

# H1 2023 ACTIVITY

Investor Presentation – July 2023

Intelligent Data processing,  
from Cloud to Edge

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## Eric Baissus

Executive Board Chairman

**25 years'** experience as senior executive for major telecom (Alcatel-Lucent) and electronics (Texas Instruments) groups, startup director.

Founder and CEO of Open-Plug (2002): high-tech firm sold to Alcatel-Lucent in 2010.



## Denis Scherrer

Chief Financial Officer

**30 years** of experience in finance, accounting, audit and business operations in semi-conductor (Siemens, Memscap, Soitec), Telecom and facility management (Sodexo).





- Kalray in a Nutshell
- H1 2023 Announcements
  - H1 revenue of €15,3 M
  - Major media contract signed with ngenea2
  - Coolidge2 announcement
  - IP Cube Project & France 2030
- Rise of AI & Edge Computing
- 2023 Objectives
- Q&A

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# KALRAY IN A NUTSHELL

Intelligent Data Processing from Cloud to Edge



Kalray offers a new type of **processor** (DPU<sup>1</sup>) and **solutions** that meet the demands of **data-intensive applications** and next generation **data centers**

## LEADER IN MANYCORE DPU TECHNOLOGY

**3<sup>rd</sup>**  
Generation of MPPA<sup>®</sup> processor

**+ €180m**  
R&D investment

**30**  
Patent families

## A GLOBAL PRESENCE



**192**  
People &  
A unique talented team  
(30 June 2023)

## LEADING CUSTOMERS & PARTNERS



## INDUSTRIAL INVESTORS



## A FAST-GROWING LISTED COMPANY



<sup>(1)</sup> DPU : Data Processing Unit



## OUR VISION: DATA IS KEY

Faster and better insights determine whether companies win or lose in today's market.

Getting the best insights **requires highly efficient processing and analysis of increasing volumes of data.**

## OUR MISSION

To become a global leading provider of **hardware and software technologies & solutions for data-intensive applications** and next generation **data centers.**

# A COMPLETE OFFER FOR DATA-INTENSIVE APPLICATIONS

From Chips to Software Solutions



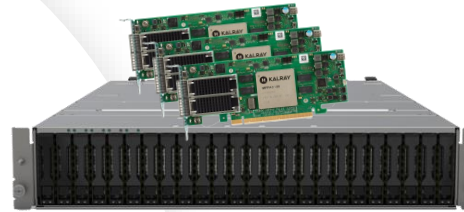
**A UNIFIED  
VALUE PROPOSITION**



**KALRAY**  
THE POWER OF MORE



PCIe Cards



Reference Solutions



MPPA® DPU  
Processors



Data Management & Storage  
Software Solutions

**PROCESS DATA  
SMARTER, MORE  
EFFICIENTLY, AND  
MORE SECURELY -  
NO MATTER WHERE  
IT RESIDES**



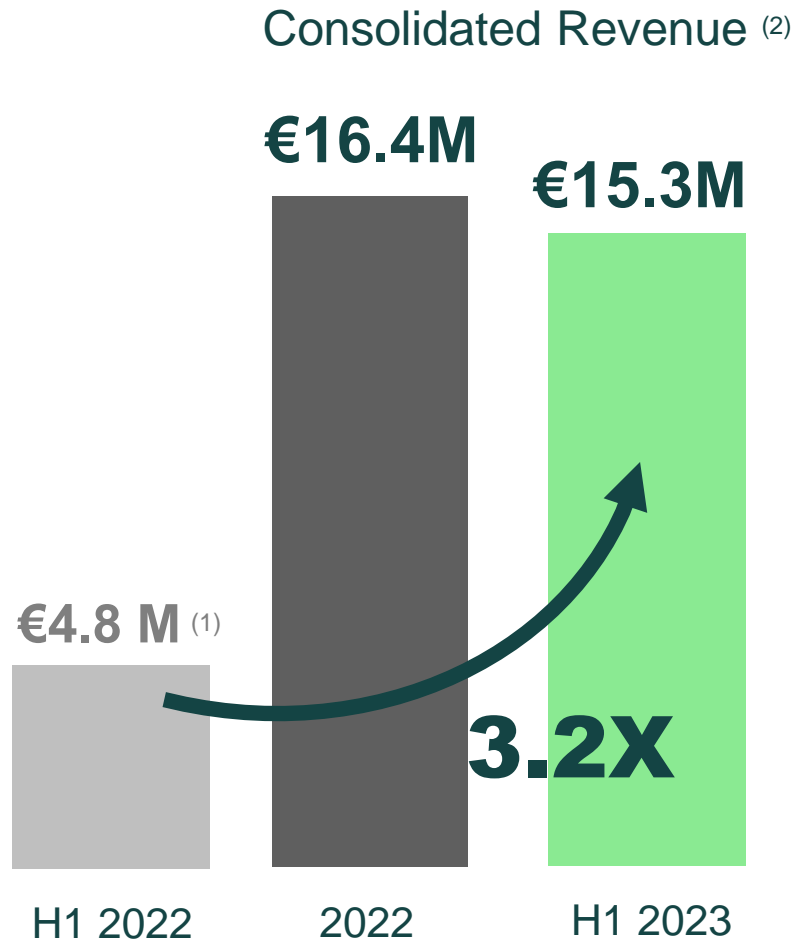
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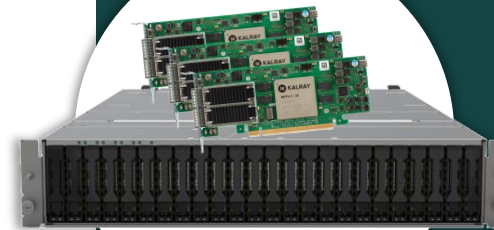
# H1 2023 FINANCIALS

Strong Increase in Revenue due to “Solution Sales” success



**Kalray  
K200-LP™**  
Acceleration cards

+



**Kalray  
Flashbox™**  
Storage appliances

+

**pixstor**  
beyond storage

**ngenea**  
beyond cloud

**Kalray pixstor™  
& ngenea®**  
Software solutions

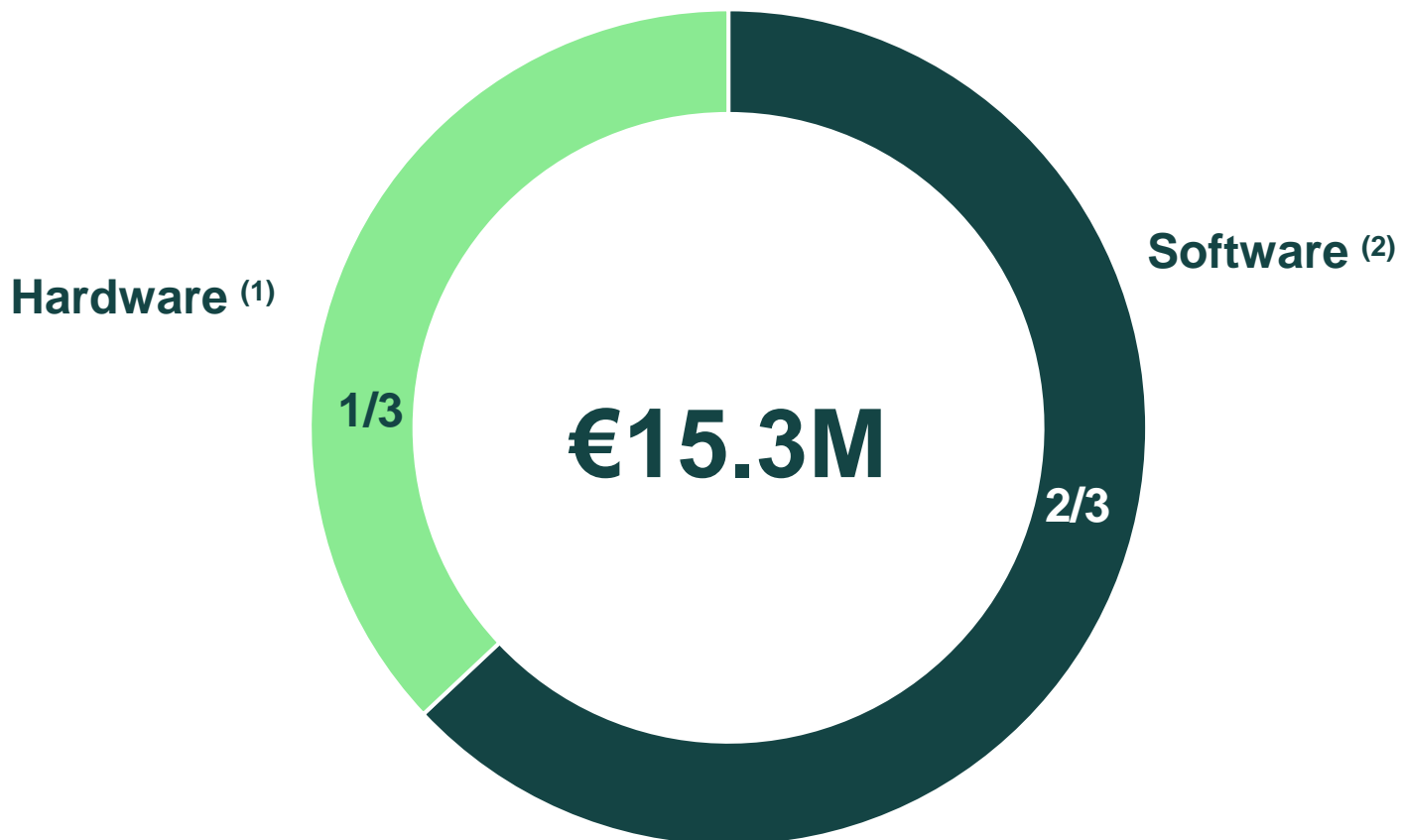
(1) Unaudited data - Integrates Arcapix Holdings Ltd as of April 15, 2022

(2) Unaudited data



# H1 2023 FINANCIALS

Consolidated Revenue by Sector



**BREAKDOWN  
HARDWARE AND  
SOFTWARE -  
SIMILAR TO 2022**

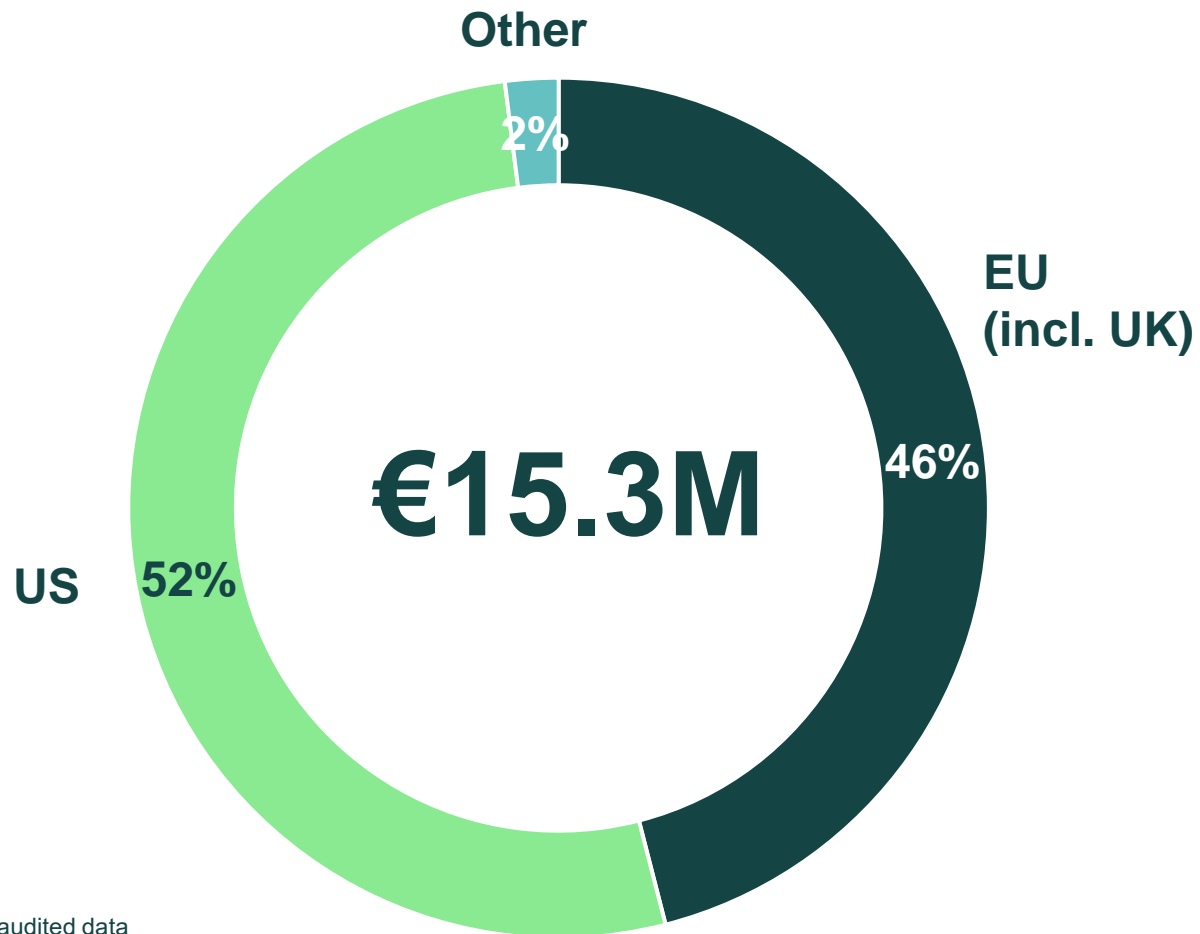
Unaudited data

(1) Hardware: supply of processors, cards and complete sets of storage.

(2) Software: software licences mainly and small part of service, maintenance and support

# H1 2023 FINANCIALS

Consolidated Revenue by Region



Unaudited data

Growing demand comes largely from selling complete solutions (HW and SW) to enterprises running data-intensive applications (AI, health, media, research..)

**A STRONG DEMAND  
ESPECIALLY IN US**

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# MAJOR MEDIA CONTRACT SIGNED WITH NGENEA2



**pixitmedia.**  
A Kalray Company

**Customer :** Large US based media company

**Solution:** Ngenea2, powered by Kalray DPUs data intensive storage

**Value:** efficient, multi-location, multi workload management of their whole media data



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# RAMP-UP OF THE GLOBAL PARTNERSHIP WITH DELL TECHNOLOGIES

- **DELL ETC PROGRAM**

Kalray joined the selective **Extended Technologies Complete (ETC)** Dell Technologies program as a **Core Partner** (10 key partners worldwide)

- **HPC & UDS DELL DIVISIONS**

Kalray solutions (ngenea® and pixstor™) are promoted by Dell's two storage divisions (HPC & UDS)

- **RESELLING AGREEMENT**

Reselling agreement of Kalray solutions in place

- **SEVERAL MILLIONS OF SALES ALREADY – FUNNEL GROWING RAPIDLY IN US AND STARTING IN EUROPE WITH SIGNIFICANT IMPACT EXPECTED H2 THIS YEAR**



**COLLABORATION  
WITH THE LEADING  
STORAGE COMPANY  
WORLDWIDE**



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# COOLIDGE™2 : LAUNCH OF THE “TAPE OUT”

More Performance, Less Power Consumption, Fine Tuned for our Target Markets

## 1 STORAGE MARKET



**Enterprises**



**Private  
Data  
Centers**



**Cloud  
Service  
Providers**

## 2 EDGE COMPUTING



**Machine  
Vision  
& AI**



**5G  
Telecom**

# EXAMPLE OF COOLIDGE V1 VS V2 BENCHMARKING



U-Net use-case

- Comparison of performance on one example of U-Net segmentation CNN analysis

	Datatype	FLOPS	FPS / MPPA®	FPS / 4-MPPA PCIe card	FPS / Watts	FPS / \$
MPPA® Coolidge V1	FP16	6.9 G	175	700	3.9	0.2
	INT8	6.9 G	250	1,000	5.2	0.28
MPPA® Coolidge V2*	FP16	6.9 G	1,400	5,600	18.7	1.4
	INT8	6.9 G	2,100	8,400	30.5	2.1

*\*Performance measured on HW RTL code*

x8 to x10  
improvement



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# STRONG INVOLVEMENT IN EUROPEAN COLLABORATIVE PROJECTS

## 1 CARAIBE PROJECT / 2020-2022 Funding: 3.7M€

Aims to develop the next generation MPPA® Coolidge™ processor (Coolidge2)



## 2 PIRANA PROJECT / Funding: 2.5 M€

Co-development of a new type of 5G server, optimized in terms of flexibility, performance, and power consumption



Atos

SWIND



## 3 5G-OPERA PROJECT / Funding: 0.6 M€

French & German project covering 5G private networks



## 4 EPI SGA2 PROJECT / 2022-2024 Funding: 1.1 M€

For the development of future generations of microprocessors



5

## IP-CUBE / 2023-2026 Funding: 10M€

Aims to develop the future generation MPPA® Dolomites™ processor



## FRANCE 2030 SELECTION

“Kalray and its ultra-high performance processors have been selected for French Tech 2030 acceleration program dedicated to disruptive innovation”



## FUNDING PROJECTS

## VISIBILITY AND NON-DILUTIVE EXTERNAL FINANCING FOR KALRAY





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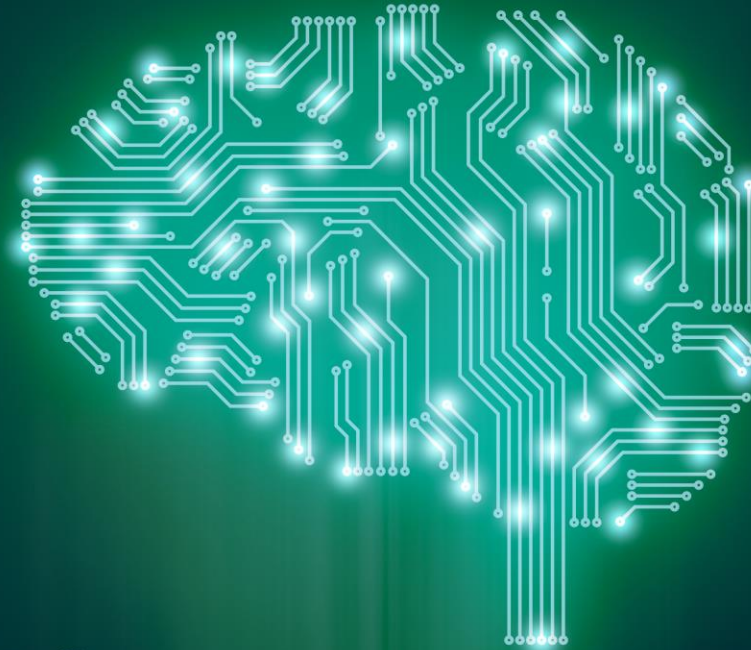
# AI: A NEW WAY TO ANALYSE DATA

## Growth Market for Kalray DPUs

AI is one of the most efficient ways for large organizations to analyse massive amounts of data

As the volume of data surges, AI adoption will do the same

AI is gaining traction in large part due to significant progress in data computing made by the semi-conductor industry



**Storage for AI  
Models**



**Machine  
Vision AI**



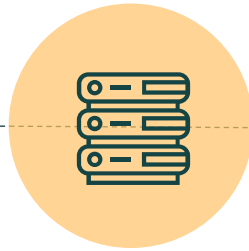
**5G Telecom &  
AI**

# AI: KALRAY BUSINESS FOCUS



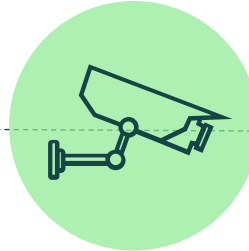
A Growth Market For Kalray's DPU

## Workloads



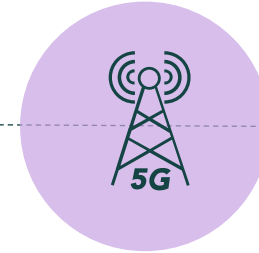
### Storage for AI Models

Both storage performance and storage capacity must grow fast to align with AI requirements



### Machine Vision AI

Industry is moving to AI-based algorithms. Kalray DPU is one of the most efficient processor on the market place in term of performance/\$ or performance/Watt



### 5G Telecom & AI

Telecom and 5G are adopting AI algorithms to improve network efficiency. Kalray DPU is the only one to support telecom and AI type of workloads

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# 2023 KEY OBJECTIVES



## BUSINESS GROWTH

- Strategic deals (jumbo contract)
- **€40M** revenue in 2023

## TEAM

- Top exec team
- Increase of Sales + Operations
- 4<sup>th</sup> DPU Generation

## IMPROVEMENT OF EBITDA



# WHY KALRAY NOW ?

## **MARKET IS NOW**

Data is everywhere – successful companies will be those that leverage the massive flow of data and process it effectively.

## **PRODUCT IS NOW**

Current DPU generation is in production.  
Complementary mix of hardware & software.  
New product generation launched in 2023.

## **PARTNERSHIPS IN PLACE**

Strategic partnership with Dell and other major industry players.

## **FIRST CONTRACT WITH MAJOR COMPANY SIGNED**

A leading NASDAQ company.



**THE ONLY EUROPEAN PROVIDER OF DPU**

The background features a stylized, isometric illustration of electronic circuit boards. The boards are shown in various shades of blue and teal, with intricate patterns of gold-colored traces and components. The perspective is angled, creating a sense of depth and complexity.

# THANK YOU



**KALRAY**  
**THE POWER OF MORE**

[www.kalrayinc.com](http://www.kalrayinc.com)



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# APPENDICES

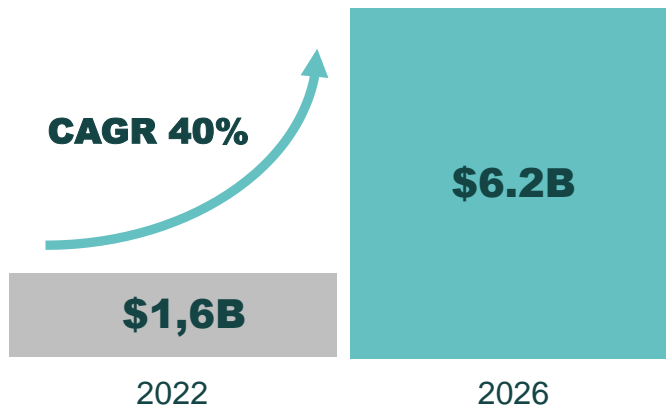


# A WIDE MARKET TO CONQUER: DPU-BASED SOLUTIONS



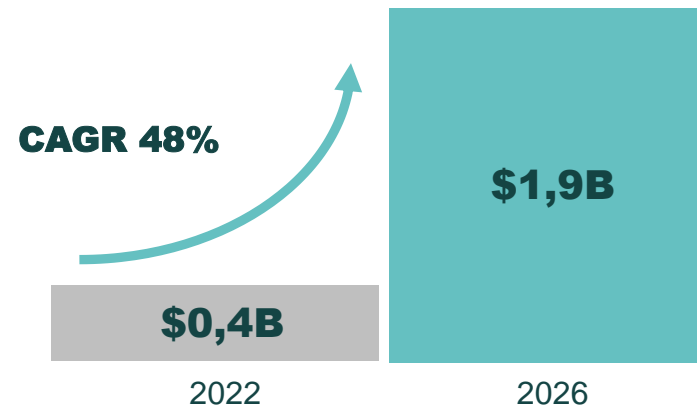
Acceleration and Offload Cards: Markets Are Fast Growing and Moving to DPUs

## Storage Acc. Cards & SmartNIC



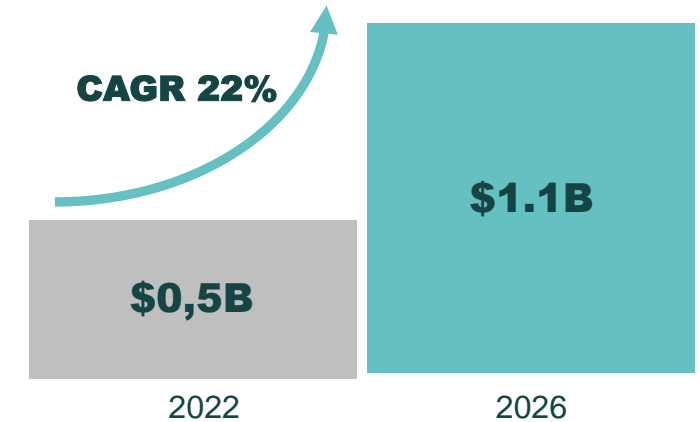
- Need for more performance both Networking & Storage
- Virtual Networking Functions
- New Protocols e.g. NVMe
- Service offload

## HPC / Machine Vision



- DSP needs replacement technologies
- Demand for more and more AI/Machine Learning & Data Processing

## 5G/Telecom Radio Access Network



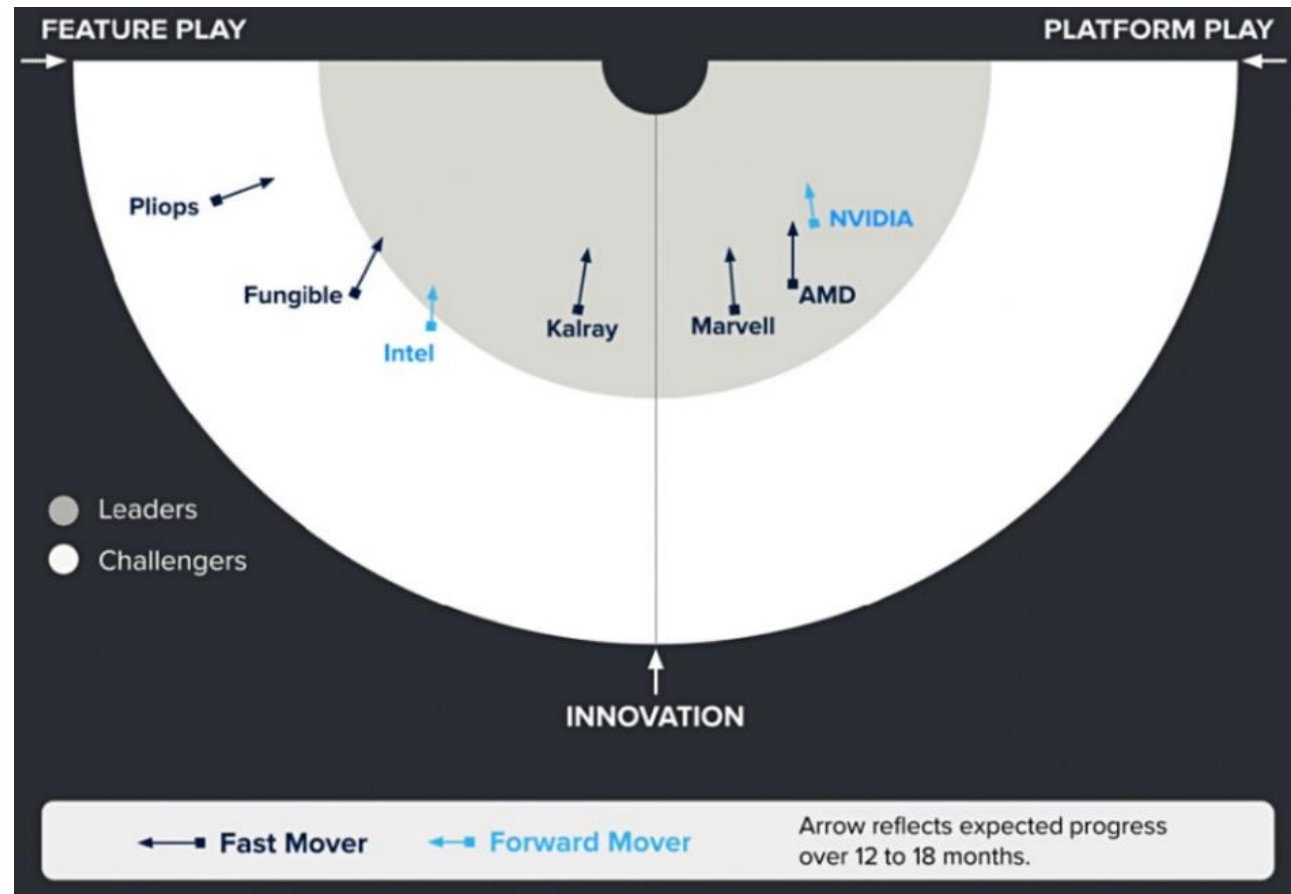
- Telecom Infra Revolution
- Open RAN
- Host Processor offload
- Performance per W and per \$



# KALRAY LEADER IN THE DPU LANDSCAPE



## Unique Selling Points & Differentiations



Justin Warren  
Jan 9, 2023 – Market Sonar

### GigaOm Sonar Report for Data Processing Units<sup>v2.0</sup> An Exploration of Cutting-Edge Solutions and Technologies

- 1 UNIQUE TECHNOLOGY**  
“Best DPU Technology and Roadmap” Gigaom  
Competition DPU solutions are based on “old approach” SmartNiC
- 2 UNIQUE POSITIONING ON 2 VERTICALS**  
Focus on Storage DPU and Edge Computing
- 3 FEATURE PLAY**  
Build complete solution, fully integrated, with our partners

## “Best DPU Technology and Roadmap”

# MORE ABOUT THIS CONTRACT



## Customer Profile

- Over 100B\$ valuation
- Several tens B\$ revenue in 2021

## Customer Needs

- Highly efficient data processing solution for next generation systems
- Key KPIs:
  - Performance / \$
  - Signal Processing and AI capabilities

## Solution

- Kalray acceleration cards with 4 Coolidge chips

## Potential deal Size

- Expected volume : several thousand cards / year
- Life of the project minimum : volume production from 2025 for 5 years minimum

# Kalray 5x

more efficient in performance / \$  
and performance / consumption  
vs main competitor

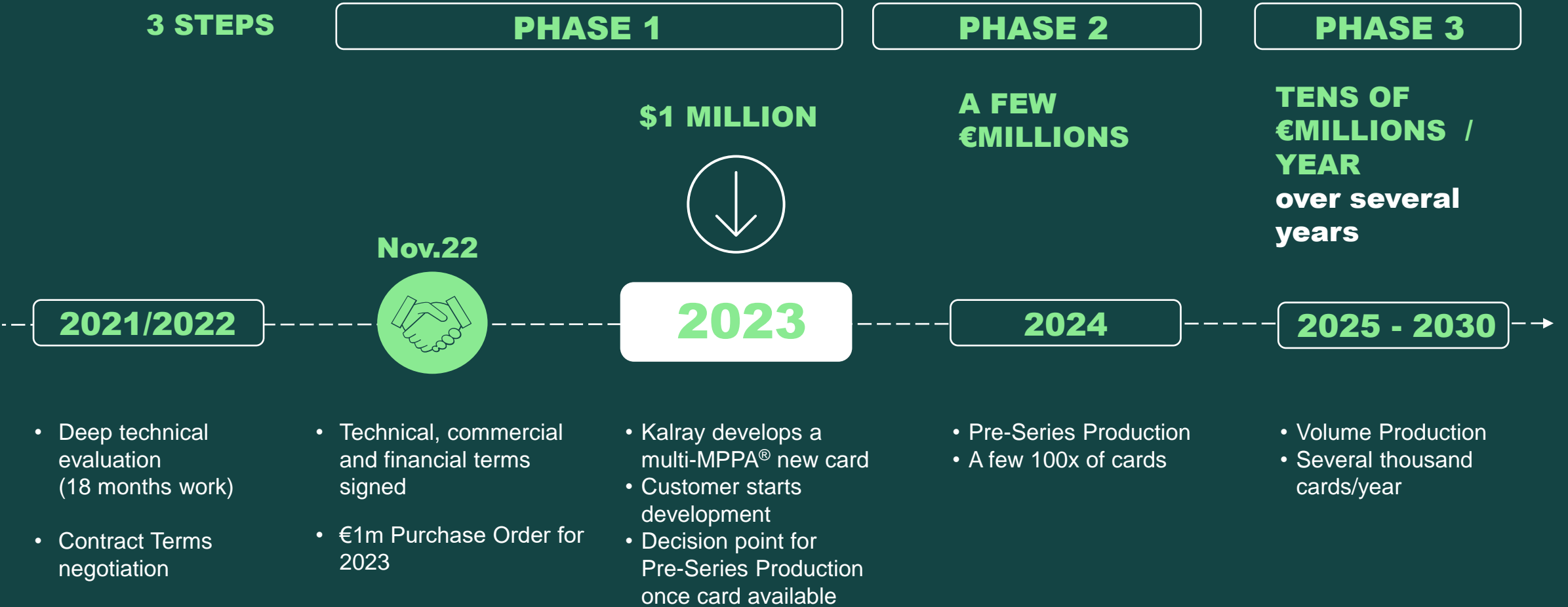
# 100M€+

Total deal Size

# ON TRACK FOR THE FIRST “JUMBO” CONTRACT



Strong Milestones (Technology, Financial and Commercial Terms)





# AGENDA

## KALRAY STOCK MARKET DATA

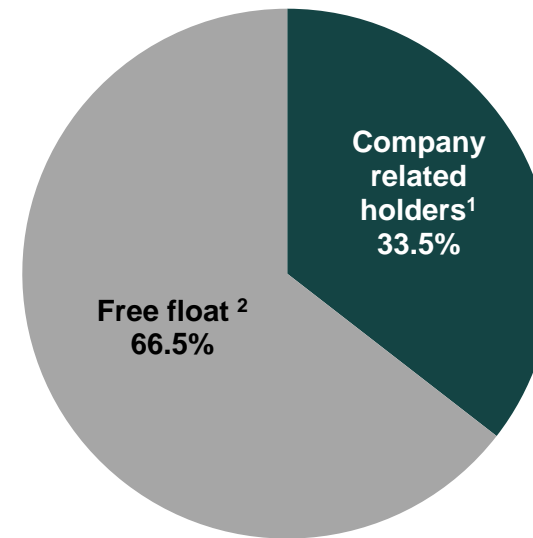


### STOCK EXCHANGE

- **Market:** Euronext Growth
- **Name:** KALRAY
- **ISIN code:** FR0010722819
- **Ticker symbol:** ALKAL
- **Share price:** €28.95 (at 29/06/2023)
- **Number of shares:** 8 475 743 (30/06/2023)
- **Market capitalization:** €245.4 M (at 29/06/2023)



### SHAREHOLDING AS OF JUNE 30, 2023

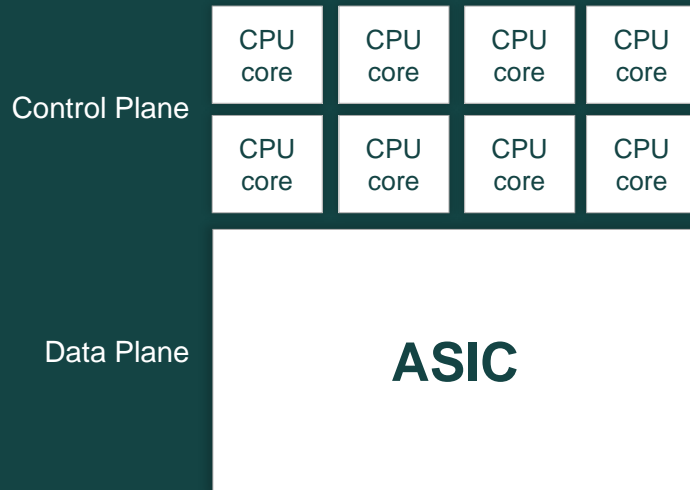


<sup>1</sup> including Alliance Ventures, CEA Investissement, MBDA, NXP, Safran Corporate Ventures, Definvest (Bpifrance), PENGPAI France ...

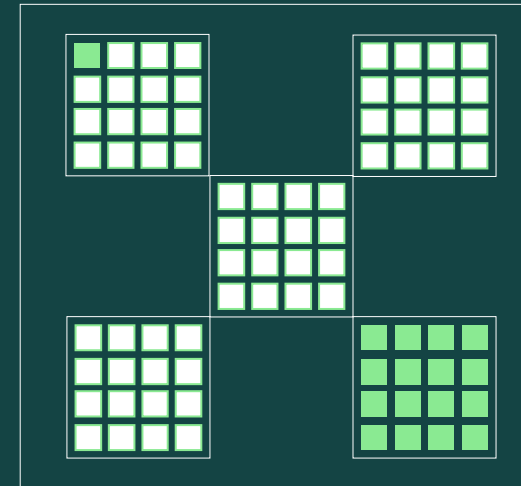
<sup>2</sup> Euronext definition

Unique Technology, Most Advanced DPU on the Market, Result of **15** Years of Development

## USUAL APPROACH



## KALRAY'S MPPA<sup>®3</sup> COOLIDGE<sup>™</sup>



- A few power-hungry RISC CPU cores
- CPU flexibility limited to control plane
- Data plane is “hardwired” –  
No new services / no possible evolution!

- **80** highly efficient VLIW fully programmable independent **CPU** cores
- Gathered into **5 clusters**
- Connected to high-speed fabrics & high-speed interfaces



# A MATURE PRODUCT AND TECHNOLOGY



## BUILT FOR HIGH VOLUMES & HIGH-QUALITY PRODUCTS

- Fabless model – fully scalable
- Qualified Global Supply Chain
- Support highly demanding customers in Automotive & Aerospace
- Partnership with NXP on safety-centric systems and technologies



University of New Hampshire  
InterOperability  
Laboratory





# KALRAY ACCELERATION CARD

Kalray DPU-based Acceleration Card



# A RECOGNIZED TOP TECHNOLOGY: X5 PERF / \$



Kalray DPU-based Flashbox™ wins coveted  
Flash Memory Summit Award for Most  
Innovative Technology



Co-designed with



**VIKING**  
Enterprise Solutions