

# Accelerating The Creation of Semiconductors

## Corporate Overview

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**ARTERIS** 

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# Macro Factors Driving Arteris Growth

ARTERIS **IP** Growth Opportunities

## MACRO Trends

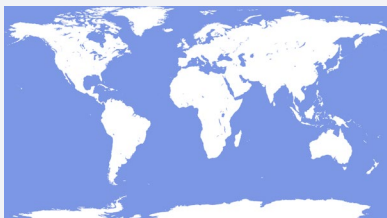
Artificial Intelligence. Machine Learning. Gen AI. LLMs.



Electrification. Energy Efficiency. Green Tech. Sustainability.

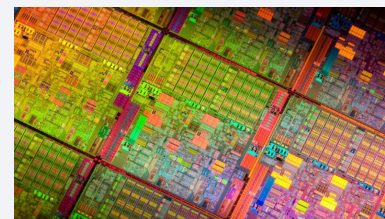


Regionalized & Government Investments.

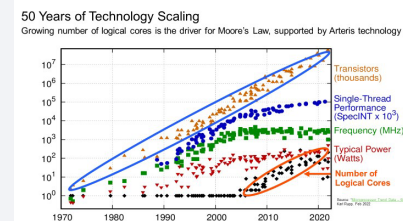


## INDUSTRY Trends

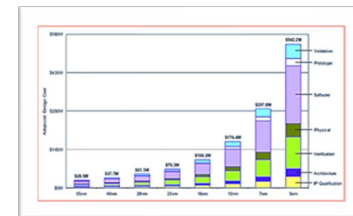
Advanced Nodes, \$1T Semi by 2030



Growing Chip Size/Complexity. Growing IP & NoC Content.

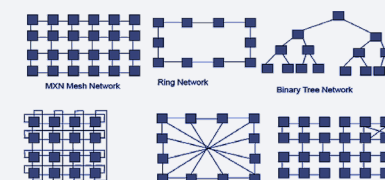


SoC Development Costs. Talent Scarcity

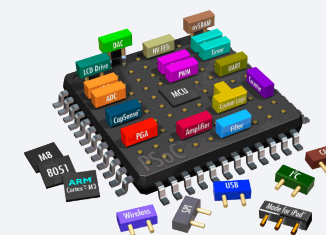


## DESIGN Trends

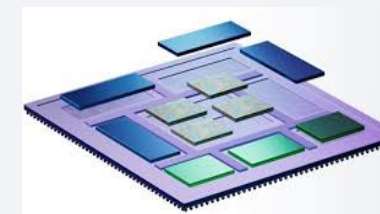
NoC Complexity.



SoC Connectivity.



Multi-Die. Chiplets.



# SoCs are made from IP Blocks → With Increasing Complexity

Printed circuit boards became chips, chips become chiplets → SoC/SIPs become electronic systems

Arteris Network-on-Chip IP connecting:

- Non-Coherent NoC → FlexNoC/FlexWay
- Cache Coherent NoC → Ncore
- Last-Level Cache → CodaCache

Subsystem NoCs

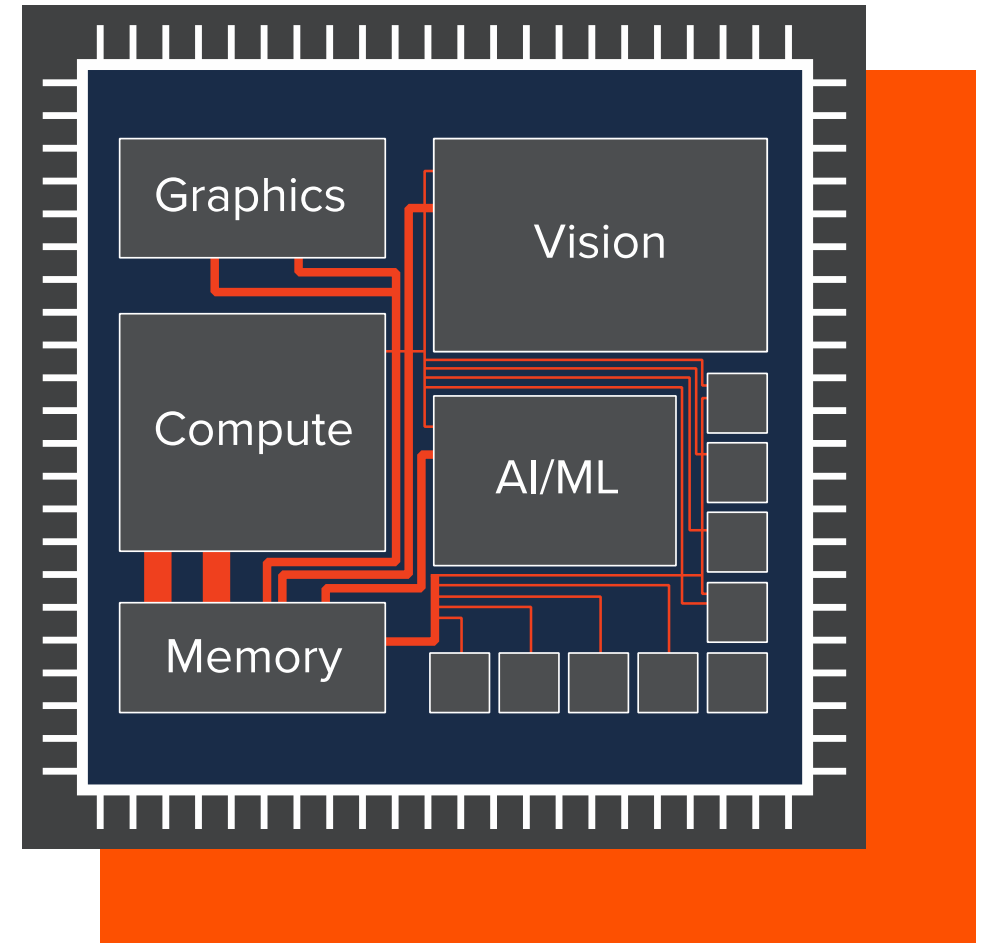
- Memory Subsystem
- NPU Subsystem
- Video Subsystem
- PCIe Subsystem
- Safety Island Subsystem

Magillem

- Establishing high-level connectivity between client IP blocks

CSR-Compiler (ex Semifore)

- Configuring IP port register RTL for efficient Hardware Software Int.

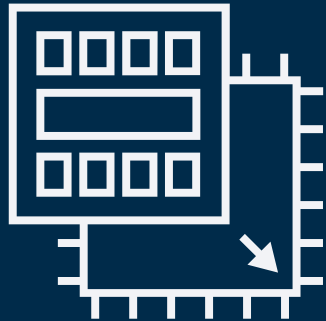


# Arteris' Market Definition

## Developing the System IP Market

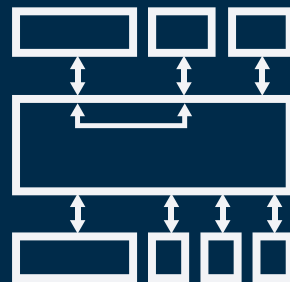
### NoC Interconnect IP

Protocol converters,  
switches, rate adaptors, etc.



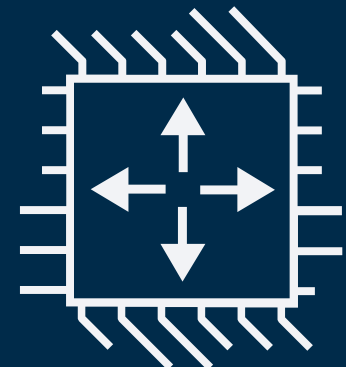
### NoC Interface IP

Additional interconnects &  
IP blocks connected to NoC  
IPs



### SoC Integration Automation

SoC IP blocks connected &  
configured with Arteris  
software



# Arteris – A Leading SoC System IP Company

Global customer base deploying Arteris interconnect IP and SoC Integration Software

- Silicon-proven IP used in ~3.5 billion+ SoCs shipped to date
- 200+ customers and 750+ SoC design starts to date
- 70-80% market share of automotive ADAS SoC market<sup>1</sup>
- Strong market presence and product offering in Artificial Intelligence/Machine Learning (AI/ML) system IP
- Broad interoperability - any processor, any IP, any EDA, any foundry
- Innovative technology coupled with expert support results in a 90+% customer retention rate
- 73 patents and 81 patent applications
- ISO 9001:2015 Quality Management System (QMS) Certified

<sup>1</sup> Management estimates

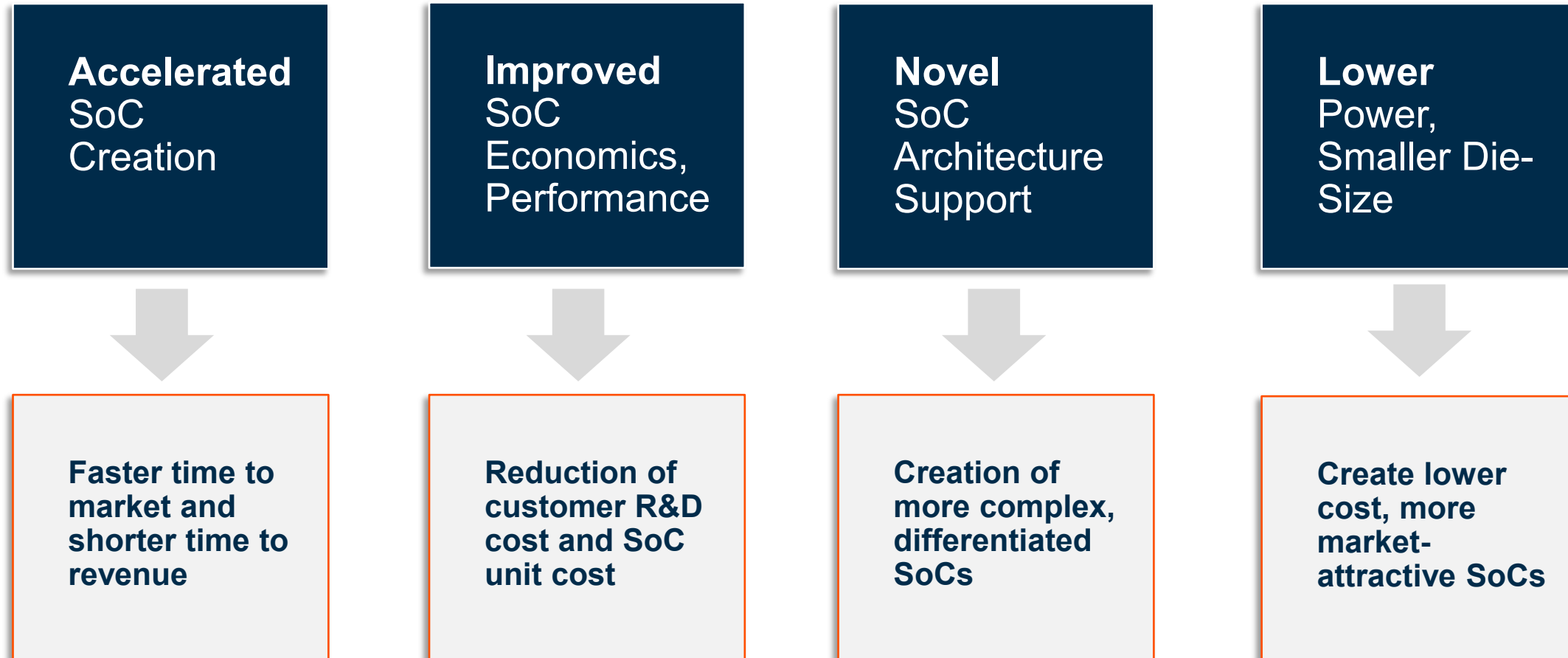
## Diversified Customer Base

*Subset of Publicly Disclosed Customers*



# Technology & Economic Factors Driving Arteris' Customer Adoption

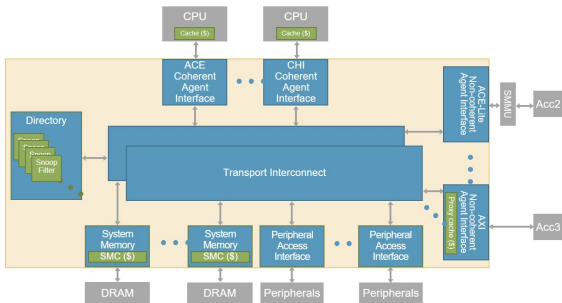
Enabling customers to create complex SoCs efficiently and reliably



# 2023 Technology Achievements



**FlexNoC 5.0**  
Physically Aware NoC IP  
(June)



**Ncore 3.6**  
ARMv9 Support  
(December)



**Arteris  
Certification**  
(November)

**ISO 9001**



**ISO 26262**

**Ncore 3.4 Certification**  
(October)

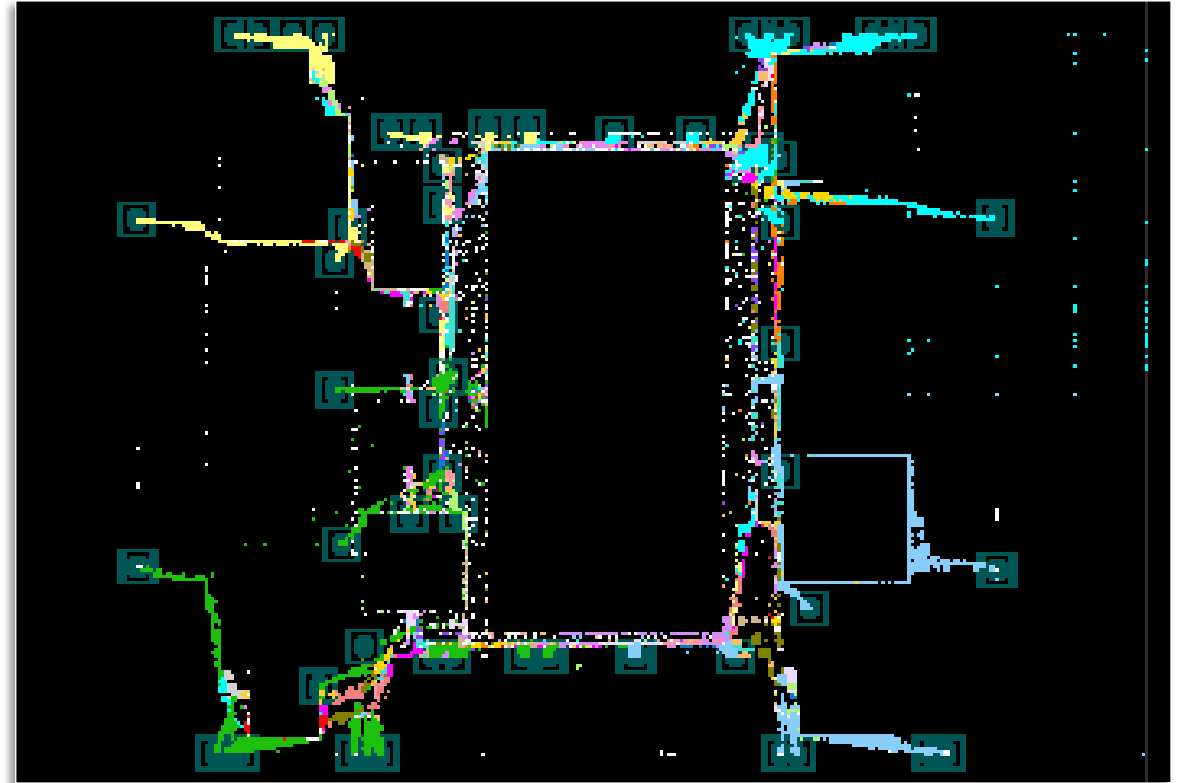
**Magillem TCL1  
Re-Certification**  
(November)



# Arteris Product Innovation: FlexNoC 5 Network-on-Chip IP

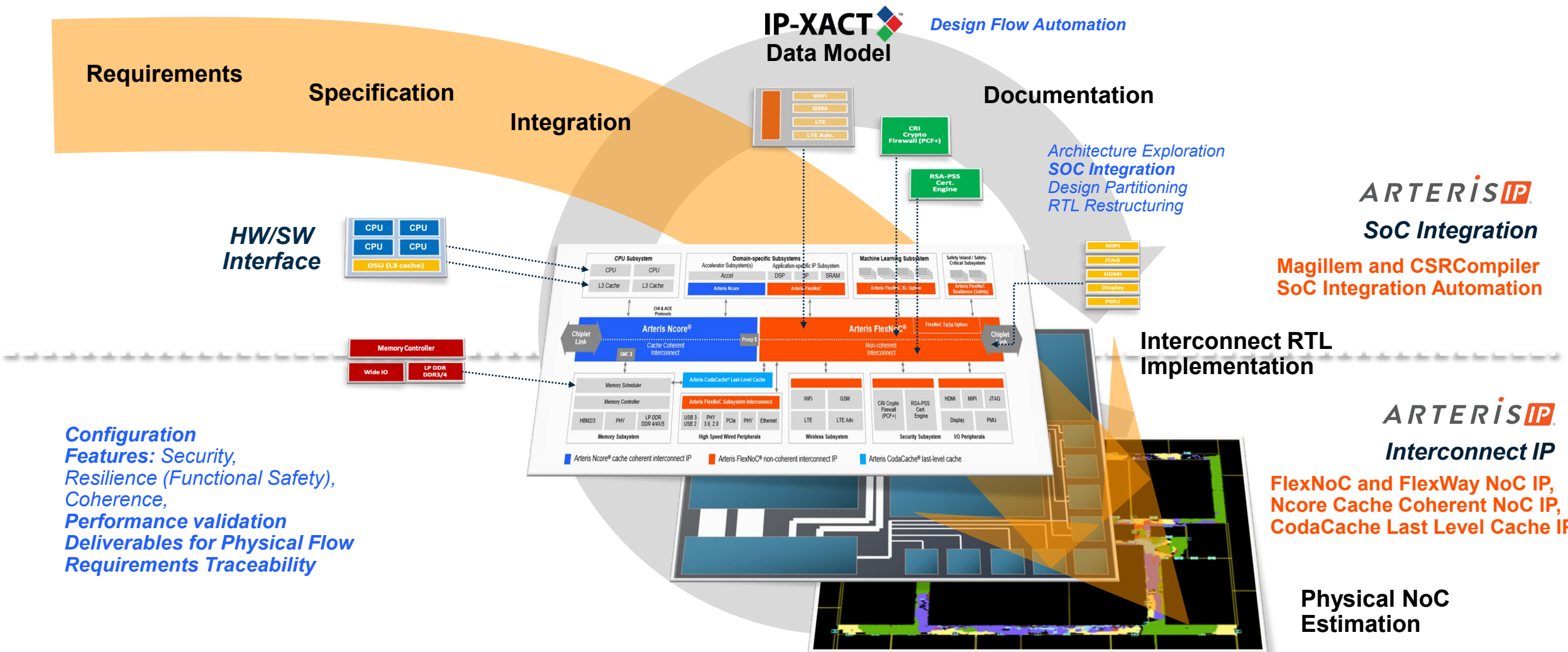
One of the Industry's First ***Physically Aware*** NoC IP Designed To Reduce Complexity + Optimize Design

1. Customers get to **physical convergence** up to **5X faster**.
2. Engineering resources are optimized, **reducing manual iterations**, cutting months to days.
3. Power, performance, and area (PPA) goals are achieved **within schedule and budget constraints**.
4. Solid customer adoption YTD
  - 21 FN5 customers through 4Q23
  - Numerous FN5 evaluations



# Accelerating SoC Delivery Capacity via Advanced System IP

Arteris NoC interconnect IP and SoC Integration Automation for SoC Project Success



# Arteris Has Deep Moats

## Marketable Product

- Annual product releases + new product innovation

Competition: 2 to 5 years to develop & mature

## Product Design In

- Customer SoC design win into electronic systems

Competition: 3 to 6 years to deploy

## Royalty Engine

- Generating royalties over a decade

Competition: 5 to 8 years to develop & mature

## Investment

- Established products supported by market leading expertise

Competition: \$100M+ dollars for full product line

## Ecosystem

- Foundry, IP & EDA ecosystem established

Competition: Lengthy development

## Engineering Resources

- Global team

Competition: Deep expertise, difficult to find

## Intellectual Property

- 73 patents issued, 81 pending

Competition: Patent infringement risk

Total time to a solid market position:  
**10 to 20 years**

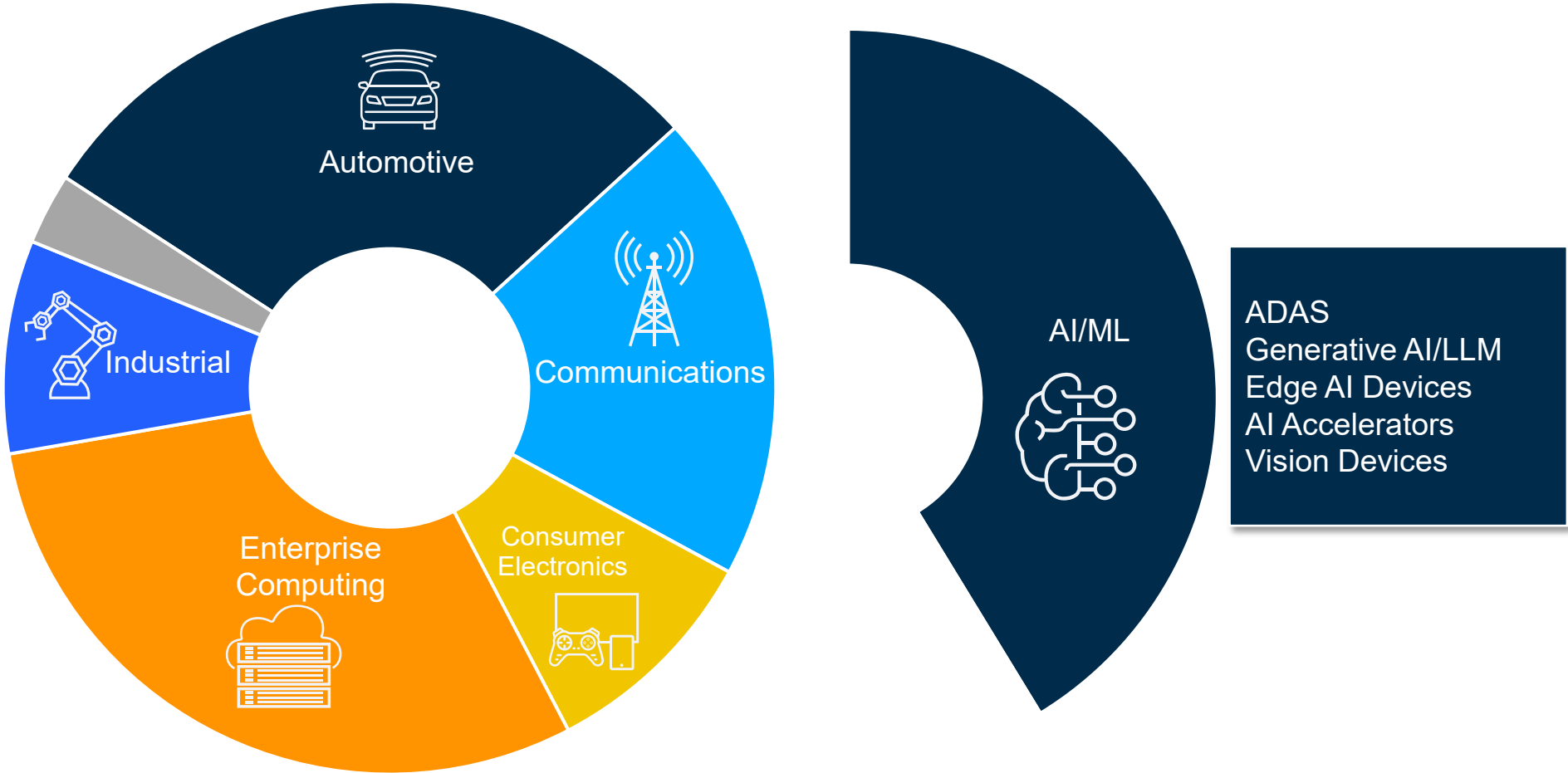


# Market Segments

Addressing the most attractive segments

# Accelerating Innovation in Key Verticals

## 2023 Revenue Vertical Breakdown



# Artificial Intelligence/Machine Learning (AI/ML) Horizontal

## AI Semiconductor Market: ~7x Increase from 2023 to 2030<sup>1</sup>



2023 AI-  
Semiconductors:  
\$105B<sup>1</sup>

2030 AI-  
Semiconductors:  
\$780B<sup>1</sup>

Generative AI  
56% CAGR<sup>2</sup>

- Generative AI is a revolution in man/machine interface technology → productivity revolution
- Generative AI ASICs & accelerators require high data bandwidth & unique features
- Moving data through system IP a key competency
- Many Generative AI ASICs using Arteris system IP

### Arteris Customers Include

Data Center  
**Hyperscalers**  
(subject to NDAs)  
**Bitmain**  
**Neureality**  
**Rain AI**

Edge  
**Renesas**  
**NXP**  
**Sima.ai**  
**Axelera**

Endpoint  
**Mobileye**  
**Socionext**  
**Hailo**

1. Source: IBS  
2. CAGR 2023 – 2028; Source: Omdia Informa

# Arteris and Rain AI

## Generative AI and Edge AI

### Driver (Market Need)

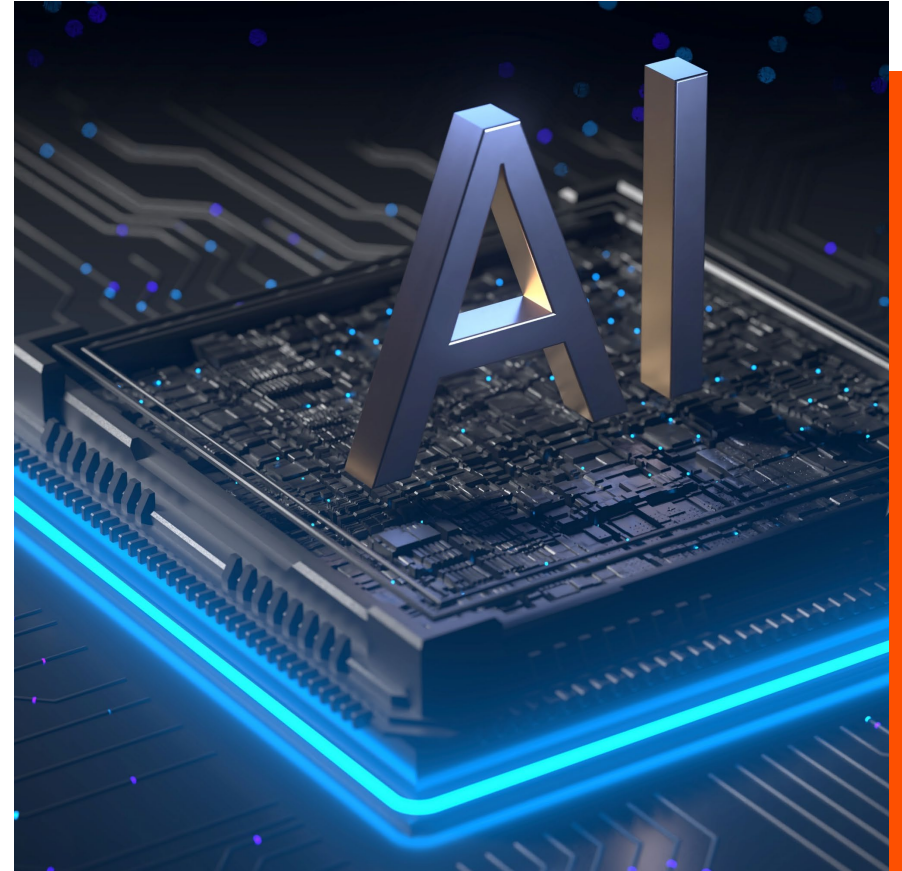
- Delivering Generative AI and Edge AI computing at scale requires faster data transfer with ultra-lower power.

### AI/ML Use Case (or AI/ML Application)

- Arteris FlexNoC 5 will provide on-chip connectivity, supporting the design of an advanced mesh network topology for superior performance for Rain AI's digital in-memory compute for AI workloads

*"The AI problem is an energy problem. Creating a future with abundant and scalable artificial intelligence is critical for the AI revolution. the right NoC is critical for AI computing and Arteris FlexNoC 5 was an easy choice given its unmatched product performance including ultra-low power, lowest latency, and highest bandwidth, along with deep expert support and proven track record in reducing time to market."*

**William Passo, CEO of Rain AI**



# Automotive Vertical

## AUTOMOTIVE SoC 19% CAGR<sup>1</sup>



ADAS  
31% CAGR<sup>1</sup>

Auto HPC  
(High Performance  
Compute)  
99% CAGR<sup>1</sup>

Automotive SoC  
17% CAGR<sup>2</sup>

Infotainment / Telematics  
SoC  
15% CAGR<sup>2</sup>

1. CAGR 2022 – 2030; Source: Gartner  
2. CAGR 2023 – 2027; Source: Omdia Informa

- 130+ SoC design wins across both EV and ICE; OEMs take on silicon
- ~\$13 billion automotive SoC market by 2027<sup>2</sup>
- Partnered with **Arm** in Automotive
- Selected by 5 major **Auto OEMs** in 2023
- Unique **Safety** capabilities

### Arteris Customers Include:

BMW  
NXP  
Mobileye  
Dreamchip  
Many others subject to NDA



# Arteris' System IP Position in Automotive Transformation

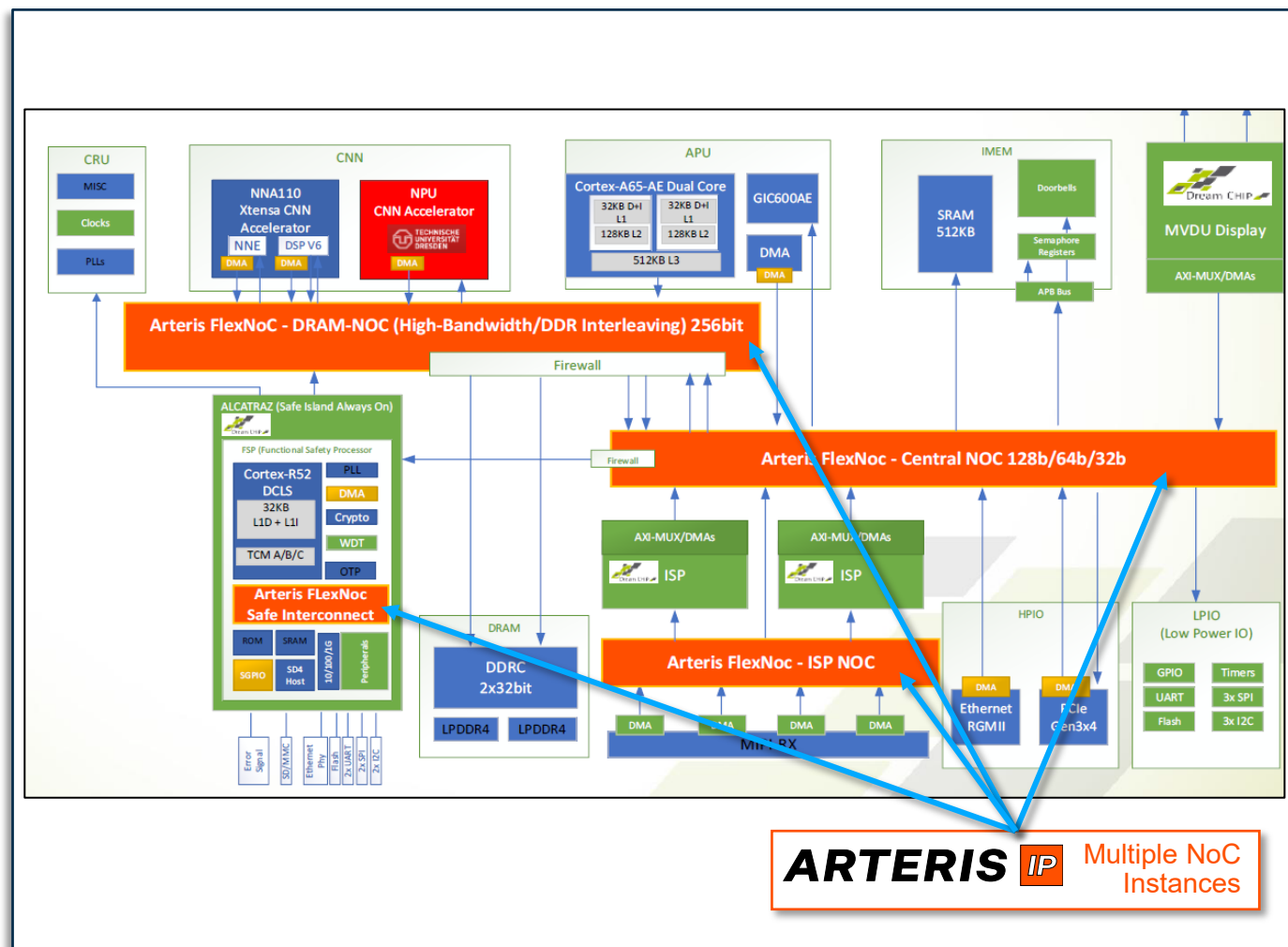
## Arteris' System IP enables novel automotive SoC architectures

SoCs per Function		Arteris IP Customers → 130+ SoC design wins					
ADAS / Machine Learning / Car Controller (1-4 systems per vehicle)	2	<div> <div>Horizon Robotics</div> <div>RECOGNIA HEALTHCARE RECOGNITION</div> <div>BOSCH</div> </div>	<div> <div>mobileye™</div> <div>socionext™</div> <div>Toshiba</div> </div>	<div> <div>Major Automotive EV OEM</div> <div>NXP®</div> <div>AutoChips</div> </div>	<div> <div>HAILO</div> <div>Major Design Services Company</div> <div>SEM(DR)VE 芯燾科技</div> </div>	<div> <div>BLACK SESAME TECHNOLOGIES</div> <div>indie</div> <div>Major ADAS System Maker</div> </div>	<div> <div>Telechips</div> <div>bos SEMICONDUCTORS</div> <div>Dream CHIP</div> </div>
Vision Camera – Local Processing (4-16 systems per vehicle)	4	<div>mobileye™</div>	<div> <div>BLACK SESAME TECHNOLOGIES</div> <div>tenstorrent</div> </div>	<div> <div>nextchip</div> </div>	<div> <div>TEXAS INSTRUMENTS</div> </div>	<div> <div>Toshiba</div> </div>	
Radar / Lidar	6	<div> <div>arbe</div> <div>CALTERAH</div> </div>	<div> <div>NXP®</div> </div>	<div> <div>vayyar™</div> </div>	<div> <div>AEVA</div> </div>	<div> <div>BOSCH</div> </div>	<div> <div>UHNDER</div> </div>
Infotainment	1	<div> <div>NXP®</div> </div>	<div> <div>TEXAS INSTRUMENTS</div> </div>	<div> <div>Major FPGA Company #1</div> </div>	<div> <div>bos SEMICONDUCTORS</div> </div>	<div> <div>Major FPGA Company #2</div> </div>	<div> <div>Telechips</div> </div>
Dashboard / HUD / DMS	2		<div> <div>NXP®</div> </div>	<div> <div>sienqine 芯擎科技</div> </div>	<div> <div>RENESAS</div> </div>		
Chassis / Engine / Motor Control	5			<div> <div>life.augmented</div> </div>	<div> <div>indie</div> </div>		
V2X / V2I / WAN Modem / Gateway	3		<div> <div>NXP®</div> </div>	<div> <div>Autotalks</div> </div>	<div> <div>MORNINGCORE 晨芯科技</div> </div>	<div> <div>SEQUANS</div> </div>	<div> <div>Silicon Mobility</div> </div>
Source: IHS Markit, McKinsey		<div> <div>23</div> <div>average complex SoCs per electronically-enabled vehicle by 2026</div> </div>					

# DreamChip Automotive AI SoC, Connected by Arteris

## Production Level 2+ ADAS SoC with 2 machine learning sections

- Multiple Arteris FlexNoC Network-on-Chip instances
- 2 AI accelerators with 10 TOPS aggregated performance
- 2 DreamChip Image Signal Processors (ISPs)
- Arm Cortex-R52 based functional safety processor
- Dual-core Arm Cortex-A65AE processor cluster
- TÜV Süd certified for ISO26262:2018, up to ASIL-D



Source: <https://www.eenewseurope.com/en/china-owned-dream-chip-tapes-out-10tops-soc/>

# Arteris Automotive Functional Safety

## ISO 26262 Certification for Ncore IP and Magillem

### Driver (Market Need)

- Reduce time and resources required to affirm functional safety for automotive technology products

### Impact

- Functional safety certification is critical for advanced driver assistance systems (ADAS) at the intersection of AI and automotive innovation
- Magillem software and Ncore, ISO 26262 certification simplifies the chip certification process for design teams, ensuring the highest functional safety standards in the automotive industry, from ASIL B to ASIL D requirements

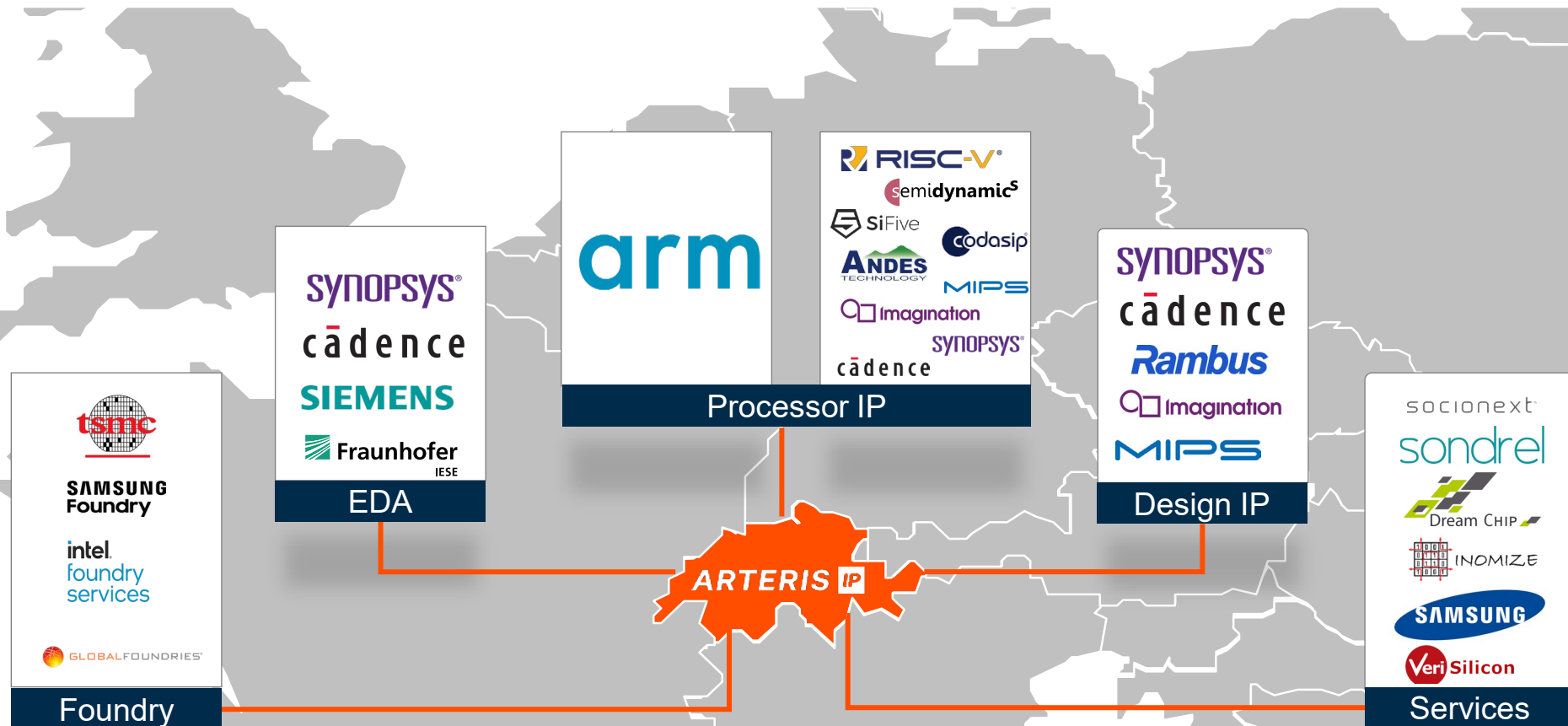




# Growth Strategies

# Arteris Ecosystem: The 'Switzerland' of IP

Neutral, trusted partner for IP providers and semiconductor makers



# Arteris Growth Strategies and Milestones

## Organic product portfolio expansion

- **June 2023** – FlexNoC 5 production shipments (21 customers to date)

## Focus on high growth market segments

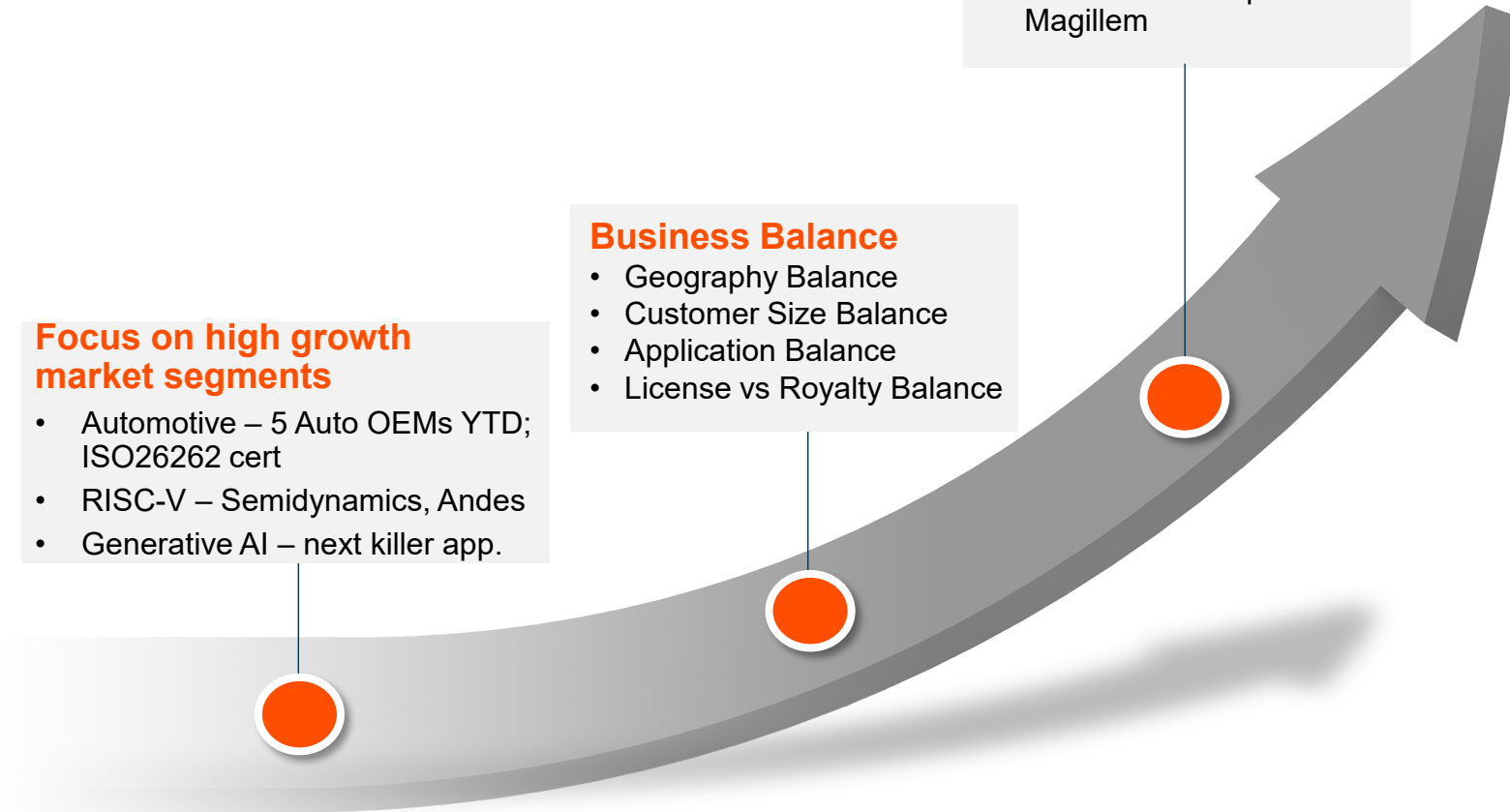
- Automotive – 5 Auto OEMs YTD; ISO26262 cert
- RISC-V – Semidynamics, Andes
- Generative AI – next killer app.

## Business Balance

- Geography Balance
- Customer Size Balance
- Application Balance
- License vs Royalty Balance

## Inorganic growth

- **Dec. 2022** – Acquisition of Semifore
- **Dec. 2020** – Acquisition of Magillem

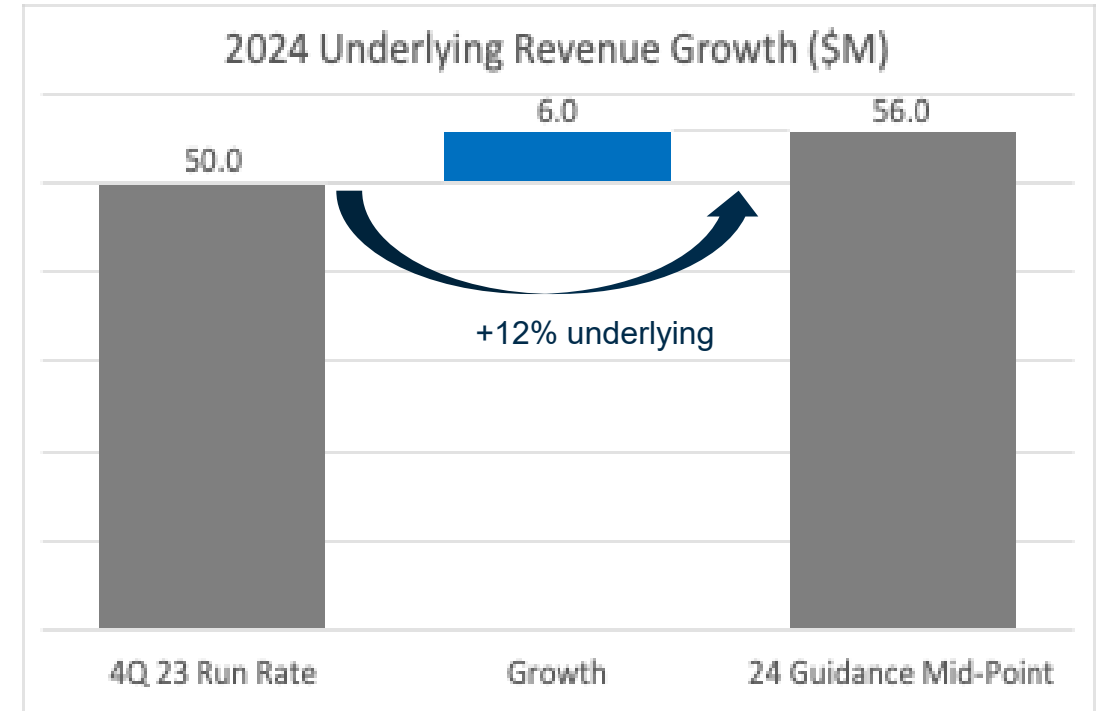
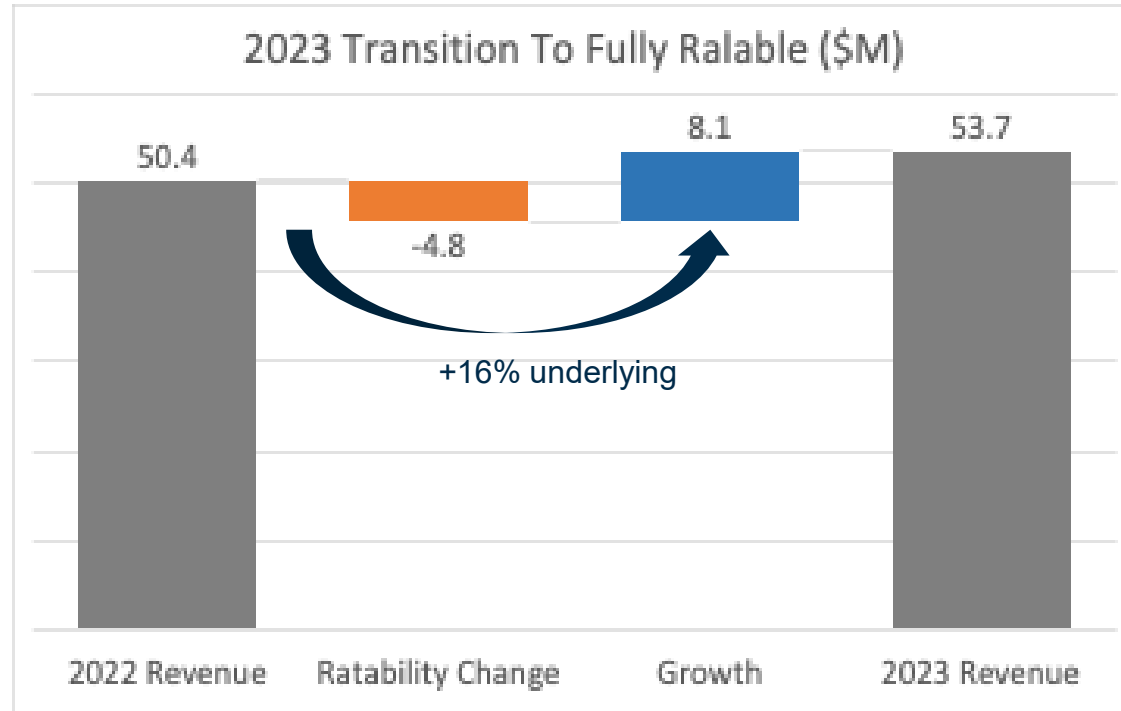




# Financial Overview

Nick Hawkins

# Revenue – Continued Growth



- Lower China deals (starting 3Q'23) created ~\$2M headwind to 2023 revenue, \$4M in 2024
- 4Q '23 ACV+TTMR = \$56.1M, supporting 2024 \$56.0M revenue guidance



# Business Highlights

	Q4'22	Q4'23	Y/Y	FY22	FY23	Y/Y
<b>ACV+TTMR</b>	52.4	<b>56.1</b>	▲7%	52.4	<b>56.1</b>	▲7%
<b>Revenue</b>	11.2	<b>12.5</b>	▲12%	50.4	<b>53.7</b>	▲7%
<b>CoR</b>	(1.0)	<b>(1.2)</b>	▲23%	(3.7)	<b>(4.4)</b>	▲17%
<b>GM%</b>	91%	<b>90%</b>	▼-1%	93%	<b>92%</b>	▼-1%
<b>NG OpEx</b>	(16.0)	<b>(16.8)</b>	▲5%	(62.8)	<b>(69.1)</b>	▲10%
<b>NGOI</b>	(5.8)	<b>(5.5)</b>	▲5%	(16.2)	<b>(19.8)</b>	▼-22%
<b>Free Cash Flow</b>	(0.8)	<b>(3.4)</b>	▼-325%	(7.8)	<b>(17.2)</b>	▼-121%
<b>RPO</b>	57.8	<b>72.7</b>	▲26%	57.8	<b>72.7</b>	▲26%
<b>Confirmed Design Starts</b>	24	<b>29</b>	+5	82	<b>95</b>	+13

- ACV+TTMR up **7%** and Q4 Revenue up **12%** Y/Y
- Highest RPO at **72.7M**; **26%** Y/Y increase
- **21** customers licensed FlexNoC 5 to date, with numerous additional prospects and evaluations
- **95** confirmed design starts - highest annual design activity
- Momentum in key verticals
  - Enterprise Computing and AI/ML:
    - NeuReality, Rain AI – Generative AI, Edge AI and LLM inference
  - Communications:
    - EdgeQ, SCALINX – 5G Infrastructure and AI Communications
  - Automotive:
    - ISO26262 certification for Ncore IP and Magillem software

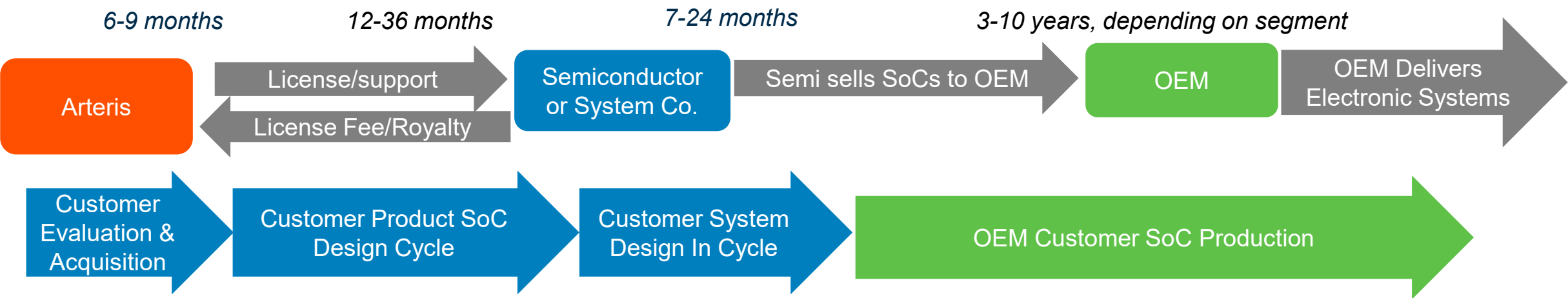
# FY2024 Guidance

Q1 2024 Guidance	
<b>ACV+TTMR</b> \$55M - \$59M	<b>Revenue</b> \$12.1M - \$13.1M
<b>Non-GAAP Op. Income</b> (61%) – (41%)	<b>Free Cash Flow</b> (9%) – 11%

FY 2024 Guidance	
<b>ACV+TTMR</b> \$62M - \$68M	<b>Revenue</b> \$54.5M - \$57.5M
<b>Non-GAAP Op. Income</b> (43%) – (33%)	<b>Free Cash Flow</b> (5%) – 5%

# Arteris Business Cycle

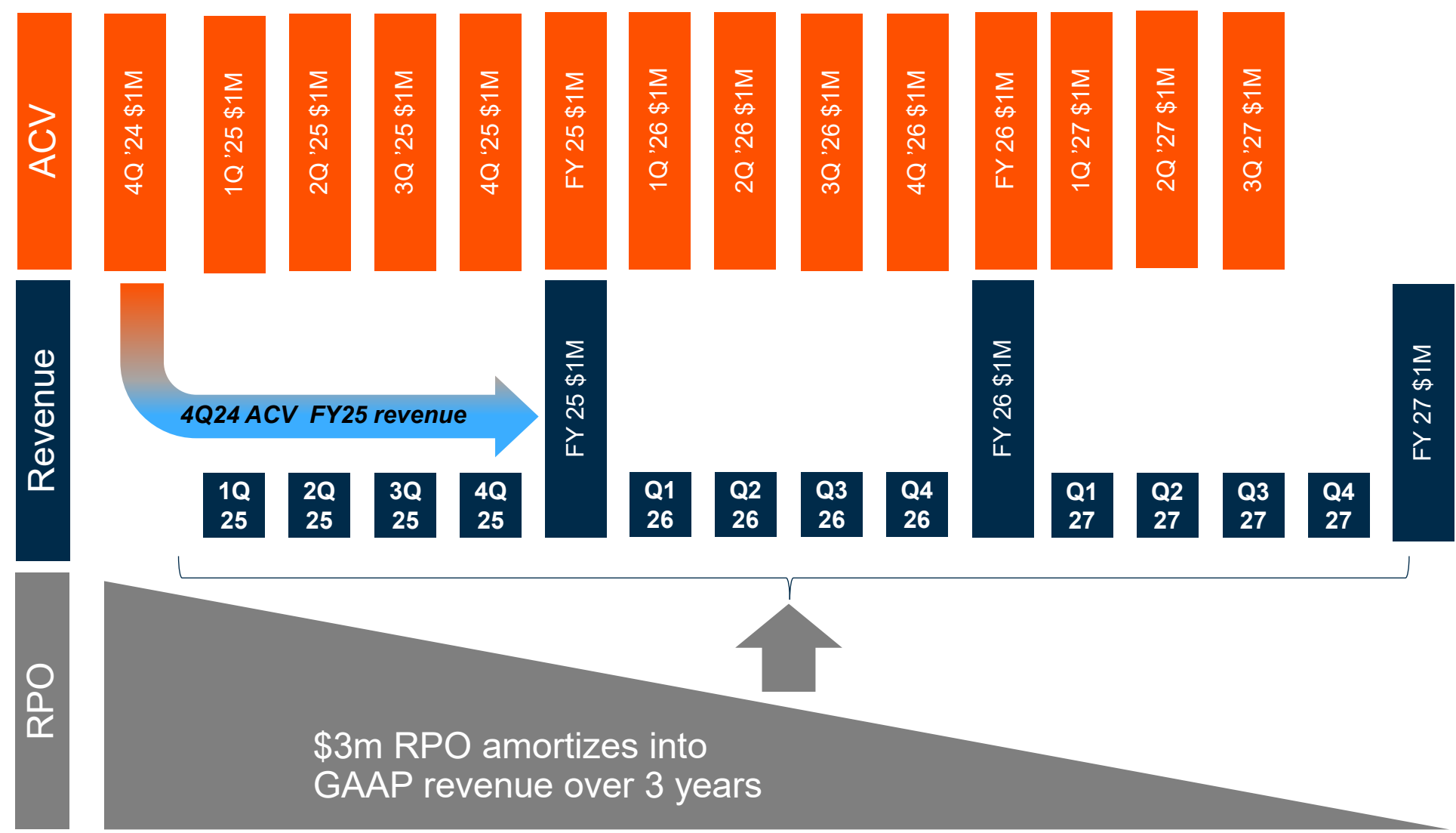
Arteris Customer base has delivered over \$3.5 Billion SoCs based on 750+ SoC projects



# License Revenue / ACV / RPO Model

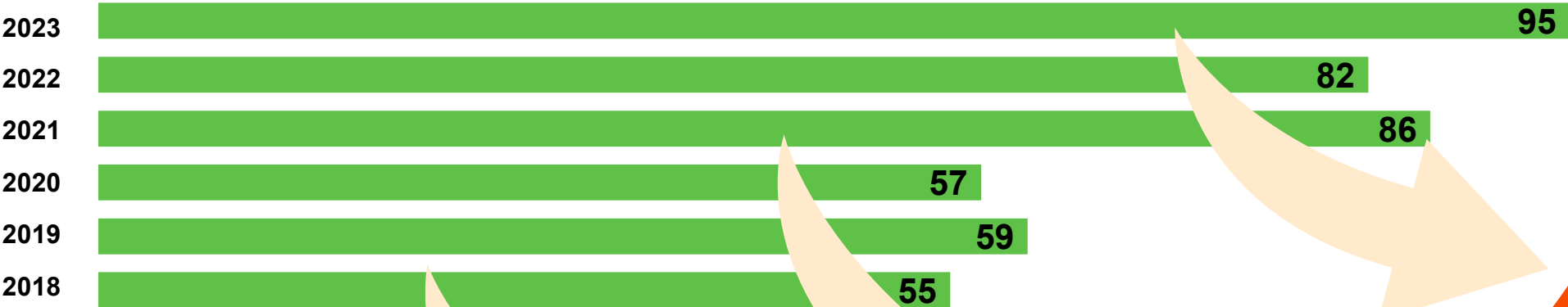
Example \$3M Deal, 36-Month License Term

\$3M / 3 Yr  
Deal Signed  
12/29/24



# Growth in Confirmed Design Starts Drives Future Royalty Expansion

## Confirmed Design Starts<sup>3</sup>



Auto

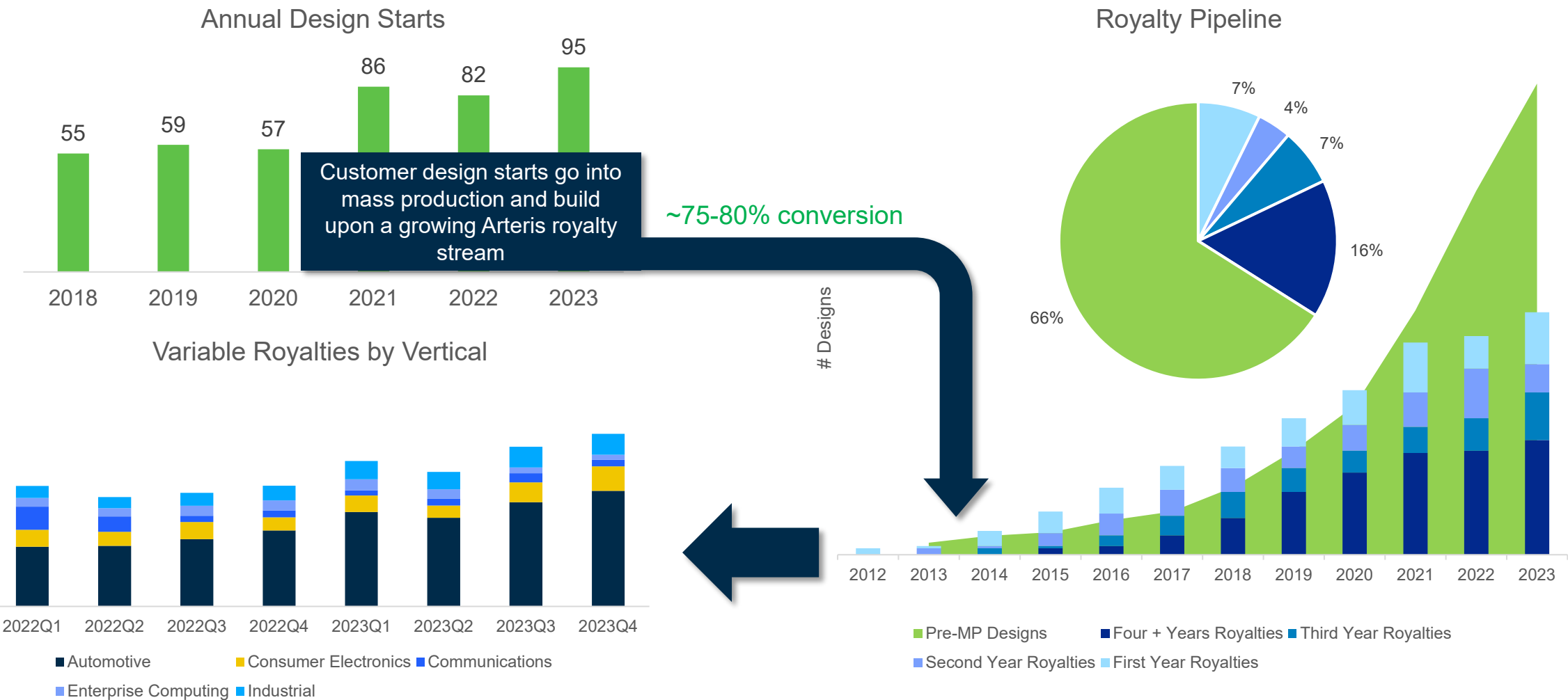
Royalty  
\$

Other

<sup>3</sup> We define Confirmed Design Starts as when customers confirm their commencement of new semiconductor designs using our interconnect IP and notify us

# Arteris Business Model

## Royalty Stream



# 2023 Actuals vs Guidance

In \$ millions	Q4 2023 Guidance	Q4 2023 Results	FY 2023 Guidance	FY 2023 Results	
ACV + TTM <sup>2</sup> Royalties	52.0 – 56.0	56.1	52.0 – 56.0	56.1	Exceeded top end of guidance range
Revenue	11.3 – 12.3	12.5	52.5 – 53.5	53.7	Exceeded top end of guidance range
Non-GAAP Operating Income <sup>1</sup>		(5.5)		(19.8)	
% Revenue	(76.1%) – (56.1%)	(44%)	(44.0%) – (39.0%)	(37%)	Better than top end of guidance
Free Cash Flow		(3.4)		(17.2)	
% Revenue	(52.4%) – (32.4%)	(27%)	(38.1%) – (33.1%)	(32%)	Better than top end of guidance

<sup>1</sup> See appendix for reconciliation of GAAP to non-GAAP

<sup>2</sup> Represents TTM (Trailing Twelve Months)

# 2023: Arteris' Year In Numbers

**\$56M**

+7% Y/Y  
ACV + TTMR

**200+**

Active Customers

**750+**

Design Starts

**\$73M**

+26% Y/Y  
RPO<sup>1</sup>

**90-95%**

Gross Margin<sup>2</sup>

**3.5B**

SoCs shipped to date

**High Growth Markets**

Automotive, Enterprise Computing, Communications,  
Consumer, Industrial + AI/ML across all verticals

<sup>1</sup>RPO: "Remaining Performance Obligations."  
We define this as the amount of contracted future revenue that has not yet been recognized, including deferred revenue, billed and unbilled cancelable and non-cancelable contracted amounts.

<sup>2</sup>2020-2023



# Investor Highlights

## Market Leadership

- Leader in semiconductor System-on-Chip (SoC) System IP
- Over 50% increase in Active Customers since 2020
- 750+ SoC Design Starts
- ~3.5 billion SoCs shipped

## Differentiated Technology

- Networking technology inside semiconductors
- Strong SoC Integration technology, IP-XACT committee member
- Global customer support
- 73 issued patents and 81 patent applications

## Well-Positioned in High Growth Segments

- 70 – 80% market share of automotive ADAS SoC market<sup>1</sup>
- Autonomous vehicle/ADAS TAM growing at 36% CAGR through 2030<sup>2</sup>
- Strong position in AI/ML system IP with over 200 design wins

## Large Addressable Market

- \$1 trillion semiconductor market by 2030<sup>3</sup>
- Demand for system IP growing due to greater SoC complexity

## Scalable Business Model

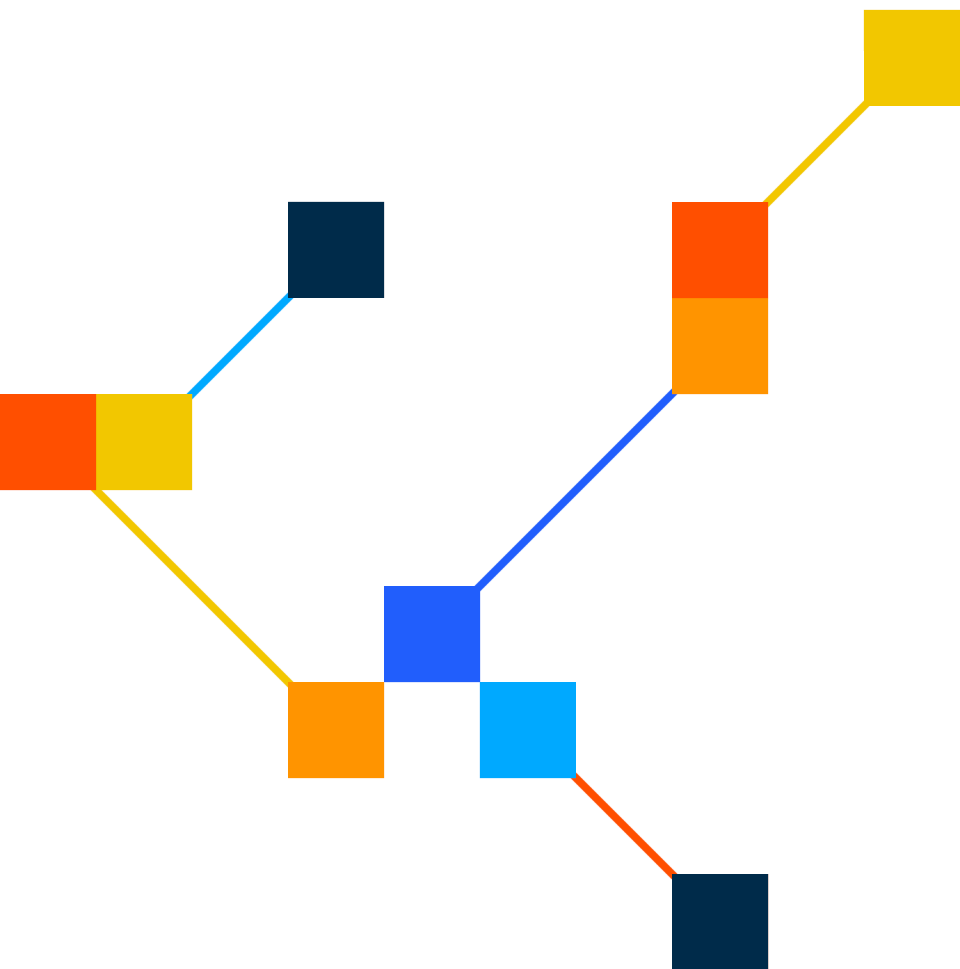
- IP business model
- Address high-growth segments with growing royalty streams
- Targeting high operating margin
- ~\$73 million contracted future revenue (RPO)<sup>4</sup>

<sup>1</sup> Management estimates

<sup>2</sup> Deutsche Bank Research

<sup>3</sup> IBS

<sup>4</sup> As of December 31, 2023. We define this as the amount of contracted future revenue that has not yet been recognized, including deferred revenue, billed and unbilled cancelable and non-cancelable contracted amounts.



**ARTERIS** 

# Thank you

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# Appendix - GAAP to Non-GAAP Reconciliation

## Income (loss) from operations

In \$ thousands	Twelve Months Ending		Three Months Ending:	
	December 31, 2022	December 31, 2023	December 31, 2022	December 31, 2023
Income (loss) from Operations	(28,856)	(35,142)	(9,060)	(9,249)
Add:				
Stock-based Compensation	11,692	14,535	2,610	3,554
Acquisition costs	527		527	
Amortization of acquired intangible assets	478	767	120	192
Non-GAAP income (loss) from operations	(16,159)	(19,840)	(5,803)	(5,503)