InspireSemi™

Disruptive Next Generation Accelerated Computing Platform
Blistering speed, energy efficiency, versatility, and affordability for HPC, AI and graph analytics applications

Investor Overview (TSXV: INSP)
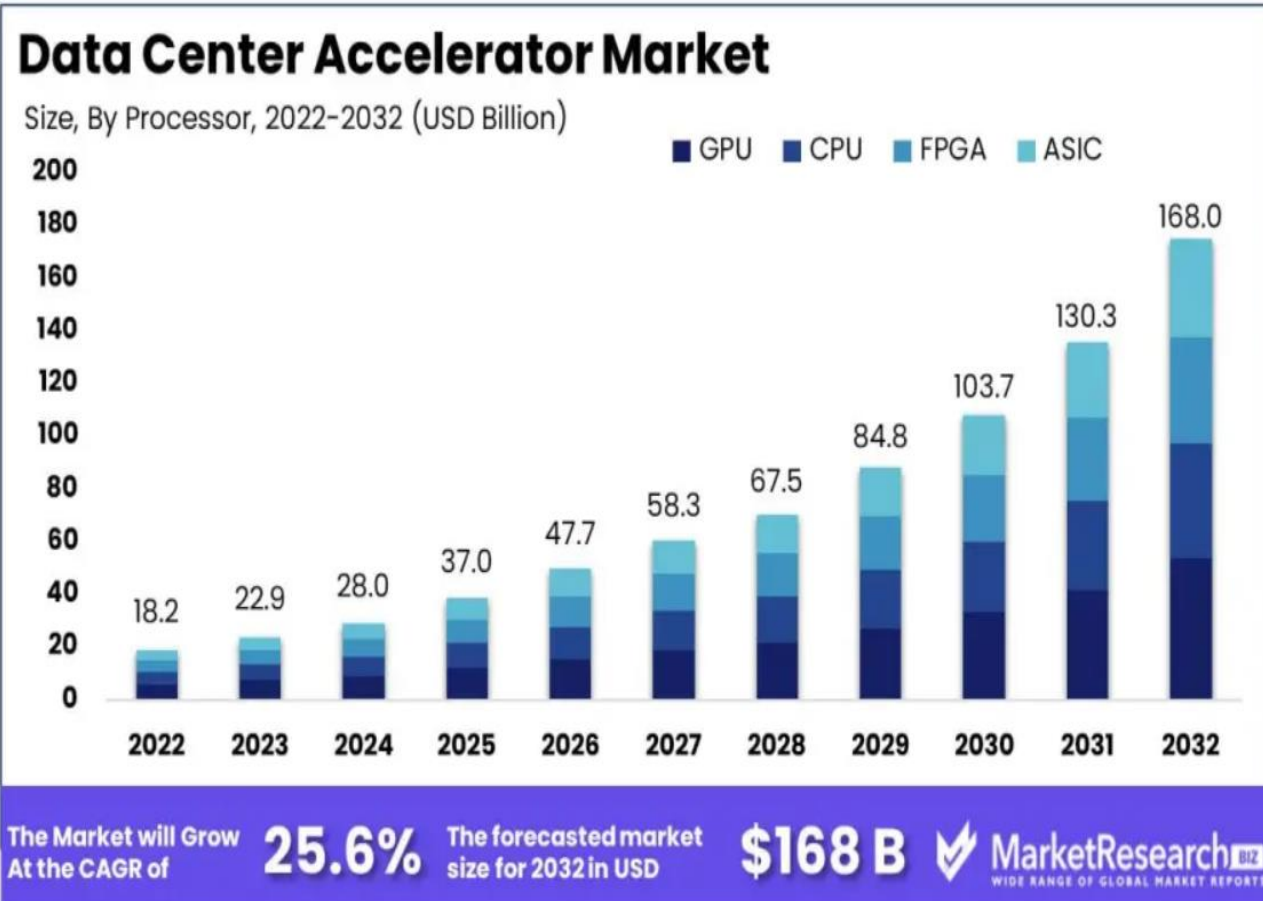Late July 2024

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InspireSemi designs highly disruptive microchips custom-tailored to meet the unique needs of the underserved $10B High Performance Computing (HPC) Data Center Accelerator Market

Data Center Accelerator Market

Size, By Processor, 2022-2032 (USD Billion)

■ GPU ■ CPU ■ FPGA ■ ASIC

Year	Value
2022	18.2
2023	22.9
2024	28.0
2025	37.0
2026	47.7
2027	58.3
2028	67.5
2029	84.8
2030	103.7
2031	130.3
2032	168.0

The Market will Grow At the CAGR of **25.6%** The forecasted market size for 2032 in USD **$168 B** ✔ MarketResearch.biz WIDE RANGE OF GLOBAL MARKET REPORTS

Source: MarketResearch.biz, June 2023

- Major hardware tech companies and emerging startups are focused solely on the $168B AI accelerator market
- Popular AI applications like ChatGPT use *very low precision* hardware
- The HPC industry (see examples next slide) has highly unique needs which require *high precision* hardware
- Consequently, the HPC industry has been neglected and forced to use sub-optimal hardware
- **InspireSemi's Thunderbird was designed specifically to meet the underserved, yet rapidly growing, HPC industry's needs**
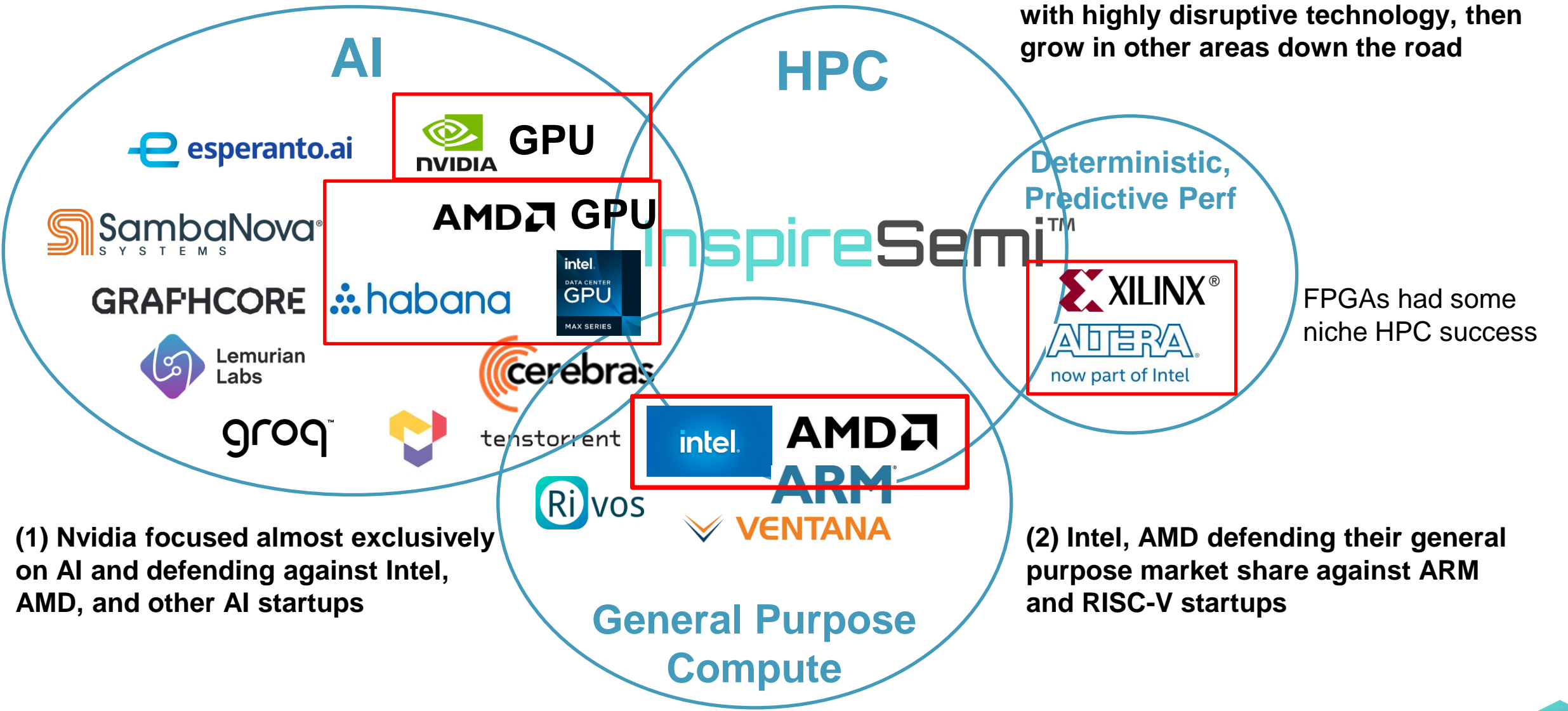
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What is HPC (High Performance Computing)?

- Large, rapidly growing market of large corporations, governments, research who need extreme computational horsepower to solve some of the world's most difficult problems
  - Genomics firms modeling hundreds billions of molecular interactions to develop new treatments
  - Banks monitoring millions of transactions in real time for fraud and money laundering
  - Intelligence agencies and cybersecurity firms tracking threats that move at the speed of light
  - Climate modeling, High Frequency Trading, Cryptography, Robotics, Smart Weapons, etc.

- HPC has different tech needs than GenAI; one key difference is "precision"
  - Low precision Pi = 3.14
  - High precision Pi = 3.14159265358979323846264338327950288419716939
  - GenAI performs low precision (4-bit) math; HPC requires very high precision (64-bit) math
  - The difference between low precision and high precision is 'an answer' (ChatGPT) vs. 'THE answer' (NASA)

- Hardware companies focused on AI continue trending to lower precision AI chips

- This trend has left the HPC market significantly underserved; many users forced to run their workloads with entire data centers full of conventional servers

- InspireSemi's **Thunderbird** can vastly reduce that data center footprint, cooling costs, and OPEX, while delivering blazing speed and performance tailored to HPC needs

Thunderbird was designed specifically to meet the needs of the underserved HPC industry

- It's **powerful**: 6,000+ CPU cores with incredible high precision performance

- It's **fast**: Proprietary 'low-latency mesh' = 5x faster core-to-core communication

- It's **green**: Best in class energy efficiency with 30% to 60% power reduction

- It's **straightforward**: PCIe card fits into any standard server

- It's **liberating**: Open-source RISC-V ecosystem doesn't force proprietary software

- It's **cost effective**: Disruptive price point AND less expensive to operate
  - yet still _very high margin_ for InspireSemi

- It's **versatile:** From double-precision math to AI to fully deterministic processing
  - Large simulations for energy, science, engineering, manufacturing, government, pharma
  - Can be used where GPUs are not capable – financial trading, cryptography, robotics, smart weapons, healthcare imaging, self-driving cars, space

- It's **easier:** Users can confidently port their existing programs to Thunderbird

- It's **scalable:** Customers with substantial needs can quickly scale up to 256 chips

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Competitive Landscape

AI

HPC

(3) Thunderbird is built to fill the HPC void with highly disruptive technology, then grow in other areas down the road

esperanto.ai

NVIDIA GPU

AMD GPU

SambaNova SYSTEMS

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Deterministic, Predictive Perf™

GRAPHCORE

habana

intel DATA CENTER GPU MAX SERIES

XILINX®

FPGAs had some niche HPC success

Lemurian Labs

cerebras

ALTERA® now part of Intel

groq™

tenstorrent

intel. AMD ARM®

Rivos

VENTANA

(1) Nvidia focused almost exclusively on AI and defending against Intel, AMD, and other AI startups

(2) Intel, AMD defending their general purpose market share against ARM and RISC-V startups

General Purpose Compute

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InspireSemi's Thunderbird Customers

- Three major categories of customers
  - Laboratories, including government, pharmaceutical, automotive, supercomputer, aerospace, etc. The US government national labs tend to set the precedent and set standards for the rest of the industry. Orders can run 6-8 figures
  - Enterprise-level Original Equipment Manufacturers (OEM) like Lenovo, Dell, 2CRSi, Penguin Computing, Worldwide Technologies. Order can run 8-9 figures
  - Bids into large projects, including government or joint international projects, where deal sizes can range from 9 figures to beyond $1+ billion
- InspireSemi has already closed "Early Access" customers in all three categories
  - Cybersecurity firm won a major project from US Space Force, currently bidding on another with US Cyber Command
  - Multiple US Department of Energy national labs, including Sandia and Oak Ridge
  - Enterprise OEM firm Penguin Computing, with 9-figures in annual sales to HPC users
  - Several others
- Thunderbird's end users are not concentrated in a single industry; they span a diverse multitude of industries from space exploration to automotive to finance

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What the market and HPC industry is saying about us:

"The pursuit of AI has been a tremendous boon for high-performance architectures across the board. For pure AI investments, most of the attention is on GPUs, but many organizations are seeking a more versatile solution, built on processing elements that are suited to a variety of HPC, AI, and analytics workloads. **This is where we see a market opportunity for companies like InspireSemi with its Thunderbird platform.**"
- Adison Snell, CEO

"**Sandia is pleased to have joined InspireSemi's early access program** for their upcoming Thunderbird processor. This is enabling us to engage early by evaluating our challenging application workloads on Thunderbird's massively parallel interconnected CPU architecture, helping to mature the overall RISC-V HPC software stack, and providing our input for future versions of Thunderbird."
- Kevin Pedretti, Principal Member of Technical Staff, Scalable System Software

"With the momentum of AI and the convergence of AI and HPC, it is time to look outside the status quo and leverage a new technology base, like InspireSemi's Thunderbird product line. **Thunderbird is ideal for workflows that require the highest performance and lowest power**. It is easy to integrate, making it a valuable addition to the HPC and AI industry."
- Earl J. Dodd, Global HPC Business Practice Leader

"The combination of your custom designed RISC-V 'sea of cores' plus high-speed interconnect fabric is very smart, and **your decision to focus on HPC (and blockchain opportunistically) rather than AI/ML was likewise very smart**."
- Amit Nanda, Advanced Tech Sourcing

"This will let us run large memory simulations with AI workflows. **We will take anything you can give sooner.**"
- Rajeev Thakur, Deputy Director, Data Science and Learning Division

InspireSemi Thunderbird in the News

Supercomputer-on-a-chip goes live: single PCIe card packs more than 6,000 RISC-V cores, with the ability to scale to more than 360,000 cores

- InspireSemi has announced the successful tapeout of the Thunderbird I Accelerated Computing chip for fabrication at TSMC

Thunderbird packs up to 6,144 CPU cores into a single AI accelerator and scales up to 360,000 cores — InspireSemi's RISC-V 'supercomputer-cluster-on-a-chip' touts higher performance than Nvidia GPUs

- The Holy Grail of supercomputing chip design is an architecture that combines the versatility and programmability of CPUs with the explicit parallelism of GPUs, and InspireSemi strives to achieve just that

Move over GPUs, with 1,536 cores the Thunderbird RISC-V CPU is ready to eat your lunch

- Open source enables small industries to participate in the accelerator boom

InspireSemi Announces Tapeout of Thunderbird Accelerated Computing Chip

- InspireSemi's new compute chip couples the parallel processing of GPUs with the versatility of CPUs

InspireSemi announces tape-out of RISC-V HPC chip

- InspireSemi's Thunderbird I RISC-V chip offers high-performance computing for underserved applications, with an emphasis on energy efficiency and competitive pricing

InspireSemi's High Margin Business Model

- InspireSemi has a simple, low-CAPEX business model
- Our small team (~20 FTE) designs chips, which are then manufactured by world-class partners like TSMC (Taiwan Semiconductor Manufacturing Company)
  - It's a major win that a group as prominent as TSMC is not only working with InspireSemi, but has granted our company access to some of its most advanced manufacturing capabilities
- InspireSemi operates with modest overhead (currently ~$6MM/year), though this will grow alongside revenue
- Even a very small share of the HPC industry translates into substantial sales
- Because Thunderbird is such a high margin product, the company anticipates net margins will remain high even as the business scales
- The company has already begun to design follow-on products beyond the first Thunderbird which can address other markets including AI and crypto

Accomplished Leadership Team

Alexander Gray, Founder, President & CTO
- 15 years experience in tech startups, entrepreneurship
- CryptoCore, SolarBridge, SunPower
- Holds 9 patents
- BSEE, University of Illinois at Urbana-Champaign (age 20)

Ron Van Dell, CEO
- 40 years experience and an exceptional track record of success and proven leadership skills in early-stage, turn-around and established businesses
- Former CEO of Primarion (Infineon), SolarBridge, and several other semiconductor and hardware startups
- GM Dell, VP-GM of Communication Products at Harris Semi (Intersil/Renesas)
- BSEE Michigan Technological University

John B. Kennedy, CFO
- 30+ years experience in tech startups and public companies
- Trilumina, SolarBridge, Primarion, KPMG
- BS Accounting & Finance, Elmira College, NY

Thomas Fedorko, COO
- 35+ years hands-on technical and business leadership in semiconductor operations in both large IDM and startups
- Eta Compute, Uhnder, Bluetechnix, Black Sand (Qualcomm), Luminary Micro (TI), Oak Technology, Motorola SPS
- Technical degree from DeVry University and graduate of the Motorola Management Institute

Doug Norton, CMO
- 35+ years experience; enterprise, startups, Federal
- Nimbix, Newisys (Sanmina), CoWare, Cadence, IBM
- President of Society of HPC Professionals, Technology Advisors Group Austin, TEXGHS Innovation Consortium
- RISC-V International: member SIG-HPC & Marketing team
- BSEE, Missouri University of Science and Technology

Current Status and Next Steps

- InspireSemi's **pre-revenue R&D startup phase is over**

- Last year's fully produced 'test chip' worked the first time and met power and performance targets; **proved Thunderbird's fundamental capabilities**

- Final Thunderbird chip design was delivered to TSMC in mid-June and is presently in the manufacturing process

- Based on TSMC's 90-day manufacturing process, plus time required to assemble the final boards, initial customer samples delivered in Q4

- "Early Access" customers will receive the first Thunderbird cards, which they will then use to optimize their software to fully utilize 6,000+ cores

- It's important to note that much of this Thunderbird-optimized software will be "open source" and hence be usable by future customers

- We anticipate follow-on orders and scaling to more customers in Q1-Q2

- Growth may be throttled by the company's capital position

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Private Placement and Funding Needs

- InspireSemi presently trades on the TSXV stock exchange (INSP)

- Listing process started in early 2021, though did not close until late 2022

- Approximately 350MM shares fully diluted including convertible debt

- Shares are thinly traded as all funding thus far has been invested in design and not stock promotion

- Company has received a non-binding LOI from a prominent US investment firm that has offered a USD $100MM equity facility to InspireSemi

- One key requirement of the facility is an uplist to a US exchange (NASDAQ), and management has already started work on that process

- InspireSemi has launched a **private placement up to CAD $7MM**; while only a portion would be sufficient to bridge the company to a successful uplist, the full amount would provide meaningful working capital to execute the growth plan

Summary: We Are N<u>ot</u> Thinking Small

- **Huge potential markets** starting with high-growth HPC— an **underserved multibillion dollar industry** ripe for our purpose-built solution that addresses its most important needs

- Even a modest market share translates into **substantial, high margin revenue.** And once sales ramp is underway, we anticipate a **short pathway to reach profitability**

- Our **test chip has already proven** Thunderbird's capabilities, and **growing customer traction** continues to demonstrate strong demand for our solution

- We have a **long-term vision** and already have follow-on products in the works that will seek to leapfrog the technological achievements of Thunderbird

- Our **highly experienced team** has scaled product and revenue several times in the past

- InspireSemi's R&D startup phase is over, and the company is moving into its growth phase; we only require a modest investment to execute