

A milestone year

Second half of 2019 (second half of 2018 in bracket)

- Total revenues amounted to SEK 17.6 million¹ (14.2 million)¹
- Operating income amounted to SEK -22.5 million¹ (-16.3 million)¹
- Net Income for the period amounted to SEK -23.1 million¹ (-16.3 million)¹
- Earnings per share was SEK -1.15¹ (-0.81)¹
- Cash at the end of period amounted to SEK 11.0 million

Full year of 2019 (1 Jan – 31 Dec 2019)

- Total revenues amounted to SEK 47.5 million¹
- Operating income amounted to SEK -24.9 million¹
- Net Income amounted to SEK -25.5 million¹
- Earnings per share was SEK -1.27¹
- Cash at the end of period amounted to SEK 11.0 million

Significant events during the second half of 2019

- On 1 July 2019, John Watson took over the baton as CFO of Ranplan Group AB.
- Credit line of up to SEK 30 million established with Per Lindberg, member of the Board.
- Lars-Inge Sjöqvist stepped down from the board of directors of Ranplan Group AB.
- At an EGM on 14 August 2019, it was resolved that Tomas Isaksson be elected as a new ordinary member and Jie Zhang as new Chairman of the board. Following the EGM, the board consists of Jie Zhang (Chairman), Wendy Yang, Tomas Isaksson and Per Lindberg (interim CEO).
- On 1 Sept 2019, Per Lindberg assumed the role of interim CEO of Ranplan Group AB.
- On 2 Sept 2019, Ranplan declared that it shifts to a half-year reporting cycle from H2 2019.
- In September 2019, Ranplan announced the recruitment of Anthony Sutton as Commercial Operations Director and Jon Ullmark as Chief Strategy Officer.
- In October 2019, Ranplan activated an incentive plan (warrants sold at fair market value) for key employees (625 200 warrants, strike price SEK 20.60 by end of 2022, sold at fair value).

¹ Adjustments related to research projects and tax credits have been made to better reflect the financial effects. Total Revenues have been restated to comprise the sum of net sales (related to commercial products and services), other income (from research projects) and other operating income (drawn from R&D tax credits).

- In October 2019, Ranplan Wireless joined the O-RAN alliance to help spur innovation and automation in an environment marked by open interfaces and multi-vendor interoperability.
- In November 2019, Ranplan Wireless announced that it has been awarded EUR 600k for an EU-Horizon 5G Network Slicing Project over four years, commencing on 1 Dec 2019. Partners include CNR of Italy, Orange Labs of France and the University of Cambridge of the United Kingdom.

Significant events after the end of calendar 2019

- Ranplan Wireless was selected as the preferred supplier of indoor radio design tools by China Unicom Network Technology Research Institute of the People's Republic of China. An initial purchase order in the region of USD 400k is expected to be revenue recognised in calendar 2020.
- Ranplan Wireless announced the release of Professional 6.0, including its next generation of radio propagation engines, dubbed Maxwell, exhibiting a deterministic true vector-based ray launching/tracing model, prepared for 5G mm waves as well as cluster computing within clouds.
- The income statement was amended to better reflect the Company's operations and financial performance and to offer investors greater insights into the components of total revenues. The latter is defined as the sum of net sales (from commercial products and services), other income (from research projects) and other operating income (from R&D tax credits). Adjustments have been made in the same vein to previous reporting periods to facilitate direct comparisons.

Significant events during calendar 2019

- Ranplan Wireless secured a significant order with an initial value of USD 2.5 million (SEK 22.5 million) for its suite of network planning tools from Marubun Corporation, its reselling partner in Japan. This landmark contract demonstrates the benefits of integrating Ranplan's tools into the operating support systems (OSSs) of mobile operators keen to take automation to a higher level.
- Ranplan entered into a reseller agreement with Tricomtek, a Seoul-based company, to sell Ranplan software solutions into the South Korean market.
- Ranplan won a leading role in a high-profile Network Slicing Project sponsored by the EU. The monetary value is expected to amount to at least EUR 600k over a four-year period.
- Employee Incentive Plan: Acting on a mandate issued at the AGM in the spring of 2019, Ranplan sold – at market value – 625 200 warrants to its members of its global workforce. The transactions increased equity and cash by c. SEK 856 000 before associated fees and other costs.
- The Nomination Committee for the AGM 2020 consists of Wendy Yang (representing the two largest shareholders Jinxing Xue and Hongbing Li), Per Lindberg (interim CEO) and Jie Zhang (Chairman of the Board). The Nomination Committee will inter alia present a proposal regarding the composition and members of the board, their remuneration, the selection and remuneration of the Company's auditor(s) as well as procedures for the appointment of the Nomination Committee in advance of the AGM 2021.

Words from the CEO

In 2019, Ranplan registered more than a doubling in net sales on the back of a milestone purchase order from our reseller Marubun in Japan. Losses from operations were largely on a par with those of 2018, but, notably, the Company generated a slight surplus before R&D (nothing of which capitalised). After experiencing delays to the finalisation of several contract negotiations in the latter part of 2019, the Company managed to close a significant partnership with China Unicom Network Technology Research Institute in the very beginning of 2020. Commercial discussions continue with leading customers and partners in most part of the world. Underlying demand remains strong, spurred by the 5G investment wave, industrial applications, greater emphasis on automation and optimising before and after the initial deployment of wireless networks.

“Whilst the second half of the year did not meet our expectations in terms of revenue recognition, we take solace in recent contract wins, ongoing field trials with existing and prospective customers, solid inflow of government-sponsored research projects, encouraging feedback on our latest product launches and near-term roadmaps, as well as the dedication, expertise and tenacity of our workforce. We wish to reiterate that the very nature of the Company’s operations – characterised by extraordinarily rich gross margins in combination with exceptionally high R&D expenses (71% of sales in 2019) - entail that its financial performance may exhibit marked fluctuations between consecutive reporting periods”,

As the decade of real 5G begins to dawn, Ranplan sets its sights on broadening its offerings, cementing its product leadership and expanding its market reach. To this end, it welcomes system development and go-to-market partnerships which complement its own R&D and direct sales channels. Its pioneering mission is to spearhead holistic wireless design at a time of heightened interest in the deployment of 4G/5G networks within the walls of and in close proximity to buildings. Private wireless networks, buoyed by CBRS, are set to bolster demand.

Since the timing of new contracts or other forms of commercial arrangements are subject to considerable uncertainties - that do not lend themselves to forecasting precision - it is not appropriate to provide any financial guidance for 2020 or beyond. Even so, our ambitions remain clear and our directions are steered by fascinating opportunities, buoyed by the criticality of 5G connectivity, optimisation and automation of network management systems. In 2020, special efforts will be devoted to extracting maximum efficiency from existing resources, refining the decision-making framework and reinforcing our leadership in HetNets.



Per Lindberg interim CEO, Ranplan Group AB

Highlights of the period and the year

For the first time in its history, Ranplan made a profit from operations before R&D (none of which being capitalised) in 2019. Revenues, drawn from both commercial products and research projects, more than doubled (as expressed in Swedish Krona) for the second consecutive year. The product portfolio was reinforced by the introduction of Maxwell, the next generation of radio propagation engines, specifically designed for 5G mm waves, open interfaces and cloud computing in mind. The Company gained precious experiences from its landmark contract in Japan which brings its suite of cutting-edge radio planning and workflow management tools into the realm of OSS integration in close partnership with leading operators and software system architects. As an integral part of its organisational development, several key recruitments were made at the senior management levels.

Financials

Total revenues in H2 2019 (1 July – 31 December 2019) reached SEK 17.6 million, up by 24% versus SEK 14.2 million (on an adjusted basis) in the corresponding period in 2018. Net sales emanating from commercial products and services rose by 30% to SEK 11.6 million (8.9 million). Other income related to research projects contributed SEK 3.2 million (2.9 million) with other operating income, drawn from R&D tax credits, adding SEK 2.8 million (2.3 million) to total revenues in the last period.

Total revenues by half year period since listing on NASDAQ First North

SEK 000s	H2 2018	H1 2019	H2 2019	Growth
Net sales	8 927	24 655	11 580	30%
Other income (research projects)	2 921	2 966	3 180	9%
Other operating income (tax credits)	2 320	2 298	2 827	22%
Total revenues	14 168	29 919	17 587	24%

Total revenues comprise the sum of net sales, other income and other operating income.

Operating income in the second half 2019 amounted to minus SEK 22.5 million compared with minus SEK 16.3 million in the second half of 2018. Operating expenses attributable to research and development, sales and marketing as well as administration and general overhead rose by 36% to SEK 39.6 million from SEK 29.2 million in the second half of 2018. The gross margin held steady in the mid-90s - reflecting the leverage of software licencing models based on in-house products.

Summary of results per half-year period

SEK 000s	H2 2018	H1 2019	H2 2019	FY 2019
Total revenues	14 168	29 919	17 587	47 506
o/w net sales	8 927	24 655	11 580	36 235
Gross profit	8 590	23 743	11 005	34 748
Gross margin	96%	96%	95%	96%
OPEX	29 187	31 178	39 591	71 026
D&A	207	42	170	212
EBIT	-16 311	-2 343	-22 519	-24 862
EPS (SEK)	-0,81	-0,12	-1,15	-1,27

Gross profits comprise the difference between net sales and cost of sales.

Gross margin is here defined as the ratio of gross profits and net sales.

For 2019 at large, total revenues reached SEK 47.5 million versus SEK 24.8 million in 2018 (on an adjusted basis for the combination of accounts). Of the separate components, Net sales expressed in SEK increased by 135% while contributions from Other income (related to research projects) and Other operating income (from R&D tax credits) rose by 22% and 20% respectively. Thanks to the breakthrough order in Japan in the beginning of 2019, Asia-Pacific became the largest region.

Composition of total revenues in calendar 2018* and 2019

SEK 000s	2018*	2019	Change	Relative
Net sales (commercial products)	15 452	36 235	20 783	135%
Other income (research projects)	5 034	6 146	1 112	22%
Other operating income (tax credits)	4 282	5 125	843	20%
Total revenues	24 768	47 506	22 739	92%

*Estimates only based on combined statements, including H1 2018 prior to the registration of Ranplan Group AB.

Total revenue mix	H2 2018	H1 2019	H2 2019	FY 2019
Net sales	63%	82%	66%	76%
Other income (research projects)	21%	10%	18%	13%
Other operating income (tax credits)	16%	8%	16%	11%
Total revenues	100%	100%	100%	100%

Operating income amounted to minus SEK 24.9 million. In this context, it should be noted that the Company has chosen to incur all R&D expenses directly (no capitalisation of assets takes place and not amortisation is incurred). As an alternative measure of performance, investors may note that in 2019 the Company had a surplus of SEK 5.6 million at the operating level before R&D expenses, equivalent to 12% of sales – these figures can be compared with a loss of SEK 24.9 million corresponding to a negative 52% of sales after directly absorbing 100% of all R&D expenditures.

Operating income after and before R&D expenditures

SEK 000s	H2 2018	H1 2019	H2 2019	FY 2019
Total revenues	14 168	29 919	17 587	47 506
R&D expenses	13 097	13 234	17 217	30 451
R&D/total revenues	92%	44%	98%	64%
Operating income	-16 311	-2 343	-22 519	-24 862
Share of total revenues	-115%	-8%	-128%	-52%
Operating income b. R&D	-3 214	10 891	-5 302	5 590
Share of total revenues	-23%	36%	-30%	12%

At the end of 2019, the Company held cash and cash receivables of SEK 48.1 million before and SEK 28.5 million after deduction for current liabilities of SEK 19.5 million. Financial debt of SEK 20 million derive from successive drawn downs of the credit line of SEK 30 million that the current CEO (interim) and member of the Board has made available to the Company (see press release of 17 July 2019).

Shareholders' equity amounted to SEK 5.9 million, corresponding to an equity ratio of 12%, at the end of 2019. It should be noted, though, that the balance sheet contains no intangible assets, neither in the form of patents (of which there are many), nor in the form of capitalised R&D. Had the Company elected to assign values to these elements, then the balance sheet would appear much more robust. In the space of the last three years alone, cumulative R&D spending amounts to well over SEK 70 million.

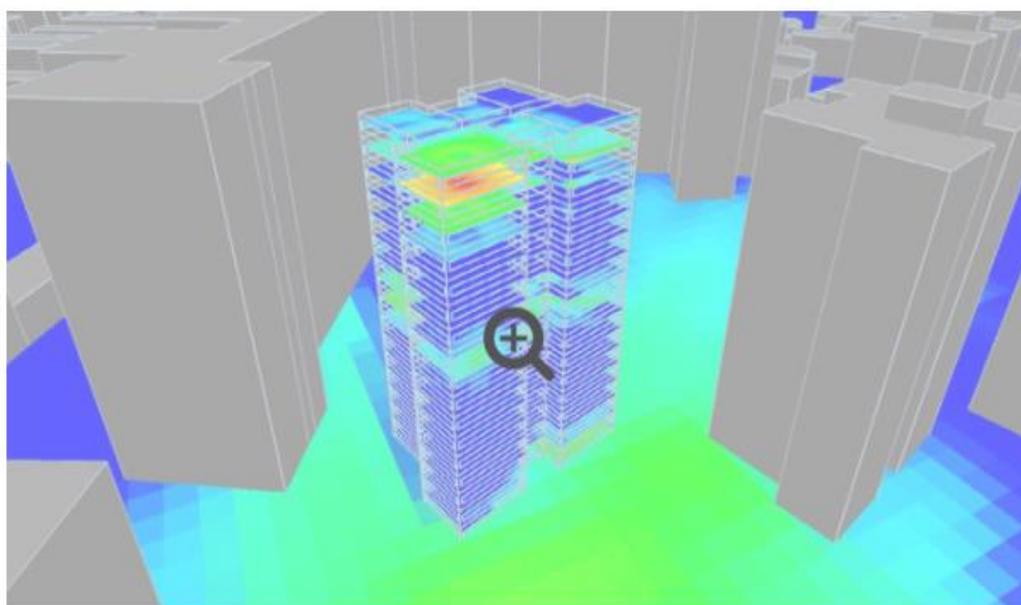
Operations

In 2019, Ranplan progressed on several operational fronts. A **landmark contract** worth about USD 2.5 million announced in February 2019 fuelled confidence in the Company's ability to meet the most exacting requirements from customers at the absolute frontier (see press release of 4 February 2019). This milestone agreement brought Ranplan into the future of OSS integration and automation – a domain which opens up a spectrum of new opportunities where its software for the planning, optimisation and automation of wireless networks – before and after the initial deployment of wireless networks - can generate tangible benefits.

Towards the end of the year, the next generation of radio propagation engines, dubbed **Maxwell** – specifically designed for 5G mm waves, open interfaces and cluster computing in the cloud – saw its commercial debut. The Collaboration Hub, previously known as Manager, evolved further into a state-of-the-art workflow management tool – inspiring interests from customers in many parts of the world. To underline its strategic mission to enable automation, foster competition (by offering customers freedom of choice) and promote innovation, Ranplan Wireless became a member of O-RAN in October 2019. Its vision to offer customers software components that readily operate in open architectures, conducive to interoperability in a multi-vendor setting is perfectly aligned with the central philosophy of this global alliance.

In the latter part of November 2019, Ranplan was named as a key participant in an EU-Horizon sponsored project revolving around **Network Slicing**. This fascinating undertaking brings Ranplan in partnership with CNR of Italy, Orange Labs of France and University of Cambridge.

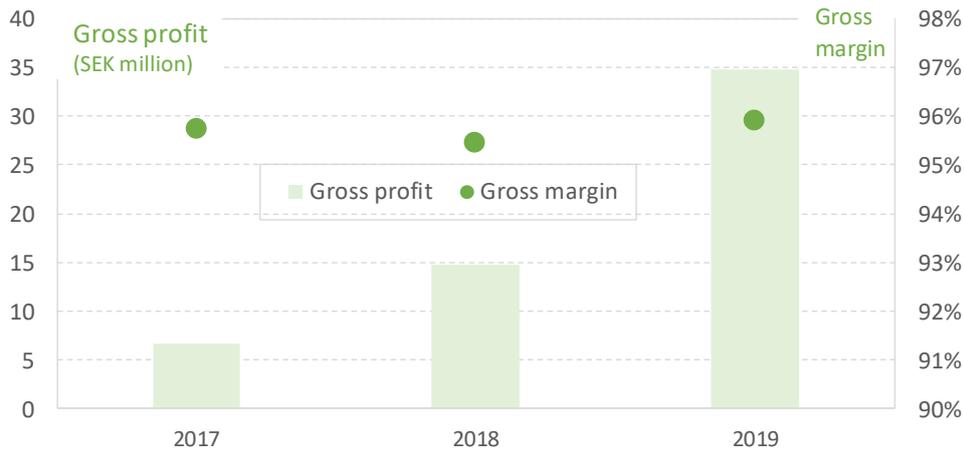
Ranplan is the pioneer of HetNet design – allowing outdoor and indoor networks to be coordinated



Simulate in-building and dense urban environment coverage

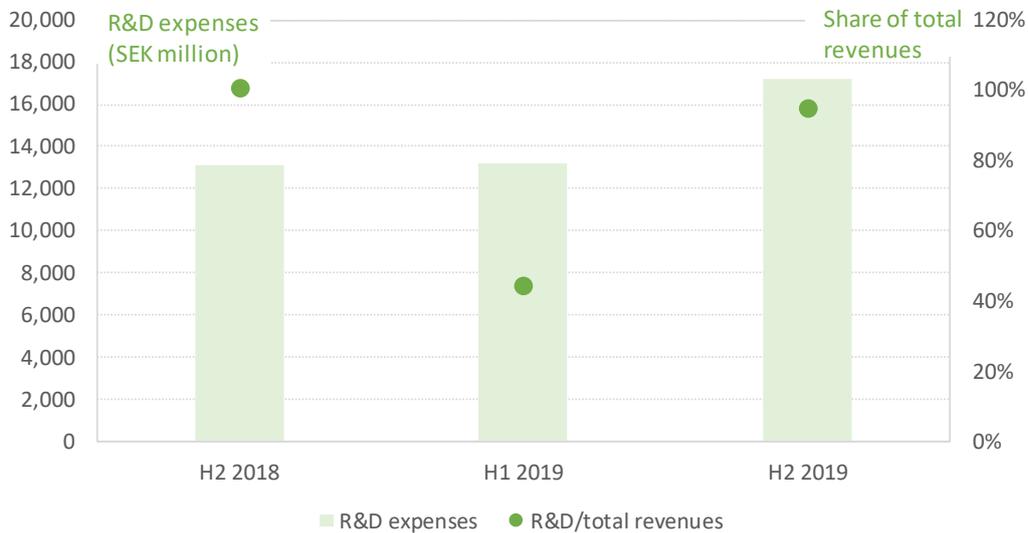
Annual Statement 2019

Gross profit and gross margin in 2017-2019¹

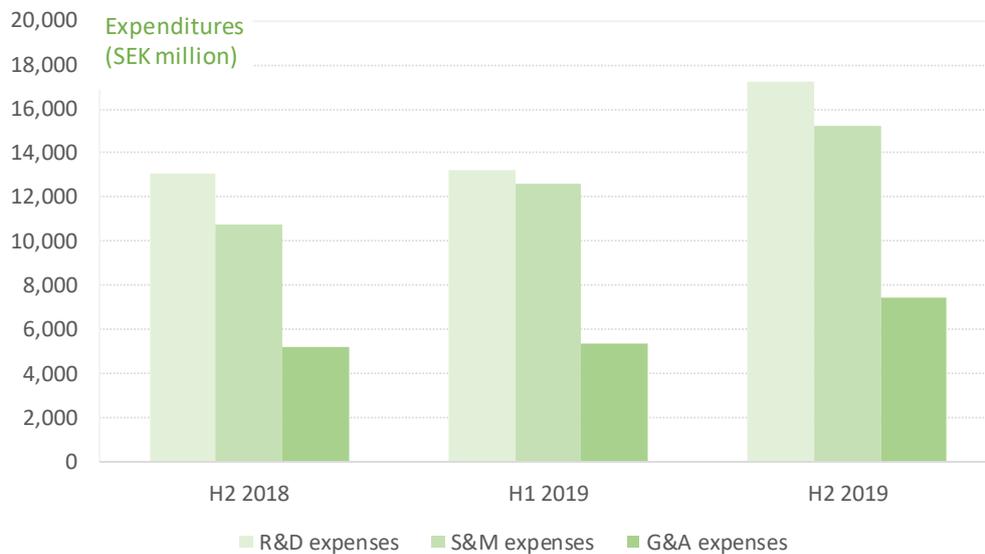


(1): The financial figures for 2017 and 2018 are based on the combined statements.

R&D expenditures in absolute and relative terms in the last three half-year periods



Expenditures by function (R&D, S&M, G&A) in the last three half-year periods

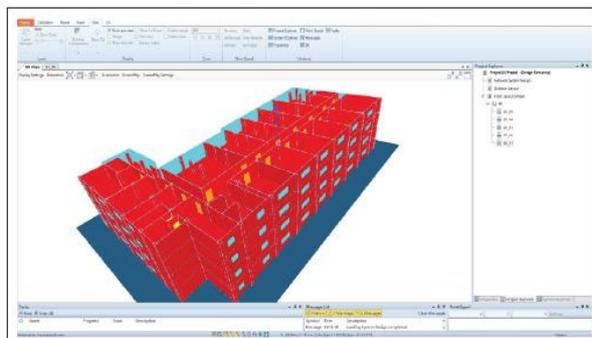
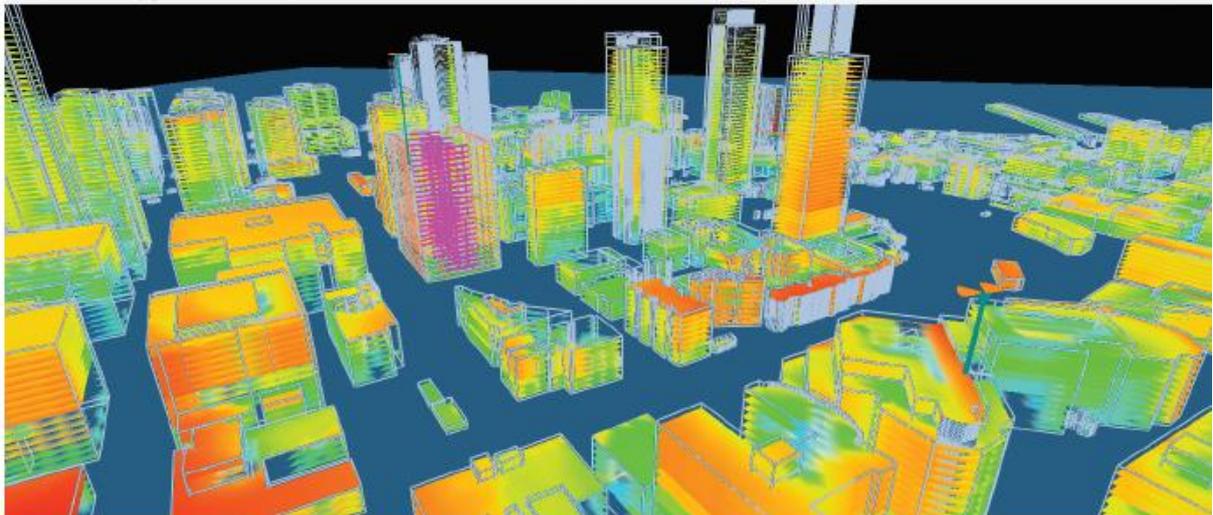


Maxwell – ready for the cloud

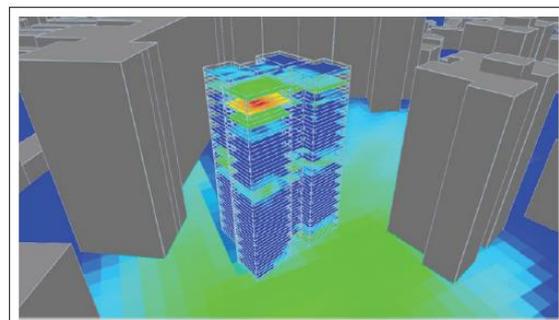
*Officially launched on 27 Jan, Ranplan Professional 6.0 is the world’s only all-in-one, planning, optimisation and simulation solution for Small Cells, DAS and Wi-Fi networks across indoor and outdoor environments that also integrates with macro-cell networks. By means of simultaneous modelling, Ranplan’s intelligent algorithms and deterministic 3D ray-tracing capabilities are able to automate the network design process to optimise coverage and capacity. Key to this is the new propagation engine, Ranplan **Maxwell™** – a state-of-the-art technology offering significant performance improvements as evidenced by the results of leading trial customers. Ranplan Maxwell is designed to operate in any computing architecture, within the desktop or the cloud.*

In the spring, Ranplan will be showing the latest capabilities of its flagship platform, Ranplan Professional. Version 6.0 is powered by the next generation propagation engine, Ranplan Maxwell, a vector-based deterministic, true 3D ray-launching/tracing engine, providing increased accuracy and faster prediction speeds. This new edition platform also paves the way for a cloud native and multi-vendor environment, embracing open interfaces and automation.

Ranplan Professional 6.0 presents customers and partners with enhanced capabilities



Automate 3D model build

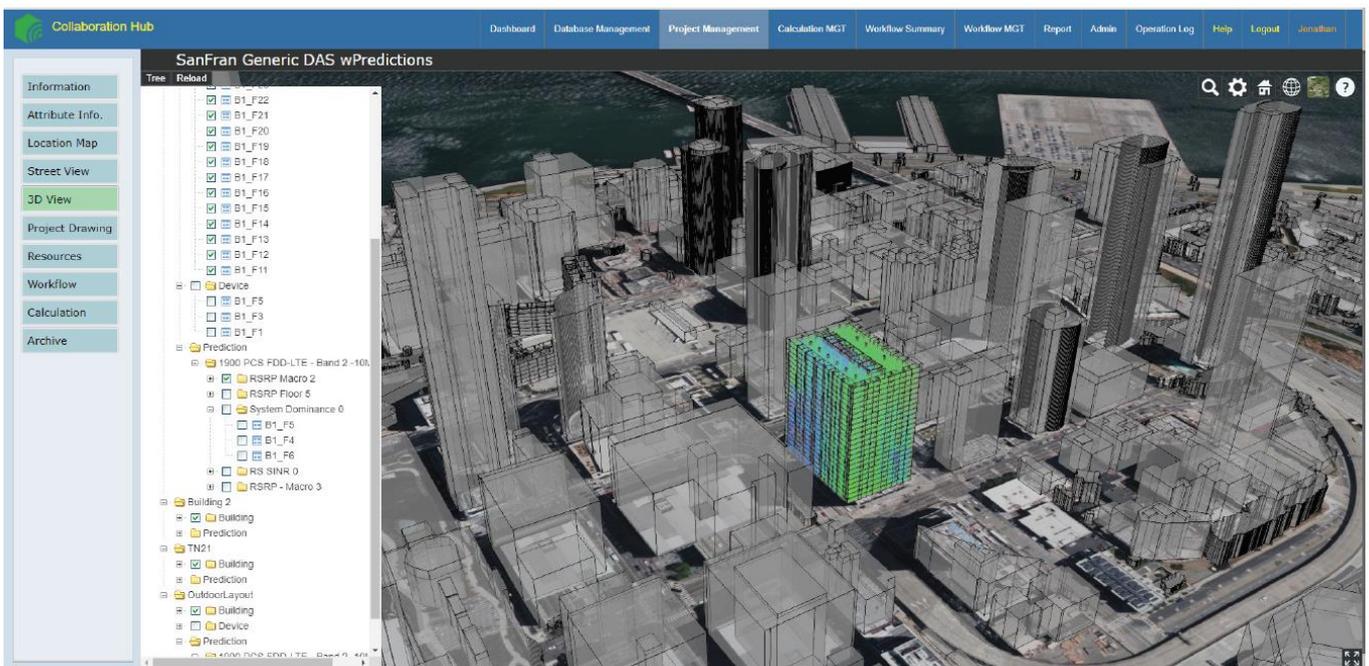


Simulating in-building and dense urban environment coverage

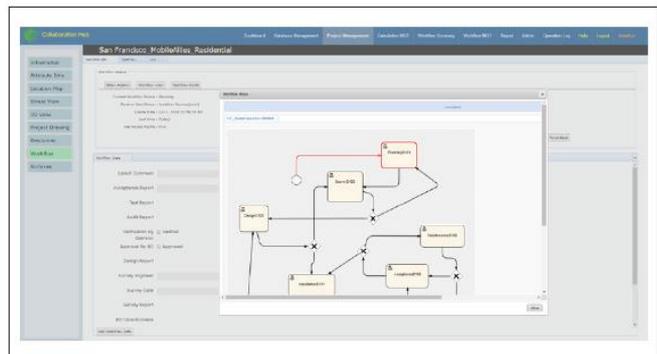
Collaboration Hub (C-Hub)

Ranplan Collaboration Hub (C-Hub) is a cloud-based and an easy-to-use network planning project management and workflow platform. Users gain real-time 360-degree insights into project delivery from inception through to final deployment and maintenance. Interaction with Ranplan’s distributed cluster-computing frameworks provides operators with increased accuracy, faster network performance evaluations and predictions required for real-time as well as near real-time automated network optimisation. The C-Hubs comes with advanced 2D and 3D project visualisation excellence, customisable dashboards and reports, device database management and, most importantly, seamless integration with Ranplan Professional and Ranplan Tablet.

At trade shows, Ranplan will be featuring its Collaboration Hub (C-Hub), a secure, cloud-based project management and workflow platform that allows operators, system integrators and equipment vendors to work cohesively in tandem while overseeing the status of ongoing projects in real-time. The C-Hub is already being used to support OSS integration in Japan.



3D visualisation of outdoor/indoor prediction



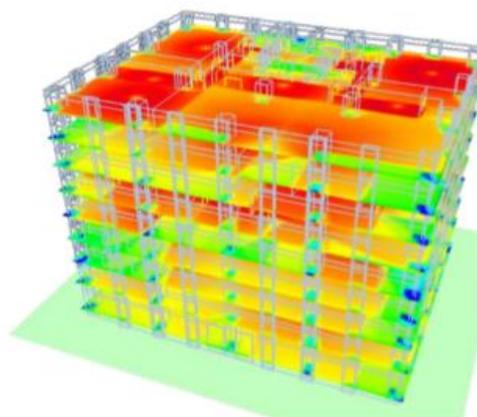
Simple project workflow scenario

CBRS – a new wave of growth

Citizens Broadband Radio Service (CBRS) – making available up to 150 MHz of entirely new spectrum in the 3.5 GHz band (more specifically 3.55–3.70 GHz in the USA) – propels an unparalleled impetus of demand for the planning, operation and perfection of wireless networks for both indoor and outdoor use. Not only wireless carriers but also cable operators as well as a whole repertoire of commercial enterprises and public services organisations (including central and local authorities) are bound to take part.

With large swathes of frequencies in the sweet-spot – catering to both capacity and coverage – set to be unleashed, the market for 4G/5G networks seems poised to experience another noticeable wave of extended solid growth. Barriers to entry will be vastly reduced as cable operators and enterprises much more easily can afford to build their own wireless networks.

Within the indoor domain. Networks akin to those of Wi-Fi (access points) are likely to be deployed on an entirely different scale than previously seen. Managed service providers may aspire to become preferred neutral cellular hosts. Enterprises may decide to construct their own 4G/5G networks to improve indoor connectivity and to support intelligent sensors. Based on U.S. Energy Information Administration surveys of U.S. commercial buildings, CBRS could expand the market for managed service providers from 7 billion to over 30 billion square feet.



Heat map showing prediction of coverage of an inbuilding 4G(LTE) wireless network

CBRS acts as a catalyst for the deployment of private 4G/5G networks that will be ‘indoor-minded’. Our expertise, products and services are ideally placed for the CBRS community.

CBRS opens up 150 MHz of highly attractive frequencies in the 3.5-3.7GHz band. It does so whilst protecting incumbents, such as the US Navy, from interferences from two new groups of users: (i) those in possession of Priority Access Licenses (PAL) and (ii) those with General Authorised Access (GAA). GAAs can use any spectrum that is not used by either PALs or incumbents. PALs can secure spectrum via auctions, in blocks of 10 MHz, times up to seven.

The whole idea of CBRS is to alleviate some of the wireless capacity constraints – especially within the walls of buildings (that is ‘indoors’) while making it possible for a whole array of businesses and even households to build and run their own cellular networks. These mechanisms may well accelerate the deployment of small cells within and in close proximity to buildings in a manner similar to what Wi-Fi Access Points (that is APs) have done in the past.

Network slicing

“The concept of network slicing, closely associated with the 5G vision, promises support for a whole variety of applications with vastly different service level requirements. It epitomises the real-time adaptability of the network architecture of the future, characterised by the isolation of logical end-to-end networks on the top of a common and shared infrastructure. Its realisation is set to deliver highly desirable and tangible benefits, in terms of cost and performance, to consumers, enterprises and operators,” asserts Professor Jie Zhang, Founder and Chairman of the Board of Ranplan Group

With the benefits of network slicing, operators will be able to allocate resources between users - preferably in real-time - depending on the criticality of their applications and their willingness to pay for a certain quality of service. Network slicing can be configured specifically to support certain use cases, such as the connected car, the smart factory, industrial robots, the remote surgeon, ambulatory medical care servants, drone facilitated rescue operators, or video gaming fans (exploring an advanced form of virtual reality) – which require either exceptionally high speeds of communications or extraordinarily fast response times (or both).

To ensure that specific service level agreements or generally acceptable service level criteria are met, it is critical that the network slices – in essence logically partitioned network functions – are provided end-to-end. True network slicing, therefore, must be cutting through all facets of telecom nodes, from the core element, via transmission links to the radio access. It permits the flexible and optimal use of all physical resources in both space and time in reaction to and in tandem with any perceptible change to the actual state of the network or its users (clients).

Participation in EU-HORIZON network slicing project

In November 2019, Ranplan Wireless was selected as a lead contributor to an EU-HORIZON project worth EUR 1.4 million over a four-year period (starting on 1 December 2019). Other participants include CNR of Italy, Orange Labs of France and the University of Cambridge.

Focused on realising the concept of network slicing in preparation for mass-marked deployment of programmable 5G network, this EU initiative spans three research disciplines:

- (i) **Data Analysis,**
- (ii) **Machine Learning**
- (iii) **Wireless Networking and Communications,**

The full project – **BANYAN** - is short for Big Data for Data Analytics for Radio Access Networks. Its objectives, amongst many, are to develop algorithms and data analytics mechanisms to:

- Forecast macroscopic spatial-temporal service demand caused by user traffic and mobility
- Geo-locate and characterise detailed in-building mobile traffic demands
- Optimise the orchestration of virtualised 5G RAN resources to coordinate outdoor and indoor networks, including those using a variety of technologies

In addition to developing key tools for data-driven 5G RAN, the project teams will play a key role in building the IPR knowledge and skills needed across both industry and academia.

Research Projects

Government sponsored research projects lie at the heart of Ranplan's operations. They represent a kernel of the firm since inception. These activities - which encompass a number of areas of great significance and are in the main tied to specific deliverables - made up a noticeable proportion of total revenues in each of the past three years. Ranplan's success in this special arena serves to illustrate the breadth and depth of its capabilities, stretching into not only the next generation of network planning and optimisation tools, but also adjacent fields such as data analytics, AI and machine learning. Commercial partners include inter alia Orange Labs, China Unicom and Telenor. One most recent example concerns Network Slicing – a key ingredient in 5G.

Since 2008, Ranplan Wireless Limited, the R&D HQ in the UK, has participated in **14** R&D projects (worth over £6.0M to Ranplan) funded by EC FP7/H2020, Eurostars and Innovate UK.

Of these **five (5)** have been successfully completed in 2012, 2013, 2015, and 2019:

- Automatic radio access network planning and optimization ([IAPP@RANPLAN](#))
- Indoor radio network planning and optimization ([iPlan](#))
- Wireless Friendly and Energy Efficient Buildings ([WiFEEB](#))
- Development of a software tool to Design Buildings with Tailored Wireless Performance ([Build-Wise](#))
- Deploying High Capacity Dense Small Cell Heterogeneous Networks ([DECADE](#))

At this stage, Ranplan Wireless Limited is actively involved in **nine (9)** ongoing projects, revolving around essential pillars of 5G: 3D MIMO Arrays, IoT, mm waves, network slicing:

- Indoor small-cell Networks with 3D MIMO Array Antennas ([is3DMIMO](#))
- [DAWN4IoE](#): Data Aware Wireless Networks for Internet of Everything
- [ODIN](#): Online Data Integrated Networks
- [CORRELATION](#): Characterization and prediction of service-level traffic for future sliced mobile network
- Millimetre wave communications in the Built Environment ([WAVECOMBE](#))
- Powering Smart mobility with Data Analytics ([PUBLIC](#)):
- Cooperative Connected Intelligent Vehicles for Safe and Efficient Road Transport [COSAFE](#):
- Crowd Blackspot Intelligence for 5G Rollout ([COCKPIT-5G](#))
- Network Slicing - "Big dAta aNalytics for radio Access Networks" ([BANYAN](#))

Financial statements

In this section, data related to the consolidated Ranplan Group AB and its Parent are presented. Please note that the parent company of the Group, Ranplan Group AB was registered on 14 March 2018. Therefore, the information provided below concerns the half year periods since the listing on Nasdaq First North (28 June 2018). After shifting to a half year reporting cycle in September 2019, the results are no longer broken down by quarter (3 months periods). It should be stressed that certain adjustments, principally related to the revenue recognition of research projects, have been made in order to provide a correct and fair picture of the company's financial performance not only since its listing but also in the latest period and on a forward-looking basis. On a net basis, these adjustments have had a slightly positive effect on the Company's total revenues and net income since 30 June 2018.

It is particularly noteworthy that, in an effort to increase clarity and transparency, the term total revenue, comprising net sales (from commercial products and services), other income (from research projects) and other operating income (from R&D tax credits, is introduced. Gross profit is measured as the difference between net sales and cost of sales with the gross margin calculated as the ratio between gross profit and net sales. To facilitate comparisons with prior periods adjustments have been made retrospectively, see Appendix Restatements).

Comments to the H2 2019 results

Income Statement

In the second half of 2019, total revenues grow (year-on-year) much more modestly than in the first six months. The slowdown is partly due to considerably less revenue recognition from our reseller in Japan and unexpected delays to certain discussions with customers in advanced stages of evaluations. Even so, the period marks the second best ever in Ranplan's history.

Operating expenditures attributable to research and development (R&D), sales and marketing (S&M) and general and administrative functions (G&A) rose to SEK 39.6 million, up 36% versus the year-earlier period and by 27% compared with the level in the first six months. The noticeable increase reflects investments in broadening the product portfolio and developing the organisation at large. Two senior level recruitments were completed in September 2019.

Other Operating Income represents the tax credit that is estimated to be paid by the UK government to support Ranplan Wireless' R&D activities. These estimates are subject to judgements according to guidelines with respect to inter alia the advancement of science and technology, the degree of uncertainty and ease of deducibility by a competent professional. In calendar 2019, no cash related to such grants were received. At the end of 2019, Ranplan carried tax credit receivables valued at around SEK 9 million – attributable to calendar 2018 and 2019 - on its balances sheet (which partly accounts for the increase in other receivables). Other expenses include inter alia withholding taxes on revenue (that may be recovered).

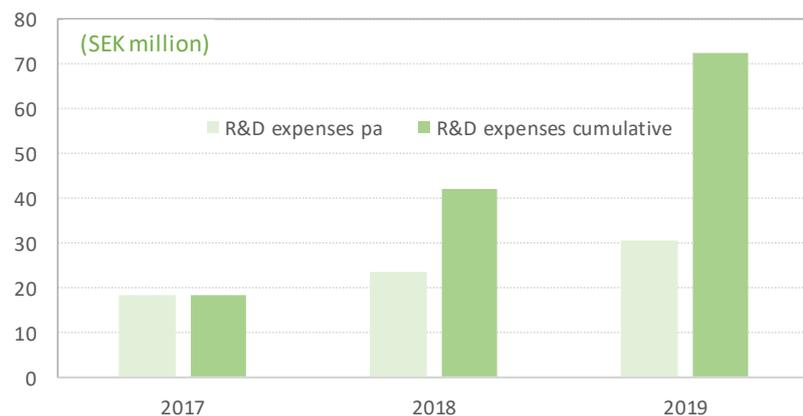
Balance Sheet

The asset base expanded noticeably in calendar 2019. Current assets, encompassing cash on hand at SEK 11.0 million and receivables in the value of SEK 37.1 million, rose to SEK 48.1 million compared with SEK 38.0 million and SEK 37.9 million at the end of June 2019 and the end of December 2018, respectively. The increase is principally attributable to deferred cash collection from both commercial customers and government agencies. The increase in cash on hand between the end of June and December 2019 is largely due to draw-down of the

credit line that has been made available (SEK 20 million of which had been used by the end of December 2019) and partly due to an increase in short-term payables related to a major research project that commenced at the end of 2019. Fixed assets fell to negligible levels at the end of 2019 as modest depreciation charges more than offset insignificant investments.

Shareholder' equity amounted to SEK 5.9 million at the end of December 2019. Its level should be evaluated on the basis that no value is attached to either the patent portfolio or the investments in research and development. Most of the Company's inherent ability to generate free cash flow is thus not captured in the balance sheet metrics as they are being portrayed.

R&D Expenditures per annum and cumulatively since the start of 2017



SEK 000s	2017	2018	2019
R&D expenses pa	18,3	23,6	30,5
R&D expenses cumulative	18,3	41,9	72,4

Current liabilities ended December 2019 at SEK 19.5 million. Whilst this level marks almost a doubling in the last six months, it should be viewed against the backdrop of a similarly sharp increase in current assets (in absolute terms): net current assets, the difference between current assets and current liabilities, remains relatively steady at SEK 27 – 30 million. As displayed in the cash flow statement, the Company is partly financed by debt. At the end of December 2019, SEK 10 million could still to be drawn from the existing credit line facility.

Balance sheet metrics

SEK 000s	30-jun-18	31-dec-18	30-jun-19	31-dec-19
Net current assets	46 363	30 133	27 309	28 534
Net cash	59 187	21 263	5 078	-9 048
Intangible assets	0	0	0	0
Shareholders' equity	46 490	30 435	27 579	5 866
Equity ratio	61%	80%	72%	12%
Fixed assets ratio	0%	1%	1%	0%

Cash flow from operations amounted to a negative SEK 31.0 million after and a negative SEK 25.0 million before movements of net working capital. No R&D investments were capitalised. The company will strive to reverse the accumulation of net receivables in calendar 2020.

Cash flow summary

SEK 000s	H1 2019	H2 2019	FY 2019
Operations	-2 590	-22 424	-25 014
Working capital	-13 361	7 369	-5 992
Investments	0	0	0
Cash flow after working capital	-15 951	-15 056	-31 007
Cash flow before working capital	-2 590	-22 424	-25 014

Dividends

The Board proposes that no dividend be paid for 2019.

Personnel

The number of full-time employees, excluding contractors, in the Group on 31 of December 2019 was 72, up from 64 at the end of December 2018 and 70 at the end of June 2019. With inclusion of contractors, the headcount broadly corresponding to full-time equivalents currently hovers around 98 versus around 72 at the end of December 2018. In the second half of 2019, there was a gross addition of 15 full-time employees more than offsetting departures.

Risk factors

The Ranplan Group is exposed to several global and Group specific risks that can impact operations and the financial performance, as well as the financial position of the Group. The foreseeable risks are identified and monitored centrally on the basis of established policies. Risk management in the Group aims at positioning the Group to be able to correctly respond to events that may pose dangers and threats to its well-being. Below is a non-exhaustive list of risks, without regard to their level of significance, which the Group consider to be material.

Further details can be found in the IPO prospectus, available on the company's website.

- Financing (through a variety of channels)
- Key personnel (experts and managers)
- Product development, quality and perception
- Competition (from existing and new contenders)
- Customers (delays, requirements, acceptance criteria etc)
- Intellectual property and business secrets
- The market price of the company's shares

Nomination Committee

In preparation for the AGM 2020, the Chairman of the Board of Ranplan Group AB has established a Nomination Committee. Its members consist of Wendy Yang, who represents the two largest shareholders (Mr Xue and Mr Li), Per Lindberg (interim CEO) and Jie Zhang (Chairman). The duty of the Nomination Committee is to submit proposals related to the composition of and compensation for the Board to the AGM. It is also assigned the task of submitting a proposal concerning the election and remuneration of auditors and procedures for the nomination committee in advance of the AGM in 2021.

Group consolidated accounts

SEK 000s	H2 2018	H1 2019	H2 2019	FY 2019
Net sales (commercial products)	8 927	24 655	11 580	36 235
Other income (research projects)	2 921	2 966	3 180	6 146
Other operating income (tax credits)	2 320	2 298	2 827	5 125
Total revenues	14 168	29 919	17 587	47 506
Cost of sales	337	912	575	1 487
R&D expenses	13 097	13 234	17 217	30 451
S&M expenses	10 850	12 594	14 937	27 788
G&A expenses	5 240	5 350	7 437	12 787
Other expenses	956	173	-61	-145
Operating income	-16 311	-2 343	-22 519	-24 862
Financial income/expenses	-37	0	-600	-600
Pre-tax income	-16 348	-2 343	-23 119	-25 462
Tax	0	0	0	0
Net income	-16 348	-2 343	-23 119	-25 462

Gross profit and expenses in relation to net sales

SEK 000s	H2 2018	H1 2019	H2 2019	FY 2019
Total revenues	14 168	29 919	17 587	47 506
o/w net sales	8 927	24 655	11 580	36 235
Gross profit	8 590	23 743	11 005	34 748
Gross margin	96%	96%	95%	96%
OPEX	29 187	31 178	39 591	71 026
D&A	207	42	170	212
EBIT	-16 311	-2 343	-22 519	-24 862
EPS (SEK)	-0,81	-0,12	-1,15	-1,27

R&D investments in absolute and relative terms

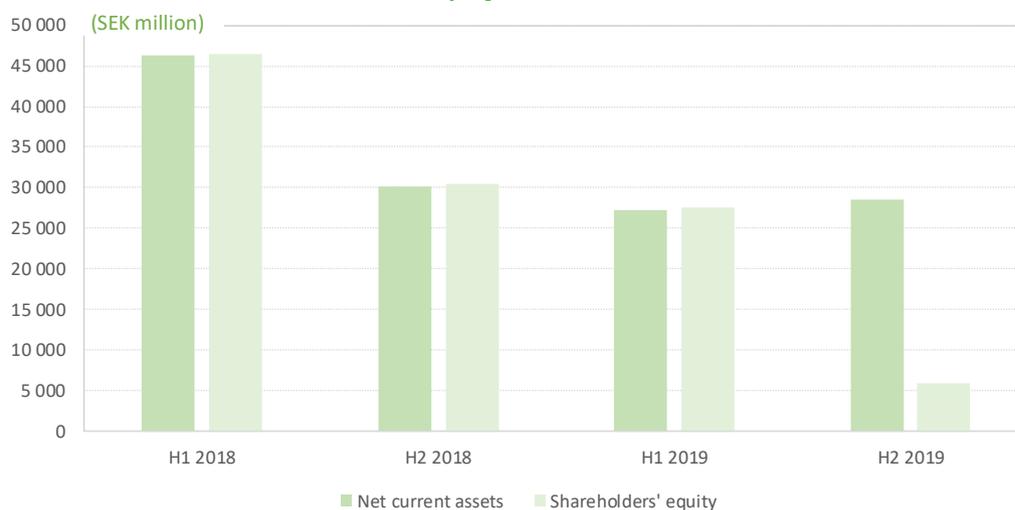
SEK 000s	H2 2018	H1 2019	H2 2019	FY 2019
Total revenues	14 168	29 919	17 587	47 506
R&D expenses	13 097	13 234	17 217	30 451
R&D/total revenues	92%	44%	98%	64%
Operating income	-16 311	-2 343	-22 519	-24 862
Share of total revenues	-115%	-8%	-128%	-52%
Operating income b. R&D	-3 214	10 891	-5 302	5 590
Share of total revenues	-23%	36%	-30%	12%

Balance sheet assets and liabilities at the end of the half-year periods

SEK 000s	30-jun-18	31-dec-18	30-jun-19	31-dec-19
Net Tangible fixed assets				
Equipment, tools, fixtures and fittings	127	302	270	52
Net Fixed Assets	127	302	270	52
Current Assets				
Trade Receivables	2 201	9 982	20 423	14 914
Other Receivables	14 117	6 653	12 501	22 199
Cash	59 187	21 263	5 078	10 952
Total Current Assets	75 505	37 898	38 002	48 065
Total Assets	75 632	38 200	38 272	48 117
Equity and Liabilities				
Equity				
Share Capital	805	805	805	805
Other paid-in Capital	50 656	50 656	50 656	51 512
Retained Earnings	-4 971	-21 026	-23 882	-46 451
Total Equity	46 490	30 435	27 579	5 866
Current Liabilities				
Trade Payables	14 366	1 970	2 966	3 775
Other liabilities	14 776	5 795	7 727	15 757
Total Current Liabilities	29 142	7 765	10 693	19 532
Non-Current Liabilities				
Financial liabilities (loan)	0	0	0	20 000
Other liabilities	0	0	0	2 719
Total Non-Current Liabilities	0	0	0	22 719
Total Equity & Liabilities	75 632	38 200	38 271	48 116

N.B. Separation between current and non-current other liabilities commenced in H2 2019.

Net current assets and shareholders' equity



SEK 000s	30-jun-18	31-dec-18	30-jun-19	31-dec-19
Net current assets	46 363	30 133	27 309	28 534
Net cash	59 187	21 263	5 078	-9 048
Intangible assets	0	0	0	0
Shareholders' equity	46 490	30 435	27 579	5 866
Equity ratio	61%	80%	72%	12%
Fixed assets ratio	0%	1%	1%	0%

Cash flow statement

SEK 000s	H2 2018	H1 2019	H2 2019	FY 2019
Operating activities				
Operating income	-17 513	-2 632	-21 994	-24 626
Adjustment for Depreciation	207	42	170	212
	-17 306	-2 590	-21 824	-24 414
Paid interest and tax	-37	0	-600	-600
	-17 343	-2 590	-22 424	-25 014
Increase in trade receivables	7 781	10 441	-5 509	4 932
Increase in other receivables	-7 464	5 848	9 698	15 546
Increase in trade payables	-12 396	996	809	1 805
Increase in other liabilities	-7 779	1 932	10 749	12 681
Cash from operating activities	-37 835	-15 951	-15 056	-31 007
Investing Activities				
Acquisition of tangible assets	0	0	0	0
Acquisition of subsidiaries	0	0	0	0
Cash flow from investing activities	0	0	0	0
Financing Activities				
Drawdown of credit line	0	0	20 000	20 000
Proceeds from issue of shares /Warrants	0	0	856	856
Cash flow from financing activities	0	0	20 856	20 856
Cash flow for the period	-37 835	-15 951	5 800	-10 151
Cash at beginning of period	59 187	21 263	4 789	21 263
Exchange rate differences	62	-524	598	75
Cash at end of period	21 414	4 789	11 188	11 188

Change in equity

SEK 000s	SHARE CAPITAL	OTHER PAID-IN CAPITAL	TRANSLATION DIFFERENCES	RETAINED EARNINGS	TOTAL EQUITY
Starting balance 2019-06-30	805	50 656		-23 882	27 579
Result for the period				-23 119	-23 119
Issue of share warrants		856			856
Translation differences			550		550
Ending balance 2019-12-31	805	51 512	550	-47 001	5 866
					5 866

Notes to the consolidated financial information

Summary of significant accounting policies This interim report has been prepared in accordance with the Annual Accounts Act and the Swedish Accounting Standards Board's general regulations BFNAR 2012:1 Annual Report and Consolidated Financial Statements (K3).

Important estimates and judgments regarding the accounting
Estimates and judgments are evaluated on an ongoing basis and are based on historical experience and other factors, including expectations regarding future events which are seen to be reasonable under the circumstances in place.

Company management deems that there is no significant information or judgment in the accounts regarding future developments or other important sources of uncertainty in the estimates undertaken at balance sheet date which would imply a significant risk of a major adjustment in the reported values of the assets and liabilities during the foreseeable future.

Share Data

SEK 000s	H2 2018	H1 2019	H2 2019
Number of share (000s)	20 116	20 116	20 116
Number of warrants (000s)*	0	0	625
Share price at end of period (SEK)	4,8	17,0	10,8
Earnings per share (SEK)**	-0,81	-0,12	-1,15

*Strike price at SEK 20.60, exercisable in Sept-Dec 2022.

**Based on the current number of outstanding shares

Shareholders as of 31 Dec 2019*	No of shares	Ownership
Jinxing Xue	8 085 887	40%
Hongbing Lu and Qimei Wu	2 624 070	13%
Per Lindberg	2 125 750	11%
Jie Zhang and Joyce Yuhau Wu	2 067 996	10%
Other	5 213 109	26%
Total	20 115 812	100%

*At the end of 2019, 625 200 warrants, exercisable at SEK 20.60 were outstanding

Annual Statement 2019

Comments to the Parent Company's financial statements

Parent Company Financial Statements

The accounts set out below relate to the Group Parent Company Ranplan Group AB which was registered in March 2018 and which is the sole owner of all Ranplan operating companies.

Income Statement

The administrative expense in 2019 relate to members of the Board, the interim CEO and the Chief Strategy Officer as well as other costs required to operate the NASDAQ listed Company.

Balance Sheet

The shares in subsidiaries represent the cost of acquiring the activity of Ranplan Holdings Ltd. Group receivables represent advances made to Group subsidiaries to fund their operations.

Changes in Equity

The reduction in equity is caused by net losses realised in calendar 2019.

Parent Company income statement in calendar 2019

SEK 000s	H1 2019	H2 2019	FY 2019
Sales	0	5 365	5 365
Marketing expenses	108	210	318
Administrative expenses	1 458	3 647	5 105
Operating income	-1 566	1 508	-58
Financial income/expenses	0	-600	-600
Pre-tax income	-1 566	908	-658
Net income	-1 566	908	-658

Parent Company balance sheet since the end of 2018

SEK 000s	31-dec-18	30-jun-19	31-dec-19
Assets			
Financial assets			
Shares in subsidiaries	3 396	3 396	3 396
Current Assets			
Group receivables	28 375	44 341	67 351
Other receivables	44	382	573
Cash	19 272	1 614	1 045
Total Current Assets	47 691	46 337	68 969
Total Assets	51 087	49 733	72 365
Equity and Liabilities			
Equity			
Share Capital	805	805	805
Other paid-in Capital	50 656	50 656	50 696
Retained Earnings	-930	-2 496	-1 588
Total Equity	50 531	48 965	49 913
Current Liabilities			
Trade payables	56	413	659
Other payables	0	355	1 689
Group payables	500	0	104
Total Current Liabilities	556	768	2 452
Loan	0	0	20 000
Total non-current liabilities	0	0	20 000
Total Equity & Liabilities	51 087	49 733	72 365

Terminologies

Total Revenues have been restated to comprise the sum of

- (i) **Net sales** (related to commercial products and services),
- (ii) **Other income** (from research projects) and
- (iii) **Other operating income** (drawn from R&D tax credits)

Gross profit is defined as the difference between Net sales and cost of sales.

Gross margin is defined as the ratio between gross profit and net sales.

Other operating income emanates from R&D qualified tax credits offered by the UK government in support of the advances of science and technology.

Depreciation: Ranplan does not capitalise its own, or, for that matter, 3rd party software or hardware (laptops, desktops, servers). The only fixed assets on the balance sheet relate to office equipment which are written off over 24 months.

Amortisation: As no R&D is capitalised, there are no intangible assets held on the balance sheet. Consequently, no amortisation of intangible assets is being made.

Income tax: Ranplan does not incur income tax at this juncture. On sales to certain countries, the buyer deducts a withholding passed to its local government. These withholdings may be recovered in the future (in the case of which a reversal occurs). The withholding tax is part of other expenses in the income statement.

EBITDA: Operating income in the income statement is almost identical to EBITDA, earnings before interest, tax, depreciation and amortisation.

Abbreviations

R&D: Research and Development
S&M: Sales and Marketing
G&A: General and Administration
OPEX: Operating Expenditures
D&A: Depreciation and Amortisation
Gross profit: gross margin x net sales
EPS: Earnings per share

AI: Artificial Intelligence
IPR: Intellectual Property Rights
OSS: Operations Support Systems

Appendix: Restatements

In this section, the effects of financial restatements on the balance sheet metrics and the income statements for the periods H2 2018 and H1 2019 are provided in detail.

Income statement line items affected: 1 Jul - 31 Dec 2018 (H2 2018)

SEK 000s	Reported 1 Jul - 31 Dec 2018	Restated amount	Restated 1 Jul -31 Dec 2018
Total revenues	12 642	1 526	14 168
Cost of sales	337	-	337
R&D expenses	13 097	-	13 097
S&M expenses	10 721	129	10 850
G&A expenses	5 240	-	5 240
Other expenses	823	133	956
Operating income	-17 576	1 265	-16 311
Financial income/expenses	-37	-	-37
Pre-tax income	-17 613	1 265	-16 348
Tax	0	-	0
Net income	-17 613	1 265	-16 348

Income statement line items affected: 1 Jan - 30 June 2019 (H1 2019)

SEK 000s	Reported 1 Jan -30 June 2019	Restated amount	Restated 1 Jan -30 June 2019
Total revenues	33 153	-3 234	29 919
Cost of sales	1 325	-413	912
R&D expenses	13 234	0	13 234
S&M expenses	12 594	0	12 594
G&A expenses	5 350	0	5 350
Other expenses	137	36	173
Operating income	513	-2 856	-2 343
Financial income/expenses	0	0	0
Pre-tax income	513	-2 856	-2 343
Tax	0	0	0
Net income	513	-2 856	-2 343

Balance sheet items affected from 30 June 2018*

SEK 000s	Assets	Equity	Liabilities
Opening balance 1 July 2018	75 682	48 955	26 727
Effect from restatement	-50	-2 466	2 416
Restated opening balance 1 July 2018	75 632	46 489	29 143

SEK 000s	Assets	Equity	Liabilities
Opening balance 31 Dec 2018	38 384	31 636	6 748
Effect from restatement	-184	-1 201	1 017
Restated opening balance 31 Dec 2018	38 200	30 435	7 765

SEK 000s	Assets	Equity	Liabilities
Opening balance 30 June 2019	39 605	31 637	7 968
Effect from restatement	-1 333	-4 058	2 725
Restated opening balance 30 June 2019	38 272	27 579	10 693

*Cumulative effects may exceed those in the income statements.

Company Description

Ranplan is a leading provider of software for the planning and optimisation of wireless networks for both indoor and outdoor before and after the deployment of networks.

Ranplan is a software company that develops and markets a suite of solutions that allow mobile operators, telecommunication equipment vendors and system integrators to cost effectively and accurately plan, design and optimise 4G (LTE), 5G and Wi-Fi wireless networks inside the walls of buildings and in outdoor urban environments.

The purpose of an in-building wireless network is to provide enhanced network coverage and/or capacity when the existing outdoor network is not able to adequately satisfy the exacting requirements. Coverage may be poor due either to high penetration losses caused by the building structure or the latest materials used that are designed to improve thermal performance of the building. In dense urban environments, adjacent buildings may create an RF barrier that blocks coverage from nearby outdoor networks. Tall buildings typically have poor coverage on upper floors since outdoor antennas, many floors below, are specifically designed to suppress energy radiating above the horizon. Capacity may be an issue in venues such as stadia and convention centres where many thousands of users may be trying to simultaneously access the network, causing severe congestions.

Today, over 80 % of mobile data traffic is generated in buildings with only approximately 2 % of commercial buildings having a dedicated in-building (cellular) wireless network. Research also shows that in-building wireless networks could increase the value of the property by 28 % on average. With the roll out of 4G (LTE) and 5G technologies, the need to construct in-building wireless networks has increased and will continue to increase. In addition, the need for more accurate network planning to maintain customer satisfaction is expected to propel demand for advanced wireless network planning tools (and services).

Ranplan's operational ambition is to increase its position in the fast-emerging wireless market by providing quality software to enable mobile operators and telecommunications equipment vendors to plan wireless networks more accurately and cost effectively. While the nature of the company's operations entail that its results are likely to vary markedly between reporting periods, Senior Management will continue to prioritise the creation of lasting industrial value.

Ranplan Group AB has been listed on Nasdaq First North Stockholm since June 2018, trading with the ticker RPLAN, ISIN: SE0011178201.

The Board of Directors and CEO hereby assure that this year-end Report for 2019 provides a true and fair overview of the performance of the parent company's and the Group's operations, financial position and earnings, and that it describes the significant risks and factors of uncertainty to which the Parent Company and the companies included in the Group are exposed.

The English version of this report takes precedence over any other representation, should any differences be found. Stockholm, 20th of February 2020

Jie Zhang, Chairman of the board

Per Lindberg, Board member

Tomas Isaksson, Board member

Wendy Yang, Board member

Other information

Proposed allocation of Ranplan's profits

The Board of Directors recommend that no dividend be paid for the full year 2019.

Auditor's review

This interim report has not been reviewed by the company's auditors.

2019 Annual General Meeting

The Annual General Meeting is scheduled to be held on 25 May 2020 in Stockholm, Sweden.

Certified Adviser

FNCA Sweden AB

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Questions regarding this interim report are answered by:

CEO (interim) Per Lindberg

E-mail address: per.lindbergn@ranplanwireless.com

Telephone: +46 79 340 7592

Financial calendar – provisional dates in 2020

20 Feb: Annual Statement for 2019

20 Apr: Annual Report for 2019 (on the company's web-site)

25 May: AGM for 2019, held in Stockholm, Sweden

20 Aug: Interim Report for the first six months of 2020

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Date: 20 Feb 2020