

ZeroPoint

Remove the waste.
Release the power.

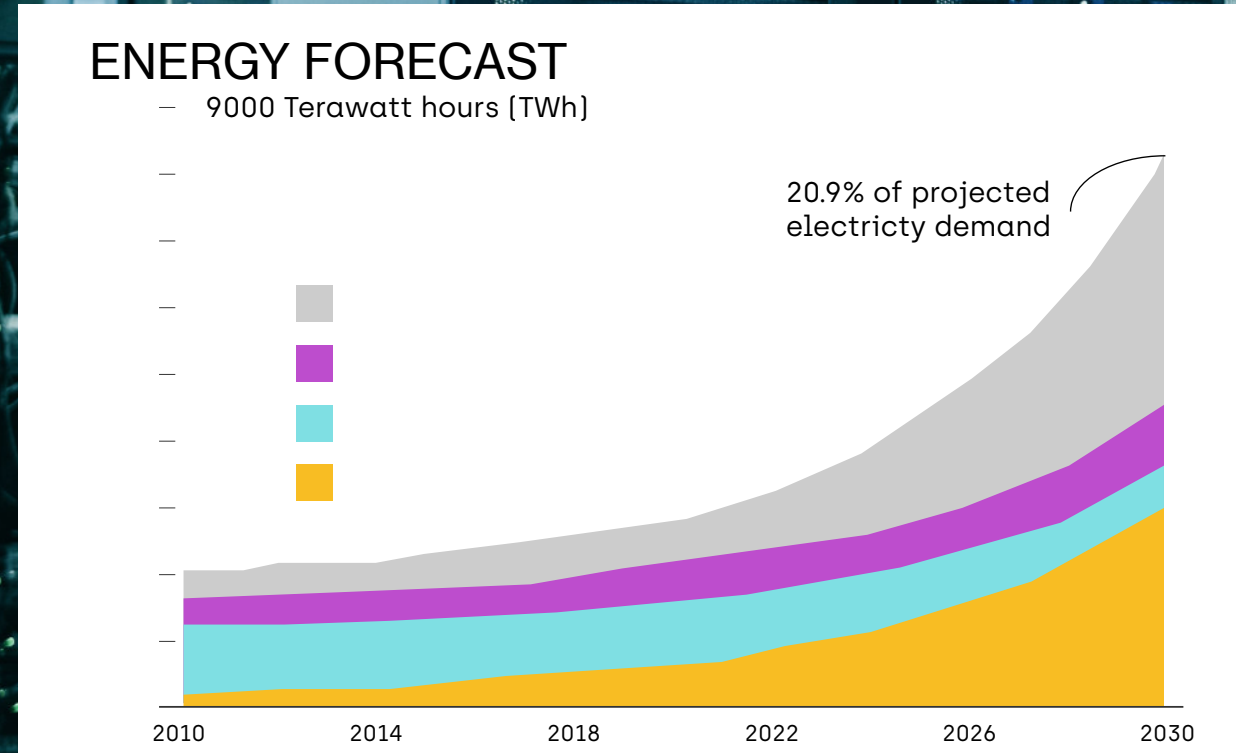
Klas Moreau
CEO
klas.moreau@zptcorp.com

The energy challenge.

Datacenters consumed 2% of the electricity produced 2021 and is expected to grow 5-fold to 2030

Smart devices, 5.3 billion subscribers globally, adds up to a significant energy footprint

ICT is the fastest growing energy consumer industry

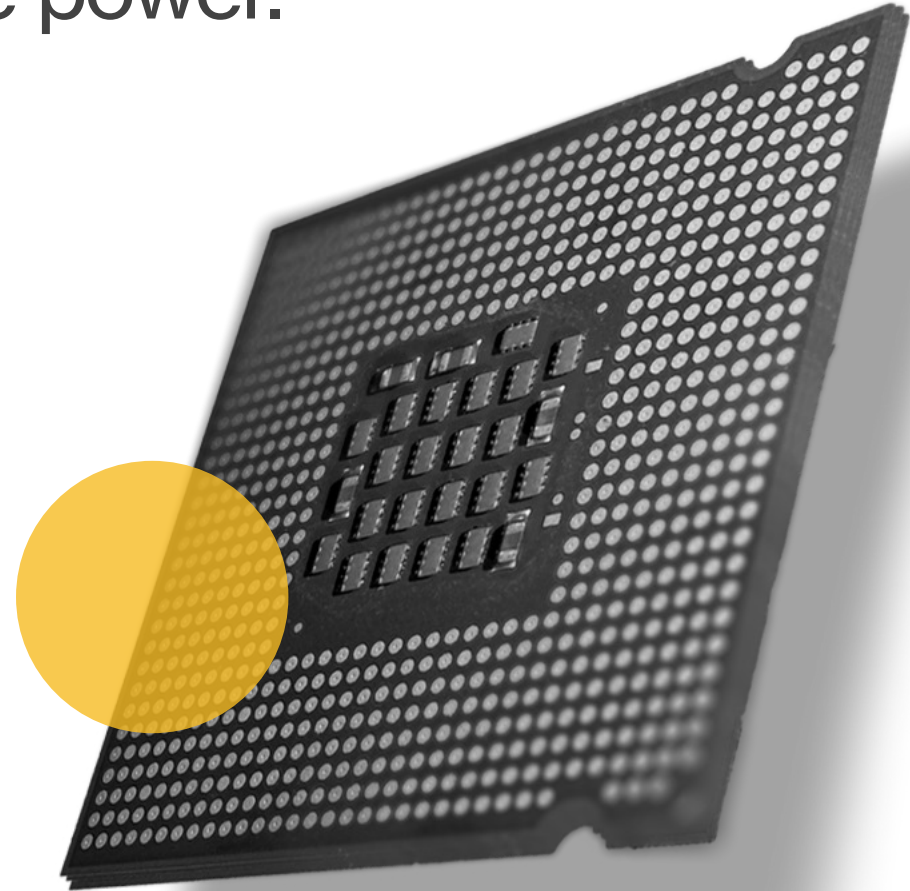


Remove the waste. Release the power.

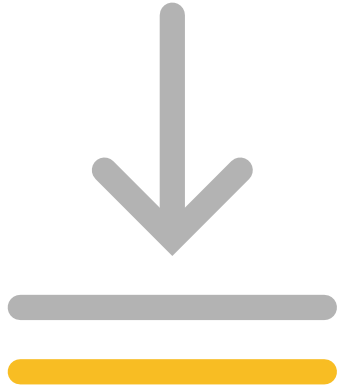
Our research shows that up to 70% of the memory of ICT equipment contain unnecessary information

ZeroPoint technology delivers up to 50% more performance per watt by removing unnecessary information

Up to **50%**
More performance
per watt



The ZeroPoint technology.



Data Compression

ZeroPoint Proprietary Algorithms

- Ultra fast, high performance and low latency
- 2-4x General purpose and Lossless compression



Data Compaction

ZeroPoint Proprietary Algorithms

- Real-time, high performance and low latency
- Cache line granularity



Memory Management

ZeroPoint Developed Driver

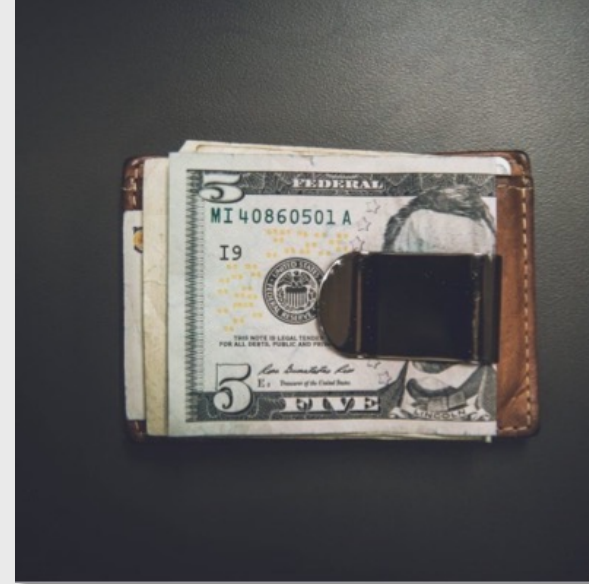
- Transparent to operating system and application
- Hardware accelerated

Environmentally friendly and financially cleaver.



Efficient use of energy

- A data center could increase the energy efficiency by 20% (OPEX)
- Meta / Facebook data center – 10 M€ saving per year



Efficient use of memory

- A data center could cut 15% of the server investment cost (CAPEX)
- Memory is 30% of server cost today, estimated to become 40% in 5 years

Market segments.



Data centers



Smart devices

System benefits. Data centers

“DRAM is super expensive!”
Server CPU customer



Up to **50%**
More performance per watt

Typical customers addressed



Revenue worldwide \$72bn (2019), DRAM share of cost
25-30% (40-50% in near future)

Performance

30-50% increased System Performance

Bandwidth

Up to 50% increased available Memory Bandwidth

Capacity

2-4x increased Memory Capacity

System benefits. Smart devices

“Your solution is the world's fastest swap at ultra low power”

Smart device SoC customer



Exceptional user experience
Extended battery time
Quicker interaction

Typical customers addressed



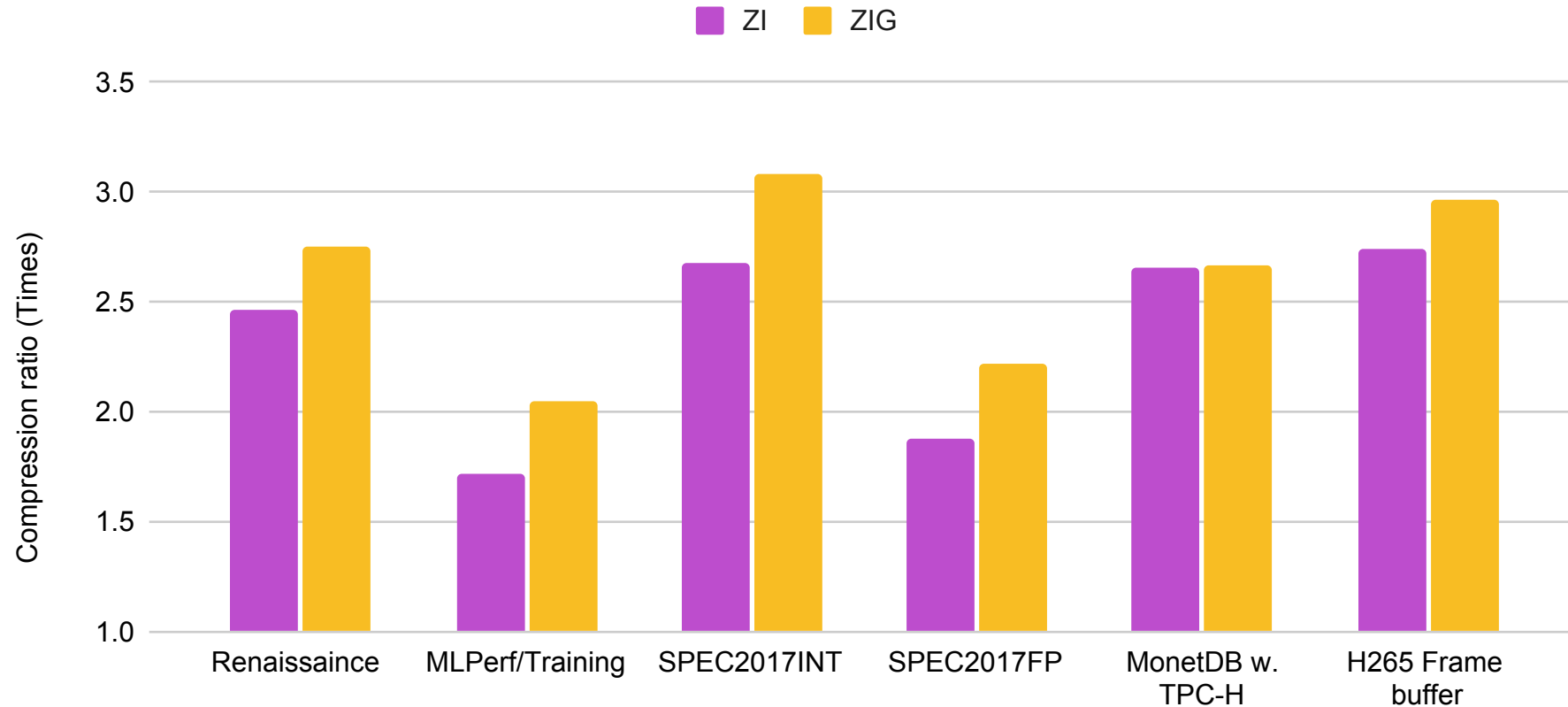
Revenue worldwide \$405bn (2019), DRAM share of cost 10-15%

Performance	10x faster virtual memory page swap
Bandwidth	50% increased available Memory Bandwidth
Capacity	2x increased Memory Capacity

A dark, futuristic server room with rows of server racks and a central aisle. The word "Performance." is overlaid in white text on the left side. The scene is dimly lit, with light reflecting off the metal surfaces of the racks and the floor. The perspective is from the end of the aisle, looking down its length. The racks on the right are filled with server components, while the racks on the left are mostly empty, showing the internal structure. The overall atmosphere is one of high-tech precision and data processing.

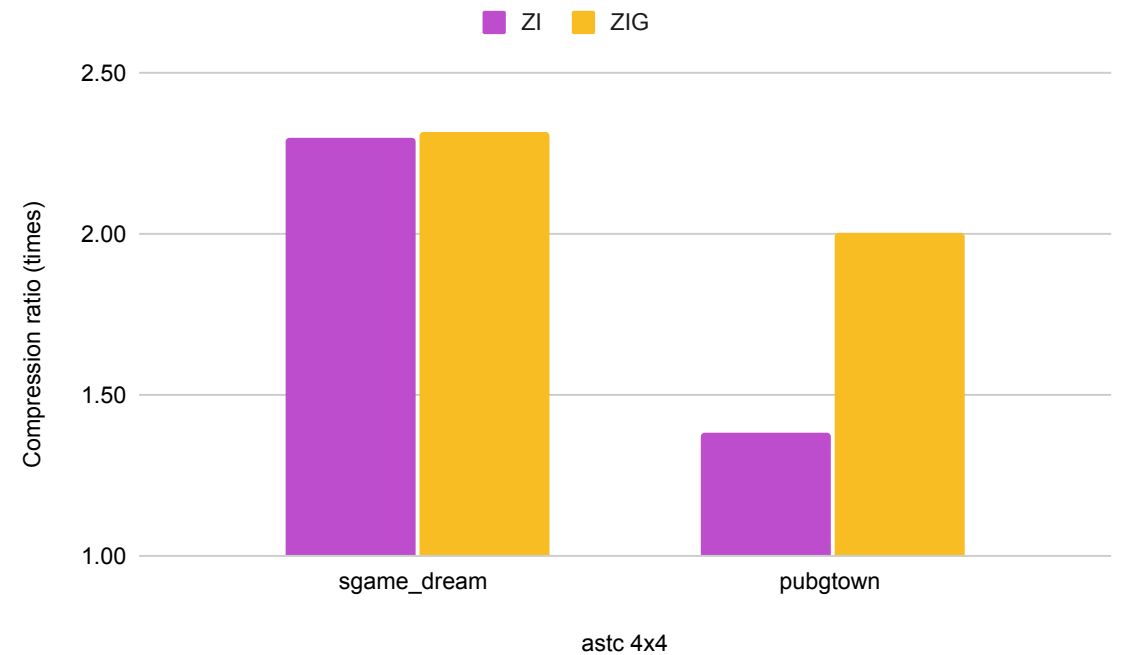
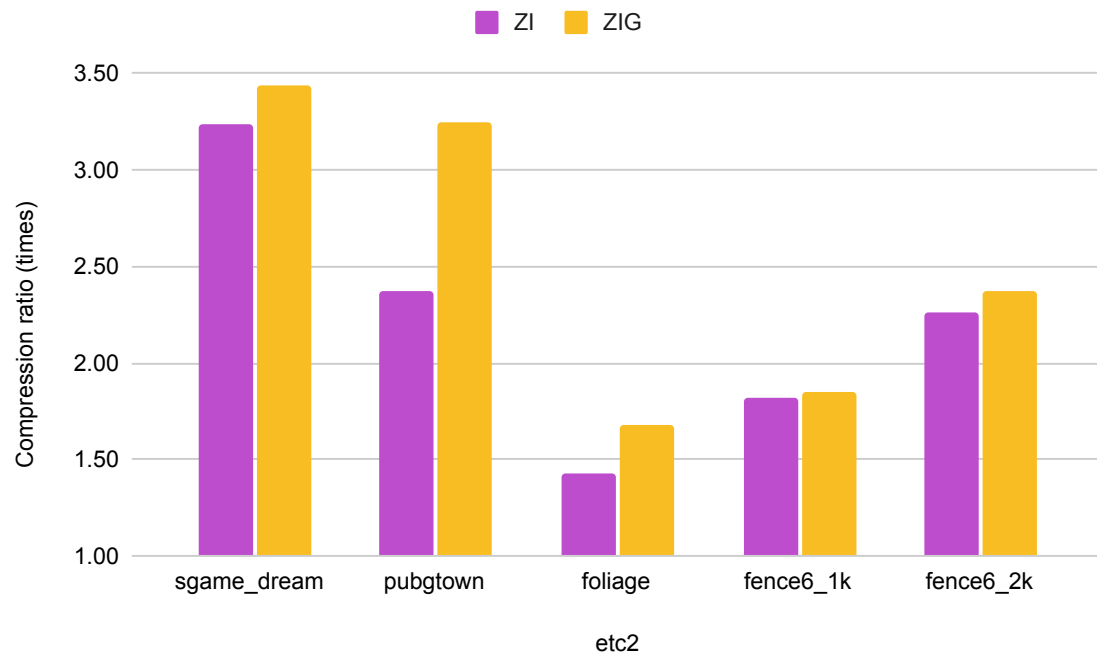
Performance.

Compression performance on various server data-sets. Higher is better



Robust compression across diverse data sets

Compression performance on smart device Frame Buffer Compressed (FBC) graphics data-sets. Higher is better

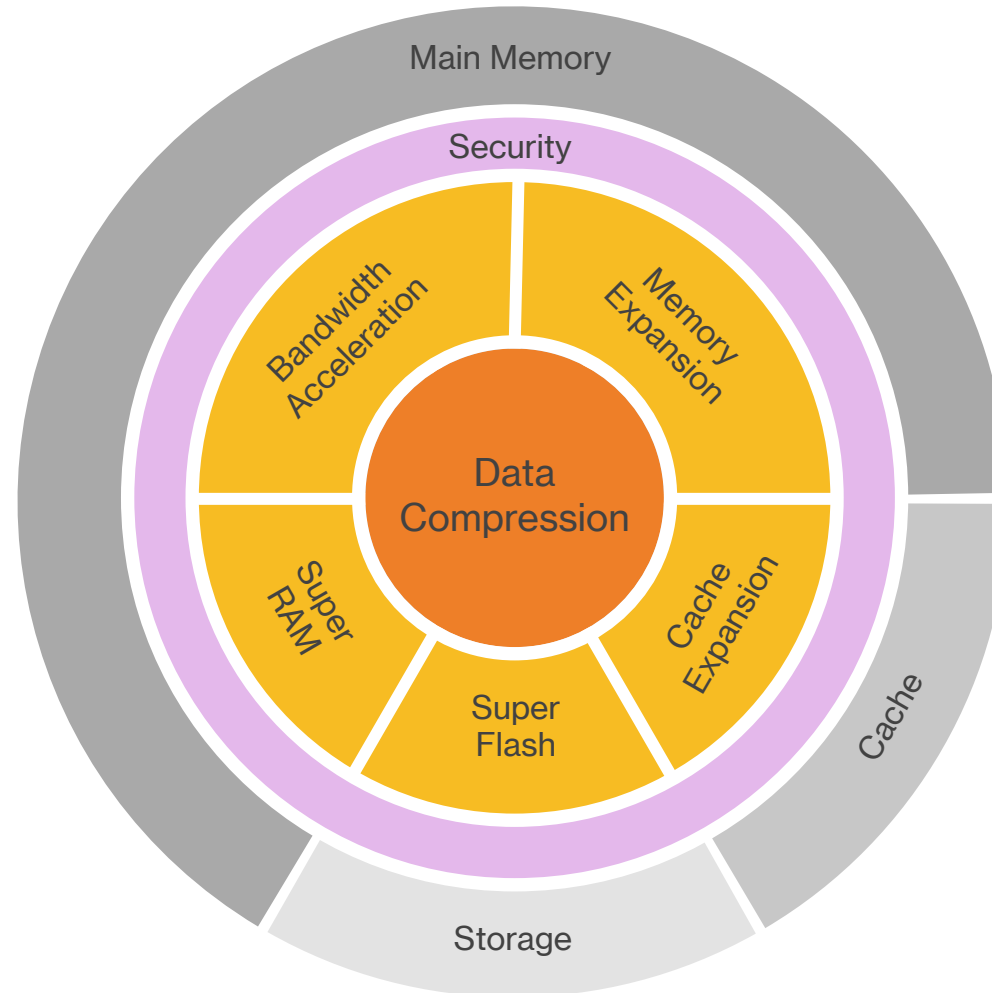


Compression on already Frame Buffer Compressed (ARM FBC) data

An aerial, top-down view of a city's urban layout. The streets and blocks are color-coded in a vibrant, multi-colored palette including shades of blue, green, yellow, orange, red, purple, and pink. The layout is highly organized and grid-like, with various block sizes and street widths. The text "Product overview." is overlaid in white on the left side of the image.

Product overview.

Product overview.

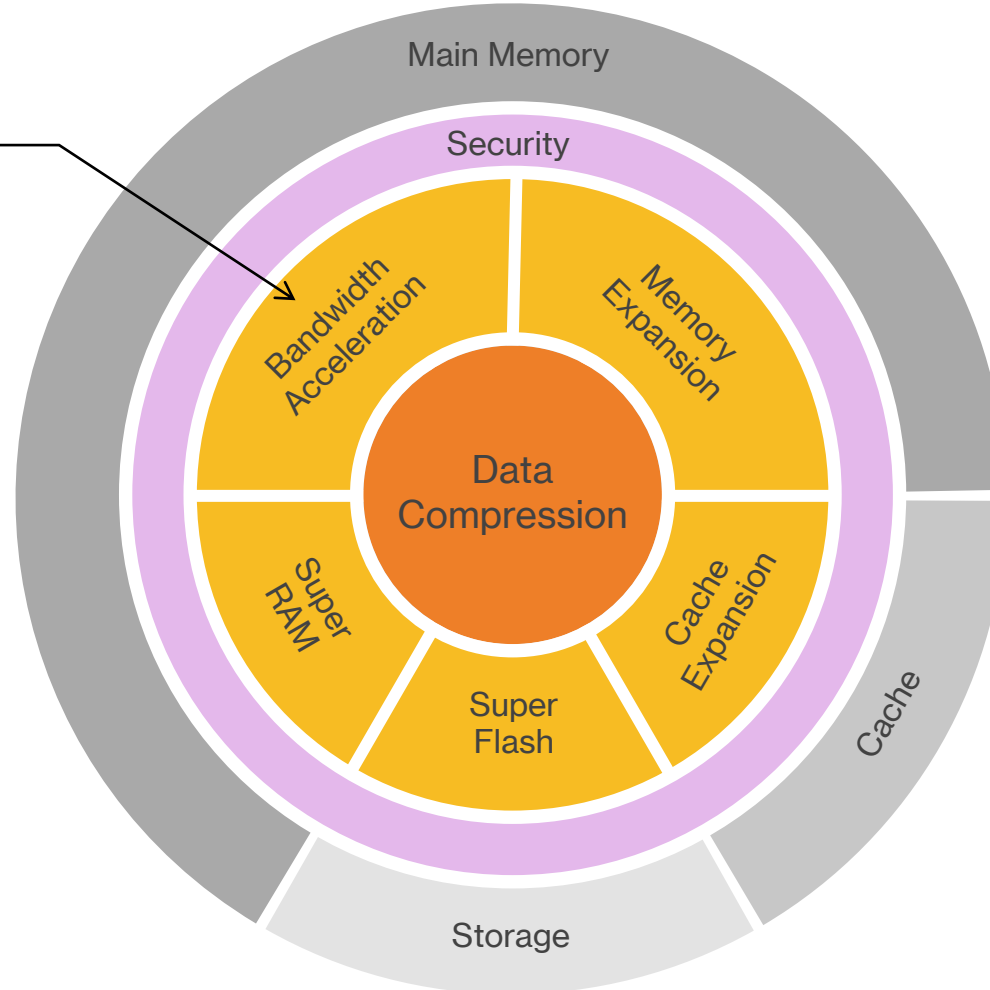
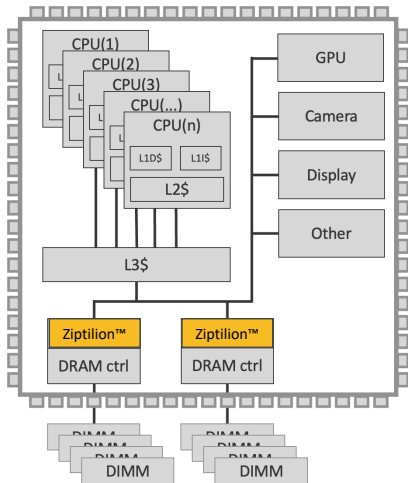


Product overview.

Ziptilion™ Bandwidth

Up to 50% main memory bandwidth acceleration

Scheduled to be released: Q4-2022

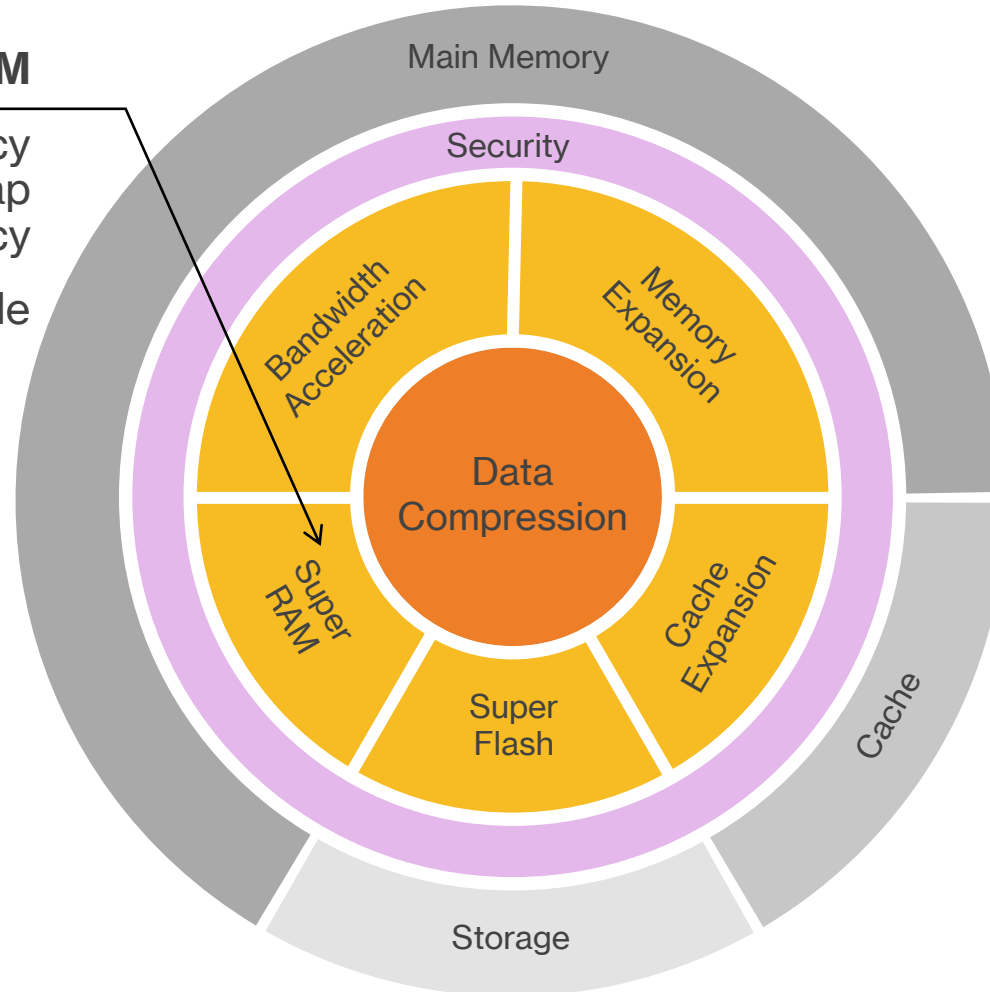
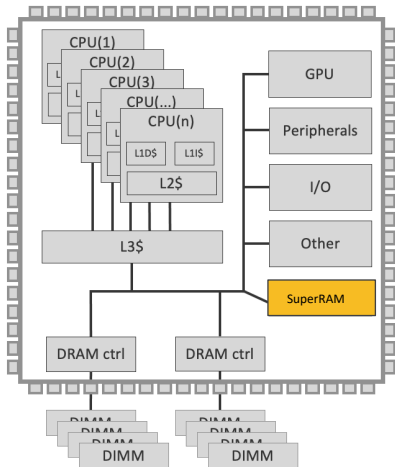


Product overview.

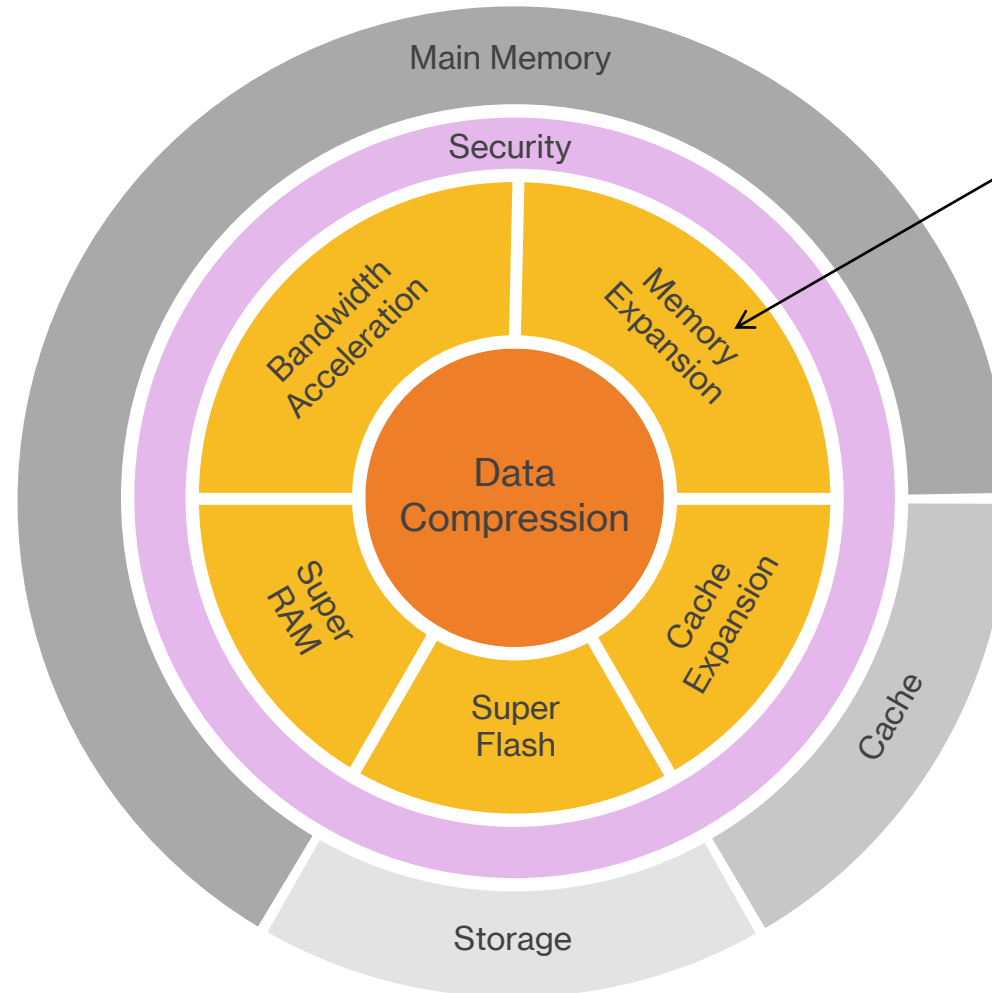
SuperRAM

High performance and low latency hardware accelerated zram/zswap at unmatched power efficiency

Released – Product available



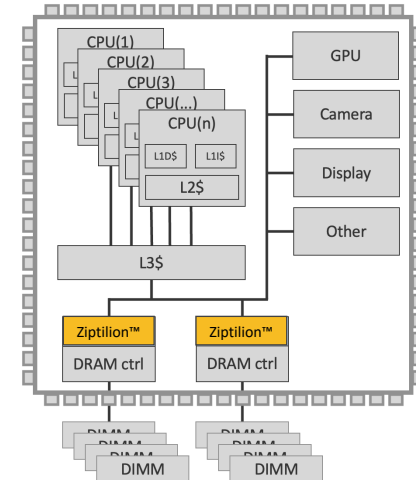
Product overview.



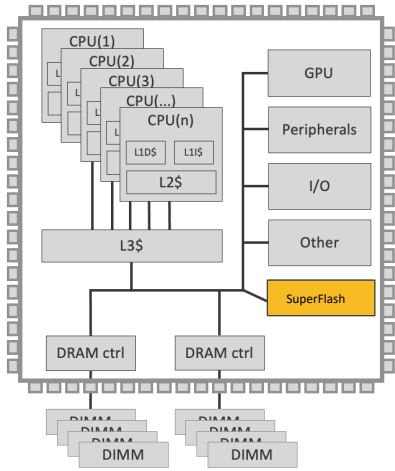
Ziptilion™ Memory Expansion

2-3x main memory expansion

Scheduled to be released:
(contact for details)



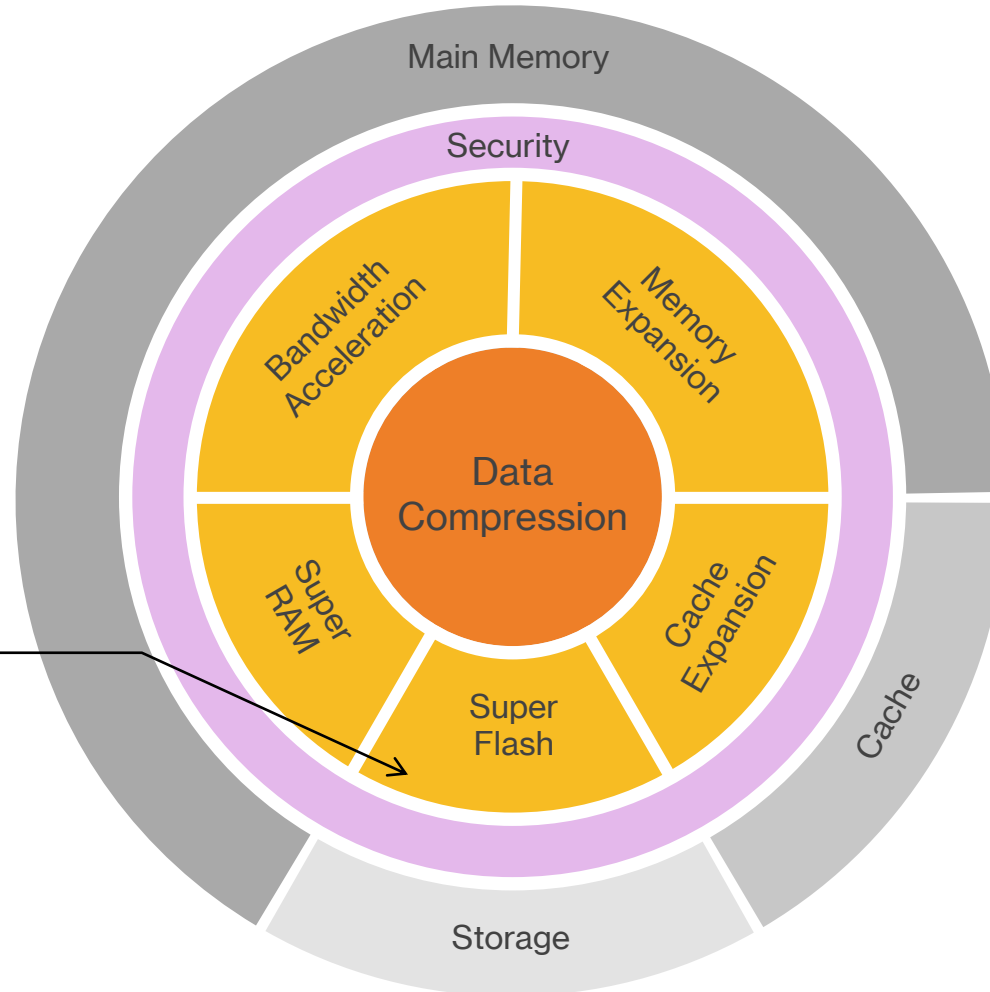
Product overview.



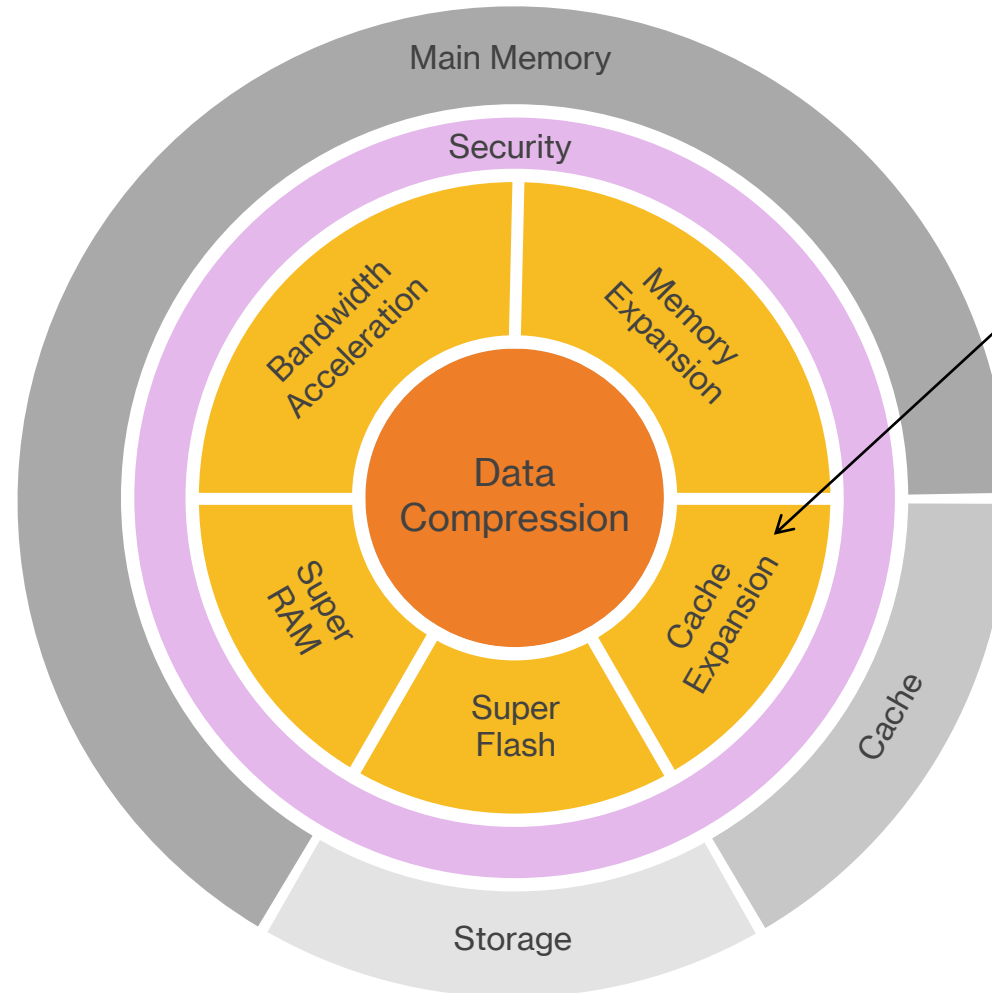
SuperFlash

High performance and low latency
2-3x hardware accelerated
flash compression at
unmatched power efficiency

Scheduled to be released:
(contact for details)



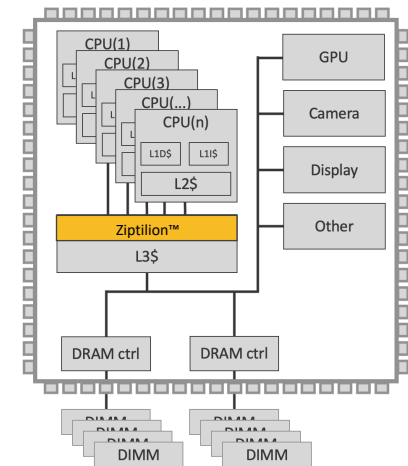
Product overview.



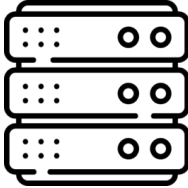
Ziptilion™ Cache Expansion

2-3x last-level cache capacity expansion

Research: (contact for details)



Customers.

Segment	1 week Assessment	3 months Evaluation	18-24 months Implementation
	Done	Done	Ongoing
	Done	Done	Planned – H1-2023
	Done	Planned – H1-2023	
	Ongoing		
	Done	Done	Product definition ongoing
	Done	Planned – H1-2023	
	Done	Done	Ongoing
	Done	Done	Planned – H1-2023
	Done	Ongoing	

ZeroPoint technology in EPI-SGA2

- EPAC 2.0 (European Processor Accelerators) contain a memory compression module developed by ZeroPoint Technologies.
- The module offers an average of 2x compression ratio which translates into significant memory bandwidth acceleration at unmatched power efficiency.
- It is built on ZeroPoint's proprietary state of the art general purpose and lossless algorithm.



About us.

Prof. Per Stenström – CSO Co-founder/inventor



- Professor at Chalmers University of Technology
- Invented main memory compression technique in 1990's
- Internationally renowned memory expert
- Senior industry experience at Sun Microsystems
- Wide industry network

Dr. Angelos Arelakis – CTO Co-founder/inventor



- Memory architecture and ultra-fast data compression expert
- Recipient of King Carl XVI Gustaf's award for science, technology and environment

Company founded 2016, over 75 man-years invested in R&D

20 people in R&D team

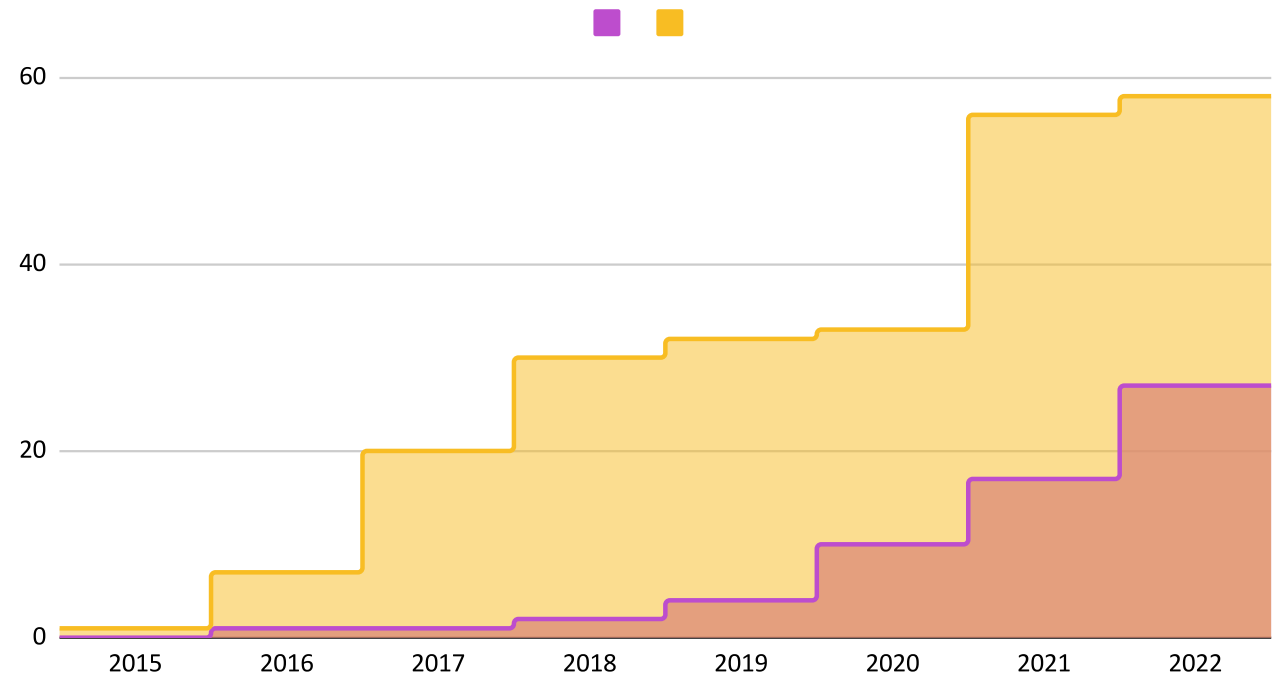
- Compression Algorithm Research & Development
- Memory Architecture
- High Volume ASIC/FPGA Development and Manufacturing

The ARM logo, consisting of the lowercase letters "arm" in a blue, sans-serif font.The ERICSSON logo, featuring three horizontal black bars above the word "ERICSSON" in a bold, black, sans-serif font.The FINGERPRINTS logo, featuring a grid of blue dots forming a square shape above the word "FINGERPRINTS" in a black, sans-serif font.The ORACLE logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font.The Sun microsystems logo, featuring a stylized blue sun icon above the word "Sun" in a blue, serif font, with "microsystems" in a smaller, black, sans-serif font below it.The intel logo, consisting of the word "intel" in a blue, lowercase, sans-serif font, enclosed within a blue circular swoosh.

Patent portfolio.



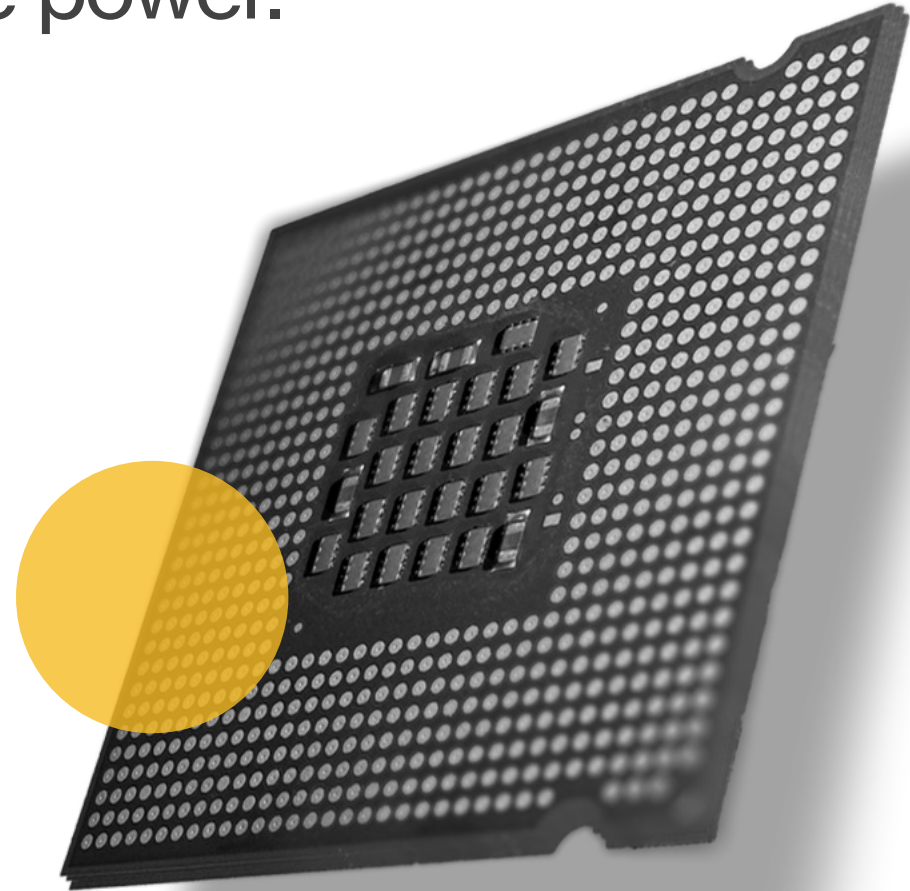
Patents Granted and Patents Filed



Remove the waste. Release the power.

ZeroPoint technology for microchips delivers up to 50% more performance per watt by removing unnecessary information

Up to **50%**
More performance
per watt



Let's talk in the Swedish pavilion.



This document is Proprietary and Confidential. No part of this document may be disclosed in any manner to a third party without the prior written consent of ZeroPoint Technologies AB.

ZeroPoint 

ZeroPoint

Remove the waste.
Release the power.

Klas Moreau
CEO
klas.moreau@zptcorp.com