2021: US$1.2m). The increase during the year was primarily due to the technology and IP acquired with OpenFive and Banias Labs.

In 2022 we recognised aggregate goodwill of US$331.9m from the acquisitions of Precise-ITC, OpenFive and Banias Labs.

Accrued revenue, where revenue recognition conditions are met under IFRS 15 but we have not billed or collected any amount, increased from US$31.7m at the end of 2021 to US$58.5m at the end of 2022. This increase was a function of our revenue growth and the timing of invoicing milestones on specific contracts, primarily for our IP sales. WiseWave accounted for US$20.2m of the accrued revenue balance at the end of 2022.

Investments in equity-accounted associates, namely the value of the investment in WiseWave, was reduced from US$9.4m in 2021 to US$nil in 2022, as a result of equity accounting for losses at WiseWave during the period. The value of the cumulative losses incurred by WiseWave exceeds the cumulative value of our investment into the business.

During 2022, current trade and other payables increased from US$5.8m to US$83.1m. This increase was predominantly due to higher purchasing levels as the business has scaled.

Deferred revenue liability, where we have invoiced or received money for products or services where revenue recognition conditions are not met, increased from US$12.7m at the end of 2021 to US$91.7m at the end of 2022. This increase was due to the order intake for custom silicon products where in some instances customers are required to make advance payment ahead of silicon being shipped to them.

During 2022, flexible spending accounts, which represent deferred income, decreased from US$6.8m to US$5.2m. Flexible spending accounts are contracts with customers who have committed to regular periodic payments to us over the term of the contract. These payments are not in respect of specific licences or other deliverables, but can be used as credit against future deliverables. We have flexible spending accounts with customers with whom we work on multiple projects and who prefer regular periodic billing and payments rather than milestone-based billing. Although we have been invoicing and collecting under these contracts, the revenue recognition conditions may not have been met, which enable us to recognise these billings as revenue.

In 2022 we generated cash from operating activities before tax of US$7.8m compared with US$26.5m in 2021. In 2022 there were one-time payments of approximately US$6.0m relating to M&A and professional fees. Also, our operating cash flow in 2022 includes US$28.2m of cash outflows related to deferred compensation payable as part of the acquisitions of Precise-ITC and Banias. These are attributable to payments made as part of the acquisitions that do not represent consideration, but are classified as compensation payments in lieu of share-based remuneration or payments conditional on continued employment with the Group. These payments are included within working capital. Excluding these, our operating cash flow before tax was US$36.0m.

Excluding these compensation payments, working capital in 2022 increased by US$15.0m, compared to an increase of US$15.6m in 2021. This was primarily due to an increase in trade and other receivables, offset by an increase in deferred revenue and flexible spending accounts, and trade and other payables.

Income tax paid in 2022 was US$19.9m, compared to US$7.6m in 2021.

In 2022, the Group generated a net cash outflow from operating activities after tax of US$12.1m, compared to a net cash inflow of US$18.9m in 2021. As stated above, this includes cash outflows related to one-time M&A-related expenses as well as deferred compensation payable as part of the acquisitions of Precise-ITC and Banias.

Capital expenditure during 2022 totalled US$15.5m (2021: US$2.2m), comprising US$4.2m of plant, property and equipment and US$11.3m of intangibles. US$11.3m of intangibles includes capitalisation of development expenses of US$7.2m (2021: US$nil). US$4.2m of plant, property and equipment relates to purchases of lab and test equipment as we ramp our own product development capabilities, as well as leasehold improvements.

In 2022, we also made further equity investments into WiseWave totalling US$9.1m, with Wise Road Capital contributing US$12.3m. As disclosed in our IPO Prospectus, Alphawave IP has committed to invest up to US$170m in total into WiseWave, although our expectation is that any future investment will be limited and we will seek to realise our equity stake in the medium term.

As detailed in our Capital Markets Day in January 2023, the Company's capital allocation policy is focused on investment in own product development and prototyping, critical hires and expertise to support growth opportunities, and management of our debt position in a changing interest rate environment. We do not intend to pay dividends or make significant acquisitions in the short or medium term.

Finally, as further detailed on page 35, the Directors have adopted the going concern basis of accounting.

Tony Pialis
Chief Executive Officer
19 May 2023

Statement of Directors' responsibilities

In respect of the annual report and financial statements

The Directors are responsible for preparing the annual report and the Group and Company financial statements in accordance with applicable law and regulations.

Company law requires the Directors to prepare Group and parent company financial statements for each financial year. Under that law they are required to prepare the Group financial statements in accordance with UK-adopted international accounting standards and applicable law and have elected to prepare the parent company financial statements in accordance with UK accounting standards and applicable law, including FRS 101 Reduced Disclosure Framework.

Under company law, the Directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and Company and of the Group's profit or loss for that period. In preparing each of the Group and Company financial statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable, relevant and reliable;
- for the Group financial statements, state whether they have been prepared in accordance with UK-adopted international accounting standards;
- for the parent company financial statements, state whether applicable UK accounting standards have been followed, subject to any material departures disclosed and explained in the parent company financial statements;
- assess the Group and Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and
- use the going concern basis of accounting unless they either intend to liquidate the Group or the Company or to cease operations, or have no realistic alternative but to do so.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Group's transactions and disclose with reasonable accuracy at any time the financial position of the Group and enable them to ensure that its financial statements comply with the Companies Act 2006. They are responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error, and have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the Group and to prevent and detect fraud and other irregularities.

Under applicable law and regulations, the Directors are also responsible for preparing a strategic report, Directors' report, Directors' remuneration report and corporate governance statement that complies with that law and those regulations.

In accordance with Disclosure Guidance and Transparency Rule 4.1.14R,the financial statements will form part of the annual financial report prepared using the single electronic reporting format under the TD ESEF Regulation. The auditor's report on these financial statements provides no assurance over the ESEF format.

The Directors are responsible for the maintenance and integrity of the corporate and financial information included on the Group's website. Legislation in the UK governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Responsibility statement of the Directors in respect of the annual financial report
We confirm that to the best of our knowledge:

- the financial statements, prepared in accordance with the applicable set of accounting standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the Company and the undertakings included in the consolidation taken as a whole; and
- the management report includes a fair review of the development and performance of the business and the position of the issuer and the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties that they face.
- We consider the annual report and accounts, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's position and performance, business model and strategy.

Tony Pialis
President & Chief Executive Officer

19 May 2023

Alphawave IP Group plc
6th Floor
65 Gresham Street
London
EC2V 7NQ
United Kingdom

Consolidated statement of comprehensive income

for the year ended 31 December 2022

Continuing operations	Note	**Year ended 31 December 2022 US$'000**	Year ended 31 December 2021 US$'000
Revenue	5	**185,406**	89,931
Cost of sales		**(60,777)**	(5,199)
Gross profit		**124,629**	84,732
Research and development/engineering	6	**(69,358)**	(29,444)
Sales and marketing		**(4,647)**	(1,275)
General and administration		**(17,167)**	(5,364)
of which expected credit loss	*28*	***(2,184)***	–
Other expenses		**4,170**	(12,614)
Operating profit		**37,627**	36,035
'Other expenses' charged in arriving at operating profit:			
Non-recurring Initial Public Offering costs	11	**—**	(9,961)
M&A costs/professional costs		**(16,973)**	(533)
Share-based payment	27	**(15,695)**	(6,143)
Exchange gain		**36,838**	4,023
Other expenses		**4,170**	(12,614)
Finance income	10	**1,684**	312
Finance expense	10	**(3,588)**	(320)
Share of post-tax loss of equity-accounted joint ventures	18	**(18,481)**	(12,939)
Profit before tax		**17,242**	23,088
Tax expense	12	**(18,328)**	(13,657)
(Loss)/profit for the year		**(1,086)**	9,431
Other comprehensive expense			
Items that may be reclassified subsequently to profit or loss:			
Exchange (losses) arising on translation of foreign operations		**(74,989)**	(23,096)
Other comprehensive expense for the period, net of tax		**(74,989)**	(23,096)
Total comprehensive expense for the year		**(76,075)**	(13,665)
(Loss)/profit per ordinary share attributable to the shareholders (expressed in cents per ordinary share):			
Basic (loss)/earnings per share (US$ cents)	13	**(0.16)**	1.51
Diluted (loss)/earnings per share (US$ cents)	13	**(0.16)**	1.34

The notes on this document form part of these financial statements.

Consolidated statement of financial position

as at 31 December 2022

	Note	**31 December 2022 US$'000**	31 December 2021 US$'000
Assets			
Current assets			
Trade and other receivables	19	**104,634**	13,103
Accrued revenue	5	**58,534**	31,719
Taxes receivable		**2,922**	2,605
Inventories	20	**18,061**	—
Cash and cash equivalents	34	**186,231**	500,964
Total current assets		**370,382**	548,391
Non-current assets			
Property and equipment	14	**13,421**	1,626
Intangible assets	15	**161,406**	1,167
Goodwill	16	**331,886**	—
Right-of-use assets	17	**14,553**	7,672
Investments in equity-accounted joint venture	18	**—**	9,421
Trade and other receivables	19	**19,272**	—

Deferred income taxes	24	**2,680**	—
Total non-current assets		**543,218**	19,886
Total assets		**913,600**	568,277
Liabilities			
Current liabilities			
Trade and other payables	21	**83,055**	5,805
Lease liabilities	17	**3,756**	2,160
Deferred revenue	5	**91,733**	12,661
Income tax payable		**—**	6,970
Flexible spending account	5	**5,200**	6,819
Loans and borrowings	22	**5,000**	—
Total current liabilities		**188,744**	34,415
Non-current liabilities			
Lease liabilities	17	**11,177**	5,668
Deferred income taxes	24	**29,650**	422
Trade and other payables	21	**10,555**	—
Loans and borrowings	22	**205,201**	—
Total non-current liabilities		**256,583**	6,090
Total liabilities		**445,327**	40,505
Net assets		**468,273**	527,772
Issued capital and reserves attributable to owners of the parent			
Share capital	25	**9,751**	9,399
Preference shares	25	**—**	—
Share premium account	26	**775**	—
Share-based payment reserve	27	**18,189**	4,777
Merger reserve	26	**(793,216)**	(793,216)
Foreign exchange reserve	26	**(96,707)**	(21,718)
Retained earnings	26	**1,329,481**	1,328,530
Total equity		**468,273**	527,772

The financial statements on pages 27 to 28 were approved and authorised for issue by the Board of Directors on 19 May 2023 and were signed on its behalf by:

Tony Pialis
Director

The notes on this document form part of these financial statements.

Company statement of financial position

as at 31 December 2022

	Note	**31 December 2022 US$'000**	31 December 2021 US$'000
Assets			
Current assets			
Trade and other receivables	19	**14,194**	146
Amounts owed by Group undertakings	19	**14,769**	367
Taxes receivable		**364**	205
Cash and cash equivalents	34	**125,729**	463,360
Total current assets		**155,056**	464,078
Non-current assets			
Investments in subsidiaries	18	**280,373**	22,391
Amounts owed by Group undertakings	19	**260,011**	22,997
Trade and other receivables	19	**17,091**	—
Total non-current assets		**557,475**	45,388
Total assets		**712,531**	**509,466**
Liabilities			
Current liabilities			
Trade and other payables	21	**12,400**	1,013
Amounts owed to Group undertakings	21	**—**	150
Income tax payable		**145**	253

Loans and borrowings	22	**5,000**	—
Total current liabilities		**17,545**	1,416
Non-current liabilities			
Trade and other payables	21	**4,423**	—
Loans and borrowings	22	**203,750**	—
Total non-current liabilities		**208,173**	—
Total liabilities		**225,718**	1,416
Net assets		**486,813**	508,050
Issued capital and reserves attributable to owners of the parent			
Share capital	25	**9,751**	9,399
Preference shares	26	**—**	—
Share premium account	26	**775**	—
Share-based payment reserve	27	**17,909**	4,497
Merger reserve	26	**(777,751)**	(777,751)
Foreign exchange reserve	26	**(79,706)**	(23,486)
Retained earnings	26	**1,315,835**	1,295,391
Total equity		**486,813**	508,050

The Company has taken advantage of the exemption allowed under section 408 of the Companies Act 2006 and has not presented its own statement of comprehensive income in these financial statements. The profit of the Company for the period was US$18.4m (period ended 31 December 2021: loss of US$8.4m).

The financial statements on pages 28 to 29 were approved and authorised for issue by the Board of Directors on 19 May 2023 and were signed on its behalf by:

Tony Pialis
Director
Company registered number: 13073661
The notes on this document form part of these financial statements.

Consolidated statement of cash flows

for the year ended 31 December 2022

	Note	**Year ended 31 December 2022 US$'000**	Year ended 31 December 2021 US$'000
Cash flows from operating activities			
(Loss)/profit for the year		**(1,086)**	9,431
Items not affecting cash:			
Tax expense	12	**18,328**	13,657
R&D tax credit		**(5,198)**	(3,039)
Amortisation of intangibles	15	**6,159**	—
Depreciation of property and equipment	14	**2,472**	642
Depreciation of right-of-use asset	17	**3,036**	2,485
Share of loss in joint venture	18	**18,481**	12,939
Share-based payment	27	**15,695**	6,143
Finance income	10	**(1,684)**	(312)
Finance cost	10	**3,197**	26
Lease interest	10	**391**	294
Foreign exchange (gain) on Intercompany balances		**(8,742)**	(112)
		51,049	42,154
Changes in working capital:			
(Increase) in trade and other receivables		**(106,937)**	(6,879)
(Increase) in Inventories		**(3,390)**	—
(Increase) in accrued revenue		**(24,101)**	(21,391)
Increase in trade and other payables		**46,363**	2,859
Increase in deferred revenue and flexible spending account		**44,834**	9,764
		(43,231)	(15,647)
Cash generated from operating activities before tax		**7,818**	26,507
Income tax paid		**(19,906)**	(7,615)
Net cash generated from operating activities		**(12,088)**	18,892

The notes on this document form part of these financial statements.

	Note	**Year ended 31 December 2022 US$'000**	Year ended 31 December 2021 US$'000
Cash flows from investing activities			
Purchase of property and equipment	14	**(4,209)**	(1,129)
Purchase of intangible assets	15	**(11,333)**	(1,038)
Interest received	10	**1,270**	312
Investment in joint venture	18	**(9,060)**	(22,360)
Net cash outflow on acquisition of subsidiaries	33	**(410,415)**	—
Net cash used in investing activities		**(433,747)**	(24,215)
Cash flows from financing activities			
Issuance of common shares – Initial Public Offering	25	**—**	509,003
Issuance of common shares	25	**—**	1,282
Initial Public Offering share issuance costs	25	**—**	(20,308)
Exercise of options	27	**898**	5,089
Proceeds from Initial Public Offering stabilisation	25	**—**	22,238
Interest paid	10	**(650)**	(26)
Increase/(decrease) in bank indebtedness		**208,750**	(54)
Repayment of principal under lease liabilities	17	**(3,038)**	(2,494)
Net cash generated from financing activities		**205,960**	514,730
Net (decrease)/increase in cash and cash equivalents		**(239,875)**	509,407
Cash and cash equivalents at start of year		**500,964**	14,039
Effects of foreign exchange on cash and cash equivalents		**(74,858)**	(22,482)
Cash and cash equivalents at end of year	34	**186,231**	500,964

The notes on this document form part of these financial statements.

Consolidated statement of changes in equity

for the year ended 31 December 2022

	Note	**Ordinary share capital US$'000**	**Share premium account US$'000**	**Share-based payment reserve US$'000**	**Merger reserve US$'000**	**Currency translation reserve US$'000**	**Retained earnings equity US$'000**	**Total US$'000**
Balance at 1 January 2022		**9,399**	**—**	**4,777**	**(793,216)**	**(21,718)**	**1,328,530**	**527,772**
Comprehensive income for the year								
(Loss) for the year		**—**	**—**	**—**	**—**	**—**	**(1,086)**	**(1,086)**
Other comprehensive expense		**—**	**—**	**—**	**—**	**(74,989)**	**—**	**(74,989)**
Total comprehensive expense for the year		**—**	**—**	**—**	**—**	**(74,989)**	**(1,086)**	**(76,075)**
Contributions by and distributions to owners								
Issue of shares	25	**106**	**775**	**—**	**—**	**—**	**—**	**881**
Effect of exercise price below nominal value		**246**	**—**	**(246)**	**—**	**—**	**—**	**—**
Transfer on exercise of share options	27	**—**	**—**	**(2,037)**	**—**	**—**	**2,037**	**—**
Share-based payments	27	**—**	**—**	**15,695**	**—**	**—**	**—**	**15,695**
Total contributions by and distributions to owners		**352**	**775**	**13,412**	**—**	**—**	**2,037**	**16,576**
Balance at 31 December 2022		**9,751**	**775**	**18,189**	**(793,216)**	**(96,707)**	**1,329,481**	**468,273**

Tax impact of other comprehensive expense is US$nil.

The notes on this document form part of these financial statements.

	Ordinary share capital US$'000	Preference share capital US$'000	Share premium account US$'000	Share-based payment reserve US$'000	Merger reserve US$'000	Currency translation reserve US$'000	Retained earnings equity US$'000	Total US$'000
Balance at 1 January 2021	1,881	—	—	331	—	1,378	14,201	17,791
Reorganisation accounting	(1,881)	—	—	—	—	—	—	(1,881)
	—	—	—	331	—	1,378	14,201	15,910
Comprehensive income for the year								
Profit for the year	—	—	—	—	—	—	9,431	9,431
Other comprehensive expense	—	—	—	—	—	(23,096)	—	(23,096)
Total comprehensive income/(expense) for the year	—	—	—	—	—	(23,096)	9,431	(13,665)

Tax impact of other comprehensive expense is US$nil.
The notes on this document form part of these financial statements.

	Note	Ordinary share capital US$'000	Preference share capital US$'000	Share premium account US$'000	Share-based payment reserve US$'000	Merger reserve US$'000	Currency translation reserve US$'000	Retained earnings US$'000	Total equity US$'000
Contributions by and distributions to owners									
Issue of shares, primary	25	124,147	71	384,856	—	—	—	—	509,074
Issue of shares, reorganisation	25	796,958	—	—	—	(793,216)	—	—	3,742
Issue of shares, other	25	313	—	969	—	—	—	—	1,282
Exercise of share options	27	4,064	—	—	(1,060)	—	—	1,060	4,064
Transfer on exercise of share options pre reorganisation	27	—	—	—	(637)	—	—	—	(637)
Effect of exercise price below nominal value	25	14,381	—	(14,381)	—	—	—	—	—
Net costs on issuance of shares relating to Initial Public Offering	25	—	—	1,930	—	—	—	—	1,930
Capital reduction		(930,464)	—	(373,374)	—	—	—	1,303,838	—
Share-based payments	27	—	—	—	6,143	—	—	—	6,143
Shares redeemed		—	(71)	—	—	—	—	—	(71)
Total contributions by and distributions to owners		9,399	—	—	4,446	(793,216)	—	1,304,898	525,527
Balance at 31 December 2021		9,399	—	—	4,777	(793,216)	(21,718)	1,328,530	527,772

The notes on this document form part of these financial statements.

Company statement of changes in equity

for the year ended 31 December 2022

	Note	**Ordinary share capital US$'000**	**Share premium account US$'000**	**Share-based payment reserve US$'000**	**Merger reserve US$'000**	**Currency translation reserve US$'000**	**Retained earnings US$'000**	**Total equity US$'000**

Balance at 1 January 2022		**9,399**	**—**	**4,497**	**(777,751)**	**(23,486)**	**1,295,391**	**508,050**
Comprehensive income for the year								
Profit for the year		**—**	**—**	**—**	**—**	**—**	**18,407**	**18,407**
Other comprehensive expense		**—**	**—**	**—**	**—**	**(56,220)**	**—**	**(56,220)**
Total comprehensive income/(expense) for the year		**—**	**—**	**—**	**—**	**(56,220)**	**18,407**	**(37,813)**
Contributions by and distributions to owners								
Issue of shares	25	**106**	**775**	**—**	**—**	**—**	**—**	**881**
Effect of exercise price below nominal value		**246**	**—**	**(246)**	**—**	**—**	**—**	**—**
Transfer on exercise of share options		**—**	**—**	**(2,037)**	**—**	**—**	**2,037**	**—**
Share-based payments	27	**—**	**—**	**15,695**	**—**	**—**	**—**	**15,695**
Total contributions by and distributions to owners		**352**	**775**	**13,412**	**—**	**—**	**2,037**	**16,576**
Balance at 31 December 2022		**9,751**	**775**	**17,909**	**(777,751)**	**(79,706)**	**1,315,835**	**486,813**

Tax impact of other comprehensive income/expense is US$nil.

The notes on this document form part of these financial statements.

	Note	Ordinary share capital US$'000	Preference share capital US$'000	Share premium account US$'000	Share-based payment reserve US$'000	Merger reserve US$'000	Currency translation reserve US$'000	Retained earnings US$'000	Total equity US$'000
Balance at 9 December 2020		—	—	—	—	—	—	—	—
Comprehensive expense for the period									
Loss for the period		—	—	—	—	—	—	(8,447)	(8,447)
Other comprehensive expense		—	—	—	—	—	(23,486)	—	(23,486)
Total comprehensive expense for the period		—	—	—	—	—	(23,486)	(8,447)	(31,933)
Contributions by and distributions to owners									
Issue of shares, primary	25	124,147	71	384,856	—	—	—	—	509,074
Issue of shares, secondary	25	796,958	—	—	—	—	—	—	796,958
Issue of shares, other	25	313	—	969	—	—	—	—	1,282
Exercise of share options	27	4,064	—	—	—	—	—	—	4,064
Reorganisation accounting	25	—	—	—	—	(777,751)	—	—	(777,751)
Effect of exercise price below nominal value	25	14,381	—	(14,381)	—	—	—	—	—
Net costs on issuance of shares relating to Initial Public Offering		—	—	1,930	—	—	—	—	1,930
Capital reduction		(930,464)	—	(373,374)	—	—	—	1,303,838	—
Share-based payments	27	—	—	—	4,497	—	—	—	4,497
Shares redeemed	25	—	(71)	—	—	—	—	—	(71)
Total contributions by and distributions to owners		9,399	—	—	4,497	(777,751)	—	1,303,838	539,983
Balance at 31 December 2021		9,399	—	—	4,497	(777,751)	(23,486)	1,295,391	508,050

Tax impact of other comprehensive income/expense is US$nil.

The notes on this document form part of these financial statements.

Notes forming part of the consolidated financial statements
for the year ended 31 December 2022

1 General information
Alphawave IP Group plc (the 'Company') is a public limited company whose shares are listed on the main market of the London Stock Exchange and is incorporated and domiciled in England and Wales. The address of its registered office is 6th Floor, 65 Gresham Street, London, United Kingdom, EC2V 7NQ.

The principal activities of the Company and its subsidiaries (the 'Group') are detailed in the Directors' report.

2 Accounting policies
Basis of preparation
The principal accounting policies adopted in the preparation of the consolidated financial statements are set out below. The policies have been consistently applied to all the years presented, unless otherwise stated.

The consolidated financial statements are presented in US$, which is the Group's presentational currency. The ten trading entities in the Group have different functional currencies. Alphawave IP Inc. and Precise are now accounted for in US$, as the primary economic environment has changed due to the proportion and value of US$ transactions increasing. The functional currency change commenced from 1 January 2022. Alphawave Semi US Corp. (formerly Alphawave IP Corp.), Alphawave Semi International Corp., Alphawave IP Limited and Alphawave IP (BVI) Ltd are also in US$ and the Company in GBP. Open-Silicon Japan is in JPY, Open-Silicon Research Private Ltd is in INR, Yuanfang Silicon Technology (Nanjing) Co. Ltd is in RMB and Solanium Labs Ltd. is in ILS. The currencies used by each entity reflect the functional currency of that entity. However, it was decided to use US$ as the Group's presentational currency as substantially all of the Group's revenues and a significant part of the costs are denominated in US$ and it is typically the presentational currency used across the semiconductor industry.

Amounts are rounded to the nearest thousand, unless otherwise stated.

The consolidated financial statements of the Group (the 'consolidated financial statements') have been prepared in accordance with UK-adopted international accounting standards (UK-adopted IFRS). The Company has elected to prepare its parent company financial statements in accordance with FRS 101; these are presented on pages 26-27 and 28.

In preparing separate financial statements the Company has taken advantage of certain disclosure exemptions conferred by FRS 101:

- certain disclosures required under IFRS 15 Revenue from Contracts from Customers, including disaggregation of revenue, details of changes in contract assets and liabilities, and details of incomplete performance obligations;
- paragraphs 91 to 99 of IFRS 13 Fair Value Measurement (disclosure of valuation techniques and inputs used for fair value measurement of assets and liabilities);
- the requirement in paragraph 38 of IAS 1 Presentation of Financial Statements to present comparative information in respect of:
  - paragraph 79(a)(iv) of IAS 1;
  - paragraph 73(e) of IAS 16 Property, Plant and Equipment;
- the requirements of paragraphs 10(d), 10(f), 16, 38A, 38B, 38C, 38D, 40A, 40B, 40C, 40D, 111, 134 and 136 of IAS 1 Presentation of Financial Statements;
- the requirements of IAS 7 Statement of Cash Flows;
- the requirements of paragraphs 30 and 31 of IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors;
- the requirements of paragraph 17 of IAS 24 Related Party Disclosures to disclose key management personnel compensation and 18A of IAS 24 Related Party Disclosures to disclose amounts incurred by the entity for provision of key management personnel services that are provided by a separate management entity; and
- the requirements in IAS 24 Related Party Disclosures to disclose related party transactions entered into between two or more members of a group, provided that any subsidiary which is a party to the transaction is wholly owned by such a member.

The Company has taken advantage of the exemption allowed under section 408 of the Companies Act 2006 and has not presented its own statement of comprehensive income in these financial statements.

In addition, and in accordance with FRS 101, further disclosure exemptions have been applied because equivalent disclosures are included in the consolidated financial statements:

- the requirements of IFRS 7 Financial Instruments: Disclosures.

Where required, equivalent disclosures are given in the Group financial statements.

The preparation of financial statements in compliance with UK-adopted IFRS requires the use of certain critical accounting estimates. It also requires Group management to exercise judgement in applying the Group's accounting policies. The areas where significant judgements and estimates have been made in preparing the financial statements and their effect are disclosed in note 3.

Basis of measurement

The financial statements have been prepared on the historical cost basis except where IFRS requires an alternative treatment, including certain financial instruments.

Changes in accounting policies

a) New standards, interpretations and amendments

The following amendments are effective for the period beginning 1 January 2022:

- Onerous Contracts – Cost of Fulfilling a Contract (Amendments to IAS 37);
- Property, Plant and Equipment: Proceeds before Intended Use (Amendments to IAS 16);
- Annual Improvements to IFRS Standards 2018-2020 (Amendments to IFRS 1, IFRS 9, IFRS 16 and IAS 41); and
- References to Conceptual Framework (Amendments to IFRS 3).

Their adoption has not had any material impact on the disclosures or on the amounts reported in these financial statements.

b) New standards, interpretations and amendments not yet effective

There are a number of standards, amendments to standards, and interpretations which have been issued by the IASB that are effective in future accounting periods that the Group has decided not to adopt early.

The following amendments are effective for the period beginning 1 January 2023:

- Disclosure of Accounting Policies (Amendments to IAS 1 and IFRS Practice Statement 2);
- Definition of Accounting Estimates (Amendments to IAS 8);
- Deferred Tax Related to Assets and Liabilities arising from a Single Transaction (Amendments to IAS 12);
- IFRS 16 Leases (Amendment – Liability in a Sale and Leaseback) Classification of Liabilities as Current or Non-current (Amendments to IAS 1); and
- IAS 1 Presentation of Financial Statements (Amendment – Classification of Liabilities as Current or Non-current).

The following is a list of other new and amended standards which, at the time of writing, had been issued by the IASB but which are effective in future periods:

- IFRS 17 Insurance Contracts (including the June 2020 and December 2021 Amendments to IFRS 17).

In June 2020, the IASB issued Amendments to IFRS 17 to address concerns and implementation challenges that were identified after IFRS 17 was published. The amendments defer the date of initial application of IFRS 17 (incorporating the amendments) to annual reporting periods beginning on or after 1 January 2023. At the same time, the IASB issued Extension of the Temporary Exemption from Applying IFRS 9 (Amendments to IFRS 4) that extends the fixed expiry date of the temporary exemption from applying IFRS 9 in IFRS 4 to annual reporting periods beginning on or after 1 January 2023.

In December 2021, the IASB issued Initial Application of IFRS 17 and IFRS 9 – Comparative Information (Amendment to IFRS 17) to address implementation challenges that were identified after IFRS 17 was published. The amendment addresses challenges in the presentation of comparative information.

IFRS 17 must be applied retrospectively unless impracticable, in which case the modified retrospective approach or the fair value approach is applied. For the purpose of the transition requirements, the date of initial application is the start of the annual reporting period in which the entity first applies the standard, and the transition date is the beginning of the period immediately preceding the date of initial application.

The Directors are currently assessing the impact of IFRS 17 and believe adoption of this standard will not have a material impact on the financial statements. The Group established a captive insurance subsidiary in 2022, but this was not providing Directors' and officers' liability insurance to the Group during 2022.

The Directors do not expect any standards which have been issued by the IASB, but are not yet effective, to potentially have a material impact on the Group.

Basis of consolidation

Where the Company has control over an investee, it is classified as a subsidiary. The Company controls an investee if all three of the following elements are present: power over the investee, exposure to variable returns from the investee, and the ability of the investor to use its power to affect those variable returns. Control is reassessed whenever facts and circumstances indicate that there may be a change in any of these elements of control.

The consolidated financial statements present the results of the Company and its subsidiaries (the 'Group') as if they formed a single entity. Intercompany transactions and balances between Group companies are therefore eliminated in full.

Joint ventures are accounted for using the equity method, where the Group's share of post-acquisition profits and losses and other comprehensive income is recognised in the consolidated statement of comprehensive and other comprehensive income (except for losses in excess of the Group's investment in the joint venture unless there is an obligation to make good those losses).

Business combinations

The Company was incorporated on 9 December 2020. On 14 May 2021, a reorganisation of Alphawave's corporate structure was completed, which resulted in the Company being the sole owner of Alphawave IP Inc. Pursuant to an agreement between the Company, Alphawave IP Inc. and each of the members of Alphawave IP Inc., the issued and outstanding Alphawave IP Inc. common shares were exchanged for 20 ordinary shares of the Company with a nominal value of GBP1. As such, the Company issued 563,859,060 ordinary shares increasing its share capital by this amount. At the time of the exchange, the net assets of Alphawave IP Inc. had a book value of GBP13,589,766 which was posted as an investment in the books of the Company and the difference posted to the merger reserve, in line with merger accounting as described below.

The merger reserve in the consolidated financial statements reflects the difference between the share capital of the shares issued in the Company of US$796,958 in exchange for the shares in Alphawave IP Inc. and the share capital of Alphawave IP Inc. of US$3,742 (as at the date of the reorganisation).

The Group reconstruction has been accounted for in accordance with the principles of merger accounting, as a common control transaction under IFRS 3.B1. Alphawave IP Inc was controlled by the same individuals as Alphawave IP Group plc previously, and their rights relative to each other were unchanged. Therefore, the shareholders have a continuing interest in the business, both before and after its transfer. Consequently, these financial statements have been prepared as if Alphawave IP Group plc had always been the holding company.

Other acquisitions are accounted for using the acquisition method. The consideration transferred in a business combination is measured at fair value, which is calculated as the sum of the acquisition-date fair values of assets transferred by the Group, liabilities incurred by the Group to the former owners of the acquiree and the equity interest issued by the Group in exchange for control of the acquiree. Acquisition-related costs are recognised in profit or loss as incurred.

At the acquisition date, the identifiable assets acquired and the liabilities assumed are recognised at their fair value.

Goodwill is measured as the excess of the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree, and the fair value of the acquirer's previously held equity interest in the acquiree (if any) over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If, after reassessment, the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed exceeds the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree and the fair value of the acquirer's previously held interest in the acquiree (if any), the excess is recognised immediately in profit or loss as a bargain purchase gain.

When the consideration transferred by the Group in a business combination includes a contingent consideration arrangement, the contingent consideration is measured at its acquisition-date fair value and included as part of the consideration transferred in a business combination.

Changes in fair value of the contingent consideration that qualify as measurement period adjustments are adjusted retrospectively, with corresponding adjustments against goodwill. Measurement period adjustments are adjustments that arise from additional information obtained during the 'measurement period' (which cannot exceed one year from the acquisition date) about facts and circumstances that existed at the acquisition date.

The subsequent accounting for changes in the fair value of the contingent consideration that do not qualify as measurement period adjustments depends on how the contingent consideration is classified. Contingent consideration that is classified as equity is not remeasured at subsequent reporting dates and its subsequent settlement is accounted for within equity. Other contingent consideration is remeasured to fair value at subsequent reporting dates with changes in fair value recognised in profit or loss.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period (see above), or additional assets or liabilities are recognised, to reflect new information obtained about facts and circumstances that existed as of the acquisition date that, if known, would have affected the amounts recognised as of that date.

Going concern

As of 31 December 2022, the Group had cash and cash equivalents of US$186.2m. Considering the Group's financial position as of 31 December 2022 and its principal risks and opportunities, a going concern analysis has been prepared for the twelve-month period from the date of signing the consolidated financial statements (the going concern period) utilising realistic scenarios and applying severe but plausible downside scenarios.

The Directors' assessment of the Group's ability to continue to adopt the going concern basis of accounting is based on a review of the base case scenario, including the going concern period, ensuring that any relevant post-year end events have been factored into the Directors' forecasts.

The Directors have also considered two severe, but plausible, downside scenarios over the forecast period and the mitigating actions that could be taken:

- Group revenue forecasts, excluding joint venture revenue, are materially reduced by 25% and the interest rate on our debt materially increases by 2% with a controllable mitigating reduction of 10% of operating expenditure and a reduction of 50% in laboratory and prototyping operating and capital expenditure.
- The Group's revenue from customers in China is excluded entirely with no actions taken to reduce the cost base.

Under either scenario, the analysis demonstrates the Group can continue to maintain sufficient liquidity headroom with no default on debt covenants.

Therefore, the Directors believe the Group is adequately resourced to continue in operational existence for at least the going concern period. Accordingly, the Directors consider it appropriate to adopt the going concern basis of accounting in preparing the consolidated and Company financial statements.

Segment information
The Group's management has performed its evaluation for reporting its reportable segments, if any, and concluded that the Group's business constitutes only one operating segment as all its products and services are of similar nature and focus on customers from the same industry. Its entire revenues, expenses, assets and liabilities pertain to the one business as a whole. This has been ratified by the chief operating decision maker (CODM), Tony Pialis (CEO), who is deemed best placed to evaluate the entity's operating results to assess performance and to allocate resources. Therefore, there was no information to be disclosed for operating segments.

Revenue recognition
Revenue is recognised in accordance with IFRS 15 Revenue from Contracts with Customers, upon transfer of control of promised products or services to customers in an amount that reflects the consideration the Group expects to be entitled to in exchange for those products or services.

Revenue represents the consideration to which the Group expects to be entitled in exchange for transferring goods or services to a customer, excluding sales taxes, and, where applicable, including estimates of rebates, product returns and other forms of variable consideration. Variable consideration is included in revenue only to the extent that we consider that it is highly probable that a significant reversal in the amount of cumulative revenue recognised will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

The Group has the following principal revenue streams:

- IP Products & Support – Contracts with customers to license intellectual property (IP) products, which consist primarily of software files that customers use to create, integrate and operate functional building blocks within a semiconductor device. Such contracts typically include the provision of support to customers during the integration of the IP product into their chip design ('integration support') and when ensuring that the IP product is functional within the resulting chip ('bring up support').
- Custom Silicon – Contracts with customers to develop custom silicon products that can include various combinations of IP provided by the Group, IP provided by third parties, other third-party costs required to prototype the device and the Group's internal engineering costs.
- Supply of silicon products – Contracts with customers for the supply of silicon devices that are developed by the Group to the customer's specification.
- Reseller fees – Fees receivable under the three-year exclusive IP subscription reseller agreement with VeriSilicon that expires in 2024.
- Income from joint venture – Fees receivable under the five-year IP subscription licence agreement with WiseWave that expires in 2026.

IP Products & Support
The Group's IP products are typically licensed under standard pay-per-use licence agreements and are delivered over the period its customers are developing their semiconductor devices, which can span several years.

The Group licenses two different types of IP product:

- hard IP, which has to be specifically tailored for different manufacturing process technologies, as it contains analogue circuitry whose characteristics may change depending on the manufacturing process; and
- soft IP, which typically contains only digital circuitry and where computer-aided design tools can enable the IP to work with different manufacturing processes.

Prior to the acquisitions of Precise-ITC and OpenFive, the Group licensed only hard IP products.

Contracts to license the Group's IP products specify the consideration to be paid by the customer, based on the specific IP products licensed and the amount of any non-recurring engineering (NRE) required. Invoicing is typically aligned with the achievement of project milestones. Support services are generally separately priced within the contract and are invoiced on an annual basis. Where a contract involves more than one performance obligation, we allocate the transaction price to the performance obligations based on their relative stand-alone selling prices.

Hard IP
Due to the complexity of the IP products being delivered and the need for customers to integrate the IP products with other IP building blocks in their chip designs, the Group's IP products are typically delivered in multiple stages, referred to as IP views, all of which require some level of customisation and/or configuration. Although delivery of the licensed IP products is split over multiple deliveries of IP views, these deliveries are not distinct because each IP view is highly dependent on or interrelated with one or more of the other IP views. Further, we do not consider any NRE work required to configure the IP products to be distinct because customers are unable to benefit from the IP views on their own or together with other resources readily available to them, due to the bespoke nature of the configuration that the Group performs on the hard IP products. We therefore consider that the delivery of the IP views and the configuration of the IP products represents a single performance obligation.

We recognise revenue on hard IP products by reference to the stage of completion of the project, measured based on the engineering hours spent on work performed to date as a percentage of the estimated total project hours.

Soft IP
While the initial delivery of IP may not be to a customer's exact specification, customers are able to use the IP without significant modification and therefore benefit from it on its own or together with resources readily available to them. We therefore consider the initial delivery of IP to be a separate performance obligation. We consider any customisation work and subsequent IP deliveries to be a single separate performance obligation because they are distinct from the initial IP delivery but are highly dependent or interrelated with each other.

We recognise revenue on the initial IP when the IP is delivered to the customer.

We recognise revenue on customisation and subsequent IP deliveries by reference to the stage of completion of the project and achievement of specific contractual milestones when successive deliveries of customised IP are made.

Support
Support services are considered a separate performance obligation from delivery of the IP products because customers could benefit from the services on their own or with other resources that are readily available to them.

Our obligation to provide support services is a stand-ready obligation over a specified period, the timing of which is uncertain and there is typically no maximum number of hours stated in the contract. Revenue from support services is therefore recognised on a straight-line basis over the contractual period of support provision.

Custom Silicon
The Group engages with customers to develop custom silicon products and, if those products go into production, to supply them to those customers. Custom silicon development contracts vary according to the proportion of the engineering work that the Group is required to undertake. For example, the customer may provide a specification only, with the Group designing, implementing and manufacturing the resulting chip, utilising third-party manufacturers. Alternatively, a customer may provide their own design, and only utilise the Group's supply chain infrastructure to manage the manufacturing of the chip. All custom silicon contracts specify that the Group owns the unique mask set of the chip design and, therefore, if the resulting chip goes into production, it can only be supplied to the customer by us. Equally, however, the customer controls the chip design because the Group cannot use it for any purpose other than to manufacture chips for the customer.

Custom silicon development projects are typically complex and highly customised with detailed engineering schedules and deliverables. A custom silicon project may include internal engineering services, our IP, IP support services, third-party IP, tooling costs and prototypes. While these elements are capable of being distinct, they are not distinct in the context of the contract. Each deliverable is highly dependent on or interrelated with one or more of the other goods or services in the contract and the nature of the obligation is to deliver a combined output in the form of a completed design or prototype. We therefore consider custom silicon development to be a single performance obligation.

We consider that the supply of chips following release to production is a separate performance obligation which arises on receipt of a silicon purchase order from the customer. Custom silicon contracts do not contain purchase volume commitments and therefore the supply of chips is not only capable of being distinct, but is also distinct in the context of the contractual arrangements.

Custom silicon contracts specify the consideration receivable for the custom design work, including any third-party components, as well as pricing for any subsequent silicon orders. Pricing of the design work will depend on factors including chip complexity, manufacturing process technology and IP costs. Invoicing for development work is typically aligned with the achievement of project milestones. Contracts are typically cancellable by the customer for convenience during the design phase. In the event of cancellation, the customer will be liable to make payment corresponding to a future contract milestone or a specified fixed percentage of the contract value.

We recognise revenue on custom silicon development projects by reference to the stage of completion of the project, measured based on the costs incurred for work performed to date as a percentage of the estimated total development costs.

Supply of silicon products
Silicon products are physical goods held as inventory with revenue recognised at a point in time when the customer obtains control of the products. Accordingly, where products are sold on 'ex-works' incoterms, revenue is recognised when the products are released for collection by the customer. Otherwise, revenue is recognised when the products are delivered to the customer. Where products are supplied on a consignment basis, delivery takes place and revenue is recognised when the products are taken out of the consignment by the customer.

Reseller fees
VeriSilicon licenses the Group's IP products to third-party customers under a three-year exclusive IP subscription reseller agreement. Under the agreement, we charge VeriSilicon exclusivity fees for each calendar year that we invoice to them and collect on a quarterly basis. The exclusivity fees represent minimum annual payments by VeriSilicon against which it can offset purchases of IP products for license to third parties at any time during the relevant calendar year. We recognise revenue on the licensing of our IP products to third parties under the agreement by reference to the stage of completion of the related customisation and/or integration project, measured based on the engineering hours spent on work performed to date as a percentage of the estimated total project hours. Any unutilised exclusivity payments cannot be carried forward by VeriSilicon to future calendar years. We therefore recognise any unutilised exclusivity payments as additional revenue at the end of the calendar year.

Income from joint venture
We have a subscription licence agreement with WiseWave that provides them with right of use over a library of our IP products for a fixed fee spread over a period of five years. As we do not usually provide individual licences without NRE to customers it is difficult to determine the standalone selling price of each of the IP products. Based on engineering schedules, we therefore estimated the total number of IP products that we expect to provide into the library over the duration of the agreement in order to calculate the estimated unit price of the IP products. Given that the number of products to be put into the library in the future is uncertain, the estimated unit price of the IP products constitutes variable consideration. We therefore exercise judgement in applying constraints to the unit price of the IP products in order to minimise the risk of significant reversals of revenue in future periods. Revenue on this agreement is recognised at a point in time when an IP product is added to the library, as this is when we consider control of the IP product is transferred to WiseWave.

Contract modifications
A contract modification is a change in the scope or price (or both) of a contract that is approved by the parties to the contract.

Modifications to our IP products and custom silicon development contracts with customers do not normally involve the addition of goods or services that are distinct from those already being provided under the contract. Such modifications are therefore accounted for as an adjustment to the existing contract rather than as a separate contract. Accordingly, the effect that the modification has on the transaction price and/or on the measure of progress to completion of the contract is recognised as a cumulative catch-up adjustment to revenue when the modification is approved.

Contract balances
Contract assets represent the amount of revenue recognised on IP and product development contracts that has not yet been billed to the customer.

Contract liabilities represent amounts billed to customers in excess of revenue recognised on IP and product development contracts.

Costs of obtaining contracts
Incremental costs of obtaining a contract with an expected duration of more than one year are recognised as an asset that is amortised over the period of the contract in proportion to the recognition of the revenue receivable on the contract.

As permitted by IFRS 15, the costs of obtaining contracts with an expected duration of one year or less are expensed as they are incurred.

Onerous contracts
If a contract with a customer is considered to be onerous, a provision is recognised to the extent that the remaining unavoidable costs of meeting the obligations under the contract exceed the remaining benefits to be received under it.

Strategic, integration and other non-recurring items
The Group incurred costs from certain strategic, integration and other non-recurring items, e.g. acquisition-related costs and Initial Public Offering costs. Management has disclosed these separately to enable a greater understanding of the underlying results of the trading business so that the underlying run rate of the business can be established and compared on a like-for-like basis each year.

Defined contribution schemes
Contributions to defined contribution pension schemes are charged to the consolidated statement of comprehensive income in the year to which they relate.

Government grants
Government grants received for qualifying expenditure are netted against the cost incurred by the Group. Where retention of a government grant is dependent on the Group satisfying certain criteria, it is initially recognised as deferred income. When the criteria for retention have been satisfied, the deferred income balance is released to the consolidated statement of comprehensive income or netted against the asset purchased.

Share-based payments
The Group operates an equity-settled, share-based payment compensation plan, under which the entity receives services from employees as consideration for equity instruments, options and RSUs, of the Group. The fair value of the employee service received in exchange for the grant of the options is recognised as an expense over the vesting period.

Share options and RSUs granted to employees are accounted for under the fair value-based method of accounting using fair value for the underlying equity instrument. Fair values are determined in accordance with the Black-Scholes-Merton option-pricing model (BSM). Management exercises judgement in determining the underlying share price volatility, expected forfeitures and other parameters of the calculations. Share options and RSUs granted to service providers are valued using fair value of services obtained, and if that is not determinable, at the fair value of the underlying equity instrument as per BSM.

Where options and RSUs are exercised, the Company issues new shares and the proceeds received, net of any directly attributable transaction costs, are credited to share capital.

If an option or RSU is cancelled this is accounted for as an acceleration of the vesting period and any amount unrecognised is recognised immediately.

Upon expiry of the options or RSUs, the value that had been ascribed to the expired options or RSUs remains in the share-based payment reserve.

When terms of the options or RSUs are modified at a future date, the fair value of the options or RSUs are adjusted for the new terms using the BSM. Any difference in fair value is adjusted as a change to share-based payment reserve and share-based payment expense.

Research and development
Research costs are expensed as incurred. Development expenditures on an individual project are recognised as an intangible asset when the Group can demonstrate:

- the technical feasibility of completing the intangible asset so that it will be available for use or sale;
- its intention to complete the asset and to use or sell it;
- the ability to use or sell the intangible asset;
- how the asset will generate future economic benefits;
- the availability of resources to complete the asset; and
- the ability to measure reliably the expenditure during development.

Foreign currency
Transactions entered into by Group entities in a currency other than the currency of the primary economic environment in which they operate (their functional currency) are recorded at the rates ruling when the transactions occur. Foreign currency monetary assets and liabilities are translated at the rates ruling at the reporting date. Exchange differences arising on the retranslation of unsettled monetary assets and liabilities are recognised immediately in the consolidated statement of comprehensive income.

On consolidation, the results of overseas operations are translated into US$ at rates approximating to those ruling when the transactions took place. All assets and liabilities of overseas operations are translated at the rate ruling at the reporting date. Exchange differences arising on translating the opening net assets at opening rate and the results of overseas operations at actual rate are recognised in other comprehensive income and accumulated in the foreign exchange reserve.

Exchange differences recognised in profit or loss in Group entities' separate financial statements on the translation of long-term monetary items forming part of the Group's net investment in the overseas operation concerned are reclassified to other comprehensive income and accumulated in the foreign exchange reserve on consolidation.

Interest income
Interest income is recorded on an accrual basis and is included in finance income in the consolidated statement of comprehensive income. Interest income from customers is recognised monthly at an agreed annual interest rate over the period in the contract.

Interest income from contracts with customers that contain a significant financing component is recognised monthly over the period of the contract at an annual interest rate that is determined by reference to then-current market interest rates and is included in finance income in the consolidated statement of comprehensive income. Where contracts with customers contain a significant financing component, the consideration due (against which revenue is recognised) is adjusted for the value of the implied interest income.

Borrowing costs

Interest expense is recognised on the basis of the effective interest method and is included in finance expense in the consolidated statement of comprehensive income.

Taxation

The tax expense for the year comprises current and deferred tax. Tax is recognised in the consolidated statement of comprehensive income, except that a charge attributable to an item of income or expense recognised as other comprehensive income is also recognised directly in other comprehensive income.

The current tax charge is calculated on the basis of tax rates and laws that have been enacted or substantively enacted by the reporting date in the countries where the Group operates and generates taxable income.

Deferred tax assets and liabilities are recognised where the carrying amount of an asset or liability in the consolidated statement of financial position differs from its tax base, except for differences arising on:

- the initial recognition of goodwill;
- the initial recognition of an asset or liability in a transaction which is not a business combination and at the time of the transaction affects neither accounting nor taxable profit; and
- investments in subsidiaries and joint arrangements where the Group is able to control the timing of the reversal of the difference and it is probable that the difference will not reverse in the foreseeable future.

Recognition of deferred tax assets is restricted to those instances where it is probable that taxable profit will be available against which the difference can be utilised.

The amount of the asset or liability is determined using tax rates that have been enacted or substantively enacted by the reporting date and are expected to apply when the deferred tax liabilities are settled.

When there is uncertainty concerning the Group's filing position regarding the tax bases of assets or liabilities, the taxability of certain transactions or other tax-related assumptions, then the Group:

- considers whether uncertain tax treatments should be considered separately, or together as a group, based on which approach provides better predictions of the resolution;
- determines if it is probable that the tax authorities will accept the uncertain tax treatment; and
- if it is not probable that the uncertain tax treatment will be accepted, measures the tax uncertainty based on the most likely amount or expected value, depending on whichever method better predicts the resolution of the uncertainty. This measurement is required to be based on the assumption that each of the tax authorities will examine amounts they have a right to examine and have full knowledge of all related information when making those examinations.

Deferred tax assets and liabilities are offset when the Group has a legally enforceable right to offset current tax assets and liabilities and the deferred tax assets and liabilities relate to taxes levied by the same tax authority on either:

- the same taxable Group company; or
- different Group entities which intend either to settle current tax assets and liabilities on a net basis, or to realise the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax assets or liabilities are expected to be settled or recovered.

Sales made to customers incorporated in overseas jurisdictions may be subject to withholding tax. Since invoices are raised by Group entities which operate under the tax authorities in Canada and the US, to the extent those countries have tax treaties in place with those overseas jurisdictions, withholding tax amounts are treated as prepaid tax and offset against corporation taxes payable.

Goodwill

Goodwill represents the excess of the cost of a business combination over the Group's interest in the fair value of identifiable assets, liabilities and contingent liabilities acquired.

Cost comprises the fair value of assets given, liabilities assumed and equity instruments issued, plus the amount of any non-controlling interests in the acquiree plus, if the business combination is achieved in stages, the fair value of the existing equity interest in the acquiree. Direct costs of acquisition are recognised immediately as an expense.

Goodwill is capitalised as an intangible asset with any impairment in carrying value being charged to the consolidated statement of comprehensive income. Where the fair value of identifiable assets, liabilities and contingent liabilities exceed the fair value of consideration paid, the excess is credited in full to the consolidated statement of comprehensive income on the acquisition date. Goodwill is not amortised but is reviewed for impairment at least annually.

The Group performs an impairment test for non-financial assets (excluding inventories, deferred tax assets and retirement benefit assets) if there is any indication that the recoverable amount will be less than the carrying amount. However, for goodwill or intangible assets with indefinite useful life or that are not yet available for use, an impairment test is performed at a certain time each fiscal year and when any signs of impairment exist. The impairment test is performed by comparing the carrying amount and the recoverable amount of the assets, and if the recoverable amount falls below the carrying amount, an impairment loss is recorded.

The recoverable amount is calculated mainly using the discounted cash flow model, where certain assumptions, including, but not limited to, the useful life of the asset, future cash flows, sales revenue, gross margin, discount rate, and long-term growth rate, are made.

These assumptions are determined based on judgements of management but could be influenced by fluctuations in uncertain future economic conditions. If a revision becomes necessary, it could have a significant impact on the amounts that will be recognised in the consolidated financial statements of subsequent periods. The calculation method of the recoverable amount is stated in note 16, Impairment of non-financial assets.

Intangible assets
Intangible assets are carried at cost less accumulated amortisation and impairment.

Intangible assets are recognised on business combinations if they are separable from the acquired entity or give rise to other contractual/legal rights and the amounts can be reliably estimated. The amounts ascribed to such intangibles are arrived at by using appropriate valuation techniques.

The significant intangibles recognised by the Group and their useful economic lives are as follows:

Developed IP – 5 years
Developed technology – 4-8 years
Customer relationships – 12 years

Expenditure on developed IP is capitalised if it can be demonstrated that:

- it is technically feasible to develop the IP for it to be sold;
- adequate resources are available to complete the development;
- there is an intention to complete and sell the IP;
- sale of the IP will generate future economic benefits; and
- expenditure on the project can be measured reliably.

Property and equipment
Property and equipment are carried at cost less accumulated depreciation and impairment losses, if any. Cost includes initial cost and subsequent expenditures that are directly attributable to the related asset when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. All other repair and maintenance costs are charged to the consolidated statement of comprehensive income during the year they are incurred.

Depreciation is provided on items of property and equipment so as to write off their carrying value over their expected useful economic lives. It is provided at the following rates:
Computer equipment – 50% straight line
Furniture and fixtures – 20% straight line
Leasehold improvements – 40% straight line
Lab equipment – 50% straight line

Property and equipment acquired during the year are depreciated from the date the asset is available for use as intended until the date of derecognition. The residual values and useful lives are reviewed by management at each reporting date and adjusted if the impact on depreciation is significant. Property and equipment are regularly reviewed to eliminate obsolete items.

An item of property and equipment is derecognised upon disposal or when no future economic benefits are expected from its use. Any gain or loss arising on derecognition of the asset is included in the consolidated statement of comprehensive income in the year the asset is derecognised.

Impairment of tangible and intangible assets
The carrying amounts of the Group's non-financial assets (other than inventories, contract assets and deferred tax assets) are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Goodwill and assets still under development are tested annually for impairment.

For impairment testing, assets are grouped together into the smallest group of assets that includes the asset and generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or cash generating units (CGUs). Goodwill is allocated to CGUs or groups of CGUs that are expected to benefit from the synergies of the related business combination.

An impairment loss is recognised if the carrying amount of an asset or CGU exceeds its recoverable amount. The recoverable amount of an asset or CGU is the higher of its value-in-use and its fair value less costs of disposal. The value-in-use of an asset or CGU represents the present fair value of the future cash flows expected to be derived from the asset in its current use and condition. Fair value less costs of disposal is the amount expected to be obtainable from the sale of the asset in an arm's length transaction between knowledgeable, willing parties, less the costs of disposal. Value-in-use is based on pre-tax estimates of pre-tax cash flows in the periods covered by budgets and/or plans that have been approved by the Board. Such cash flow estimates are discounted at a pre-tax discount rate that reflects the current market assessments of the time value of money and the risks specific to the asset of CGU to which the asset belongs.

Impairment losses are recognised in profit or loss. They are allocated first to reduce the carrying amount of any goodwill allocated to the CGU, and then to reduce the carrying amounts of the other assets in the CGU on a pro rata basis.

Impairment losses in respect of goodwill are not reversed. For other assets, impairment losses recognised in previous periods are reversed if there has been a change in the estimates used to determine the asset's recoverable amount, but only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognised in previous periods.

Leases

Identifying leases

The Group accounts for a contract, or a portion of a contract, as a lease when it conveys the right to use an asset for a period of time in exchange for consideration. Leases are those contracts that satisfy the following criteria:

- there is an identified asset;
- the Group obtains substantially all the economic benefits from use of the asset; and
- the Group has the right to direct use of the asset.

The Group considers whether the supplier has substantive substitution rights. If the supplier does have those rights, the contract is not identified as giving rise to a lease.

In determining whether the Group obtains substantially all the economic benefits from use of the asset, the Group considers only the economic benefits that arise from the use of the asset, not those incidental to legal ownership or other potential benefits.

In determining whether the Group has the right to direct use of the asset, the Group considers whether it directs how and for what purpose the asset is used throughout the period of use. If there are no significant decisions to be made because they are pre-determined due to the nature of the asset, the Group considers whether it was involved in the design of the asset in a way that predetermines how and for what purpose the asset will be used throughout the period of use. If the contract or portion of a contract does not satisfy these criteria, the Group applies other applicable IFRSs rather than IFRS 16.

All leases are accounted for by recognising a right-of-use asset and a lease liability except for:

- leases of low-value assets; and
- leases with a term of twelve months or less.

The Group has elected to use the recognition exemptions listed above and thus does not apply the right-of-use asset and lease liability measurement requirements to these items. Leases of low-value assets and short-term leases are expensed on a straight-line basis over the life of the lease.

Lease liabilities are measured at the present value of the contractual payments due to the lessor over the lease term, with the discount rate determined by reference to the rate inherent in the lease unless (as is typically the case) this is not readily determinable, in which case the Group's incremental borrowing rate on commencement of the lease is used. Variable lease payments are only included in the measurement of the lease liability if they depend on an index or rate. In such cases, the initial measurement of the lease liability assumes the variable element will remain unchanged throughout the lease term. Other variable lease payments are expensed in the period to which they relate.

On initial recognition, the carrying value of the lease liability also includes:

- amounts expected to be payable under any residual value guarantee;
- the exercise price of any purchase option granted in favour of the Group if it is reasonably certain to exercise that option; and
- any penalties payable for terminating the lease, if the term of the lease has been estimated on the basis of the termination option being exercised.

Right-of-use assets are initially measured at the amount of the lease liability, reduced for any lease incentives received, and increased for:

- lease payments made at or before commencement of the lease;
- initial direct costs incurred; and
- the amount of any provision recognised where the Group is contractually required to dismantle, remove or restore the leased asset (typically leasehold dilapidations).

Subsequent to initial measurement lease liabilities increase as a result of interest charged at a constant rate on the balance outstanding and are reduced for lease payments made. Right-of-use assets are amortised on a straight-line basis over the remaining term of the lease or over the remaining economic life of the asset if, rarely, this is judged to be shorter than the lease term.

When the Group revises its estimate of the term of any lease (because, for example, it reassesses the probability of a lessee extension or termination option being exercised), it adjusts the carrying amount of the lease liability to reflect the payments to make over the revised term, which are discounted at the same discount rate that applied on lease commencement. The carrying value of lease liabilities is similarly revised when the variable element of future lease payments dependent on a rate or index is revised. In both cases an equivalent adjustment is made to the carrying value of the right-of-use asset, with the revised carrying amount being amortised over the remaining (revised) lease term.

Where a variable lease payment that is dependent on an index or rate is present in the lease, the lease liability and right-of-use asset is re-measured once the rate is known. Any variable lease payments that are not dependent on an index or rate are expensed in the period they are incurred.

When the Group renegotiates the contractual terms of a lease with the lessor, the accounting depends on the nature of the modification:

- if the renegotiation results in one or more additional assets being leased for an amount commensurate with the standalone price for the additional rights-of-use obtained, the modification is accounted for as a separate lease in accordance with the above policy;
- in all other cases where the renegotiation increases the scope of the lease (whether that is an extension to the lease term, or one or more additional assets being leased for an amount that is not commensurate with the standalone price for the additional rights-of-use obtained), the lease liability is remeasured using the discount rate applicable on the modification date, with the right-of-use asset being adjusted by the same amount; and
- if the renegotiation results in a decrease in the scope of the lease, both the carrying amount of the lease liability and right-of-use assets are reduced by the same proportion to reflect the partial or full termination of the lease with any difference recognised in profit or loss. The lease liability is then further adjusted to ensure its carrying amount reflects the amount of the renegotiated payments over the renegotiated term, with the modified lease payments discounted at the rate applicable on the modification date. The right-of-use asset is adjusted by the same amount.

For contracts that both convey a right to the Group to use an identified asset and require services to be provided to the Group by the lessor, the Group has elected to account for the entire contract as a lease, i.e. it does not allocate any amount of the contractual payments to, and account separately for, any services provided by the supplier as part of the contract.

Investments in subsidiaries
Investments in subsidiaries in the Company financial statements are carried at cost less any provision for losses arising on impairment.

Investments in joint ventures
The Group is a party to a joint arrangement when there is a contractual arrangement that confers joint control over the relevant activities of the arrangement to the Group and at least one other party. Joint control is assessed under the same principles as control over subsidiaries.

Joint ventures are initially recognised in the consolidated statement of financial position at cost. Subsequently joint ventures are accounted for using the equity method, where the Group's share of post-acquisition profits and losses and other comprehensive income is recognised in the consolidated statement of comprehensive income (except for losses in excess of the Group's investment in the joint venture unless there is an obligation to make good those losses).

Profits and losses arising on transactions between the Group and its joint ventures are recognised only to the extent of unrelated investors' interests in the joint venture. The Group's share in the joint venture's profits and losses resulting from these transactions is eliminated against the carrying value of the joint venture.

Any premium paid for a joint venture above the fair value of the Group's share of the identifiable assets, liabilities and contingent liabilities acquired is capitalised and included in the carrying amount of the joint venture. Where there is objective evidence that the investment in the joint venture has been impaired the carrying amount of the investment is tested for impairment in the same way as other non-financial assets.

Investment tax credits
Investment tax credits receivable are amounts recoverable from the Canadian federal and provincial government under the SRED incentive programme. These tax credits are not received in cash, they are netted off against the Group's current tax charge. The amounts that are claimed under the programme represent the amounts submitted by management based on research and development costs paid during the year and include a number of estimates and assumptions made by management in determining the eligible expenditures. Investment tax credits are recorded when there is reasonable assurance that the Group will realise the investment tax credits receivable and are netted against the related expenditure. Recorded investment tax credits are subject to review and approval by tax authorities and therefore amounts eventually netted off against the Group's current tax charge may be different from the amounts recorded.

Inventories

The acquisition cost of inventories comprises all costs of purchase, costs of conversion and all other costs incurred in bringing the inventories to their present location and condition.

Inventories are stated at the lower of cost and net realisable value. Cost comprises direct materials and, where applicable, direct labour costs and those overheads that have been incurred in bringing the inventories to their present location and condition. Cost is calculated using the weighted average cost method. Net realisable value represents the estimated selling price less all estimated costs of completion and costs to be incurred in marketing, selling and distribution.

Short-term employee benefits
A liability is recognised for benefits accruing to employees in respect of wages and salaries, annual leave and sick leave in the period the related service is rendered at the undiscounted amount of the benefits expected to be paid in exchange for that service.

Cash and cash equivalents
Cash and cash equivalents include cash and liquid investments with a term to maturity of 90 days or less at the reporting date.

Financial instruments
Financial assets and financial liabilities are recognised in the Group's consolidated statement of financial position when the Group becomes a party to the contractual provisions of the instrument.

Financial assets and financial liabilities are initially measured at fair value. Except for financial assets and financial liabilities measured at fair value through profit or loss, transaction costs that are directly attributable to the acquisition or issuance of financial assets and financial liabilities are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, upon initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognised immediately in profit or loss.

Financial assets
All recognised financial assets are measured subsequently in their entirety at either amortised cost or fair value, depending on the classification of the financial assets. The classification and measurement of financial assets after initial recognition at fair value depends on the business model for managing the financial asset and the contractual terms of the cash flows. Financial assets are classified in one of the three categories:

a) Amortised cost
Financial assets that are debt instruments and are held within a business model whose objective is to collect the contractual cash flows, and that have contractual cash flows that are solely payments of principal and interest (SPPI) on the principal outstanding, are measured at amortised cost at each subsequent reporting period. The Group classifies accounts receivable and notes receivable as financial assets that are subsequently measured at amortised cost.

b) Fair value through other comprehensive income
The Group and Company do not have any financial assets classified as being at fair value through other comprehensive income.

c) Fair value through profit or loss
Financial assets that do not meet the criteria for being measured at amortised cost or fair value through other comprehensive income are measured subsequently at fair value through profit or loss. Trading financial instruments are mandatorily measured at fair value through profit or loss as they are held for trading purposes or are part of a business model with a pattern of short-term profit taking. Non-trading financial assets are also mandatorily measured at fair value through profit or loss if their contractual cash flow characteristics do not meet the SPPI test or if they are managed together with other financial instruments on a fair value basis. In addition, the Group may, at initial recognition, make an irrevocable election to designate a financial asset as fair value through profit or loss. A financial asset is designated as fair value through profit or loss when such classification eliminates or significantly reduces a measurement inconsistency that would otherwise arise from measuring the financial asset on a different basis. Gains and losses realised on disposition and unrealised gains and losses from changes in fair value of the financial assets are recognised in the consolidated statement of comprehensive income.

Impairment of financial assets
The Group recognises a loss allowance for expected credit losses (ECL) on accounts receivable that are measured at amortised cost. The Group applies the simplified approach for accounts receivable and recognises the lifetime ECL for these assets. The ECL on accounts receivable is estimated using a provision matrix based on the Group's historical credit loss experience, adjusted for factors that are specific to the customers, and general current and forecasted economic conditions at the reporting date, including time value of money where appropriate.

For all other financial assets measured at amortised cost or fair value through other comprehensive income, the Group recognises lifetime ECL only when there has been a significant increase in credit risk since initial recognition. If the credit risk on such financial instruments has not increased significantly since initial recognition, the Group measures the loss allowance on those financial instruments at an amount equal to twelve months' ECL.

Lifetime ECL represents the ECL that will result from all possible default events over the expected life of a financial asset. In contrast, twelve-month ECL represents the portion of lifetime ECL that is expected to result from default events on a financial asset that are possible within twelve months after the reporting date.

In assessing whether the credit risk on a financial asset has increased significantly since initial recognition, the Group compares the risk of default occurring on the financial asset at the reporting date with the risk of default occurring at initial recognition. The Group considers both quantitative and qualitative factors that are supportable, including historical experience and forward-looking information that is available without undue cost or effort.

Irrespective of the above assessment, the Group presumes that the credit risk on a financial asset has increased significantly since initial recognition when contractual payments are more than 30 days past due, unless the Group has reasonable and supportable information that demonstrates otherwise. Despite the foregoing, the Group presumes that the credit risk on a financial asset has not increased significantly since initial recognition if the financial asset is determined to have low credit risk at the reporting date.

The Group regularly monitors the effectiveness of the criteria used to identify whether there has been a significant increase in credit risk and revises them as appropriate to ensure that the criteria are capable of identifying a significant increase in credit risk before the amount becomes past due.

Definition of default
For internal credit risk management purposes, the Group considers a financial asset not recoverable if the customer balance owing is 180 days past due and information obtained from the customer and other external factors indicate that the customer is unlikely to pay its creditors in full.

Credit-impaired financial assets
A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred. Evidence that a financial asset is credit-impaired include observable data about the following events:

a) significant financial difficulty of the issuer or the counterparty;
b) a breach of contract, such as a default or past due event;
c) the lender(s) of the debtor, for economic or contractual reasons relating to the debtor's financial difficulty, having granted to the debtor a concession(s) that the lender(s) would not otherwise consider;
d) it is becoming probable that the debtor will enter bankruptcy or other financial reorganisation; and
e) the disappearance of an active market for that financial asset because of financial difficulties.

Write-off policy
The Group writes off and derecognises a financial asset when there is information indicating that the debtor is in severe financial difficulty and there is no realistic prospect of recovery.

Derecognition of financial assets
The Group derecognises a financial asset only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognises its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognise the financial asset and also recognises a collateralised borrowing for the proceeds received.

On derecognition of a financial asset measured at amortised cost, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognised in profit or loss. In addition, on derecognition of an investment in a debt instrument classified at fair value through other comprehensive income, the cumulative gain or loss previously accumulated in the investments revaluation reserve is reclassified to profit or loss. In contrast, on derecognition of an investment in an equity instrument which the Group has designated on initial recognition to measure at fair value through other comprehensive income, the cumulative gain or loss previously accumulated in the investments revaluation reserve is not reclassified to profit or loss, but is transferred to retained earnings.

Financial liabilities
All financial liabilities are measured subsequently at amortised cost using the effective interest method or at fair value through profit or loss.

Financial liabilities are classified as at fair value through profit or loss when the financial liability is:

a) contingent consideration of an acquirer in a business combination;
b) held for trading; or
c) designated as at fair value through profit or loss.

A financial liability is classified as held for trading if it has been acquired principally for the purpose of repurchasing it in the near term or on initial recognition it is part of a portfolio of identified financial instruments that the Group manages together and has a recent actual pattern of short-term profit-taking, or it is a derivative financial liability.

A financial liability other than a financial liability held for trading or contingent consideration of an acquirer in a business combination may be designated as at fair value through profit or loss upon initial recognition if such designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise or the financial liability forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Group's documented risk management or investment strategy, and information about the grouping is provided internally on that basis.

Financial liabilities classified or designated at fair value through profit or loss are measured at fair value, with any gains or losses arising on changes in fair value recognised in profit or loss. However, for financial liabilities that are designated as fair value through profit or loss, the amount of change in the fair value of the financial liability that is attributable to changes in the credit risk of the issuer is recognised in other comprehensive loss, unless the recognition of the effects of changes in the liability's credit risk in other comprehensive loss would create or enlarge an accounting mismatch in profit or loss. The remaining amount of change in the fair value of a liability is recognised in profit or loss. Changes in fair value attributable to a financial liability's credit risk that are recognised in other comprehensive loss are not subsequently reclassified to profit or loss; instead, they are transferred to retained earnings upon derecognition of the financial liability.

The Group classifies accounts payable, accrued liabilities and lease liabilities at amortised cost.

<u>Derecognition of financial liabilities</u>
The Group derecognises financial liabilities when, and only when, the Group's obligations are discharged, cancelled or have expired. The difference between the carrying amount of the financial liability derecognised and the consideration paid and payable is recognised in profit or loss.

<u>Share capital</u>
Ordinary shares are classified as equity. Equity instruments are measured at the fair value of the cash or other resources received or receivable, net of the direct costs of issuing the equity instruments. If payment is deferred and the time value of money is material, the initial measurement is on a present value basis.

<u>Stabilisation programme</u>
In the prior year, as part of the Underwriting Agreement for the IPO transaction, the Company agreed to an over-allotment and stock stabilisation programme with the founder shareholders and the IPO syndicate banks. The stabilisation programme was put into effect and given the aftermarket performance of the shares immediately post-IPO, resulted in proceeds to the Company of US$22.2m (£15.7m). As these proceeds were not part of the normal operation of the business and related to the IPO transaction, they were posted to the share premium account to set against IPO issuance costs.

3 Significant accounting estimates and judgements

In the application of the Group's and Company's accounting policies, the Directors are required to make judgements (other than those involving estimations) that have a significant impact on the amounts recognised and to make estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Critical judgements in applying the Group's accounting policies
Revenue recognition
Management exercises judgement in determining the separate performance obligations present in contracts with customers. In FY 2022, our scope of supply has extended from hard IP into soft IP and custom silicon, where performance obligations and revenue recognition treatment are different. As described in note 2, for hard IP of the type provided by Alphawave prior to the acquisitions of Precise-ITC and OpenFive, the Group considers the multiple deliveries of IP views of a single IP product to be part of a single performance obligation, as each IP view is highly dependent on or interrelated with one or more of the other IP views, as each successive IP view is based on the prior views of that IP. As such, customers are unable to benefit from IP views on their own or together with other readily available resources. For soft IP and IP products acquired through the acquisitions of Precise-ITC and the OpenFive business, the Group considers the initial IP delivery to be a separate performance obligation, with subsequent IP deliveries and customisation NRE forming a single further performance obligation.

Custom silicon developments are typically complex and highly customised with detailed engineering schedules and deliverables. A custom silicon project may include internal engineering services, Group IP, IP support services, third-party IP, tooling costs and prototypes. While these elements are capable of being distinct, they are not distinct in the context of the contract. Each delivery is highly dependent on or interrelated with one or more of the other goods or services in the contract and the nature of the obligation is to deliver a combined output in the form of a completed design or prototype. In management's judgement, supply of silicon following release to production is considered a separate performance obligation which arises on receipt of a silicon purchase order from the customer. Customer contracts do not contain purchase volume commitments and therefore the supply of custom silicon products is not only capable of being distinct, but is distinct in the context of the contractual arrangements.

As described in note 2, hard IP products are delivered in various stages, referred to as IP views. In FY 2021, management exercised its judgement as to what percentage of the contract price allocated to the IP product should be recognised as revenue at each IP view delivery. For FY 2022, in respect of hard IP products of the type provided by Alphawave prior to the acquisitions of Precise-ITC and OpenFive, management now recognises revenue based purely on percentage of completion. This approach more accurately reflects the work done and requires management to exercise its judgement in estimating the total number of hours required for each project both at contract inception and periodically throughout the life of the project.

Delivery of Preliminary IP views may occur very shortly after a licence agreement is signed by a customer and hence significant research and development or engineering hours may not have been expended from contract signing up to that point. There are hours incurred prior to the signing of contracts that relate to the fulfilment of the performance obligations that are subsequently agreed to in such contracts. As the maturity of our hard IP improves, the number of hours expended prior to contract signature is expected to reduce. Judgement is made with respect to the pre-contract hours that are excluded or included in the calculation of the revenue to be recognised such that any included hours directly relate to the fulfilment of any contractual performance obligations. Such pre-contract hours are taken into account in our calculation of percentage of completion.

Systems have been implemented to more accurately measure the hours expended prior to contract signature and, from FY 2023 onwards, management will no longer be required to exercise judgement in respect of these pre-contract hours.

At Final IP view delivery (the last IP view delivered to the customer ahead of test chip manufacture), an amount of revenue was previously held back for any post-delivery work that may have been required to ensure the customer 'taped out' silicon met the specifications detailed in the contract. Any post-Final IP view delivery work related to silicon 'Bring up' and 'Integration' is covered by the support contract and is a separate performance obligation. The percentage held back was formerly fixed based on the type and complexity of the IP provided. However, based on a track record of completed projects, accumulated data has established that significant hours are not required post-Final IP view delivery. Therefore, we use management judgement to assess each project on a case-by-case basis to assess whether further engineering hours are likely to be required post-delivery of Final IP views. The amount of revenue held back on such contracts is typically a small proportion of the overall contract consideration.

Both the estimate of total contract hours at contract inception and thereafter the hold back of revenue at Final IP view delivery require significant judgement from management. Such judgement is based on deep knowledge and understanding of the development effort required in delivering IP products to customers and the potential for any further work required to ensure successful silicon production by customers. This judgement may not be representative of the work to be completed in all cases. As the Group completes more IP deliveries to customers, it will continue to establish a broader data set on which to base its judgements.

In respect of soft IP products originating from our acquisition of Precise-ITC and IP products acquired through our acquisition of the OpenFive business, as described in note 2, a proportion of revenue is recognised at a point in time when the initial delivery of IP is made to the customer, with the remaining revenues recognised at points in time when successive deliveries of customised IP are made. The proportion of revenue recognised is based on management's judgement of the allocation of the contract price attributable to each delivery. A distinction is made between whether the IP requires significant or non-significant customisation. For Precise-ITC IP requiring non-significant customisation, 80% of the transaction price after deduction of the value of any separate performance obligation in respect of support, is attributed to the initial IP delivery.

The remaining 20% is attributed to customisation work and split equally between two further IP deliveries, being updated and final IP views. For IP requiring significant customisation, 30% is attributed to the initial IP delivery. The remaining 70% is attributed to customisation, which is split between three further IP deliveries, with the percentage of revenue recognised reflecting the functional coverage offered at each IP delivery. For IP products acquired through our acquisition of the OpenFive business, the initial IP delivery is typically based on a separate contract with the value based on a list price of the IP, with any customisation or integration work covered in a separate agreement.
Management judgement is required in determining the percentage recognition at the initial and subsequent IP deliveries and this may not be representative of the work to be completed in all cases.

If a contract contains multiple IP products, the deliverables may be considered part of a single performance obligation, as customers are unable to benefit from the IP products on their own or together with other readily available resources, due to the bespoke nature of the configuration that the Group performs on the IP products as part of the licence arrangements.

In respect of custom silicon, as detailed above, the development work represents a single performance obligation. Management exercises its judgement in estimating the total costs required for each project, which includes not only the internal engineering costs (based on estimated hours and blended costs per hour), but third-party costs required to be incurred.

Revenue under the subscription licence agreement with WiseWave is recognised at the point in time at which control of the goods is transferred to WiseWave. The Group considers control to have transferred to WiseWave when each IP product and updates to those IP products are uploaded to the library that they have access to under the agreement. At the point of upload of IP products and updates to IP products to the library, WiseWave has the ability to direct the use of, and obtain substantially all of the remaining benefits from, those

IP products and updates to IP products, by utilising the products in their semiconductor designs from which they can then generate cash inflows.

As outlined in our IPO Prospectus, we assigned the VeriSilicon reseller arrangement to WiseWave in order to consolidate the Group's activities in China under a single entity and this was implemented in Q4 2021. WiseWave are entitled to retain payments from that contract totalling US$13.6m reflecting work that they will be expected to perform in future periods to fulfil that contract. In FY 2021, as WiseWave were building their technical capabilities and were not yet able to fully perform this work, this sum was accounted for as a reduction in the value (i.e. a discount) of the subscription licence agreement with WiseWave, subject to future adjustment as and when WiseWave began performance. In FY 2022, WiseWave have continued to build out their technical capabilities and have begun to provide support to Alphawave. As WiseWave are now performing the work to fulfil the contract, the discount is being recognised in proportion to the amounts WiseWave are entitled to retain and the number of IPs delivered. In FY 2022, the Group recognised US$3.4m of the US$13.6m discount as revenue.

As outlined in our IPO Prospectus, these arrangements were contemplated at the time of entering into the VeriSilicon reseller contract and establishing WiseWave and have been taken into account in the disclosed aggregate booking of US$147.8m for these transactions. As a result of the assignment of the VeriSilicon reseller arrangement, there is no significant change anticipated to the overall net financial impact on the Group.

Research and development costs
Judgement is exercised in determining whether costs incurred should be capitalised in line with IAS 38. The judgement includes whether it is technically feasible to complete the relevant assets on which costs are incurred so that they will be available for use or sale. Judgement is also required to determine the useful economic life of any capitalised development costs.

In respect of standard product development, Alphawave operates a New Product Development (NPD) process where engineering decisions are reviewed in respect of:

- commercial prospects, for example target market size, target customers, revenue potential;
- expected costs of planned engineering activity, resources required and opportunity cost of utilising those resources; and
- planned engineering activity analysed by defined project phases.

Alphawave's NPD process identifies 16 project phases and is applied to new products, both in silicon and IP form.

The stage at which technical feasibility of completing the asset can be demonstrated can vary substantially depending on the nature of the technology and is assessed on a project-by-project basis, with reference to the project phases defined in the NPD process and is hence subject to judgement.

The assessment of whether development expenditure should be capitalised requires assumptions relating to our ability to ensure we have adequate resources available to complete the final product and our assessment of the scale and maturity of the addressable market and forecast customer demand.

Joint ventures
As at year end, the Group owned 42.5% of WiseWave, a newly formed company established in China in Q4 2021 to develop and sell silicon products incorporating silicon IP licensed from the Group. We equity account for the investment as a joint venture, resulting in a US$18.5m loss for FY 2022.

Judgement is used in determining the extent of the control the Group has over WiseWave. The Group is satisfied WiseWave should be treated as a joint venture under IFRS 11 as opposed to being treated as an associate. For all joint arrangements structured in separate vehicles the Group must assess the substance of the joint arrangement in determining whether it is classified as a joint venture or joint operation.

This assessment requires the Group to consider whether it has rights to the joint arrangement's net assets (in which case it is classified as a joint venture), or rights to and obligations for specific assets, liabilities, expenses and revenues (in which case it is classified as a joint operation). Factors the Group must consider include:

- structure;
- legal form;
- contractual agreement; and
- other facts and circumstances.

Upon consideration of these factors, the Group has determined that all of its joint arrangements structured through separate vehicles give it rights to the net assets and are therefore classified as joint ventures.

Joint venture revenue
The Group's proportion of revenue recognised from sales to WiseWave under the subscription licence agreement has been eliminated in the 'Loss from joint venture' line in the consolidated statement of comprehensive income to the extent that the revenue is not realised based on WiseWave's utility and in line with IAS 28. The Group exercised judgement in eliminating the revenue in this way. Had the

Group eliminated our share of the gains from sales to the joint venture against the revenue line, our revenues would have reduced by US$4.8m to US$180.6m.

Where an investor enters into a downstream transaction with an equity-accounted investee for which its share of the gain arising from the transaction exceeds its interest in the investee, an accounting policy choice is made in respect of how that excess is treated in the investor's accounts. In 2022, our cumulative share of WiseWave's loss and the elimination of gains from sales made to WiseWave exceeded the value of our investment in them.

We have exercised our judgement in choosing not to eliminate the full gains from sales to WiseWave and not to recognise a deferred income balance for the excess of the elimination over the carrying value of the investment. In our opinion, this more appropriately reflects the current nature of the relationship with WiseWave and is consistent with our intention to exit the joint venture in the medium term.

Had we elected to eliminate the share of the gain in full, we would have recognised a deferred income balance of US$2.3m in the consolidated statement of financial position.

Impairment of financial assets
As described in note 2, the Group recognises a loss allowance for expected credit losses (ECL) on accounts receivable and applies the simplified approach, recognising the lifetime ECL for these assets. The Group uses a provision matrix based on the Group's historical credit loss experience to inform the level of ECL allowance and exercises significant judgement in assessing the factors that are specific to the customers and the general current and forecasted economic conditions that are used to adjust the ECL.

As at 31 December 2022, the Group's ECL allowance for accounts receivable was US$2.2m (31 December 2021: not material). This level of ECL allowance reflects the Group's historical credit loss experience and its assessment of each of the customers making up its accounts receivable balance at each reporting date and the prevailing and predicted macroeconomic conditions that may impact on those customers' ability to pay their outstanding invoices.

As at 31 December 2022, the Group had one customer with accounts receivable that were significantly in excess of 30 days past due, totalling US$4.2m including the associated accrued revenue balance, against which an ECL allowance of US$0.5m was recognised. Management consider this component of the ECL allowance to be a major source of estimation uncertainty at the end of the reporting period, that has a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year.

In concluding that the allowance recognised of US0.5m was appropriate, the Group has considered carefully the recoverability of this balance, taking into account specific details of the customer's current and near-term trading prospects, their access to additional funding and past trading activity with the Group. Had the Group provided the full amounts of these accounts receivable and accrued revenue in FY 2022, accounts receivable and accrued revenue would have been US$3.7m lower and operating profit would have been US$3.7m lower.

Assets acquired and liabilities assumed in business combinations
In accounting for business combinations, judgement is required in determining whether an intangible asset is identifiable and should be recorded separately from goodwill. Additionally, estimating the acquisition-date fair values of the identifiable assets acquired and liabilities assumed involves considerable judgement and the valuation techniques used incorporate several key assumptions, including: forecasts of revenues attributable solely to the existing assets; forecasts of revenue/customer attrition; the application of an appropriate operating margin to forecast sales; the application of an appropriate tax charge to estimate post-tax cash flows; the application of post-tax contributory asset charges to reflect the return required on other tangible and intangible assets that contribute to the generation of the forecast cash flows; and the application of an appropriate discount rate to state future cash flows at their present value. The necessary measurements are based on information available at the acquisition date and are based on expectations as well as assumptions that have been deemed reasonable by management. These judgements, estimates and assumptions could materially affect our financial statements if other judgements, estimates and assumptions were made.

Cash generating units
A cash generating unit (CGU) is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets.

The Group's tangible and identifiable intangible assets principally comprise acquired IP and technology assets that are used interchangeably by the Group's research and development team in the delivery of IP, custom silicon and silicon products to end customers. For example, we use the IP and technology assets acquired with the OpenFive business in the development not only of custom silicon designs but also of IP products and standard products. Given this integrated approach to IP development, the Group does not hold any individual assets or groups of assets that generate cash inflows that are largely independent of the cash inflows from other assets or groups of assets. In management's judgement, therefore, the Group consists of a single CGU. Accordingly, the Group's tangible and identifiable intangible assets are tested for impairment at Group level based on estimates of the Group's future cash flows.

Key sources of estimation uncertainty in the consolidated financial statements

The key assumptions concerning the future, and other key sources of estimation uncertainty at the consolidated statement of financial position date, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are discussed below.

Revenue recognition
Revenue recognition for hard IP products licensed under our standard pay-per-use contracts and custom silicon development work is based upon cost to completion using the input method, as this best reflects the transfer of control of the licensed IP products or the custom silicon design to the customer, with percentage of completion based on management judgements and estimates approximating the work required to meet contract deliverables. These judgements and estimates vary depending on the contract type, the maturity of the IP being licensed, the complexity of the silicon being developed, customer requirements and involvement, customer specifications, whether the contract deliverables are in their early or later stages and whether the IP has already been silicon-proven. If different estimates of the work required to meet contract deliverables had been made, our revenue may have been different from that shown in the consolidated statement of comprehensive income and the contract assets and contract liabilities balances shown in the consolidated statement of financial position may also have been different. Refer to note 5 for further information regarding the sensitivity of revenue recognition to the estimation uncertainty of work required to meet contract deliverables.

For the subscription licence agreement with WiseWave, the Group uses point-in-time revenue recognition. The agreement includes multiple performance obligations for delivery of distinct IPs and periodic updates to those IPs. Revenue is recognised based on delivery of each distinct IP as a proportion of management's estimate of the total number of IPs to be delivered during the five-year term of the agreement. If different assumptions were made about the total number of IPs to be delivered during the contract term and the amount of contract price allocated to each IP, the revenue recorded against this contract in the consolidated statement of comprehensive income and the contract assets and contract liabilities balances shown in the consolidated statement of financial position may be different from that shown.

Fair value of assets acquired in business combinations
In calculating the value of intangible assets, we have considered the requirements of the standards and the highest and best use of the assets. The calculations include estimation uncertainty in respect of elements of the fair value estimates, notably forecasting revenues and margins for intellectual property (IP) and customer relationships.

For the IP recognised in respect of the OpenFive business combination, SoC IP revenues have been forecast to grow at a compound annual growth rate (CAGR) of 43.6% between 2022 and 2026 based on past performance. If total revenue growth of 29.0% per annum (based on a 2022 to 2026 CAGR) had been used instead, the SoC IP intangible value would be US$9.2m lower, consequently leading to an increase in goodwill and a decrease in deferred tax liability.

In respect of customer relationships recognised in the OpenFive business combination, we forecast an improvement in EBIT margins for NRE and product revenue based on operational changes between 2022 and 2025. If these expected margin improvements were not achieved, then the value of the customer relationship recognised would be approximately US$5.8m, which is US$19.9m lower than recognised in the consolidated statement of financial position, consequently leading to an increase in goodwill and a decrease in deferred tax liability.

In determining the value of the IP in-progress recognised in respect of the Banias business combination, we have considered the revenue expected to be achieved from this asset once complete. However, as this is a new optical DSP product offered by the Group that is not yet complete, there is uncertainty in the revenue that is expected to be achieved. Had we limited the expected sales and margins to the total of the non-binding, multi-year purchasing framework with a leading North American hyperscaler, which we consider to be an unlikely scenario, the valuation of the IP in-progress would be reduced to US$0.6m, consequently leading to an increase in goodwill and a decrease in deferred tax liability. In performing this sensitivity, we have reduced the discount rate to reflect the reduced forecasting uncertainty of the scenario compared to the base case.

4 Alternative performance measures (APMs)
The Group uses certain financial measures that are not defined or recognised under IFRS. The Directors believe that these non-GAAP measures supplement GAAP measures to help in providing a further understanding of the results of the Group and are used as key performance indicators within the business to aid in evaluating its current business performance. The measures can also aid in comparability with other companies who use similar metrics. However, as the measures are not defined by IFRS, other companies may calculate them differently or may use such measures for different purposes to the Group.

Bookings
The Group monitors and discloses bookings and backlog as key performance indicators of future revenues. Bookings are a non-IFRS measure and represent legally binding and largely non-cancellable commitments by customers to license our technology. Our bookings comprise licence fees, non-recurring engineering, support, orders for silicon products and, in some instances, our estimate of potential future royalties.

Our royalties are estimated based on contractually committed royalty prepayments or, in limited instances, on sensitised volume estimates provided by customers. Our bookings for FY 2022, including royalties, totalled US$228.1m (FY 2021: US$244.7m), and excluding royalties, US$213.0m (FY 2021: US$220.8m).

Backlog represents bookings over the life of the Group that have not yet been recognised as revenues and which we expect to be recognised in future periods. Backlog as at the end of 2022 is calculated based on our backlog as at the end of 2021, plus new bookings, plus backlog acquired as part of the acquisitions of OpenFive and Precise-ITC Inc., less revenues recognised during the period.

	Year ended 31 December 2022 US$m	Year ended 31 December 2021 US$m
Backlog (end of the prior year)	**168.6**	37.2
Add: New bookings excluding IP royalties	**213.0**	220.8
Add: Backlog acquired with OpenFive and Precise-ITC	**168.3**	—
Less: Revenues recognised in the period[1]	**(185.4)**	(89.4)
Backlog (end of the year)	**364.5**	168.6

1. 2021 is different from reported revenue due to foreign exchange differences.

Earnings before interest, taxation, depreciation and amortisation (EBITDA)

EBITDA provides a supplemental measure of earnings that facilitates review of operating performance on a period-to-period basis by excluding items that are not indicative of the Group's underlying operating performance and is a key profit measure used by the Board to assess the underlying financial performance of the Group. EBITDA is stated before the following items and for the following reasons:

- interest is excluded from the calculation of EBITDA because the expense and income bears no relation to the Group's underlying operational performance;
- charges for the depreciation of property and equipment, acquired intangibles and right-of-use assets are excluded from the calculation of EBITDA, as removing these non-monetary items allows management to better project the Group's long-term profitability; and
- tax is excluded from the calculation of EBITDA because the expense bears no relation to the Group's underlying operational performance.

Operating profit to EBITDA reconciliation

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Operating profit	**37,627**	36,035
Add backs:		
Depreciation of tangible fixed assets and right-of-use assets	**5,508**	3,127
Amortisation	**6,159**	—
EBITDA	**49,294**	39,162

Two further measures are adjusted EBITDA and adjusted profit after tax, defined in the tables below. These further allow for a more accurate assessment of underlying business performance by making exclusions of items which do not form part of the Group's normal underlying operations.

EBITDA to adjusted EBITDA reconciliation

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
EBITDA	**49,294**	39,162
Add backs:		
Non-recurring Initial Public Offering costs	**—**	9,961
M&A-related costs	**16,973**	533
Share-based payment	**15,695**	6,143
Exchange gain	**(36,838)**	(4,023)
Retention payments	**1,703**	—
Adjusted EBITDA	**46,827**	51,776

M&A-related costs include one-off legal and professional costs incurred as a result of the Group's execution of agreements for the formation and commercial arrangements relating to the Group's joint venture, WiseWave, as well as professional fees and one-time employee retention bonuses related to the acquisitions of Precise-ITC, OpenFive and Banias. We believe that excluding the effect of share-based payments from adjusted EBITDA assists management and investors in making period-to-period comparisons in the

Group's operating performance because the amount of such expenses in any specific period may not directly correlate to the underlying performance of our business operations.

Retention payments represent cash payments in lieu of share-based remuneration committed as part of the acquisition of Banias.

Additionally, these expenses can vary significantly between periods as a result of the timing of grants of new share-based awards, including grants in connection with acquisitions. The exchange gain in 2022 has been removed from EBITDA as it relates to an unrealised gain relating to cash held and therefore does not form part of the Company's operating performance.

We exclude the impact of amortisation of acquired intangibles in connection with business combinations from our adjusted profit after tax, as we do not consider them to be representative of the underlying operational performance of the business.

Profit for the year to adjusted profit after tax reconciliation

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
(Loss)/profit for the year	**(1,086)**	9,431
Add backs:		
Non-recurring Initial Public Offering costs	**—**	9,961
M&A-related costs	**16,973**	533
Share-based payment	**15,695**	6,143
Exchange gain	**(36,838)**	(4,023)
Retention payments	**1,703**	—
Amortisation of acquired intangibles	**5,519**	—
Tax effect of above adjustments	**4,708**	—
Adjusted profit for the year	**6,674**	22,045

Adjusted profit per ordinary share attributable to the shareholders (expressed in cents per ordinary share)

	Year ended 31 December 2022	Year ended 31 December 2021
Adjusted basic earnings per share (US$ cents)	**0.98**	3.52
Adjusted diluted earnings per share (US$ cents)	**0.98**	3.14

Adjusted and diluted basic earnings per share have been calculated by taking the adjusted profit for the year and dividing it by the basic or diluted, as appropriate, weighted average number of common shares outstanding as calculated in note 13. Adjusted basic earnings per share and adjusted diluted earnings per share are the same because the share options and RSUs are anti-dilutive. Therefore, they have been excluded from the calculation of diluted weighted average number of ordinary shares.

5 Revenue

Disaggregation of revenue

The Group has disaggregated revenue into various categories in the following tables which is intended to depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors.

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Revenue by type:		
IP and NRE	**76,123**	51,224
IP and NRE – Reseller	**3,270**	8,861
IP and NRE– JV	**58,207**	29,846
Silicon and royalties	**47,806**	—
	185,406	89,931

'IP and NRE' represents revenues from IP products licensing, along with related support and NRE services, in addition to custom silicon NRE (which can include internal engineering services, our IP and related support, third party IP, tooling costs and prototypes). 'IP and NRE – Reseller' represents revenue from IP products licensing, related support and NRE services provided through VeriSilicon, prior to our arrangements with VeriSilicon being moved under WiseWave in late 2021. 'IP and NRE – JV' represents revenue from our joint venture, WiseWave, and includes revenues recognised under the 5-year subscription licence and revenues recognised under the VeriSilicon reseller arrangements which were moved under WiseWave in late 2021. 'Silicon and royalties' represent revenues recognised once our customers are in production and in the case of custom silicon are based on shipments of physical silicon products and, for standalone IP licensing, royalties payable on usage of our IP within silicon products.

Whilst this part of the note shows revenue by type, due to materiality, we have separately itemised the revenue from our reseller and joint venture, both based in China. The revenue from our joint venture in China, WiseWave, predominantly relates to a five-year subscription licence agreement where we have recognised US$31.1m (2021: US$27.7m) based on our deliveries of IP to WiseWave. The remaining revenue from WiseWave relates to a separate agreement signed in Q4 2021 to deliver chiplet IP and revenue recognised through WiseWave acting as master reseller of IP to VeriSilicon.

All revenue from VeriSilicon and related balances are in respect of transactions signed with VeriSilicon as reseller prior to the VeriSilicon reseller agreement moving under WiseWave as master reseller effective from November 2021. All revenue and associated balances in respect of transactions signed with VeriSilicon since that date are now recognised through the WiseWave joint venture line.

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Revenue by region:		
North America	**51,361**	37,642
China	**104,755**	43,063
APAC (ex-China)	**16,980**	9,226
EMEA	**12,310**	—
	185,406	89,931

Revenues from customers which comprise greater than 10% of the Group's total revenues are as follows:

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Customer – WiseWave	**58,207**	29,846

US$90.7m (49% of total revenues) (2021: US$53.4m, 59%) represent revenues recognised over time. These revenues require management judgements and estimates of project hours or costs that are used in percentage of completion calculations. These revenues relate to work done during the design phase of a customer project and include (with the exception of a limited amount of revenue relating to our Soft IP) IP product licensing fees, together with related support and NRE, as well as custom silicon NRE fees. We have applied a sensitivity to revenues recognised over time in 2022 which are subject to estimates. If our estimates of total hours or total costs had been 10% higher, these revenues would be US$83.6m. If our estimates of total hours or total costs had been 10% lower, these revenues would be US$96.3m.

US$94.7m (51% of total revenues) (2021: US$36.5m, 41%) are recognised at a point in time. These revenues are based on silicon shipments once our customers are in production. In the case of custom silicon, this represents revenues from shipments of physical silicon products, and for standalone IP licensing, royalties payable on usage of our IP within silicon products. Revenues from our 5 year subscription licence agreement with WiseWave are also recognised at a point in time, based on the number of IP uploads during the period. Revenues from the 3 year reseller agreement with VeriSilicon, which was moved under WiseWave in late 2021, are recognised at a point in time to the extent that they represent exclusivity fees paid during the period not credited against IP licences. In addition, a limited amount of revenue from our Soft IP products is recognised at a point in time.

WiseWave – subscription licence agreement

Revenue recognition for the WiseWave subscription licence agreement is determined with reference to the estimated total number of IP uploads to be delivered to WiseWave during the term of the agreement and the number of uploads made to WiseWave each period. The table below illustrates the sensitivity of revenue recognition and the associated balance sheet balances to a change in the estimated total number of IP products to be delivered and assumes a 10% increase and a 10% decrease in the total number of uploads, but the same number of uploads made during 2022.

Year ended 31 December 2022	**As reported US$'000**	**+10% US$'000**	**-10% US$'000**
Revenue stream			
WiseWave SLA revenue	**31,091**	**27,982**	**34,200**
WiseWave SLA accrued revenue	**16,794**	**15,115**	**18,473**

Year ended 31 December 2021	As reported US$'000	+10% US$'000	-10% US$'000
Revenue stream			
WiseWave SLA revenue	27,700	25,229	30,714
WiseWave SLA accrued revenue	3,700	1,229	6,714

Accrued and deferred revenue movements

Below is a reconciliation of the movement in accrued revenue during the period:

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
At 1 January	**31,719**	10,328
On acquisition of subsidiaries	**2,714**	—
Revenue accrued in the period	**56,231**	30,482
Accrued revenue invoiced in the period	**(31,983)**	(8,959)
Foreign exchange difference	**(147)**	(132)
At 31 December	**58,534**	31,719

Below is a reconciliation of the movement in deferred revenue during the period:

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
At 1 January 2022	**12,661**	7,381
On acquisition of subsidiaries	**41,361**	—
Revenue recognised in the period	**(38,959)**	(6,450)
Revenue deferred in the period	**76,205**	11,554
Cumulative catch-up adjustments	**—**	8
Foreign exchange difference	**465**	168
At 31 December	**91,733**	12,661

The cumulative catch-up adjustment in 2021 represents a change in estimate of the total number of hours expected to complete a project.

The deferred revenue balance is all expected to be satisfied within 12 months of the consolidated statement of financial position date.

The flexible spending account has decreased to US$5.2m as at 31 December 2022 from US$6.8m as at 31 December 2021. This represents a type of deferred income, and these are contracts with customers who have committed to regular periodic payments to us over the term of the contract. These payments are not in respect of specific licences or other deliverables, but they can be used as credit against future deliverables.

The balances related to costs to obtain contracts from customers are as follows:

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Capitalised contract costs	**874**	609

The costs to obtain contracts from customers include commissions. Amortisation of US$2.9m (2021: US$3.0m) and impairment of US$nil (2021: US$nil) was charged to the consolidated statement of comprehensive income in the period.

6 Research and development/engineering

The Group incurred research and development costs that have been expensed in the consolidated statement of comprehensive income. The amounts are expensed through research and development/engineering and are as follows:

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Research and development/engineering	**69,358**	29,444

7 Employee benefit costs

The aggregate employee benefit expenses were as follows:

	Group Year ended 31 December 2022 US$'000	Group Year ended 31 December 2021 US$'000	**Company Year ended 31 December 2022 US$'000**	Company Period ended 31 December 2021 US$'000
Wages, salaries and benefits	**45,301**	19,216	**1,444**	328
Defined contribution pension costs	**1,300**	253	**27**	10
Social security costs	**3,959**	1,447	**411**	41
Share-based payment expense	**15,695**	6,143	**235**	342
Investment tax credit	**(5,198)**	(3,039)	**—**	—
Government grants	**—**	(56)	**—**	—
Total	**61,057**	23,964	**2,117**	721

The average number of employees during the period, analysed by category, was as follows:

	Group 2022	Group 2021	**Company 2022**	Company 2021
Research and development/engineering	**321**	110	**—**	—
General and administration	**29**	10	**7**	3
Sales and marketing	**11**	4	**—**	—
Total	**361**	124	**7**	3

The number of employees at the period end analysed by category, was as follows:

	Group 2022	Group 2021	**Company 2022**	Company 2021
Research and development/engineering	**621**	134	**—**	—
General and administration	**57**	15	**9**	5
Sales and marketing	**17**	5	**—**	—
Total	**695**	154	**9**	5

FY 2022 and FY 2021 headcount numbers throughout the report exclude interns. In FY 2021 there were five interns who were previously reported as part of the R&D headcount.

8 Directors' and key management personnel remuneration

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the Group, including the Directors of the Company, the co-founders and the Chief Financial Officer of the Company.

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Remuneration (including benefits in kind)	**5,962**	2,235
Defined contribution pension costs	**59**	4
Share-based payment expense	**—**	252
	6,021	2,491

One Director exercised options during the previous period. Details are as follows:

	Year ended 31 December 2022	Year ended 31 December 2021
Number of options, in thousands, exercised by Directors and key management	**—**	4,000
Gains made on exercise of options by Directors and key management US$'000	**—**	5,636

Details of the highest paid Director's remuneration is as follows:

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Remuneration (including benefits in kind)	**762**	740
Defined contribution pension costs	**45**	4
	807	744
Number of options, in thousands, exercised by Director	**—**	4,000

The number of options at 31 December 2021 has been adjusted for the 20 for 1 share split that happened immediately prior to the Initial Public Offering in May 2021.

Shortly following the Company's incorporation, 50,000 preference shares of nominal value of £1 each were issued to John Lofton Holt, a Company Director. The preference shares were issued as fully paid up in consideration for an undertaking from Mr Holt to pay to the Company a sum of £50,000. The preference shares were redeemed by the Company on 6 December 2021 and the undertaking to pay was thereby cancelled.

A loan of CDN$1,280,000 was made to Daniel Aharoni, a Director of the Company for the exercise of share options in Alphawave IP Inc prior to the IPO date. The loan was repaid on the sale of shares in the Company at the IPO and following the exchange of Alphawave IP Inc shares into Company shares prior to the IPO date. The loan was interest free.

9 Auditor's remuneration

The Group paid the following amount to its auditor in respect of the audit of the Group's financial statements and for other non-audit services provided to the Group.

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Audit of the financial statements	**1,713**	725
Audit-related assurance services	**124**	155
Other assurance services	**—**	1,135
	1,837	2,015

In the prior period, other assurance services relate to financial services provided for our admission to list on the London Stock Exchange.

10 Finance income and expense

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Finance income		
Interest income from customer	**—**	202
Interest income from contracts with customers containing significant financing components	**235**	—
Bank interest	**1,449**	110
	1,684	312
Finance expense		
Bank charges	**—**	(26)
Lease interest	**(391)**	(294)
Term loan interest	**(3,134)**	—
NPV interest	**(27)**	—
IIA interest	**(36)**	—
	(3,588)	(320)
Net finance expense	**(1,904)**	(8)

11 Non-recurring Initial Public Offering costs

In accordance with the Group's policy for non-recurring items, the following charges were included in this category for the prior period:

One-off costs relating to Project Aurora, the project name for the Group's Initial Public Offering on the London Stock Exchange, that were not able to be offset against share premium under IAS 32 totalled US$nil (2021: US$10.0m). Over half of these total fees related to LSE admission fees and legal costs associated with the Initial Public Offering. Per IAS 32, costs that relate to the stock market listing or are otherwise not incremental and not directly attributable to issuing new shares should be recorded in the consolidated statement of comprehensive income.

12 Tax expense

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Current taxation		
UK corporation tax	**5,792**	257
Adjustments to prior periods	**(516)**	125
Overseas tax	**13,330**	13,349
Total current tax	**18,606**	13,731
Deferred tax		
Origination and reversal of timing differences	**(278)**	(74)
Total deferred tax	**(278)**	(74)
Taxation on profit	**18,328**	13,657

The reasons for the difference between the actual tax charge for the year and the standard rate of corporation tax applied to profits for the year are as follows:

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Profit before tax	**17,242**	23,088
Profit before tax at the UK corporation tax rate of 19% (2021: 19%)	**3,275**	4,387
Effects of:		
Share-based compensation	**3,141**	1,036
Expenses not deductible for tax purposes	**1,964**	1,902
Research and development tax credits and incentives	**—**	72
(Over)/under accrual of prior year provision	**(516)**	125
Different tax rates applied in overseas jurisdictions	**3,469**	3,677
Share of joint venture's loss	**3,511**	2,458
Change in benefit of tax assets not recognised	**3,281**	—
Other tax items	**203**	—
Total tax charge for year	**18,328**	13,657

Changes in tax rates and factors affecting the future tax charge

An increase in the future main UK corporation tax rate to 25% from 1 April 2023, from the previously enacted 19%, was announced at the Budget on 3 March 2021, and substantively enacted on 24 May 2021. The deferred taxation balances have been measured using the rates expected to apply in the reporting periods when the timing differences reverse.

There have been no legislative changes announced in 2022 in relation to Canadian or US tax rates which will affect the Group.

13 Earnings per share

Basic earnings per share is calculated by dividing net income from operations by the weighted average number of common shares outstanding during the period.

Diluted earnings per share is calculated by adjusting the weighted average number of common shares outstanding during the period to assume conversion of all potential dilutive share options and restricted share units to common shares.

(US$ thousands except number of shares)	**Year ended 31 December 2022**	Year ended 31 December 2021
Numerator:		
(Loss)/profit for the year	**(1,086)**	9,431
Denominator:		
In issue at 1 January	**664,965,934**	27,927,252
Effect of 20 for 1 share exchange	**—**	558,545,040
Effect of pre-IPO option conversion	**—**	3,986,807

Effect of primary share issue at IPO	**—**	54,776,719
Effect of exercise of options at IPO	**—**	8,138,237
Effect of share issue post IPO	**14,883,503**	137,957
Weighted average number of common shares outstanding for basic earnings per share	**679,849,437**	625,584,760
Adjustment for dilutive share options and RSUs	**—**	76,905,071
Weighted average number of common shares outstanding for diluted earnings per share	**679,849,437**	702,489,831
Basic (loss)/earnings per share (US$ cents)	**(0.16)**	1.51
Diluted (loss)/earnings per share (US$ cents)	**(0.16)**	1.34

Adjusted basic loss per share in 2022 and adjusted diluted loss per share in 2022 are the same because the share options and RSUs are anti-dilutive. Therefore, they have been excluded from the calculation of diluted weighted average number of ordinary shares.

14 Property and equipment

Group	Computer equipment US$'000	Furniture and fixtures US$'000	Leasehold improvements US$'000	Lab equipment US$'000	Total US$'000
Cost					
Balance at 1 January 2021	508	57	140	—	705
Additions	1,595	5	268	—	1,868
Foreign exchange	(15)	—	(4)	—	(19)
Balance at 31 December 2021	2,088	62	404	—	2,554
Additions	**10,128**	**286**	**1,261**	**93**	**11,768**
On acquisition of subsidiaries	**913**	**111**	**264**	**1,279**	**2,567**
Foreign exchange	**(5)**	**(1)**	**(6)**	**—**	**(12)**
Balance at 31 December 2022	**13,124**	**458**	**1,923**	**1,372**	**16,877**
Accumulated depreciation					
Balance at 1 January 2021	232	24	37	—	293
Depreciation charge for the year	540	7	95	—	642
Foreign exchange	(6)	—	(1)	—	(7)
Balance at 31 December 2021	766	31	131	—	928
Depreciation charge for the year	**1,886**	**58**	**456**	**72**	**2,472**
Disposals	**—**	**—**	**—**	**—**	**—**
Foreign exchange	**16**	**9**	**31**	**—**	**56**
Balance at 31 December 2022	**2,668**	**98**	**618**	**72**	**3,456**
Net book value					
At 31 December 2020	276	33	103	—	412
At 31 December 2021	1,322	31	273	—	1,626
At 31 December 2022	**10,456**	**360**	**1,305**	**1,300**	**13,421**

Company

The Company has no property, plant and equipment.

15 Intangible assets

Group	Developed IP US$'000	Developed technology US$'000	Customer relationships US$'000	RISC-V licences US$'000	Other intangibles US$'000	Total US$'000
Cost						
Balance at 1 January 2021	140	—	—	—	—	140
Additions	1,038	—	—	—	—	1,038
Foreign exchange	(11)	—	—	—	—	(11)
Balance at 31 December 2021	1,167	—	—	—	—	1,167
On acquisition of subsidiaries	**38,887**	**83,900**	**25,700**	**5,200**	**386**	**154,073**
Additions	**4,343**	**4,255**	**—**	**—**	**3,747**	**12,345**
Foreign exchange	**(49)**	**—**	**—**	**—**	**—**	**(49)**
Balance at 31 December 2022	**44,348**	**88,155**	**25,700**	**5,200**	**4,133**	**167,536**
Accumulated amortisation						

Balance at 1 January 2021	—	—	—	—	—	—
Amortisation charge for the year	—	—	—	—	—	—
Foreign exchange	—	—	—	—	—	—
Balance at 31 December 2021	—	—	—	—	—	—
Amortisation charge for the year	**4,730**	**—**	**714**	**347**	**368**	**6,159**
Foreign exchange	**(29)**	**—**	**—**	**—**	**—**	**(29)**
Balance at 31 December 2022	**4,701**	**—**	**714**	**347**	**368**	**6,130**
Net book value						
At 31 December 2020	140	—	—	—	—	140
At 31 December 2021	1,167	—	—	—	—	1,167
At 31 December 2022	**39,647**	**88,155**	**24,986**	**4,853**	**3,765**	**161,406**

Amortisation is recognised in the R&D/engineering line of the consolidated statement of comprehensive income.

Developed technology consists of intangible assets that are still under development and are not yet available for use.

Company
The Company has no intangible assets.

16 Goodwill

Group	Total US$'000
Cost	
Balance at 1 January 2021 and 2022	—
On acquisition of subsidiaries[1]	**331,886**
Foreign exchange	**—**
Balance at 31 December 2022	**331,886**
Impairment	
Balance at 1 January 2021 and 2022	—
Impairment charge for the year	**—**
Balance at 31 December 2022	**—**
Net book value	
At 31 December 2020	—
At 31 December 2021	—
At 31 December 2022	**331,886**

1. OpenFive and Banias goodwill balances are provisional. See note 33 Business combinations.

The Group is required to test, on an annual basis, whether goodwill has suffered any impairment. The recoverable amount is determined based on value-in-use calculations. The use of this method requires the estimation of future cash flows and the determination of a discount rate in order to calculate the present value of the cash flows.

Movements in goodwill during the years ending 31 December 2022 and 2021 were as follows:

	2022 US$'000	2021 US$'000
At the beginning of the year	**—**	—
Businesses acquired during the year (note 33)	**331,886**	—
At the end of the year	**331,886**	—

Management considers that the Group's operations constitute a single operating segment. Furthermore, management considers that the Group's operations are interdependent such that there is no asset or group of assets that generates cash inflows that are largely independent of the cash inflows generated by other assets or groups of assets. Consequently, management has not allocated goodwill at a level lower than the Group level. Goodwill is tested for impairment at Group level.

We measured the Group's recoverable amount on a value-in-use basis. Value-in-use represents the present value of the projected future cash flows for the next five years based on the most recent budget and forecasts approved by management. Cash flow projections for a further five years are extrapolated based on revenue growth rates trending down to the perpetuity growth rate, and beyond this ten-year period cash flow projections have been estimated by applying a perpetuity growth rate to the forecast cash flows in the tenth year.

We consider that the key assumptions used in determining value-in-use are the expected growth in each of the Group's revenue streams, the expected gross margins for these revenue streams, our operating and capital expenditure, the perpetuity growth rate and the discount rate.

Expected future revenue is based on external forecasts of the future demand in each of our revenue streams adjusted to reflect specific factors such as our customer base, estimated market share and available distribution channels, the possibility of new entrants to the market and future technological developments. Cash flows during the five-year budget and forecast period also reflect the cost of materials and other direct costs, research and development expenditure and selling, general and administrative expenses. We estimated future revenue on current prices and market expectations of future price changes and future costs based on past experience and current prices and market expectations of future price changes, including the impact of inflation across the regions in which we operate.

We applied a perpetuity rate of 2% per annum which we consider to be a reasonable estimate of the average long-term growth rate in the markets for our products.

We calculated the value-in-use by applying a nominal discount rate to the expected post-tax cash flows that was determined using a capital asset pricing model and reflected current market interest rates, relevant equity and size risk premiums and specific risks. The equivalent pre-tax discount rate used was 13.4%.

A sensitivity analysis was performed on the single Group CGU, using reasonably possible changes in revenue growth rates, forecast cash flows and pre-tax discount rates and management concluded that no reasonably possible change in any of the key assumptions would result in the carrying value of the single Group CGU to exceed its recoverable amount.

We did not recognise any goodwill impairment during 2022 and the Group's recoverable amount was comfortably in excess of its carrying amount for the purpose of impairment tests.

17 Right-of-use assets and lease liabilities

Right-of-use assets

Group	Buildings US$'000	Equipment US$'000	Total US$'000
Cost			
Balance at 1 January 2021	6,115	1,706	7,821
Additions	2,321	898	3,219
Disposal	—	(22)	(22)
Foreign exchange	24	(3)	21
Balance at 31 December 2021	8,460	2,579	11,039
Additions	**4,308**	**3,023**	**7,331**
On acquisition of subsidiaries	**2,786**	**—**	**2,786**
Disposal	**—**	**—**	**—**
Foreign exchange	**(248)**	**(104)**	**(352)**
Balance at 31 December 2022	**15,306**	**5,498**	**20,804**
Accumulated depreciation			
Balance at 1 January 2021	718	188	906
Depreciation charge for the year	1,144	1,341	2,485
Foreign exchange	(10)	(14)	(24)
Balance at 31 December 2021	1,852	1,515	3,367
Depreciation charge for the year	**1,706**	**1,330**	**3,036**
Disposal	**—**	**—**	**—**
Foreign exchange	**(90)**	**(62)**	**(152)**
Balance at 31 December 2022	**3,468**	**2,783**	**6,251**
Net book value			
At 31 December 2020	5,397	1,518	6,915
At 31 December 2021	6,608	1,064	7,672
At 31 December 2022	**11,838**	**2,715**	**14,553**

Nature of leasing activities (in the capacity as lessee)

The Group has leases for corporate offices, development facilities and certain equipment. The Group also acquired leases with both the OpenFive and Solanium Labs acquisitions. These leases have remaining lease terms ranging from four months to 8.5 years, some of which include options to extend the leases for up to ten years or to terminate the lease with notice periods of 90 days to six months or at predetermined dates as specified within the lease contract. The Group has classified the assets related to these leases as right-of-use assets and the liabilities associated with the future lease payments under these leases as lease liabilities. The weighted average incremental borrowing rate applied to these lease liabilities at initial recognition during the year was 3.95% per annum.

At 31 December 2022 the carrying amounts of lease liabilities are not reduced by the amount of payments that would be avoided from exercising break clauses because at that date it was considered reasonably certain that the Group would not exercise its right to break the lease. Total lease payments of US$nil (2021: US$0.1m) are potentially avoidable were the Group to exercise break clauses at 31 December 2022.

The use of extension and termination options gives the Group added flexibility in the event it has identified more suitable premises in terms of cost and/or location or determined that it is advantageous to remain in a location beyond the original lease term. An option is only exercised when consistent with the Group's strategy and the economic benefits of exercising the option exceed the expected overall cost.

Amounts not included in the measurement of lease liabilities are as follows:

Group	**Year ended 31 December 2022 US$'000**	Year ended 31 December 2021 US$'000
Short-term lease expense and low-value lease expense	**1,769**	—
Expense relating to variable lease payments not included in the measurement of lease liabilities	**19**	42
	1,788	42

Lease liabilities

Group	Total US$'000
At 1 January 2021	6,801
Additions	3,219
Disposals	(32)
Interest expense	294
Lease payments	(2,494)
Foreign exchange	40
At 31 December 2021	7,828
Additions	**7,196**
Interest expense	**391**
Lease payments	**(3,038)**
On acquisition of subsidiaries	**2,616**
Foreign exchange	**(60)**
At 31 December 2022	**14,933**

Lease liabilities are due as follows:

	Group 31 December 2022 US$'000	Group 31 December 2021 US$'000
Not later than one year	**3,417**	2,160
Between one and five years	**9,158**	5,525
Over five years	**2,358**	143
	14,933	7,828

The total cash outflow for leases is as follows:

Group	**Year ended 31 December 2022 US$'000**	Year ended 31 December 2021 US$'000
Total cash outflow	**3,038**	2,494

The Group does not face a significant liquidity risk with regard to its lease liabilities.

Company

The Company has no leases.

18 Investments

Group subsidiaries

All subsidiaries have been included in the consolidated financial statements. Details of the Group's subsidiaries as at 31 December 2022 are as follows:

Name of subsidiary	Principal activity	Country of incorporation and principal place of business	Class of share	Proportion of ownership interest and voting rights held by the Group
Alphawave IP Inc.	Developing and licensing high performance connectivity silicon IP for the semiconductor industry	Canada	Ordinary	100%
Alphawave IP Corp.	Sales and sales support for silicon IP licencing and custom silicon solutions.	United States (Delaware)	Ordinary	100%
Alphawave IP (BVI) Ltd.	To facilitate silicon IP licensing to WiseWave Technology Co., LTD	British Virgin Islands	Ordinary	100%
Alphawave Call. Inc.	Non-trading	Canada	Ordinary	100%
Alphawave Exchange Inc.	Non-trading	Canada	Ordinary	100%
Alphawave IP Limited	To facilitate the investment in WiseWave Technology Co., LTD	China	Ordinary	100%
Precise-ITC, Inc.	Developing and licensing high performance connectivity silicon IP for the semiconductor industry	Canada	Ordinary	100%
AWIPInsure Limited	Captive insurance company	Barbados	Ordinary	100%
Alphawave Holdings Corp.	Holding company provides operational support in Taiwan for Open-Silicon, Inc	United States (Delaware)	Ordinary	100%
Open-Silicon, Inc	Provides custom silicon solutions and high-speed connectivity silicon IP	United States (Delaware)	Ordinary	100%
Open-Silicon Holding Corp.	Holding company	Mauritius	Ordinary	100%
Open-Silicon Development Corp.	Dormant	United States (Delaware)	Ordinary	100%
Open-Silicon Engineering, Inc.	Dormant	United States (Delaware)	Ordinary	100%
Open-Silicon International, Inc.	Dormant	United States (Delaware)	Ordinary	100%
Open-Silicon Japan	Dormant	Japan	Ordinary	100%
Open-Silicon Research Private Ltd	Provides research and development contracting services to Open-Silicon International, Inc.	India	Ordinary	100%
Yuanfang Silicon Technology (Nanjing) Co. Ltd	Provides sales and marketing contracting services to Open-Silicon, Inc.	China	Ordinary	100%
Alphawave 102022 Limited	Dormant	United Kingdom (England & Wales)	Ordinary	100%
Solanium Labs Ltd	Developing optical Digital Signal Processing chips for data centres	Israel	Ordinary	100%
Solanium Labs, Inc	Provides Sales support for Solanium Labs, Ltd. Dissolved on 21 December 2022	United States (Delaware)	Ordinary	100%

All of the subsidiaries, with the exception of Alphawave IP (BVI) Ltd, Alphawave Call. Inc., Alphawave IP Limited, AWIPInsure Limited, Alphawave Holdings Corp. and Alphawave 102022 Limited are indirectly held subsidiaries.

The registered office of Alphawave IP Corp. and Alphawave Holdings Corp. is 1730 N 1st St, Suite 650, San Jose, CA, 95112.

The registered office of Alphawave IP (BVI) Ltd is Trinity Chambers, PO Box 4301, Road Town, Tortola, British Virgin Islands.

The registered office of Alphawave IP Limited is 21 Avenida da Praia Grande, No 409, Edificio China Law, 21 andar, em Macau.

The registered office of Precise-ITC, Inc. is 170 University Avenue, 10th Floor, Toronto, Ontario, M5H 3B3.

The registered office of AWIPInsure Limited is 1st Floor, Limegrove Centre, Holetown, St. James, Barbados.

The registered office of Open-Silicon, Inc, Open-Silicon Development Corp, Open-Silicon Engineering, Inc and Open-Silicon International, Inc is 490 N McCarthy Blvd #220, Milpitas, CA 95035.

The registered office of Open-Silicon Holding Corp (Mauritius) is 3rd Floor, Les Cascades, Edith Cavell Street, Port Louis, Mauritius.

The registered office of Open-Silicon Japan is c/o Akia Tax Consultants, Shoei Kannai Building, 22, Sumiyoshicho 2-chrome, Naka-ku, Yokohama, Kanagawa.

The registered office of Open-Silicon Research Private Ltd is No. 11/1 & 12/1 Maruthi Infotech Centre, 2nd Floor, B-Block, Indiranagar, Koramangala Intermediate Ring Road, Bangalore – 560 071, India.

The registered office of Yuanfang Silicon Technology (Nanjing) Co. Ltd is Room 101, Building B, No. 300, Zhihui Road, Qilin Science and Technology Innovation Park, Jiangning District, Nanjing.

The registered office of Alphawave 102022 Limited is 65 Gresham Street, 6th Floor, London, England, EC2V 7NQ.

The registered office of Solanium Labs Ltd. is 24 Hanagar, Hod HaSharon 4527713, Israel.

The registered office of all other subsidiaries is 70 University Ave, 10th Floor, Toronto, Ontario, Canada M5J 2M4.

Summary of the Company investments

Company	Subsidiaries US$'000
Cost	
On incorporation	—
Addition	18,236
Share-based payment capital contribution	4,155
At 31 December 2021	22,391
Addition	**240,135**
Share-based payment capital contribution	**17,847**
Carrying amount	
At 31 December 2021	22,391
At 31 December 2022	**280,373**

In FY 2022, the Company acquired 100% of the share capital of Banias Labs. Further details are provided in note 33.

Investment in joint ventures

The following entities have been included in the consolidated financial statements using the equity method:

Name of joint venture	Principal activity	Country of incorporation and principal place of business	Class of share	Proportion of ownership interest and voting rights held by the Group
WiseWave Technology Co., LTD	A semiconductor device company focused on the mainland Chinese market	China	Ordinary	42.5%

The registered office of WiseWave Technology Co., LTD is Room 105, No. 6, Baohua Road, Hengqin New District, Zhuhai, China.

Group	Joint venture US$'000
Cost and net book value	
At 1 January 2021	—
Additions	22,360
Share of loss	(12,939)
At 31 December 2021	9,421
Additions	**9,060**
Share of loss	**(18,481)**
At 31 December 2022	**—**

Summarised financial information for joint venture:

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Current assets	**18,536**	32,114
Property and equipment	**1,908**	12
Intangible assets	**71,331**	29,018
Other non-current assets	**4,883**	—
Current liabilities	**27,351**	9,707
Non-current liabilities	**42,317**	—
Included in the above amounts are:		
Cash and cash equivalents	**15,729**	30,664
Current financial liabilities (excluding trade payables)	**—**	—
Non-current financial liabilities (excluding trade payables)	**—**	—
Net assets (100%)	**26,990**	51,437
Group share of net assets (42.5%)	**11,471**	21,861
Period ended 31 December:		
Revenues	**5,517**	—
(Loss) from continuing operations	**(37,764)**	(1,522)
Other comprehensive income	**—**	—
Included in the above amounts are:		
Depreciation and amortisation	**(18,267)**	(925)
Interest expense	**(2,936)**	(73)
Total comprehensive expense (100%)	**(37,764)**	(1,522)
Group share of total comprehensive expense (42.5%)	**(16,050)**	(647)

The above summary financial information has been aligned with the accounting policies of the Group. The recognition of intangible assets and related amortisation has been adjusted for the purposes of aligning the Group recognition policies. Revenue transactions between Alphawave and WiseWave are accounted for on the basis that we are principal and they are agent.

Share of post-tax loss of equity-accounted joint ventures:

	Year ended 31 December 2022 US$'000	Year ended 31 December 2021 US$'000
Share of loss	**16,050**	647
Elimination of gains from sales to the joint venture	**2,431**	12,292
Total	**18,481**	12,939

Revenues of US$37.5m (2021: US$29.8m) were made from provision of IP to WiseWave. To the extent that WiseWave has not yet utilised the IP, the proportion of the Group's investment has been eliminated and will be released over the term of the subscription licence of five years.

19 Trade and other receivables

Current	Group 2022 US$'000	Group 2021 US$'000	Company 2022 US$'000	Company 2021 US$'000
Trade receivables from contracts with customers	**16,455**	12,074	**—**	—
Less: expected credit loss provision	**(2,184)**	—	**—**	—
Trade receivables at amortised cost – net	**14,271**	12,074	**—**	—
Other receivables – current	**18,888**	158	**13,922**	—
Other receivables – non-current	**19,272**	—	**17,091**	—
Total financial assets other than cash and cash equivalents carried at amortised cost	**52,431**	12,232	**31,013**	—
Prepayments	**70,601**	262	**272**	146
Capitalised contract costs	**874**	609	**—**	—
Total trade and other receivables	**123,906**	13,103	**31,285**	146

Amounts owed from Group subsidiaries – current	**—**	—	**14,769**	367
Amounts owed from Group subsidiaries – non-current	**—**	—	**260,011**	22,997
Total trade and other receivables and amounts owed from Group subsidiaries	**123,906**	13,103	**306,065**	23,510

Group

The carrying value of trade and other receivables approximates to fair value.

The Group applies the IFRS 9 simplified approach to measuring expected credit losses (ECL) using a lifetime ECL provision for trade and other receivables. The expected loss rates are based on the Group's historical credit losses. The historic loss rates are then adjusted for current and forward-looking information on macroeconomic factors affecting the Group's customers.

The Group's exposure to credit and market risks, including impairments and allowances for credit losses, relating to trade and other receivables is disclosed in note 28.

All trade and other receivables have been reviewed under the ECL impairment model. As at 31 December 2022, an ECL provision of US$2.2m was recognised. As at 31 December 2021, the Group's ECL provision was not material and therefore not recognised. See financial instruments note 28 for information on the Group's ECL policy.

Prepayments of US$70.6m have increased significantly from 2021. This increase was due to prepayments of US$50.9m from the OpenFive acquisition, which represent advance payments to foundries to reserve fab capacity and are predominantly covered by advance receipts from customers and other prepayments of US$19.7m (2021: US$2.5m).

The Company has significant current and non-current amounts owed to it by other Group entities. Current amounts relate to normal course operational trading where balances are expected to be recovered within a year. Non-current amounts relate to loans to non-trading entities in respect of our acquisition of OpenFive and equity investment in WiseWave, where balances are not expected to be recovered within a year.

Current and non-current other receivables in both the Company and the Group includes prepayments of deferred compensation to employees in lieu of share-based remuneration committed as part of the acquisition of Banias. These were paid in cash and are held by a third party under the terms of the sale and purchase agreement to be released to employees over time conditional upon their continued employment. There is also a similar balance within trade and other receivables in the Group which relates to a prepayment of deferred compensation based on continued employment with the Group as part of the Precise-ITC acquisition.

20 Inventories

	Group 31 December 2022 US$'000	Group 31 December 2021 US$'000	**Company 31 December 2022 US$'000**	Company 31 December 2021 US$'000
Finished goods	**3,616**	—	**—**	—
Work in progress	**10,413**	—	**—**	—
Raw materials	**4,032**	—	**—**	—
Total inventories	**18,061**	—	**—**	—

The carrying value of inventories at 31 December 2022 is presented net of the US$0.5m provision for obsolescence.

21 Trade and other payables

Trade and other payables

Current	**Group 31 December 2022 US$'000**	Group 31 December 2021 US$'000	**Company 31 December 2022 US$'000**	Company 31 December 2021 US$'000
Trade payables	**23,573**	1,317	**1,302**	366
Other payables	**18,956**	—	**6,249**	—
Accrued expenses	**33,287**	4,038	**4,826**	637
Contingent consideration	**5,000**	—	**—**	—
Employee-related liabilities	**1,035**	450	**23**	10

Social security and other taxes	**1,204**	—	**—**	—
Total current trade and other payables	**83,055**	5,805	**12,400**	1,013

Non-current	**Group 31 December 2022 US$'000**	Group 31 December 2021 US$'000	**Company 31 December 2022 US$'000**	Company 31 December 2021 US$'000
Other payables	**10,555**	—	**4,423**	—
Total non-current trade and other payables	**10,555**	—	**4,423**	—
Total trade and other payables	93,610	5,805	16,823	1,013
Amounts owed to Group subsidiaries – current	**—**	—	**—**	150
Total trade and other payables and amounts owed to Group subsidiaries	**93,610**	5,805	**16,823**	1,163

Group
The carrying value of trade and other payables classified as financial liabilities measured at amortised cost approximates fair value.

Trade payables have increased from US$1.3m in 2021 to US$23.6m in 2022. The increase was predominantly due to significant purchases of lab equipment in December 2022 and invoices received from foundry suppliers at the end of the year.

Both current other payables of US$19.0m (2021: US$nil) and non-current other payables of US$10.6m (2021: US$nil) have increased due to deferred compensation payments in lieu of share-based remuneration committed as part of the acquisition of Banias.

Accrued expenses have increased from US$4.0m in 2021 to US$33.3m in 2022. The increase is primarily due to accruals of sales tax in an overseas subsidiary, retention bonuses due to employees who joined Alphawave as part of the OpenFive and Precise-ITC acquisitions and interest due on our borrowings. Contingent consideration is recorded at fair value, see note 33 for details.

22 Loans and borrowings
The Group's sources of borrowing for liquidity purposes include the Credit Agreement dated 12 October 2022 and the Incremental Facility Amendment dated 3 November 2022. These comprise a US dollar-denominated Delayed Draw Term Loan B ('Term Loan') of US$100.0m and a multi-currency revolving credit facility (RCF) of up to US$125.0m, provided by a syndicate of banks.

Both the Term Loan and the RCF have a term of five years. The Term Loan and US$110.0m of the RCF were drawn in full in October 2022 in connection with the Group's acquisition of Banias Labs. US$15.0m of the RCF remains undrawn. Both the Term Loan and RCF bear interest at a floating rate of interest linked to SOFR (secured overnight financing rate), with the overall rate dependent on our total net leverage ratio, defined as the ratio of our consolidated total debt outstanding to our consolidated adjusted EBITDA.

Our borrowings under the Credit Agreement and Incremental Facility Amendment are subject to a net leverage ratio and a fixed charges coverage ratio which are defined in the Credit Agreement and tested quarterly. The maximum permissible net leverage ratio is 3.75x up to the period ending 30 June 2023, 3.5x up to the period ending 31 March 2024 and 3.0x thereafter. The minimum fixed charges coverage ratio is 1.25x over the term of the debt.

	Group 31 December 2022 US$'000	Group 31 December 2021 US$'000	**Company 31 December 2022 US$'000**	Company 31 December 2021 US$'000
Current				
Bank loan	**5,000**	—	**5,000**	—
Non-current				
Bank loan	**203,750**	—	**203,750**	—
IIA[1]	**1,451**	—	**—**	—
Total borrowings	**210,201**	—	**208,750**	—

1. Israel Innovation Authority.

23 Employee benefits liabilities
Liabilities for employee benefits comprise:

	Group	Group	**Company**	Company

	31 December 2022 US$'000	31 December 2021 US$'000	31 December 2022 US$'000	31 December 2021 US$'000
Accrual for annual leave	**1,035**	450	**23**	10

24 Deferred tax

The movement on the deferred tax account is as shown below:

	Group US$'000	Company US$'000
2022		
At 1 January 2022	**422**	—
Credit to profit or loss	**(278)**	—
On acquisition of subsidiaries	**31,094**	—
Transfer of tax credits	**(4,350)**	—
Foreign exchange	**82**	—
At 31 December 2022	**26,970**	—
2021		
At 1 January 2021	492	—
Credit to profit or loss	(74)	—
Foreign exchange	4	—
At 31 December 2021	422	—

The deferred account liability is made up as follows:

	Group 31 December 2022 US$'000	Group 31 December 2021 US$'000	**Company 31 December 2022 US$'000**	Company 31 December 2021 US$'000
Accelerated capital allowances	**676**	74	**—**	—
Leases	**(65)**	(41)	**—**	—
Intangibles	**29,194**	—	**—**	—
Transfer of tax credits	**(4,350)**	—	**—**	—
Other temporary differences	**1,515**	389	**—**	—
Total	**26,970**	422	**—**	—

See note 33 for details of the breakdown of acquired intangibles deferred tax liability by acquisition.

There are unrecognised deferred tax assets relating mainly to unutilised US tax loses arising from the acquisition of OpenFive. See note 33 for more details.

As at 31 December 2022, the Group has a deferred tax asset of US$10.0m and a deferred tax liability of US$37.0m. Where we have recognised a deferred tax asset and a deferred tax liability in the same taxation jurisdiction, these have been netted off resulting in a deferred tax asset of US$2.7m and a deferred tax liability of US$29.7m in the consolidated statement of financial position.

25 Share capital

Authorised share capital	**Number of shares 2022**	**US$'000 2022**	Number of shares 2021	US$'000 2021
Ordinary shares of £0.01 each	**695,068,200**	**9,751**	664,965,934	9,399

Issued and fully paid	Number of shares	US$'000
Redeemable preference shares of £1 each		
Balance as at 31 December 2020	—	—
Primary share issue at Initial Public Offering	50,000	71
	50,000	71

Shares redeemed	(50,000)	(71)
Balance as at 31 December 2021	—	—
Balance as at 31 December 2022	**—**	**—**

Issued and fully paid	Number of shares	US$'000
Ordinary shares of £0.01 each		
Balance as at 31 December 2020 in Alphawave IP Inc.	27,927,252	—
Exercise of options pre Initial Public Offering	265,701	—
Sub-total	28,192,953	—
20 for 1 share exchange	563,859,060	796,958
Shares issued to option holders on exercise	13,049,861	18,445
	576,908,921	815,403
Primary share issue at Initial Public Offering	87,835,796	124,147
Further issue of shares	221,217	313
	664,965,934	939,863
Capital reduction	—	(930,464)
Balance as at 31 December 2021	664,965,934	9,399
Shares issued to option holders on exercise	**29,442,453**	**344**
Further issue of shares	**659,813**	**8**
Balance as at 31 December 2022	**695,068,200**	**9,751**

On 14 May 2021, the Company acquired the entire issued share capital of Alphawave IP Inc. in return for 576,908,921 ordinary shares issued by the Company with a nominal value of £1. This was based on 20 shares in the Company for each share in Alphawave IP Inc.

The Company issued 87,835,796 shares, as a primary offering, with a nominal value of £1 as part of its listing on the London Stock Exchange at a price of US$5.79 (£4.10), resulting in gross proceeds to the Company of US$509.0m (£360.1m) accounted for as share capital of US$124.1m (£87.8m) and share premium of US$384.9m (£272.3m).

Net proceeds after bank syndication fees were US$492.1m (£347.1m) with further costs relating to the issuance of shares resulting in total costs of US$20.4m (£14.5m), chargeable to the share premium account. However, the Company received US$22.2m (£15.7m) as proceeds of a stock stabilisation programme which were set off against these Initial Public Offering costs, resulting in the net proceeds of US$1.8m being posted to the share premium account. The Company had further costs of US$10.0m (£7.2m) relating to the IPO but not relating directly to the issuance of new shares. These have been charged to the statement of comprehensive income as non-recurring costs.

As part of the transaction there was a secondary offering where certain employees, Directors and founders sold a total of 120,859,856 shares, including the 13,049,861 options converted to shares and described below, at £4.10 per share.

In addition, all options held over Alphawave IP Inc. stock became, by way of an amendment to option agreements, options in Company shares, on the basis of 20 options in the Company for 1 option in Alphawave IP Inc., each with an exercise price of 1/20th of the original exercise price at the grant date.

On the Initial Public Offering date and as part of the secondary offering, 13,049,861 options were exercised into newly issued ordinary shares in the Company. The options exercised all had exercise prices below the £1 nominal value as a result of them maintaining their original exercise prices when they were granted as options in the shares of Alphawave IP Inc. This resulted in exercise proceeds of US$4.1m (£2.8m) with the shortfall in share capital of US$14.4m (£10.2m) being transferred from the merger reserve to the share capital account.

Finally, at IPO a further 221,217 ordinary shares were issued and purchased by our Non-Executive Directors at the market price of £4.10.

The reorganisation of the Company's corporate structure described above has been accounted for as a common control transaction and has been given effect from 1 January 2020. This has resulted in the opening share capital position being adjusted as if the reorganisation had happened on that date. In addition, a merger reserve has been established which reflects the difference between the share capital issued to acquire the shares in Alphawave IP Inc. and the share capital of Alphawave IP Inc. acquired at the transaction date of 14 May 2021.

Pursuant to the General Meeting of the Company held on 12 May 2021, it was resolved that the Company's share capital be reduced from £1 per ordinary share, to £0.01. This was confirmed by an Order of the High Court of Justice, Chancery Division and certified by the registrar of Companies on 16 and 17 November, respectively.

On 6 December 2021 the preference shares were redeemed.

On 8 March 2022 the Company issued 300,000 shares at £0.01 per share and 108,333 shares at £0.187058 per share.

On 16 March 2022 the Company issued 1,874,860 shares at £0.01 per share and 40,500 shares at £0.187058 per share.

On 5 May 2022 the Company issued 2,151,680 ordinary shares at £0.01 per share.

On 24 May 2022 the Company issued 1,289,483 ordinary shares at £0.01 per share, 15,417 ordinary shares at £0.8251 per share and 54,007 ordinary shares at £0.187058 per share.

On 25 May 2022 the Company issued 12,028 ordinary shares at £0.8251 per share and 5,461 ordinary shares at £0.187058 per share.

On 26 May 2022 the Company issued 37,972 ordinary shares at £0.8251 per share, 182,025 ordinary shares at £0.187058 per share and 154,167 ordinary shares at £0.01 per share.

On 30 May 2022 the Company issued 64,583 ordinary shares at £0.187058 per share, 8,333 ordinary shares at £0.018121 per share, 1,002,000 ordinary shares at £0.01 per share.

On 31 May 2022 the Company issued 100,387 ordinary shares at £0.01 per share.

On 1 June 2022 the Company issued 7,877 ordinary shares at £0.187058 per share.

From 13 June 2022 to 30 June 2022 the Company issued 7,890,627 ordinary shares at £0.01 per share, 130,083 ordinary shares at £0.018121 per share, 803,121 ordinary shares at £0.187058 per share and 223,233 ordinary shares at £0.8251 per share.

From 5 July 2022 to 12 July 2022 the Company issued 3,647,500 ordinary shares at £0.01 per share and 58,749 ordinary shares at £0.187058 per share.

From 12 July 2022 to 2 August 2022 the Company issued 3,186,688 ordinary shares at £0.01 per share, 131,250 ordinary shares at £0.018121 per share, 183,434 ordinary shares at £0.187058 per share and 19,583 ordinary shares at £0.825101 per share.

Between the 3 August 2022 to 25 August 2022 the Company issued 628,750 ordinary shares at £0.01 per share, 16,567 ordinary shares at £0.187058 per share and 4,166 ordinary shares at £0.825101 per share.

From 26 August 2022 to 23 September 2022 the Company issued 751,354 ordinary shares at £0.01 per share, 10,416 ordinary shares at £0.1871 per share and 10,000 ordinary shares at £0.825101 per share.

From 30 September 2022 to 12 October 2022 the Company issued 1,820,373 ordinary shares at £0.01 per share, 62,500 ordinary shares at £0.187058 per share and 50,001 ordinary shares at £0.825101 per share.

From 21 October 2022 to 21 November 2022 the Company issued 2,145,858 ordinary shares at £0.01 per share, 50,860 ordinary shares at £0.018121 per share and 163,751 ordinary shares at £0.187058 per share.

From 28 November 2022 to 19 December 2022 the Company issued 527,207 ordinary shares at £0.01 per share, 104,166 ordinary shares at £0.018121 per share, 56,249 ordinary shares at £0.187058 per share and 16,667 ordinary shares at £0.825101 per share.

Rights and restrictions

Each ordinary share carries the right to one vote on a poll. The right to vote is determined by reference to the register of members at a time specified in the notice of meeting. All dividends shall be declared and paid according to the amounts paid up on the share. The shares do not carry any rights in respect to capital to participate in a distribution (including on winding up) other than those that exist as a matter of law. The shares are not redeemable.

26 Reserves

The following describes the nature and purpose of each reserve within equity:

Reserve	Description and purpose
Share capital	Amount subscribed for share capital at nominal value.
Share premium	The premium arising on issue of equity shares, net of issue expenses.
Share-based payment reserve	The share-based payment reserve is used to recognise the grant date fair value of shares issued to employees.
Merger reserve	The difference between the share capital issued to acquire the shares in Alphawave IP Inc. and the share capital of Alphawave IP Inc. acquired at the transaction date of 14 May 2022.
Foreign exchange reserve	Gains or losses arising on retranslating the net assets of overseas operations.
Retained earnings	All other net gains and losses and transactions with owners not recognised elsewhere.

27 Share-based payment
The Company operates two equity-settled share-based incentive schemes for employees – an option scheme, which was utilised prior to the IPO, and a Restricted Share Unit (RSU) scheme used both pre and post IPO. The terms of any options and RSUs granted under the schemes are specified within individual grant agreements.

Both options and RSUs typically vest over four years with 25% vesting after one year from the grant date with the remaining 75% vesting equally each month over the following 36 months. They have a life of five years which can be extended with Board approval. The exercise price of option grants was set at the fair value of the Company's common shares as determined by the implied valuation at the prior funding round.

Each share option or RSU in Alphawave IP Inc. became 20 share options or RSUs in the Company by way of an amendment to the option or RSU agreements immediately prior to the Company's admission to listing on 18 May 2021. The exercise price of any share options outstanding at that time was divided by 20.

Each share option or RSU converts into one voting share of the Company on exercise or vesting. No amounts are paid or payable by the recipient on receipt of the option or RSU. The options or RSUs carry neither rights to dividends nor voting rights. Options may be exercised at any time from the date of vesting to the date of their expiry. The only vesting condition of the options and RSUs is that the individual remains an employee of the Group over the vesting period.

Options on non-voting common shares:	**31 December 2022 Number of share options**	**31 December 2022 Weighted average exercise price (US$)**	31 December 2021 Number of share options	31 December 2021 Weighted average exercise price (US$)
Outstanding at the beginning of the period	**95,273,220**	**0.280**	4,557,955	1.874
Exercised during the period	**(30,102,266)**	**0.102**	(936,944)	5.760
Forfeited during the period	**(2,588,486)**	**1.381**	—	—
Granted during the period	**23,109,685**	**1.640**	1,142,650	20.04
Share exchange during the period	**—**	**—**	90,509,559	—
Outstanding at the end of the period	**85,692,153**	**0.712**	95,273,220	0.280
Exercisable at the end of the period	**41,720,539**	**0.221**	63,833,174	0.080

The exercise price of options over non-voting shares outstanding at 31 December 2022 ranged between US$0.08 and US$1.13 (2021: US$0.08 and US$1.13) after adjusting for the 20:1 share split which happened immediately prior to the Initial Public Offering in May 2021 and their weighted average contractual life was 2.30 years (2021: 3.07 years).

The weighted average value per option during the year was US$1.60 (2021: US$0.17).

The total expense included within the consolidated statement of comprehensive income for the Group for the current year is US$15,695,000 (2021: US$6,143,000), and for the Company is US$235,000 (period ended 31 December 2021: US$342,000).

The following information is relevant in the determination of the fair value of options granted during the year:

	31 December 2022	31 December 2021
Option pricing model used	**Black-Scholes-Merton**	Black-Scholes-Merton
Risk-free interest rate	**3.44%**	0.91%
Expected volatility	**29.72%**	29.72%
Expected dividend yield	**0%**	0%
Expected life of stock option	**4 years**	4 years

The Group has determined the forfeiture rate to be nil and volatility was determined in reference to listed entities similar to the Group.

Volatility was determined with reference to similar listed entities using the historical stock price volatility of those entities over the estimated expected term of the option awards.

28 Financial instruments – risk management
The Group is exposed through its operations to the following financial risks:

- credit risk;
- interest rate risk;

- foreign exchange risk;
- other market price risk;
- liquidity risk; and
- capital risk.

In common with other businesses, the Group is exposed to risks that arise from its use of financial instruments. This note describes the Group's objectives, policies and processes for managing those risks and the methods used to measure them. Further quantitative information in respect of these risks is presented throughout these financial statements.

There have been no substantive changes in the Group's exposure to financial instrument risks, its objectives, policies and processes for managing those risks or the methods used to measure them from previous periods unless otherwise stated in this note.

Principal financial instruments
The principal financial instruments used by the Group, from which financial instrument risk arises, are as follows:

- Trade and other receivables
- Cash and cash equivalents
- Trade and other payables

The Group and Company's financial instruments are categorised as follows:

Financial assets
Amortised cost

	Group 2022 US$'000	Group 2021 US$'000	**Company 2022 US$'000**	Company 2021 US$'000
Trade receivables	**14,271**	12,074	**—**	—
Amounts owed by Group undertakings	**—**	—	**274,780**	23,364
Other receivables	**109,635**	158	**31,285**	—
Accrued revenue	**58,534**	31,719	**—**	—
Cash and cash equivalents	**186,231**	500,964	**125,729**	463,360
Total financial assets held at amortised cost	**368,671**	544,915	**431,794**	486,724

Financial liabilities
Amortised cost

	Group 31 December 2022 US$'000	Group 31 December 2021 US$'000	**Company 31 December 2022 US$'000**	Company 31 December 2021 US$'000
Trade payables	**23,573**	1,317	**1,302**	366
Other payables	**30,715**	—	**10,672**	—
Accrued expenses	**33,287**	4,038	**4,826**	637
Contingent consideration	**5,000**	—	—	—
Employee-related liabilities	**1,035**	450	**23**	10
Amounts owed to Group undertakings	**—**	—	**—**	150
Flexible spending account	**5,200**	6,819	**—**	—
Loans and borrowings	**210,201**	—	**208,750**	—
Total financial liabilities held at amortised cost	**309,011**	12,624	**225,573**	1,163

Financial instruments not measured at fair value
Financial instruments not measured at fair value include cash and cash equivalents, trade and other receivables, trade and other payables, and loans and borrowings.

Due to their short-term nature, the carrying value of cash and cash equivalents, trade and other receivables, and trade and other payables approximates their fair value.

General objectives, policies and processes
The Board has overall responsibility for the determination of the Group's risk management objectives and policies. Whilst retaining ultimate responsibility for them, it has delegated the authority for designing and operating processes that ensure the effective implementation of the objectives and policies to the Group's centralised finance function from which the Board receives regular updates.

The overall objective of the Board is to set policies that seek to reduce risk as far as possible without unduly affecting the Group's competitiveness and flexibility. Further details regarding these policies are set out below:

Credit risk
The Group recognises a loss allowance for expected credit losses (ECL) on accounts receivable and accrued revenue that are measured at amortised cost, under IFRS 9. The Group applies the simplified approach for accounts receivable and accrued revenue and recognises the lifetime ECL for these assets. The simplified approach allows entities to recognise lifetime expected losses on all these assets without the need to identify significant increases in credit risk.

The ECL on accounts receivable and accrued revenue is estimated using a provision matrix based on the Group's historical credit loss experience, adjusted for factors that are specific to the customers, and general current and forecasted economic conditions at the reporting date, including time value of money where appropriate. There may be circumstances that lead management to conclude on different values of ECL for particular trade receivables and accrued revenue balances than those suggested by the matrix.

The Group has grouped its trade receivables and contract assets based on credit risk factors for the purposes of constructing the provision matrix. The Group uses the following credit risk groupings and estimates different loss rates for each grouping:

- Start-up based in developing country: gross carrying amount US$25.3m, impairment allowance US$0.3m, net carrying amount US$25.0m
- Start-up based in RoW: gross carrying amount US$21.5m, impairment allowance US$1.2m, net carrying amount US$20.3m
- Established company based in developing country: gross carrying amount US$8.2m, impairment allowance US$0.2m, net carrying amount US$8.0m
- Established company based in RoW: gross carrying amount US$20.0m, impairment allowance US$0.5m, net carrying amount US$19.5m

	31 December 2022 US$'000	31 December 2021 US$'000
Opening ECL provision	**—**	—
Loss allowance measured at an amount equal to twelve-month expected credit losses	**—**	—
Loss allowance measured at an amount equal to lifetime expected credit loss for trade receivables and contract assets	**2,184**	—
Financial assets purchased or originated credit-impaired	**—**	—
Closing ECL provision	**2,184**	—

The Group recognised an expected credit loss in the statement of comprehensive income of US$2.2m in 2022. This was derived from multiple customers who had either overdue trade receivables balances or aged accrued revenue balances, or both. As at 31 December 2022, US$1.5m of accounts receivable were greater than 90 days overdue and US$0.7m of accrued revenue was aged greater than one year.

The Group had accounts receivable from one customer that made up 20% (2021: 25%) of the total balance. None of the amounts outstanding have been challenged by the customer and the Group continues to conduct business with them on an ongoing basis. Accordingly, management has no reason to believe that these balances are not fully collectible in the future.

Credit risk also arises from cash and cash equivalents and deposits with banks and financial institutions. The Group monitors the credit quality of financial institutions where it keeps its funds. Currently, it deals with a bank having Aa2 credit rating by Moody's.

The Group trades only with recognised, creditworthy third parties and independent credit checks and credit limits are managed by the trading entities. Credit limits can only be exceeded if authorised by the Chief Financial Officer. Receivable balances are monitored on an ongoing basis with the result that the Group's exposure to bad debts is not significant, especially given past payment history of longstanding customers. There are no significant concentrations of credit risk within the Group.

Market risk
Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices whether those changes are caused by factors specific to the individual financial instrument or its issuer, or factors affecting similar financial instruments traded in the market. Market price risks include interest rate risk, currency risk and other price risk.

Interest rate risk
Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. In the prior year, the Group was exposed to interest rate risk on its floating rate bank indebtedness. If the interest rates were to fluctuate 5%, there would be no significant impact on the Group's financial statements due to the short-term nature of the debt.

Foreign exchange risk
Foreign exchange risk is the risk to the Group's earnings that arise from fluctuations of foreign exchange rates and the degree of volatility of these rates. There is a risk that significant fluctuations in the exchange rates between US$ and CAD$ and between US$ and GBP cause an adverse impact on the Group's profitability. The Group does not use derivative instruments to reduce its exposure to foreign exchange risk.

The Group's exposure to foreign exchange risk is as follows:

31 December 2022	**CAD US$'000**	**GBP US$'000**	**ILS US$'000**	**INR US$'000**	**RMB US$'000**	**Total US$'000**
Cash and cash equivalents	**(6,648)**	**125,218**	**833**	**1,965**	**12,986**	**134,354**
Trade and other receivables	**—**	**—**	**—**	**1,572**	**23**	**1,595**
Accrued income	**—**	**—**	**—**	**—**	**—**	**—**
Trade and other payables	**1,663**	**952**	**794**	**2,660**	**10,039**	**16,108**
Deferred income	**—**	**—**	**—**	**—**	**70,324**	**70,324**
	(4,985)	**126,170**	**1,627**	**6,197**	**93,372**	**222,381**

31 December 2021	CAD US$'000	GBP US$'000	Total US$'000
Cash and cash equivalents	876	364,837	365,713
Trade and other receivables	12,836	146	12,982
Accrued income	28,016	—	28,016
Trade and other payables	4,615	366	4,981
Deferred income	12,661	—	12,661
	59,004	365,349	424,353

As at 31 December 2022, if CAD$ had strengthened/weakened by 5% with all other variables held constant, total Group loss for the year would have changed from US$1,086,000 to be a profit of approximately US$3,721,000 and a loss of US$5,893,000 (2021: profit of US$10,405,000 and US$9,640,000), respectively, mainly as a result of the foreign exchange gains and losses on translation of foreign exchange financial instruments.

As at 31 December 2022, if GBP had strengthened/weakened by 5% with all other variables held constant, total Group loss for the year would have changed from US$1,086,000 to be a loss of approximately US$503,000 and US$1,669,000 (2021: profit of US$10,376,000 and US$9,631,000) respectively, mainly as a result of the foreign exchange gains and losses on translation of foreign exchange financial instruments.

As at 31 December 2022, if ILS had strengthened/weakened by 5% with all other variables held constant, total Group loss for the year would have changed from US$1,086,000 to be a loss of approximately US$1,068,000 and US$1,104,000 (2021: US$nil and US$nil) respectively, mainly as a result of the foreign exchange gains and losses on translation of foreign exchange financial instruments.

As at 31 December 2022, if INR had strengthened/weakened by 5% with all other variables held constant, total Group loss for the year would have changed from US$1,086,000 to be loss of approximately US$899,000 and US$1,273,000 (2021: US$nil and US$nil) respectively, mainly as a result of the foreign exchange gains and losses on translation of foreign exchange financial instruments.

As at 31 December 2022, if RMB had strengthened/weakened by 5% with all other variables held constant, total Group loss for the year would have changed from US$1,086,000 to be a loss of approximately US$996,000 and US$1,176,000 (2021: US$nil and US$nil) respectively, mainly as a result of the foreign exchange gains and losses on translation of foreign exchange financial instruments.

Other price risk
Other price risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices (other than those arising from interest rate risk or currency risk), whether those changes are caused by factors specific to the individual financial instrument or its issuer, or factors affecting all similar financial instruments traded in the market. There are no financial assets subject to market rate price fluctuations. The Group's exposure to other price risk is minimal.

Liquidity risk
Liquidity risk arises from the Group's management of working capital and the finance charges and principal repayments on its debt instruments. Liquidity risk is the risk that the Group will not be able to meet its financial obligations as they fall due.

The Group's policy is to ensure that it will always have sufficient liquid assets to allow it to meet its liabilities when they become due.

The Group manages its liquidity risk by reviewing its growth plans on an ongoing basis as well as maintaining excess capacity on its line of credit.

The following table sets out the contractual maturities (representing undiscounted contractual cash flows) of financial liabilities:

31 December 2022	**Due within 1 year US$'000**	**Due between 1 and 5 years US$'000**	**Due > 5 years US$'000**	**Total US$'000**
Trade payables	**23,573**	**—**	**—**	**23,573**
Other payables	**20,160**	**10,555**	**—**	**30,715**

Accrued expenses	**33,287**	**—**	**—**	**33,287**
Contingent consideration	**5,000**	**—**	**—**	**5,000**
Employee-related liabilities	**1,035**	**—**	**—**	**1,035**
Loans and borrowings	**5,000**	**205,201**	**—**	**210,201**
Flexible spending account	**5,200**	**—**	**—**	**5,200**
Lease liabilities	**3,756**	**8,819**	**2,358**	**14,933**
	97,011	**224,575**	**2,358**	**323,944**

31 December 2021	Due within 1 year US$'000	Due between 1 and 5 years US$'000	Due > 5 years US$'000	Total US$'000
Trade payables	1,317	—	—	1,317
Other payables	—	—	—	—
Accrued expenses	4,038	—	—	4,038
Employee-related liabilities	450	—	—	450
Loans and borrowings	—	—	—	—
Flexible spending account	6,819	—	—	6,819
Lease liabilities	2,160	5,525	143	7,828
	14,784	5,525	143	20,452

Capital risk management

The Group's primary objectives with respect to its capital management are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital and to have sufficient cash resources to fund product development and operations.

As at 31 December 2022, the Group had gross borrowings through its Term Loan and RCF of US$208.8m as detailed in note 22. The Group remains in compliance with its banking covenants. The Group maintains a significant gross cash position of US$186.2m which it holds in instant access, fixed term deposit or notice accounts across various banks.

Management reviews its capital management approach on an ongoing basis. During the course of 2022, the Group's approach to capital management has adapted to reflect the reduction in gross cash following the acquisitions of Precise-ITC, OpenFive and Banias as well as the assumption of borrowings. The Group's priorities for capital management are organic investment in technology development and maintaining flexibility to reduce gross borrowings in response to macroeconomic conditions and the requirements of the business.

29 Retirement benefit schemes

Defined contribution schemes

Group

The Group operates defined contribution retirement benefit schemes. The pension cost charge for the year represented contributions payable by the Group to the schemes and amounted to US$1,300,000 (2021: US$253,000). Contributions totalling US$3,000 (2021: US$2,000) were payable to the schemes at the end of the year and are included in other creditors.

30 Government assistance

During 2021, the Group received US$55,000 CEWS from the Government of Canada. This was prior to the Initial Public Offering when Alphawave IP Inc. was a private Canadian company faced with uncertainty as to the longer-term impact on the business. Post the Initial Public Offering, whilst Alphawave IP Inc. is entitled to COVID-related grants, the Board and management team has elected not to receive them. No government assistance has been requested nor taken in the UK since the Company's incorporation and Initial Public Offering.

In 2022, the Group did not receive any government assistance.

31 Related party transactions

Transactions between the Company and its subsidiaries, which are related parties, have been eliminated on consolidation and are not disclosed in this note.

Transactions with Directors and key management personnel of the Group are disclosed in note 8.

During the year Group companies entered into the following transactions with related parties who are not members of the Group.

	31 December 2022 US$'000	31 December 2021 US$'000

Transactions:		
Revenue from companies on which a Director is the chairman of the board[1,2]	**3,549**	9,855
Revenue from VeriSilicon	**3,270**	8,861
Revenue from WiseWave, a joint venture, where there is common directorship	**58,207**	29,846
Costs capitalised as intangible assets from a company on which a Director is a director	**(1,200)**	—
	63,826	48,562
Balances:		
Accounts receivable from a company on which a Director is the chairman of the board[2]	**350**	500
Accounts receivable from VeriSilicon	**669**	2,469
Accounts receivable from WiseWave, a joint venture, where there is common directorship	**3,360**	—
Accrued revenue from companies on which a Director is the chairman of the board[2]	**6,750**	5,631
Accrued revenue from VeriSilicon	**—**	423
Accrued revenue from WiseWave, a joint venture, where there is common directorship	**20,217**	5,803
	31,346	14,826
Deferred revenue from a company on which a Director is the chairman of the board[1]	**686**	727
Deferred revenue from VeriSilicon	**—**	593
	686	1,320

1. US$915,000 of this revenue (2021: US$949,000) and US$686,000 of this deferred revenue (2021: US$677,000) is from Achronix Semiconductor Corporation, where John Lofton Holt ceased to be chairman of the board on 8 July 2021.
2. Companies on which a Director is the chairman of the board are Achronix Semiconductor Corporation, FLC Technology Group and DreamBig Semiconductor Inc.

Sales to related parties are made at market prices and in the ordinary course of business. Outstanding balances are unsecured and settlement occurs in cash. Any estimated credit losses on amounts owed by related parties would not be material and are therefore not disclosed. This assessment is undertaken at each key reporting period through examining the financial position of the related party and the market in which the related party operates.

In the interests of transparency, we have opted to disclose VeriSilicon as a related party within this note. However, we have received advice that VeriSilicon is not a related party as defined by IAS 24 or Listing Rule 11. All revenue from VeriSilicon and related balances are in respect of transactions signed with VeriSilicon prior to the VeriSilicon reseller agreement moving under WiseWave as master reseller effective November 2021. All revenue and associated balances in respect of transactions signed with VeriSilicon since that date are now recognised through the WiseWave joint venture line.

32 Capital commitments

The Group has contractually committed to investing up to US$170,000,000 in WiseWave and as at 31 December 2022 has invested US$31,420,000 (2021: US$22,400,000). WiseWave does not currently anticipate requiring the maximum committed amount and is likely to undertake an external financing round in the medium term. Beyond a potential small internal financing round ahead of any external capital raise, the Group does not intend to make significant further capital contributions to WiseWave. The amount of US$170,000,000 remains a contractually committed amount, but it is unlikely that the maximum amount of investment will be required.

33 Business combinations

Acquisition of Precise-ITC, Inc.

On 1 January 2022, we completed the acquisition of 100% of the equity interests of Precise-ITC, Inc. ('Precise'), a developer of Ethernet and Optical Transport Network (OTN) communications controller IP.

Precise, which is based in Ontario, Canada, brings a team of talented engineers and additional strategic IP to our portfolio. We have been working with Precise since 2019 and our combined IP solutions are already integrated in silicon products for several of our customers. Now, working as one team, we will have an expanded and vertically integrated portfolio of communications IPs to service the most advanced global customers in the networking and data centre markets, including leading semiconductor companies and hyperscalers.

We acquired Precise for US$8,000,000 on a cash-and debt-free basis. We paid consideration of US$8,470,000 in cash on completion, including US$470,000 in respect of Precise's cash less indebtedness.

Additional consideration of up to US$5,000,000 is payable contingent on the aggregate value of Precise's IP Core revenue and bookings exceeding US$10,000,000 during 2022. Using an option pricing model, we determined that the fair value of the contingent consideration at the acquisition date was US$740,000 and this is recorded within trade and other payables in the consolidated statement of financial position.

Further payments totalling US$11,500,000 may be made to one of the vendors during the period of up to three years following completion. Since those further payments are largely conditional on that individual continuing in the Group's employment, they are accounted for as employee compensation rather than as consideration for the purchase of the business.

We recognised goodwill of US$3,097,000 on the acquisition of Precise that is principally attributable to the benefits expected to be derived from the combination of our technologies to develop new IP and increase our penetration of the rapidly growing networking and data centre markets.

Subsequent to its acquisition, Precise generated revenue of US$2,251,000 and a profit of US$2,747,000 that are included in the consolidated statement of comprehensive income.

Precise's actual IP Core revenue and bookings during 2022 significantly exceeded our expectations at the acquisition date. As a result, the full amount of the contingent consideration, namely US$5,000,000, is payable to the vendors and recognised as a liability measured at fair value. We have recognised the excess of the contingent consideration payable over its fair value at the acquisition date as an expense of US$4,260,000 within other expenses in the consolidated statement of comprehensive income.

Acquisition of OpenFive

On 31 August 2022, we completed the acquisition of 100% of the equity interests in Open-Silicon, Inc. and related assets and liabilities that together comprised the OpenFive business unit of SiFive, Inc. and entered into certain IP licensing agreements that were integral to the business combination.

OpenFive is a leading provider of high-end SoC IP technologies globally, with a strong focus on the North American market. We believe that the acquisition of OpenFive has the following key benefits: it nearly doubles our connectivity and SoC IP portfolio and will accelerate our progress in providing advanced connectivity solutions in 5nm, 4nm, 3nm and beyond; it will enable us to offer leading-edge data centre and networking custom silicon solutions and will enhance our chiplet design capabilities; it significantly expands our customer base and total addressable market, including a new hyperscaler customer in North America, providing a broader platform from which to execute our sales strategy; and it brings a team of more than 300 people, largely based in India, that will considerably enhance our delivery capabilities.

We acquired the OpenFive business unit and the related IP licences for US$210,000,000 on a cash- and debt-free basis. We paid consideration of US$203,636,000 in cash on completion, after deducting US$6,364,000 in respect of OpenFive's estimated cash, indebtedness and working capital. We expect that there will be an adjustment to the purchase price based on OpenFive's actual cash, indebtedness and working capital on completion. Subject to agreement of the amount with SiFive Inc., we expect that the purchase price adjustment will be settled during the second half of 2023.

We have completed the purchase price allocation for OpenFive, except for possible amendment to consideration when the purchase price adjustment has been determined in line with the acquisition agreement and possible adjustments to deferred tax assets and liabilities. Consideration is yet to be confirmed as at the date of approval of the accounts and is expected to be determined during 2023. On that basis, we have recognised provisional goodwill of US$182,158,000 on the acquisition of OpenFive that is principally attributable to the assembled workforce, the benefits expected to be derived from the combination of our technologies to enhance our offering of advanced custom silicon solutions and further increases in our penetration of the rapidly growing networking and data centre markets.

Regarding deferred tax assets and liabilities, we have evaluated the costs and benefits of making an election under Section 338 of the US Internal Revenue Code of 1986, which would limit the historical US income tax liability that may otherwise be inherited in a taxable stock acquisition and also change the tax attributes inherited (including tax losses) and the deferred tax position. On 15 May 2023, we made a Section 338 election and we are currently awaiting the final calculations from the former owners of OpenFive to determine the impact of the election and any amounts payable to the former owners. For the purposes of our annual reporting, we have recorded a provisional deferred tax liability of US$15.9m, which will be updated following receipt of the final calculations.

Subsequent to its acquisition, OpenFive generated revenue of US$70,827,000 and a loss of US$11,717,000. If we had acquired OpenFive on 1 January 2022, we estimate that the Group's revenue for the year would have been US$75,847,000 higher and the Group's loss for the year would have been US$13,554,000 greater.

Acquisition of Banias Labs

On 12 October 2022, we completed the acquisition of 100% of the equity interests of Solanium Labs Ltd (Solanium), a leading optical Digital Signal Processing (DSP) chip developer that trades under the name Banias Labs.

Banias Labs is based near Tel Aviv, Israel and has a team of about 50 people, the majority of whom are engaged in research and development. Alongside the acquisition of Banias Labs, we entered into a non-binding, multi-year purchasing framework with a leading North American hyperscaler that proposes a multi-year roadmap for Alphawave to develop and sell a portfolio of optical products and DSPs, including coherent DSP technology from Banias Labs, with sales potentially ramping to over US$300m. We consider that the acquisition of Banias Labs has the following key benefits: it brings silicon-proven optical DSP technology, expanding our product portfolio and strengthening our product roadmap; it will expand Alphawave's addressable market and deepen our commercial partnership with a leading North American hyperscaler; and it will enable us to target the growing opportunity to use coherent optical technology within data centres and in other shorter reach applications.

We purchased all of Banias Labs' outstanding issued common and preferred shares and all outstanding unexercised options over its common shares for US$240,000,000 on a cash- and debt-free basis.

We paid US$244,955,000 cash on completion in respect of consideration of US$213,942,000, deferred cash rights of US$31,013,000 and US$4,955,000 in respect of Banias Labs' estimated cash, indebtedness and working capital. We paid US$24,300,000 of the initial consideration into an escrow fund that is available to settle any valid claims that we may make in relation to the representations, warranties and indemnities that were provided to us by the sellers. We expect that there will be an adjustment to the purchase price based on Banias Labs' actual cash, indebtedness and working capital on completion. Subject to agreement with the vendors, we expect that the purchase price adjustment will be settled during the second half of 2023.

We funded the acquisition from existing cash balances and the proceeds of our recently obtained US$210.0m Senior Secured Credit Facilities, comprising a five-year US$110.0m Revolving Credit Facility and a five-year US$100.0m Term Loan.

On completion, all outstanding unvested employee options over Banias Labs' common shares were converted into rights to receive future cash payments, which are generally subject to the vesting schedule and other terms (including a service condition) that governed the options that they replaced. We determined that the fair value of the deferred cash rights on the acquisition date was US$31,013,000, of which US$8,804,000 was attributable to employee service rendered before the acquisition date and is therefore accounted for as deferred consideration. We will recognise the balance of the fair value of the deferred cash rights as an employee compensation expense over their respective vesting periods.

Based on the vesting schedules of the deferred cash rights, we expect that the liability for deferred consideration will be settled over the period to August 2026.

Based on Banias Labs' actual cash, indebtedness and working capital on completion, we estimate that a purchase price adjustment of around US$250,000 will be payable to the vendors. Subject to agreement of the amount with the vendors, we expect that the purchase price adjustment will be settled during 2023.

We have completed the purchase price allocation, except for possible amendment to consideration when the purchase price adjustment has been determined in line with the acquisition agreement, as noted above. On that basis, we have recognised provisional goodwill of US$146,585,000 on the acquisition that is principally attributable to the assembled workforce and the benefits expected to be derived from the future development of new connectivity product offerings for the rapidly growing networking and data centre markets.

Since its key future products are still under development, Banias Labs does not generate any revenue as yet. Subsequent to its acquisition, Banias Labs incurred a loss of US$481,000 that is included in the consolidated statement of comprehensive income. If we had acquired Banias Labs on 1 January 2022, we estimate that the Group's profit for the year would have been US$12,388,000 lower.

Assets acquired and liabilities assumed

We have allocated the purchase consideration to the identifiable assets and liabilities of the businesses acquired at their respective acquisition dates and goodwill as follows, based on their fair values:

	Precise-ITC US$'000	OpenFive (provisional) US$'000	Banias Labs (provisional) US$'000	Total US$'000
Assets acquired				
Cash and cash equivalents	803	14,503	9,131	24,437
Trade and other receivables	269	26,014	1,256	27,539
Inventories	—	14,671	—	14,671
Technology/IP	*7,800*	*30,100*	*83,900*	*121,800*
Customer relationships	—	*25,700*	—	*25,700*
Other intangibles	—	*6,573*	—	*6,573*
Intangible assets (subtotal)	7,800	62,373	83,900	154,073
Property, plant and equipment	52	813	1,702	2,567
Other assets	—	1,667	1,119	2,786
Total assets acquired	8,924	120,041	97,108	226,073
Liabilities assumed				
Trade and other payables	(70)	(40,924)	(2,073)	(43,067)
Contract liabilities	(1,120)	(40,241)	—	(41,361)
Deferred tax liabilities	(1,621)	(15,860)	(13,613)	(31,094)
Other liabilities	—	(1,538)	(5,261)	(6,799)
Total liabilities	(2,811)	(98,563)	(20,947)	(122,321)
Net identifiable assets acquired	6,113	21,478	76,161	103,752
Goodwill arising on acquisition	3,097	182,158	146,585	331,840
Consideration	9,210	203,636	222,746	435,592
Purchase consideration was as follows:				
Cash paid on completion	8,470	203,636	213,942	426,048
Purchase price adjustment	—	—	—	—
Deferred consideration	—	—	8,804	8,804

Contingent consideration	740	—	—	740
Consideration	9,210	203,636	222,746	435,592

The Group engaged qualified external experts to support the identification and measurement of the identifiable assets acquired and liabilities assumed. The intangible assets acquired that qualified for recognition separately from goodwill were technology/IP, customer relationships and third-party IP licences. The fair values of the acquired technology and IP intangible assets were determined using the multi-period excess earnings method (MEEM), the fair value of the customer relationships intangible asset was determined using the MEEM and the fair value of the third-party IP licences was determined using the cost savings approach.

Trade and other receivables are stated at their gross contractual amounts receivable, which are considered to be reflective of their fair values. At the acquisition dates, management expects all of the contractual cash flows from trade and other receivables to be collected.

None of the goodwill recognised on business combinations completed during 2022 is deductible for tax purposes.

During 2022, we incurred acquisition-related costs of US$16,973,000 (2021: US$533,000) (included in other operating expenses in the consolidated statement of comprehensive income).

Cash flows in relation to business combinations
During the years ended 31 December 2022 and 2021, the net cash outflow on the purchase of businesses was as follows:

	2022 **US$'000**	2021 US$'000
Cash paid on completion	**426,048**	—
Purchase price adjustment	**—**	—
Deferred consideration	**8,804**	—
Consideration paid	**434,852**	—
Cash and cash equivalents acquired	**(24,437)**	—
Cash outflow on purchase of businesses, net of cash acquired	**410,415**	—

34 Notes supporting the consolidated statement of cash flows

	Group **31 December** **2022** **US$'000**	Group 31 December 2021 US$'000	**Company** **31 December** **2022** **US$'000**	Company 31 December 2022 US$'000
Cash at bank and in hand	**186,231**	500,964	**125,729**	463,360

There are no other significant amounts of cash and cash equivalents that are held by the Group that are not available to the Group.

Movements in the Group's loans and borrowings have been analysed below.

	Non-current loans and borrowings US$'000	Current loans and borrowings US$'000	Total US$'000
At 1 January 2022	—	—	—
Financing cash flows	**203,750**	**5,000**	**208,750**
Non-cash flows	**1,451**	**—**	**1,451**
At 31 December 2022	**205,201**	**5,000**	**210,201**

	Non-current loans and borrowings US$'000	Current loans and borrowings US$'000	Total US$'000
At 1 January 2021	27	27	54
Financing cash flows	(27)	(27)	(54)
Non-cash flows	—	—	—
At 31 December 2021	—	—	—

35 Events after the reporting period

On 17 April 2023, the Group invested US$2.7m into its joint venture, WiseWave, as part of the final tranche of a previously approved investment round. The total amount invested was US$6.4m, of which Wise Road Capital contributed the balance of US$3.7m.

The financial information set out above does not constitute the company's statutory accounts for the years ended 31 December 2022 or 2021 but is derived from those accounts. Statutory accounts for 2021 have been delivered to the registrar of companies, and those for 2022 will be delivered in due course. The auditor has reported on those accounts; their reports were (i) unqualified, (ii) did not include a reference to any matters to which the auditor drew attention by way of emphasis without qualifying their report and (iii) did not contain a statement under section 498 (2) or (3) of the Companies Act 2006.

Appendix

TCFD Compliance Table

Disclosure	Response
Governance	
Describe the board's oversight of climate-related risks and opportunities.	Governance – page 16
Describe management's role in assessing and managing climate-related risks and opportunities.	Governance – page 16
Strategy	
Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	See Risks and Opportunities tables on pages 15-16
Describe the impact of climate-related risks and opportunities on the organisation's business, strategy, and financial planning.	Dependency on natural, social and human capital – page 16 Strategy – page 17
Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	We have not performed a quantitative risk assessment or climate-related scenario analysis. As a first step, in 2023 we will evaluate additional requirements and associated costs to assess the resilience of the organisation under different climate-related scenarios.
Risk Management	
Describe the organisation's processes for identifying and assessing climate-related risks.	Risk Management – Page 15
Describe the organisation's processes for managing climate-related risks.	See Risks and Opportunities tables on pages 15-16
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	Risk Management – Page 15
Metrics and Targets	
Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	Metrics and Targets – Page 14-15
Disclose Scope 1, Scope 2, and if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Table – Page 14-15
Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	Metrics and Targets – Page 14-15