iCTGC

Organizer: NSTC 國家科學及技術委員會 National Science and Technology Council

Co-Organizers: semi 國際半導體產業協會 | TSIA 台灣半導體產業協會 Taiwan Semiconductor Industry Association | TCA 台北市電腦公會 TAIPEI COMPUTER ASSOCIATION | TTA TAiWAN TECH ARENA

IC Taiwan Grand Challenge

Leveraging the Strengths of Silicon Island to Attract International Talents and Investment to Taiwan

- Combine **Generative AI** and **Chips** to drive industry-wide innovation
- Facilitate local professional development and attract **Global R&D Talents**
- Accelerate **Heterogeneous Integration** and **Advanced Technology**

Areas of Focus

- Startups, legal entities, academic research teams, and persons that plan to collaborate with Taiwan's semiconductor chip design and manufacturing industry.
- Proposals should include core technology, challenges solved, business model, market development plan, etc.

Domain 1
AI Core Technologies and Chips

- AI chip design
- Hardware Acceleration
- AI systems
- Robotics
- Generative Applications
- Large language models
- Cybersecurity

Domain 2
Smart Mobility

- Electric Vehicles
- Autonomous Vehicles
- Comms/Satellite

Domain 3
Smart Manufacturing

- Intelligent Manufacturing
- IC Process
- Robotics

Domain 4
Smart Medtech

- Biometrics
- Smart Monitoring
- e-Health

Domain 5
Sustainability

- Sustainable Manufacturing
- Energy Saving Innovation
- New Energy

Criteria

40%

LOCAL CONNECTIVITY

1. Have a need of resources and concrete development plans in Taiwan
2. Offer Taiwan broader industry development
3. Focus on the business plans and the goals of the applicants

40%

VALUE CREATION

1. Able to drive technological innovation and create social welfare
2. Contribute to building new industrial links or enable industrial upgrading
3. Capable of raising funds or creating high economic value

20%

TECHNOLOGICAL INNOVATION

1. Possess innovation in emerging fields of application
2. Propel innovation in the manufacturing process, design, and use of new materials
3. Integrate diverse innovation and cross-domain knowledge

Benefits

1

Prize

US $30,000

- Upon team arrival in Taiwan
- In person exhibition of innovation at 2025 TIE Expo

* details to follow

2

Mentoring

Mentorship by Semiconductor Industry Experts

- the teams will be mentored by various experts from our semiconductor industry

3

Platform

Prototyping to Production (EDA Tools, Wafer, etc.)

- Each awardee, upon fulfilling the specified conditions, can receive up to a maximum of US$3 million in product development subsidies.

4

Resources

Multifaceted Resources and Services to Ensure Success

- key stakeholders of Taiwan's overall startup ecosystem will provide resources to support the challenge winners and ensure their soft landing success in Taiwan

World-class Mentors and Partners

Industry

arm · GUC The Advanced ASIC Leader · MEDIATEK · ememory · tsmc · PSMC · UMC 聯華電子 · 日月光集團 · ASPIL · COMPAL 仁寶電腦 · 英業達 Inventec · PEGATRON 和碩聯合科技 · 廣達電腦 Quanta Computer · wistron 緯創資通 · M31 · SYNOPSYS · cadence · SIEMENS · iSTART · FARADAY · CMSC 益芯科技 · ANDES TECHNOLOGY 晶心科技 · brocere

Bor-Sung Liang
Senior Director, MediaTek

Brandon Wang
VP, Synopsys

Henry Lee
Former Technical Director , Sunplus

Jason Jeng
Technical Director, UMC

Jerome Hung
Vice President, M31

Konrad Young
Former Chief of RD Department , TSMC

Kris Peng
President, UMC Capital

Kevin Wei
Sr. Business Development , Synopsys

Ken Li
Formal President, Rafael Microelectronics

Louis Lin
Senior Vice President, GUC

Michel Chu
President, ITIC

S. Z. Chang
Vice President & CTO , PSMC

Todd Lin
COO, EgisTec

Tsun-Jen Hou
Former RD Director , Faraday

Tsung-Ching Wu
Co-founder and Executive of Vice President, Atmel Corp

Weining Shen
Partner, MediaTek Capital

Accelerator

比翼加速器 BE Accelerator · MOSAIC VENTURE LAB · 新創101 STARTUP101 · flyingVest ventures · ORBIT STARTUPS · IAPS · FOODLAND 扶田 VENTURES 資本 · SparkLabs TAIWAN · TTA TAiWAN TECH ARENA

Association

semi 國際半導體產業協會 · TCA 台北市電腦公會 TAIPEI COMPUTER ASSOCIATION · TSIA 台灣半導體產業協會 Taiwan Semiconductor Industry Association

R&D Institute

TSRI · NARLabs 國家實驗研究院 台灣半導體研究中心 Taiwan Semiconductor Research Institute · NCHC NARLabs 財團法人國家實驗研究院 國家高速網路與計算中心 National Center for High-performance Computing · 工業技術研究院 Industrial Technology Research Institute

University

國立臺灣大學 重點科技研究學院 Graduate School of Advanced Technology · 產學創新研究學院 IAIS 陽明交大 · CoSR 國立清華大學 半導體研究學院 College of Semiconductor Research · 智慧半導體及永續製造學院 Academy of Innovative Semiconductor and Sustainable Manufacturing · 國立中山大學 半導體及重點科技研究學院

IC Startup Accelerating Platform

Provides Critical Resources to Accelerate Semiconductor Solutions from Prototyping to Production

EDA/IP/IC Design

EDA & IP
Analog and digital processes

IC Design Service

System Integration

SI Development Factory
Module integration
Niche products market development

Wafer Manufacturing

Chip fab
Wafer shuttle

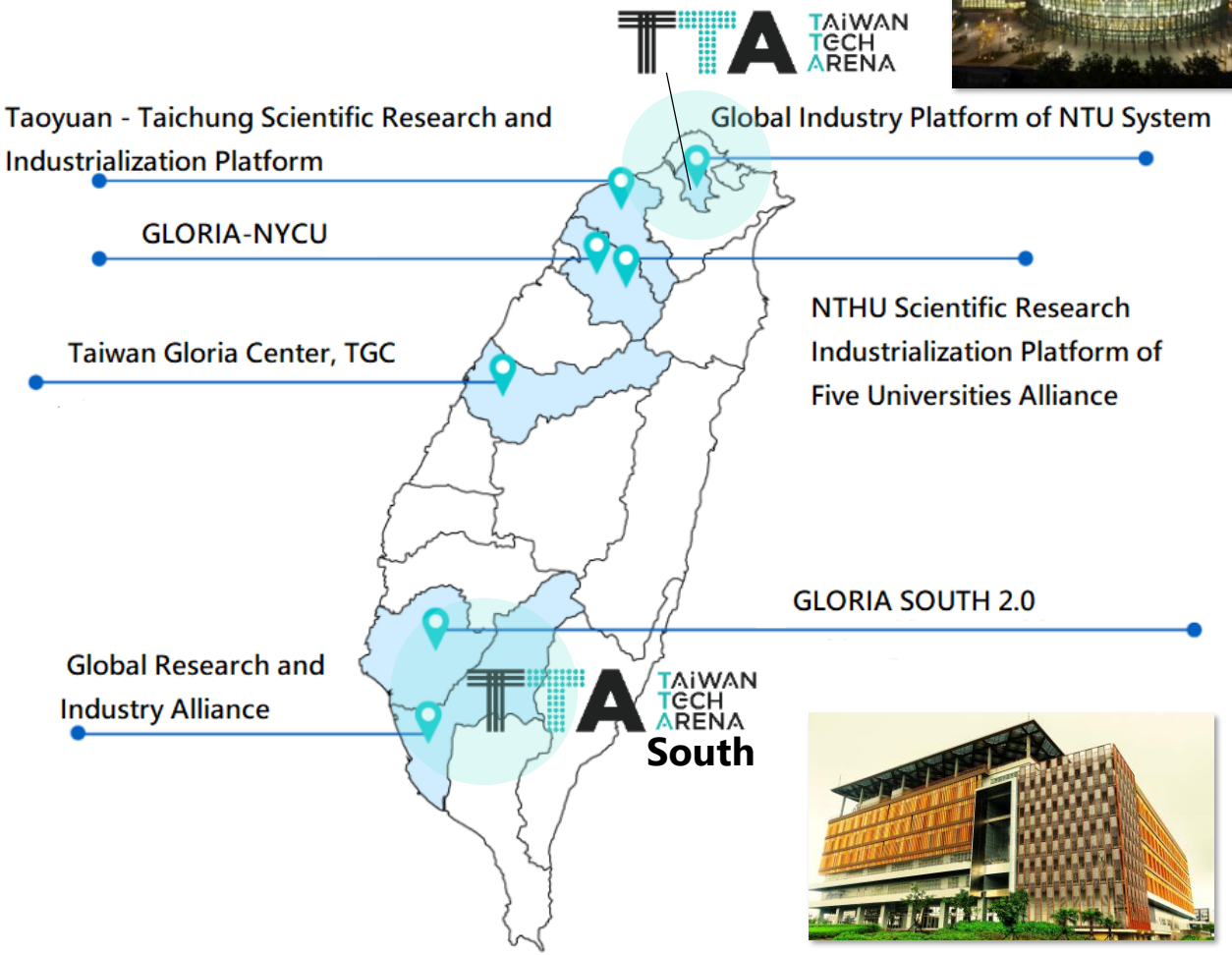
Packaging and testing supply chain
Advanced packaging testing

US$3M in product development subsidies

- **Funding in critical resources (up to US$3M) will be in exchange of equity through SAFE (Simple Agreement for Future Equity) agreement and will be disbursed by the organizer directly to Taiwan suppliers.**

Ecosystem Resources

Winners of the challenge will receive comprehensive support from the Taiwan Startup Ecosystem



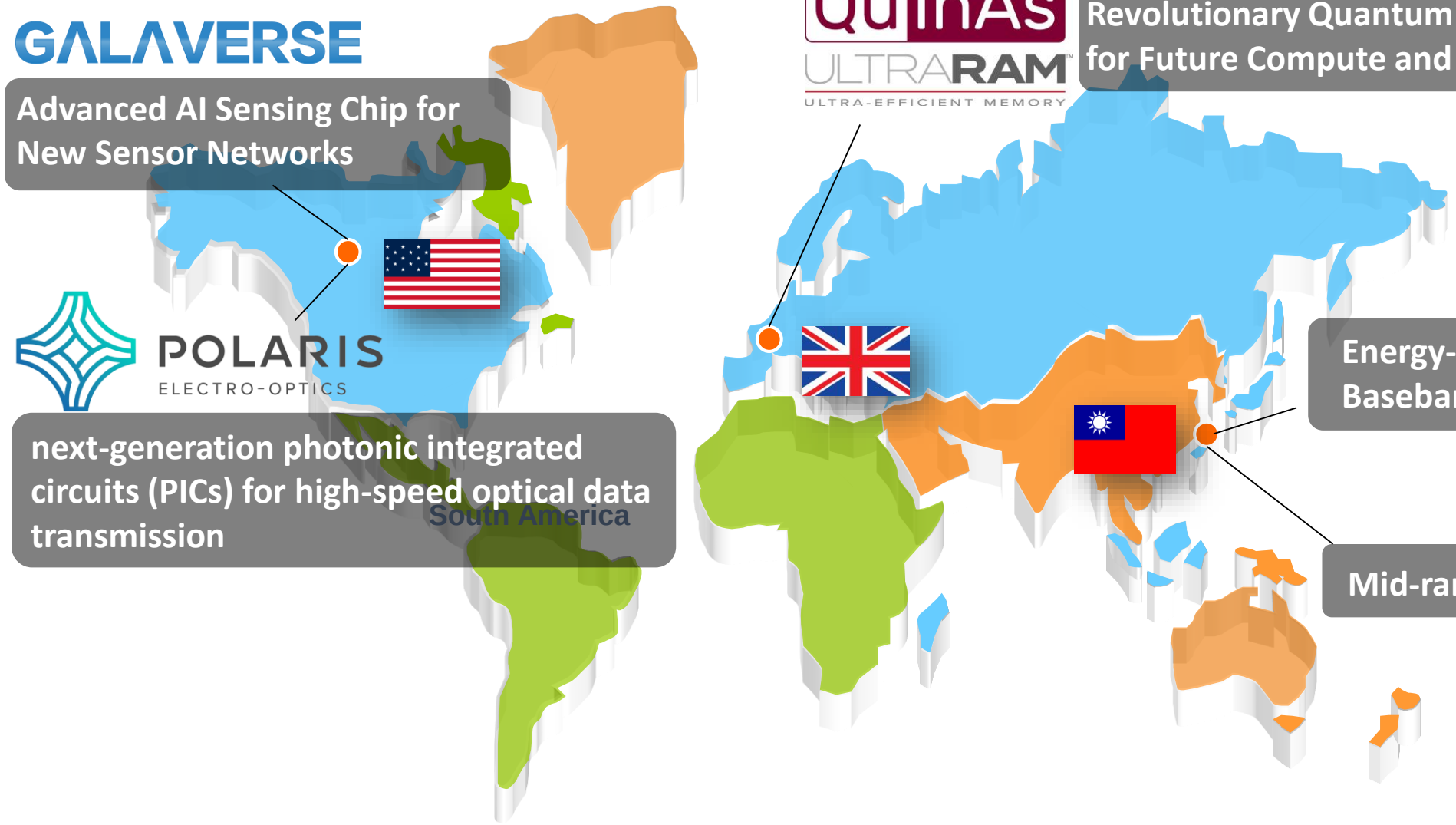
Top 5 Winners from 72 Teams

GALAVERSE

Advanced AI Sensing Chip for New Sensor Networks

QuInAs ULTRARAM ULTRA-EFFICIENT MEMORY

Revolutionary Quantum Powered Universal Memory for Future Compute and AI



POLARIS ELECTRO-OPTICS

next-generation photonic integrated circuits (PICs) for high-speed optical data transmission

Ranictek

Energy-saving and Cost-effective Baseband Solutions for 5G/6G O-RAN

VOLTRAWARE SEMICONDUCTOR

Mid-range Wireless Charging Solutions

Competition Timeline

Taiwan Innotech Expo
台灣創新技術博覽會

Mar. 26th, 2025

Online Apply Open

***Winning teams will attend award ceremony and exhibit at TIE expo held on Oct 16-18 in Taiwan**

TIMELINE

Jun. 30th, 2025

Online Apply Deadline

IC TAIWAN GRAND CHALLENGE

Play video

Website
ictaiwanchallenge.org

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2024 Winner Introduction

Smart Data & AI

ULTRARAM™ - Revolutionary Quantum Powered Universal Memory for Future Compute and AI

Quinas Technology is a multi award-winning spin-out from the Physics Department of Lancaster University in the UK. Quinas Technology introduced ULTRARAM, **an energy-efficient universal memory** with a unique, innovative and highly disruptive approach. ULTRARAM uses the **band engineering properties of III-V compound semiconductors**, allowing it to exploit quantum-mechanics to achieve its remarkable properties.

Smart Mobility

Advanced AI Sensing Chip for New Sensor Networks

Galaverse is a US-AU team that boasts decades of experience in the semiconductor industry and specializes on modularized products. Galaverse boasts decades of experience in the semiconductor industry and specializes on modularized products. Their **Advanced AI Sensing Chip for New Sensor Networks** utilizes **advanced AI algorithms** to process complex communication signals, **enabling seamless integration of sensing and communications (ISAC).**

Energy-saving and Cost-effective Baseband Solutions for 5G/6G O-RAN Base Stations and Satellite Communications

Ranictek, Inc., is a Taiwan based company that specializes in **energy-saving and cost-effective baseband chip solutions for 5G/6G O-RAN base stations and satellite communications**. Their core innovation enables **Massive MIMO (digital beamforming)**, which allows the base stations, satellites, or ground stations to utilize large numbers of antennas. This breakthrough significantly reduces power consumption and promotes more sustainable, cost-efficient base station deployment.

2024 Winner Introduction

Sustainability

100+ GHz Low-Vπ Hybrid Silicon Photonic Modulators

Polaris Electro-Optics, Inc. is a US-based company that develops **next-generation photonic integrated circuits (PICs) for high-speed optical data transmission**. Their key innovation lies in the use of **ferroelectric nematic liquid crystals (FNCs)**. This technology **seamlessly integrates post-foundry with PICs fabricated using standard manufacturing processes**. Together, these traits make it ideal for next-generation applications in high-speed communications, such as data centers, telecommunications networks, and AI-driven systems.

Mid-range Wireless Charging Solutions

Voltraware is a fabless semiconductor company from Taiwan that specializes in the research and development of **ICs for wireless power transfer applications**. **Their Magnetic Resonance (MR) based technology can charge devices at a distance with positional freedom**. Voltraware assists customers in integrating wireless charging solutions into their products using exclusive tools for coil and system designs, firmware algorithms, and specialty IC.