



H1 2019 EARNINGS AND OUTLOOK

- Coolidge™ development completed and manufacturing phase launched (tape-out). First customer deliveries scheduled by 2019 year-end for evaluation;
- Integration of first Kalray boards in next-generation high-performance storage servers manufactured by Asian market leader Wistron;
- Multiple partnerships and joint programs with top-tier players, including distribution partnership with Intron Technology for the Chinese market;
- Cash and cash equivalents of €23.3 million thanks to tight budget control during H1;
- Focus on sales and continued investment in Coolidge™ to reach €100 million revenue target by 2022.

Grenoble, France, October 23, 2019 - Kalray (Euronext Growth Paris: ALKAL), a pioneer in processors for new intelligent systems, has published its first half 2019 earnings. The consolidated financial statements were approved by the Executive Board and reviewed by the Supervisory Board on October 23, 2019. The first half financial report, including the first half financial statements and notes, can be viewed under “Financial documents” on the company’s website: www.kalray-bourse.com.

Eric Baissus, President of Kalray’s Executive Board, commented as follows:

“The first half saw the completion of development phase on Coolidge™, our 3rd generation of intelligent processors. Tape-out was launched this summer and the first samples will be sent to the first customers by the end of the year. Coolidge™ has been specially designed for our two priority markets, i.e. acceleration boards for data centers and next-generation vehicles. Expectations are noticeably high on these markets and we have already received multiple pre-orders for evaluation.

The major milestones reached over the last few months and the many negotiations currently underway have strengthened our faith in this strategy and encouraged us to focus our sales initiatives on rolling out this new-generation processor. We shall continue to ramp up capital expenditure in a reasonable manner in order to meet our €100 million revenue target by 2022.”





PROMISING SALES OUTLOOK FOR DATA CENTERS

The intelligent systems (edge computing) market has been earmarked as one of the fastest-growing markets over the coming years. According to Gartner¹, the market is expected to grow by 35% per year over the years to come. This view is confirmed by Cisco², which estimates that by 2021 the volume of data generated by humans, machines and connected devices will be 40 times greater than the volume of data processed in data centers. The deployment of intelligent systems to analyze this data as close as possible to where there are generated is therefore becoming a pressing need.

For the **data center** market, which remains Kalray's No. 1 target market in the short term, the company has continued to build its offering aiming at initial commercial deployment with Bostan™, its current generation processor, by year-end, followed by the rapid deployment of Coolidge™ on the same market. In connection with these plans, at the international FMS (Flash Memory Summit) this summer the company announced that it would be supporting the **NVMe-TCP protocol**. NVMe-TCP is an evolution of the NVMe-oF standard destined to become the default protocol for upcoming generations of SSD flash storage servers. Completed by the industry in late 2018, this evolution has been eagerly awaited as it should make it much easier to adopt this technology in data centers, given that most of them use TCP.

Kalray is currently supporting the development of high-performance storage servers (JBOF) based on this solution amongst integrators, including **Wistron**, one of the largest manufacturers of data center servers in the world. Wistron has already announced the successful integration of Kalray Bostan boards in its next product, which will support NVMe-TCP.

Meanwhile, advanced negotiations continue with a number of manufacturers, including major storage and data center industry players, with a view to integrating **Coolidge™** in their next-generation servers. Coolidge™ supports the latest high-speed interfaces required for future developments in data centers.

MAJOR PROGRESS IN THE INTELLIGENT VEHICLES MARKET

In view of the many expressions of interest the company continues to receive from the automotive industry, Kalray is also strongly positioned in its second market, **intelligent vehicles**. Besides autonomous vehicles, this market more broadly covers Advanced Driver Assistance Systems (ADAS) designed to enhance safety and driving comfort, increase automation and facilitate parking.

The company recently signed a **distribution and support partnership agreement** with **Intron Technology**, a company based in China, the world's biggest car market with 28 million vehicles manufactured in 2018. Listed on the Hong Kong stock exchange, this fast-growing group is now one of the leading distributors of automotive electronics to Chinese manufacturers and integrators. The agreement with Intron Technology is a prime opportunity that will boost Kalray's commercial presence on the world's No. 1 market.

Earlier this year, Kalray struck a strategic alliance with **NXP Semiconductors**, a leading supplier of technology for new-generation vehicles, aimed at jointly developing a safe and reliable solution for autonomous vehicles. This partnership will combine the computing power and reliability of Kalray's processors with the decision-making

¹ Source: White paper Expert Community Edge computing

² Source: Cisco Global Cloud Index: Forecast and Methodology, 2016–2021





power of NXP processors within NXP's Bluebox solution, which will equip level 3 (partial autonomy), 4 and eventually 5 (fully autonomous) vehicles. Kalray has also been selected by a **leading car manufacturer** for a major level 3³ autonomous vehicle project for which production is scheduled to begin in 2023. It was also selected by Chinese manufacturer **Baidu** to contribute to its Apollo autonomous vehicle solution and by **eSOL**, one of the main developers of real-time embedded software for cars and other applications, which will integrate Kalray's MPPA[®] processor.

Lastly, Kalray has announced that Aubass, a joint venture majority-owned by Japanese equipment manufacturer DENSO, will port its **Adaptative Autosar™ platform** to the Kalray MPPA[®] intelligent processor. This software platform based on the Autosar™ industry standard delivers the high level of performance required for autonomous vehicles (L2+ to L5) and centralized vehicle control. It has already been made available to a number of leading car manufacturers.

FIRST SAMPLES OF COOLIDGE™ DELIVERED BY 2019 YEAR-END

In terms of technology, in July Kalray announced the launch in of production (tape-out) of **Coolidge™**, the 3rd generation of its MPPA[®] intelligent processor marking the completion of over two years of development.

Coolidge™ presents major progress in the operation of MPPA[®] technology: significant performance improvement, enhancement of artificial intelligence capacity, greater programming capabilities and high-performance interfaces specifically designed for next-generation data centers.

The first samples of Coolidge™ will be delivered to the **first customers by the end of the year**. The **evaluation phase** will begin shortly afterwards and will cover the entire Coolidge™ environment developed by Kalray, including the **AccessCore[®] software suite** and the simultaneously developed **Coolidge™-based boards** which will also be available by year-end.

Kalray has already received the **first requests for development of Coolidge™-based products**. Initial mass commercial deployment by the first Coolidge™ user customers is scheduled for **H2 2020**.

H1 2019 EARNINGS IN LINE WITH EXPECTATIONS

H1 2019 **revenues** from sales of boards, development platforms and licenses, as well as customer services for the evaluation and qualification phases, amounted to **€455,000** (compared to €322,000 in H1 2018), meeting management expectations in this **pre-volume phase**.

H1 2019 earnings were impacted by **ongoing development programs**, including completion of the Coolidge™ design and NVMe-TCP solution, and by **tight control of expenditure**.

Kalray posted an **EBITDA** loss of **€2,652,000** in H1 2019 (compared to a €2,053,000 loss in H1 2018). The increase in capitalized production (up €777,000 versus H1 2018) partly offset the increase in operating expenses over the period. Personnel expenses (up €720,000 versus H1 2018) increased as a result of **9 new hires** (including 7 experienced R&D engineers and 2 sales), bringing the headcount to **81 as of June 30, 2019**. EBITDA also includes an increase in software development and hardware design subcontracting costs (up €453,000), design software license fees (up €286,000) and other expenses (up €160,000).

³ A level that allows you to assign control to the vehicle in certain situations, for example in highway traffic jams. The human driver must nevertheless remain behind the wheel. The driver is expected to resume control in a few seconds, when the vehicle indicates that it is no longer able to drive autonomously (e.g. in the absence of road markings).





After depreciation, amortization and provisions (€2,800,000) and research tax credit (€1,147,000), the **adjusted operating loss** came to **€4,305,000**, a €1,527,000 increase on the H1 2018 loss. After deduction of net financial expense, Kalray posted a net loss of €4,357,000 for H1 2019 (versus €5,079,000 in H1 2018).

CASH AND CASH EQUIVALENTS OF €23.3 MILLION AS OF JUNE 30, 2019

At June 30, 2019, Kalray posted **shareholders' equity** of **€31.3 million** versus **cash and cash equivalents** of **€23.3 million** (compared to €28.8 million at December 31, 2018), enabling Kalray to continue with its technological roadmap and commercial deployment plans. Cash is stated after deduction of capital expenditure on the continued development of Coolidge™ over the period.

OUTLOOK

Compared to the first half, business is expected to pick up in the **second half of 2019**, mainly driven by initial orders for Coolidge™ evaluation and licenses. Sales of Bostan boards will have a limited impact in view of the upcoming market launch of Coolidge.

Full-year operating expenses are expected to increase by around 25% versus 2018 due to hiring carried out in H1, further hiring planned for H2 (7-9 employees) and the increase in other expenses, particularly subcontracting costs.

2019 free cash flow will be close to the 2018 figure. The expected increase in capital expenditure in the second half, mainly related to the manufacture of Coolidge™ masks for a “one-shot” amount of around €4 million, will be offset by improvements in working capital.

Mass sale of Coolidge-based acceleration boards remains Kalray's main target for 2020. Given market enthusiasm for Coolidge™ and in line with this priority target, Kalray has taken the strategic decision to focus sales initiatives on this next-generation processor. The major **sales ramp-up scheduled for 2020** is expected to kick in during the second half, mainly driven by sales of Coolidge™ boards.

Adjusted operating profit/(loss) including research tax credit will be impacted by the increase in depreciation and amortization charges related to the Coolidge program and will therefore not reach breakeven in 2020 as expected at the time of the IPO. On the other hand, the company expects to see a **sharp improvement in EBITDA**, which should approach breakeven during the last few months of 2020 against a backdrop of sales ramp-up and leveling of operating expenses compared to the end of 2019.

In view of this improvement in EBITDA coupled with a significant reduction in capital expenditure compared to 2019 (no expenditure on tape-out masks), 2020 free cash flow should be higher than in 2019. The present cash position will therefore allow the company to pursue the strategy after 2020.

In light of the multiple negotiations and commercial evaluations currently underway, Kalray is maintaining the **2022 revenue target of €100 million** announced at the time of its IPO.

Next publication:

January 22, 2020: H2 2019 business report

ABOUT KALRAY

Kalray (Euronext Growth Paris - FR0010722819 - ALKAL) is the pioneer in processors for new intelligent systems. A genuine technological breakthrough, “intelligent” processors are able to intelligently analyze a vast quantity of data on the fly and to make decisions and interact in real time with the outside world. These intelligent processors will be largely deployed in fast-growing sectors such as new-generation networks (intelligent data centers) and autonomous vehicles, as well as in healthcare equipment, drones and robots. Kalray's offering spans both





processors and global solutions (electronic boards and software). Created in 2008 as a spin-off of CEA (“Commissariat à l’Énergie Atomique”, the French Alternative Energies and Atomic Energy Commission), Kalray addresses a broad spectrum of customers including server manufacturers, intelligent system integrators and consumer product manufacturers such as car makers. Read more at: www.kalrayinc.com

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APPENDICES

The statutory auditors have conducted a limited review of the following financial statements.

Income statement - H1 2019

Consolidated – (€000) – Unaudited data	H1 2018	H1 2019
Net sales	322	456
R&D capitalization	2,502	3,279
Subsidies	853	1,056
Other revenue	-	55
Operating income	3,677	4,846
Cost of sales	(81)	(66)
Operating expenses	(5,652)	(7,432)
<i>Including salaries and contributions</i>	<i>(3,152)</i>	<i>(3,872)</i>
<i>Including other expenses</i>	<i>(2,500)</i>	<i>(3,560)</i>
EBITDA	(2,053)	(2,652)
Depreciation and amortization	(2,107)	(2,800)
Operating result	(4,163)	(5,452)
Research tax credit	1,385	1,147
Net operating result⁴	(2,778)	(4,305)
Financial result ⁵	(2,275)	(23)
Exceptional result	(26)	(29)
Net result	(5,079)	(4,357)

⁴ Operating profit/(loss) + research tax credit (CIR)

⁵ Including a €2,070,000 non-conversion premium for convertible bonds in H1 2018





Balance sheet as of June 30, 2019

(€000) – Unaudited data	12/31/2018	06/30/2019	(€000)	12/31/2018	06/30/2019
NON-CURRENT ASSETS	16,265	17,388	EQUITY	35,541	31,259
Intangible assets	14,217	15,699	DEBTS AND LIABILITIES	11,760	12,286
Tangible assets	1,713	1,289	Provisions	85	115
Financial assets	335	400	R&D refundable advances	5,815	6,094
CURRENT ASSETS	33,582	28,304	Bank loans	457	835
Inventories	216	271	Accounts payables=	3,571	3,113
Accounts receivable	411	273	Taxes & contribution payable	1,360	1,440
Other receivable (CIR, CICE, subs.)	4,173	4,464	Other debts	472	688
Cash	28,782	23,297	Deferred revenue (subsidies)	2,817	2,545
Accrued expenses	271	398			
TOTAL ASSETS	50,118	46,091	TOTAL EQUITY & LIABILITIES	50,118	46,091

Cash flow statement - H1 2019

Consolidated – (€000) – Unaudited data	H1 2018	H1 2019
Operating cash flow before CAPEX & WC variation	(3,509)	(2,745)
Change in working capital (incl. R&D tax credit)	(3,264)	(1,443)
Free cash flows	(6,773)	(4,188)
Cash flows from investment activities - Fixed asset acquisitions	(8,349)	(2,425)
Free cash flow	(15,122)	(6,613)
Net cash from investors	40,942	-
Bank loans	-	500
Net debt	358	628
Liquidity contract	(350)	-
Cash flows from financing activities	40,950	1,128
Change in cash and cash equivalents	25,828	(5,485)
Cash beginning of period	2,954	28,782
Cash end of period	28,782	23,297

