Activity in the second half of 2019

January 22, 2020
Eric Baissus • Executive Board Chairman

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


Anne Gabrot • CFO

20 years’ experience as CFO for major telecom groups and tech startups.

ESSEC Business School
KALRAY: PIONEER IN INTELLIGENT PROCESSORS

MANYCORE PROCESSORS ENABLING NEW INTELLIGENT SYSTEMS

Patented MPPA® architecture allowing unlimited number of cores
Latest generation: x times 80 cores
Technology is uniquely relevant for new intelligent systems

ADDRESSING TWO CORE, HIGH-GROWTH MARKETS

DATA CENTERS

• Opportunity: data center acceleration
• Complete solution (board and software) for appliance makers and data centers
• Under selection by large OEMs
• Commercial launch in volume targeted in H2 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

81 EMPLOYEES (END 2019) OF WHICH 16 PHDS AND 59 ENGINEERS

€85M EQUITY RAISED TO DATE EURONEXT GROWTH PARIS LISTED

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

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INTELLIGENT SYSTEMS: A DISRUPTION REQUIRING A NEW GENERATION OF PROCESSORS

INTELLIGENT SYSTEMS ANALYSE AN EXPONENTIAL FLOW OF DATA IN REAL TIME

MULTIPLE EMERGING END-MARKETS

- Data centers
- Autonomous driving
- Aerospace & Defense
- Medical
- Robotics
- Other A.I. applications

Current strategic focus

Opportunistic upside in the short to mid term

Potential new focus markets going forward with multi-billion SAM increment

INTELLIGENT SYSTEMS OPPORTUNITIES

- COMPUTERS: APPLICATION PROCESSING
- SMARTPHONES: CONNECTIVITY & MOBILITY
- INTELLIGENT SYSTEMS ANALYSIS & DECISION-MAKING

PROCESSORS DESIGNED FOR LARGE APPLICATIONS
PROCESSORS DESIGNED FOR CONNECTIVITY
PROCESSORS DESIGNED FOR INTELLIGENT PROCESSING

INTELLIGENT SYSTEMS ANALYSIS & DECISION-MAKING

SMARTPHONES: CONNECTIVITY & MOBILITY

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SMARTPHONES: CONNECTIVITY & MOBILITY

PROCESSORS DESIGNED FOR LARGE APPLICATIONS

COMPUTERS: APPLICATION PROCESSING
INTELLIGENT SYSTEMS & EDGE COMPUTING MARKET: THE NEXT WAVE OF AI

Centralized AI processing:
- Strong demand for bandwidth
- High energy consumption
- High latency
- Training and specific Inference

AI processing close to Data
- Bandwidth savings
- Low energy consumption
- Latency reduction
- Inference and co-training
- Security & Privacy

Smart Device AI:
- Bandwidth savings
- Low energy consumption
- Latency reduction
- Basic Inference
- Security & Privacy

Controlled by Cloud giants incl. Google, NVIDIA and Intel

99% of today
$5,5B market (1)

1% today
A $5,5B market in 2025 (1)

Much more fragmented market
Need for flexible solution able to accelerate application, protocol and artificial intelligence

KEY FACTS

Coolidge™ is here:
Demonstration at CES 2020 (including demo with NXP)
Confirmed Traction

Coolidge on the ramp
Negociation on going with Storage servers makers and strategic DC partners

Clear Interest
From Automotive industry
For Kalray’s solution

+ 63% sales growth (€ 1.3m) in 2019
Net cash: € 15.7m enabling the roadmap to be implemented
COOLIDGE™, A TECHNOLOGICAL BREAKTHROUGH NOW AVAILABLE

THE PROCESSOR AT THE HEART OF NEW INTELLIGENT SYSTEMS
COOLIDGE™: A MAJOR EVOLUTION

- **Performance**: x25
- **Programming ease**
- **High-speed** support as required by the industry (CAN, PCI Gen4, Ethernet 100Gb)
- **Price**: ÷2
- **Designed for mass production**

ARCHITECTURE ADAPTED TO HARNESS ALL THE BENEFITS OF MPPA® TECHNOLOGY, CONCENTRATING THE EXPERTISE ACCUMULATED OVER THE PAST 10 YEARS:

- >100 man-years of development over 2018/2019
- 80% of the R&D team
- 66% Software / 33% Hardware
- 50% dev. / 50% validation and testing

8
FIRST PUBLIC DEMONSTRATION OF COOLIDGE AT CES 2020

- Coolidge runs YoloV3 AI algorithms for real time multiple object detection in a autonomous car use case

- More than 30 dedicated meetings with major players in the automotive and embedded world
**COOLIDGE™: TOWARDS VOLUME IN H2 2020**

<table>
<thead>
<tr>
<th>Finalization of design Phase</th>
<th>Beginning of Manufacturing</th>
<th>Internal Bring-up (2)</th>
<th>Customer Evaluation &amp; Coolidge integration on their own product</th>
<th>Volume Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2 2019</td>
<td>Q3 2019</td>
<td>Q4 2019</td>
<td>Q1 2020</td>
<td>Q2 2020</td>
</tr>
</tbody>
</table>

**Dév.**
- Tape-out (1)

**FIRST SAMPLES AND CARD:**
- K200: Development / Prototyping and Production Card
- Software Environment

**Shipment to early adopter customers**

**Coolidge General Availability**

(1) The tape-out is an important milestone for a semiconductor company, as it indicates the completion of the design phase and the beginning of the manufacturing process.

(2) The bring-up phase covers the validation of key blocks and the initial port of the development environment of the MPPA®
DATA CENTER: HIGH VOLUME PRODUCTION IN 2020
INTELLIGENT DATA CENTER: A NEED TO ACCELERATE PROCESSING AT EVERY STAGE

EMERGENCE OF AI AND EXPLOSION OF DATA

NEW ARCHITECTURES

BIGDATA ANALYTICS

DATABASE

COMPUTE

MACHINE LEARNING

NETWORK

STORAGE

FINANCIAL

LIFE SCIENCES

Apps

Application servers

Accelerator servers

Storage servers (HDD -> x100 faster SSD)

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KALRAY’S NVMe-TCP SOLUTION: PAVING THE WAY TO HIGH VOLUME PRODUCTION

KTC80 – NVMe/TCP: a complete solution, low energy consumption, 40G, supporting the new NVMe-TCP protocol

TEST & POC WITH WISTRON

KTC200: 100G support
AVAILABLE 2020

Integrators

Development / integration

Deployment

Volume

OEMs / Data centers

INTELLIGENT DATACENTER
WISTRON: LEADING GLOBAL SERVER MANUFACTURER

Wistron is an Original Design Manufacturer (ODM) that manufactures and assembles electronic components. Wistron was a spin-off company created in 2000 by Acer.

Listed in Taiwan, it is one of the leading suppliers of electronics for data centers.

Wistron has already announced the successful integration of Kalray boards in its next storage server (JBOF), which will support NVMe-TCP.

➔ 10 advanced negotiations underway with leading OEMs and integrators to integrate Coolidge™ in their future products
2CRSi & KALRAY JOIN FORCES & DEMONSTRATE COMPOSABILITY AT NOV. 2019

Kalray’s KONIC card support multiple profile to enable 2CRSi to rapidly compose modular solutions e.g. AI engines, application acceleration or protocol stacks.

- Enabled by MPPA manycore intelligent unique architecture

- Markets such as video surveillance, defect detection, finance algorithm optimization, Artificial Intelligence and many others
AUTONOMOUS VEHICLES:
TIME TO CHOOSE

THE PROCESSOR AT THE HEART OF NEW INTELLIGENT SYSTEMS
NEXT GEN CAR:
2 KEY CHALLENGES FACED BY INDUSTRY

A need for performance

Perf. increase
x100
up to
x1,000

A need to consolidate
the electronic functions in the car

50 to 100 processors per car today

ESTIMATED REQUIREMENT FROM MANUFACTURERS TODAY:
BETWEEN 150 AND 300 TOPS

KALRAY
MPPA®

INITIAL SELECTION
FOR PRODUCTION LAUNCH IN 2022/2023

Provisional development and market launch timeline

- H2 2018: Prototyping
- 2019: Selection
- 2020: Qualification
- 2021: Manufacturer integration process
- 2022/23: Start of mass production

➢ > 10 evaluations or negotiations underway
with major automotive manufacturers and integrators
NXP PARTNERSHIP: OPPORTUNITY WITH A GLOBAL LEADER – DEMO AT CES 2020

CENTRAL COMPUTING SOLUTION FOR AUTONOMOUS VEHICLES OF THE FUTURE

➢ For Level 3 vehicles
➢ Roadmap up to Level 5

#1 in automotive semiconductors (11% market share)¹
#2 in automotive processors (28% market share)²

JANUARY 2019

¹ Gartner 2017 market share
² NXP 2017 market share
PARTNERSHIP WITH INTRON TECHNOLOGY: INCREASED MARKETING POWER IN CHINA

SIGNING OF A DISTRIBUTION AND SUPPORT PARTNERSHIP WITH INTRON TECHNOLOGY IN CHINA.

CHINA: NO. 1 AUTOMOTIVE MARKET WORLDWIDE WITH 28 MILLION VEHICLES MANUFACTURED IN 2018.

LISTED ON THE HONG KONG STOCK EXCHANGE, A LEADING DISTRIBUTOR OF AUTOMOTIVE ELECTRONICS TO CHINESE MANUFACTURERS AND INTEGRATORS.

THIS AGREEMENT WITH INTRON TECHNOLOGY IS A PRIME OPPORTUNITY THAT WILL BOOST KALRAY’S COMMERCIAL PRESENCE ON THE WORLD’S NO. 1 MARKET.
H2 2019 ACTIVITY IN LINE WITH EXPECTATIONS & COMMERCIAL ACCELERATION CONFIRMED IN H2 2020
+63% SALES GROWTH IN 2019
IN LINE WITH MANAGEMENT EXPECTATIONS

FY 2019 REVENUE: +63%

- H1 2019 Revenue: 455 K€
- H2 2019 Revenue: 810 K€
- FY 2019 Revenue: 1,265 K€ (+63%)

€15.7M AVAILABLE CASH
AT DECEMBER 31, 2019

This level enables to pursue the technological roadmap and commercial deployment plans

- This level of cash includes capex related to the development of Coolidge over the period (including $4M for mask fabrication).
- 15 new recruitments, of which 9 completed in H1 and 6 in H2 2019 (R&D and commercial engineers) with starting dates in 2020.
### A CLEAR STRATEGY TO BE PURSUED IN 2020 ON TWO PRIORITY MARKETS

<table>
<thead>
<tr>
<th>Intelligent data center</th>
<th>Intelligent car / Embedded systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target market</strong></td>
<td><strong>Target market</strong></td>
</tr>
<tr>
<td>KALRAY</td>
<td>KALRAY</td>
</tr>
<tr>
<td>~€1bn by 2022*</td>
<td>~€1.5bn in 2025**</td>
</tr>
</tbody>
</table>

#### 2020 FOCUS

- **Intelligent data center**
  - Mass sales of Coolidge™ boards (thousands of units)

- **Intelligent car / Embedded systems**
  - Developing strategic partnerships on the market

#### STRATEGY

- **Intelligent data center**
  - Focus on Coolidge™
  - Vertical approach (prepackaged software solutions including NVMe-TCP)
  - Nourishing ongoing partnerships/agreements
  - Ramping up international presence (USA/China)

- **Intelligent car / Embedded systems**
  - Alliance with key market players to solidify reputation
  - Working on a limited number of high-potential projects
  - Technology licensing

---

* Comprising:
  - €500m SMARTNIC market ("Serverless DPDK Public Report" – CAVIUM)
  - €500m NVMe-OF Smart Adapter market (G2ME NVMe Market Report -2017)

OUTLOOK

**Coolidge:** beginning of the sales ramp-up in H2 2020

**Cash position** enabling the company to pursue the strategy after 2020

Kalray constantly evaluates opportunities to support its long-term development. These opportunities can involve discussions with industrial or financial partners.

Target maintained for €100m revenues by 2022 taking into account the multiple negotiations and commercial evaluations underway.
### KALRAY STOCK MARKET DATA

<table>
<thead>
<tr>
<th>STOCK EXCHANGE</th>
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</thead>
<tbody>
<tr>
<td><strong>Market:</strong> Euronext Growth</td>
</tr>
<tr>
<td><strong>Name:</strong> KALRAY</td>
</tr>
<tr>
<td><strong>ISIN code:</strong> FR0010722819</td>
</tr>
<tr>
<td><strong>Ticker symbol:</strong> ALKAL</td>
</tr>
<tr>
<td><strong>Share price:</strong> €19.90 (at 01/21/2020)</td>
</tr>
<tr>
<td><strong>Market capitalization:</strong> €90.1m (at 01/21/2020)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NEXT MEETINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>April 20, 2020</strong></td>
</tr>
<tr>
<td><strong>July 9, 2020</strong></td>
</tr>
<tr>
<td><strong>September 21, 2020</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SHAREHOLDING - AS OF DECEMBER 31, 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of shares:</strong> 4,527,940</td>
</tr>
<tr>
<td><strong>Potential dilution:</strong> 466,469</td>
</tr>
</tbody>
</table>

**Float** 40.5%

**Financial investors**¹ 37.2%

**Corporate funds**² 22.2%

1 with more than 5% of shared capital
2 Safran, MBDA, Alliance Ventures