

THE PROCESSOR  
AT THE HEART OF  
INTELLIGENT SYSTEMS



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# KALRAY: PIONEER IN INTELLIGENT PROCESSORS

MANYCORE PROCESSORS ENABLING  
NEW INTELLIGENT SYSTEMS



Patented MPPA® architecture  
allowing unlimited number of cores

Current generation: 288 cores

Technology is uniquely relevant for  
new intelligent systems

ADDRESSING TWO CORE,  
HIGH-GROWTH MARKETS



## DATA CENTERS

- **Opportunity:** data center acceleration
- Product offering ready and certified (processors and boards)
- Solutions already adopted by several customers
- Commercial launch in volume expected in 2020



## AUTONOMOUS DRIVING

- **Opportunity:** car's sensor fusion / ADAS & AI systems
- Processors suited to Level 2+ to Level 5 cars
- Technology already tested in concept cars
- Under selection by large OEMs and Tier 1s
- Strategic shareholder (the Alliance) and strategic partnership with NXP (#1 in auto semis)

COMPANY HIGHLIGHTS



4 LOCATIONS: GRENOBLE,  
SOPHIA-ANTIPOLIS (FRANCE),  
LOS ALTOS (US) AND TOKYO (JAPAN)



> €70M OF R&D INVESTMENT  
OVER 10 YEARS. PROTECTED  
BY 23 PATENT FAMILIES



75 EMPLOYEES (Q1 2019) OF  
WHICH 16 PHDS AND 51  
ENGINEERS



€85M EQUITY RAISED TO DATE  
EURONEXT GROWTH PARIS  
LISTED



€100M SALES TARGET IN 2022  
C.90% DATA CENTERS

# INTELLIGENT SYSTEMS: A DISRUPTION REQUIRING A NEW GENERATION OF PROCESSORS

INTELLIGENT SYSTEMS ANALYSE AN EXPONENTIAL FLOW OF DATA IN REAL TIME



COMPUTERS:  
APPLICATION  
PROCESSING



PROCESSORS  
DESIGNED FOR  
LARGE APPLICATIONS

SMARTPHONES:  
CONNECTIVITY  
& MOBILITY



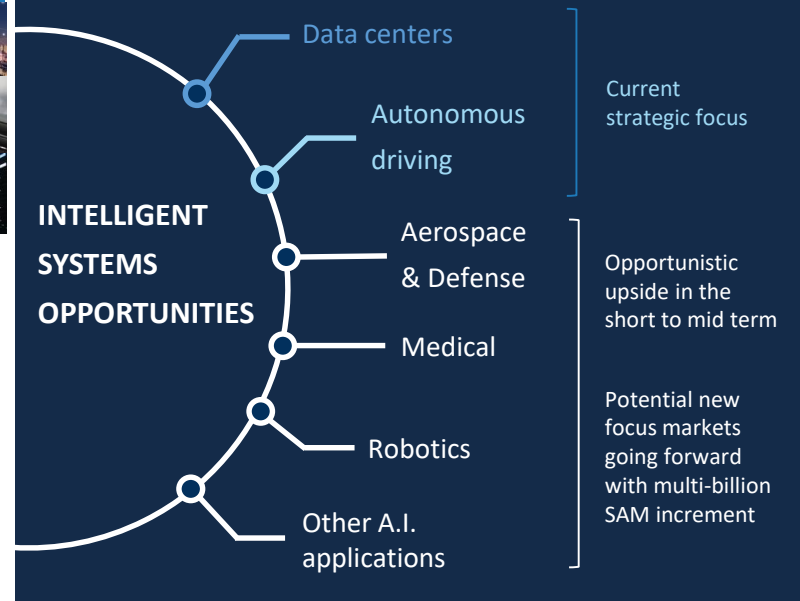
PROCESSORS  
DESIGNED FOR  
CONNECTIVITY

INTELLIGENT SYSTEMS  
ANALYSIS &  
DECISION-MAKING



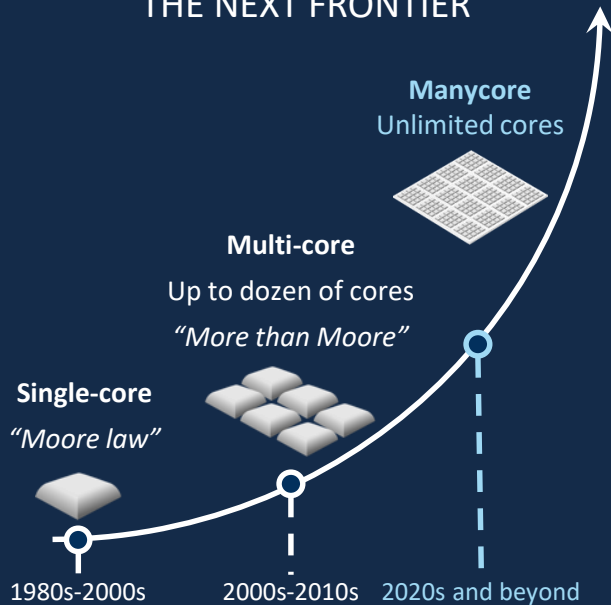
PROCESSORS  
DESIGNED FOR  
INTELLIGENT  
PROCESSING

MULTIPLE EMERGING END-MARKETS



# KALRAY MANYCORE PATENTED MPPA® TECHNOLOGY: RESULT OF 10 YEARS OF INVESTMENT

## MANYCORE: THE NEXT FRONTIER



## UNIQUE SELLING POINTS

- #1**  
Computing power
- #2**  
Data processing  
in real time
- #3**  
Completion of dozens of  
critical tasks in parallel
- #4**  
Low power consumption
- #5**  
Programmable  
Open system
- #6**  
Security & Safety

## TOP R&D PARTNER



AMONG BEST  
RESEARCH CENTERS  
IN SEMIS GLOBALLY

10 YEARS OF R&D  
WITH KALRAY

## A MATURE TECHNOLOGY

> €70m R&D investment  
> 400 Men.Year of R&D

## STRONG & PROTECTED IP

23 patent families protecting the MPPA®  
architecture

Patents covering manycore architecture,  
cores and interconnect

Current patent portfolio granting  
protection until 2032-2037

# COMPREHENSIVE PRODUCTS OFFERING

## CORE PRODUCTS



### PROCESSORS

Processors based on MPPA® architecture

**Bostan:** Kalray's 2<sup>nd</sup> generation processor with 288 cores, **already available** for commercial launch

**Coolidge:** Kalray's 3<sup>rd</sup> generation processor with superior performance vs. Bostan, targeting samples in customer hands before end 2019

### BOARDS

Solutions integrating ready-to-use boards, based on Kalray's processors, and application software

**KTC (Kalray Target Controller): First product available** on Bostan processor including NVMe-oF standard and targeting storage servers

**TurboCards:** Card based on Coolidge processor enabling networking, storage and compute acceleration in data centers, under development to be deployed in 2020

## SUPPORT PRODUCTS

### SOFTWARE DEVELOPMENT KITS



### DEVELOPMENT PLATFORMS



# SCALABLE PLATFORM GLOBAL FOOTPRINT

US



EUROPE (FRANCE)

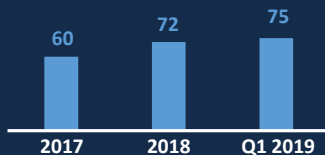


ASIA-PACIFIC (JAPAN)

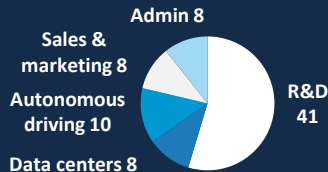


## GROWING AND HIGH QUALITY TEAMS

### HEADCOUNT EVOLUTION



### HEADCOUNT (Q1 2019)



## SCALABLE OUTSOURCED MANUFACTURING



- Fabless business model
- Outsourced with TSMC (global #1)
- Limited investment / no expansion costs
- Production on the basis of purchase orders

# SEASONED MANAGEMENT TEAM AND STRONG SHAREHOLDER BASE

## SEASONED MANAGEMENT TEAM



**Eric Baissus** • CEO

*20 years of experience in telecommunications (Alcatel-Lucent) and electronics (Texas Instruments). Founder and CEO of Open-Plug (2002)*



**Anne Gabrot** • CFO

*20 years of experience as group CFO in the telecommunications sector and in technology start-ups*



**Benoît de Dinechin** • CTO

*20 years of experience in IT systems and processor architecture (ST Micro Fellow, Cray Research)*



**Olivier Lauvray** • VP Data Center & Global Sales

*20 years of experience in go-to-market and international sales development (Motorola, Freescale / NXP or NetLogic Microsystems / Broadcom)*



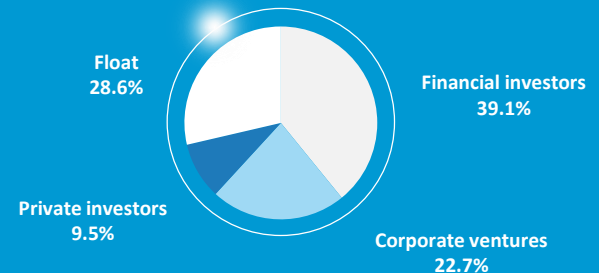
**Stéphane Cordova** • VP Embedded / Autonomous driving

*20 years of experience in semiconductors (ST Microelectronics and ST Ericsson)*

## SELECTED SHAREHOLDERS



## SHAREHOLDING STRUCTURE





# SUMMARY HIGHLIGHTS

1

**New high growth market opportunity emerging with surge of intelligence system**

2

**Existing processors generation (CPUs, GPUs, FPGAs) are at their limits: manycore is the answer**

3

**Kalray has a multi-year head start vs. competitors with its proprietary MPPA® architecture**

4

**Technology acknowledged as the leading one by top industry players**

5

**Kalray's strategy and platform is geared to address a market opportunity of >\$10bn by 2030**



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