



德律科技股份有限公司

www.tri.com.tw

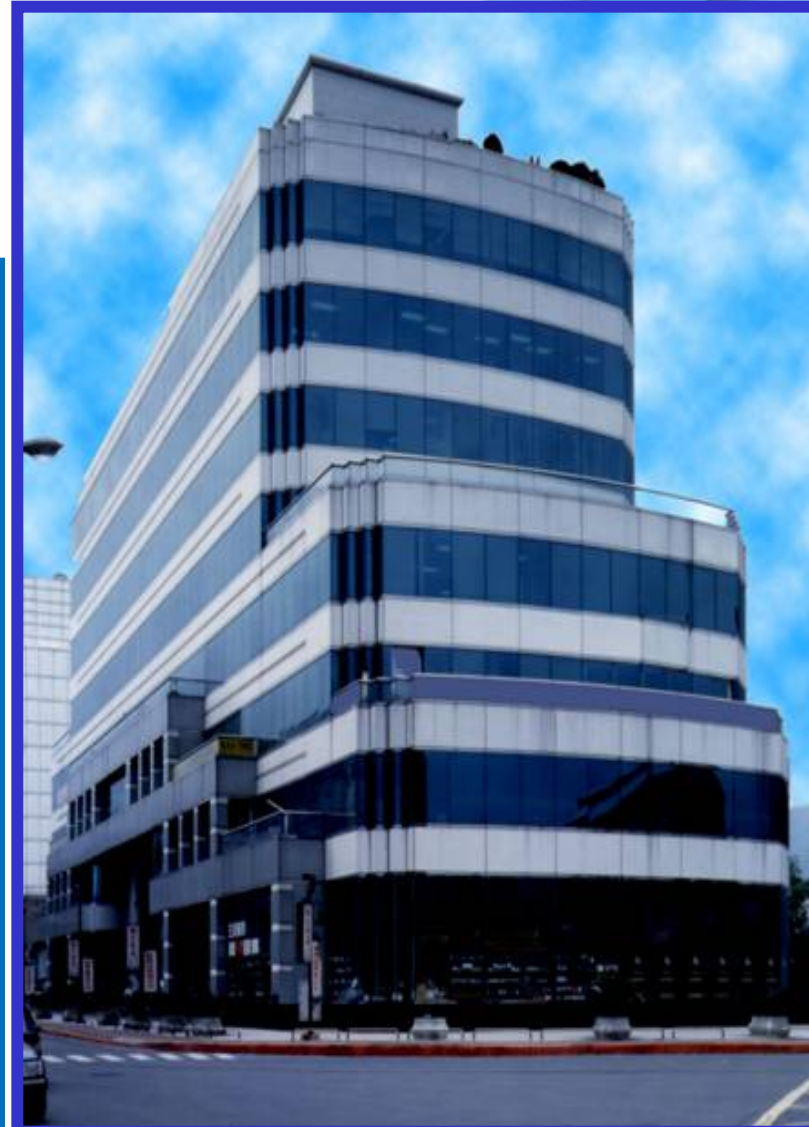
June 2025

報告人：陳冠元/財務長兼代理發言人

德律科技股份有限公司



- 成立時間：1989年4月10日
- 創立人：陳玠源董事長
- 資本額：新台幣23.62億



製造廠區擴展



地點: 德律林口二期廠區 (地上10層樓, 地下4層樓)

二期廠區面積: 35,000 平方米 / 10,600 坪

完工啟用日程: 2024 Q1



提升產能及產品開發/驗證使用空間

各產品線及智慧工廠應用展示

研討會/代理商大會舉辦



ESG應用方案進展

發行永續報告書

TRI
innovation



🏠 / 投資人關係 / 永續報告書 / 永續報告書

投資人關係

致股東信

財務資訊

永續報告書

永續報告書

公司治理

股東專權

活動訊息

利害關係人

QA

永續報告書

日期	標題
2023/08/28	2022年永續報告書

Click to download the ESG Report



主力產品



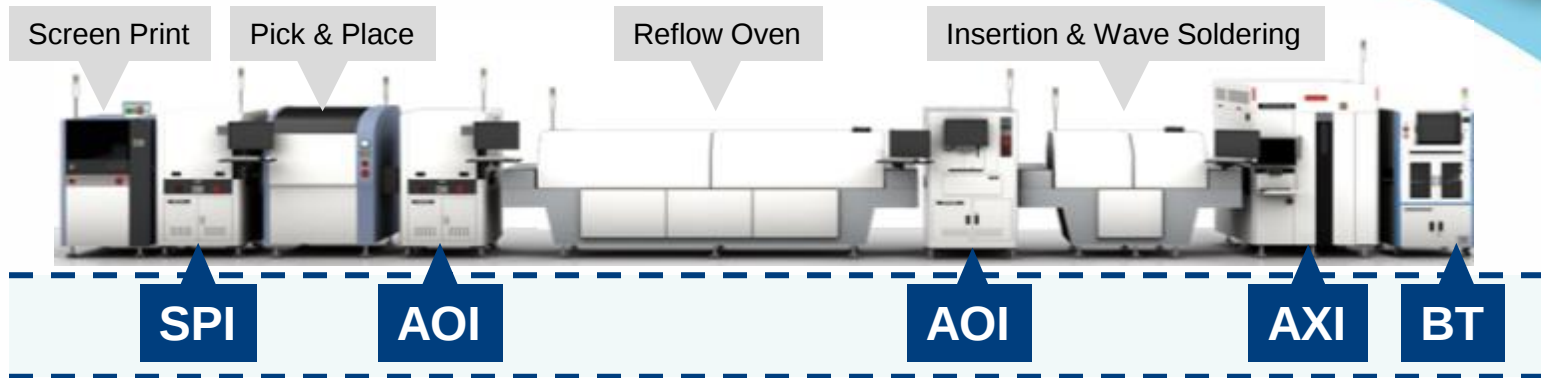
☆ 自動光學檢測設備(IT/Image Tester)

- ☆ 錫膏自動光學影像檢測機(SPI)
- ☆ 自動光學影像檢測機(AOI)
- ☆ X-ray自動檢測機(AXI)

☆ 電路板測試機(BT/In-Circuit Board Tester)

- ☆ 組裝電路板測試機(MDA)
- ☆ 全功能電路板自動測試機(ICT)

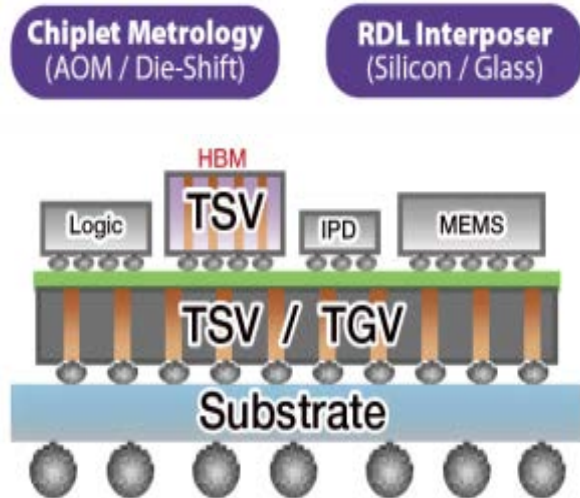
完整SMT檢測解決方案



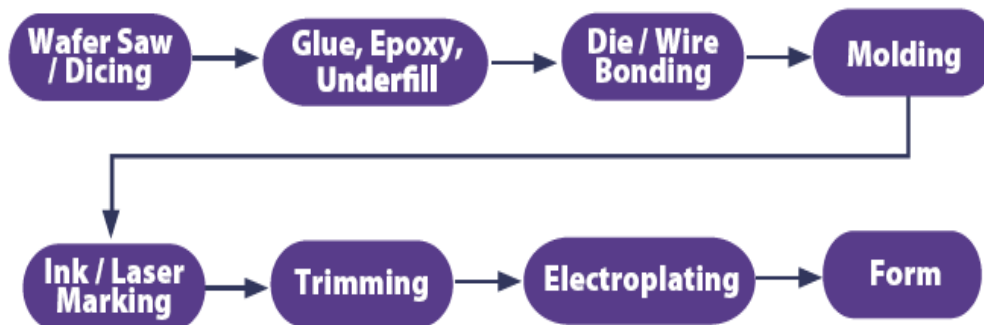
Optical Inspection	SPI	<i>Solder Paste Inspection</i>
	AOI	<i>Automated Optical Inspection</i>
	AXI	<i>Automated X-ray Inspection</i>
Board Test	BT	<i>In-Circuit Tester (ICT) Manufacturer Defect Analyzer (MDA)</i>

半導體中/後段製程 – 檢測與量測

► ADVANCED WLP/PLP

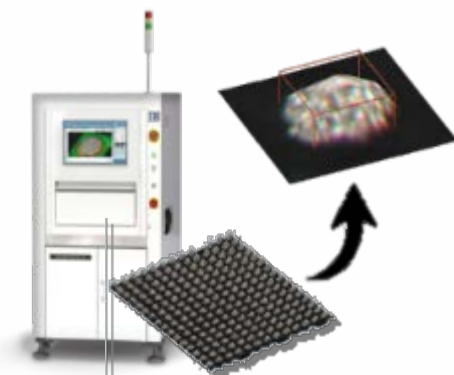


► BACK-END PROCESSING



半導體製程/先進封裝檢測應用產品

TRI
innovation



TR7007Q SII-S
3D SEMI
Bump Inspection



TR7720S
2D SEMI
AOI



TR7700Q SII-S
3D SEMI
AOI



TR7900Q SII
Magazine & Strip
3D Semi AOI



TR7900Q SII-R
Magazine & Strip + Reject Station
3D Semi AOI



TR7600 SIII Plus
3D Semi X-Ray
Cu-Pillar, C4 Bumps



TR7950Q SII
Wafer Inspection and Metrology
Frame, Bumping, Surface TSV

半導體中段封裝/後段封裝檢測項目



INSPECTION & METROLOGY SOLUTIONS FOR:

Advanced WLP

Wafer Frame

Patterned Wafer

Wafer Bumping

WLCSP

TSV

Cu Pad/Pillar

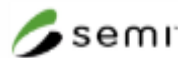
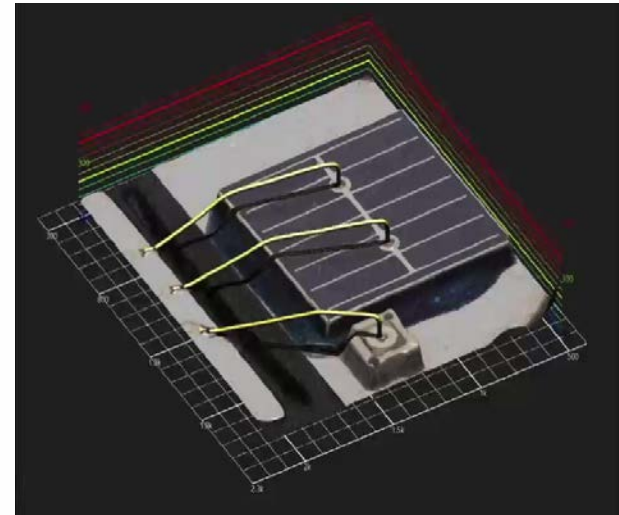
Die / Wire Bonding

IGBT / SiC / GaN

SiP

Underfill

Epoxy / Flux / Glue



半導體後段檢測應用



Wafer Saw / Dicing



Fillet Inspection
Epoxy / Underfill



Die Bonding



Wire Bonding



TR7950Q SII
8"/12" Wafer
3D Saw Measuring
2D Surface AVI
Back Side & Top
Side Chipping
SWIR Support

TR7700Q SII-S
TR7720S
Bond Pad
Epoxy
Underfill
Surface
Inspection

TR7700Q SII-S
TR7700QE-S
Die Inner & Outer
Crack / Chipping
Surface Particle
Scratch / Residue
Foreign Material
Inspection

Magazine AOI
TR7900Q SII
TR7900Q SII-R
Die Bonding
2D / 3D
Inspection

Magazine AOI
TR7900Q SII
TR7900Q SII-R
Wire Bonding
2D / 3D
Inspection

TR7950Q SII



TR7700QE-S



TR7700Q SII-S



TR7720S



TR7900Q SII

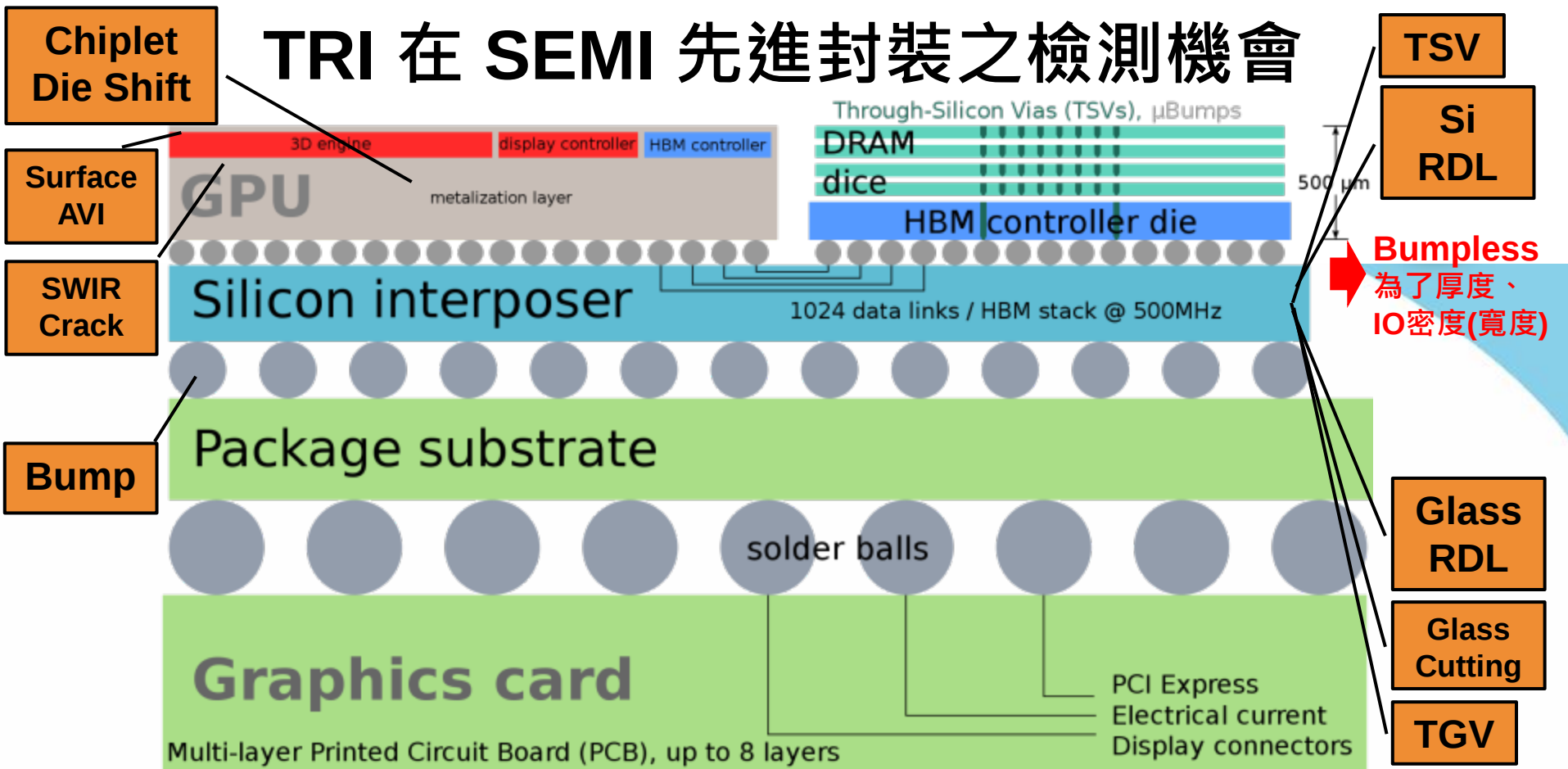


TR7900Q SII-R



10
750 mm

TRI 在 SEMI 先進封裝之檢測機會



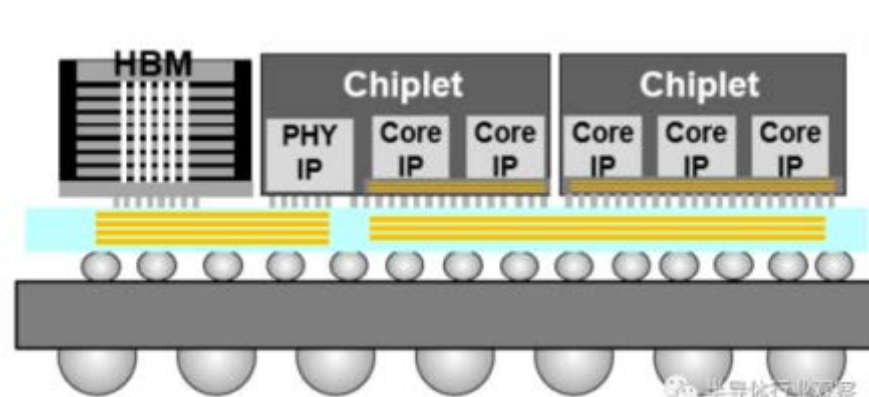
TR7700Q SII-S



TR7950Q SII



TR7600 SIII Plus



半导体行业观察

innovation

主要競爭對手



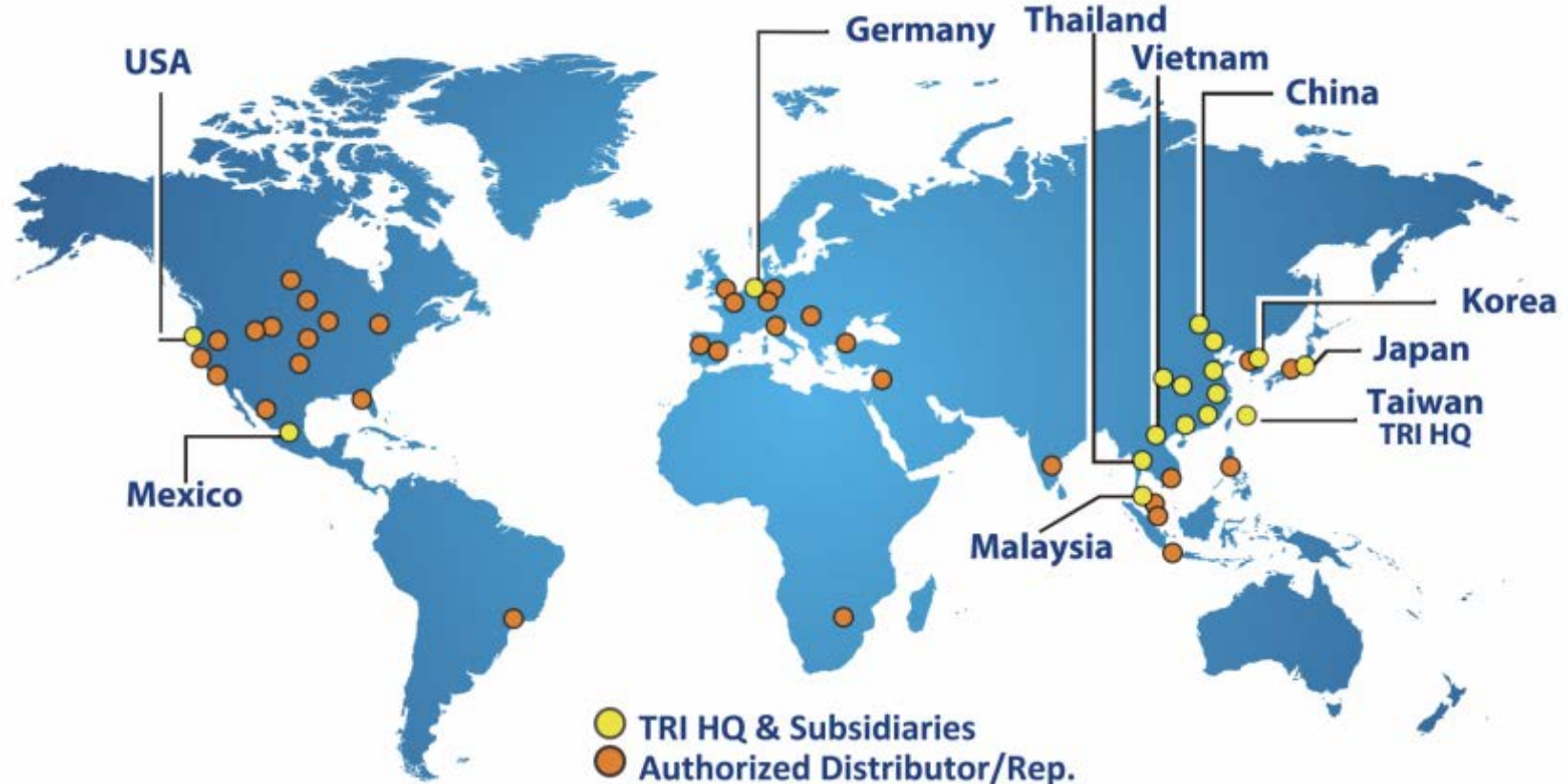
- 韓國: Koh Young/Pemtron/Parmi/Mirtec
- 日本: Omron/YAMAHA/Saki
- 中國大陸: Jutze/Sinic-Tek/Holly/Unicomp/MagicRay
- 馬來西亞: Vitrox
- 美國: Keysight/Teradyne/Camtek(SEMI)/MVP(SEMI)
- 德國: Viscom/SPEA

全球銷售服務網

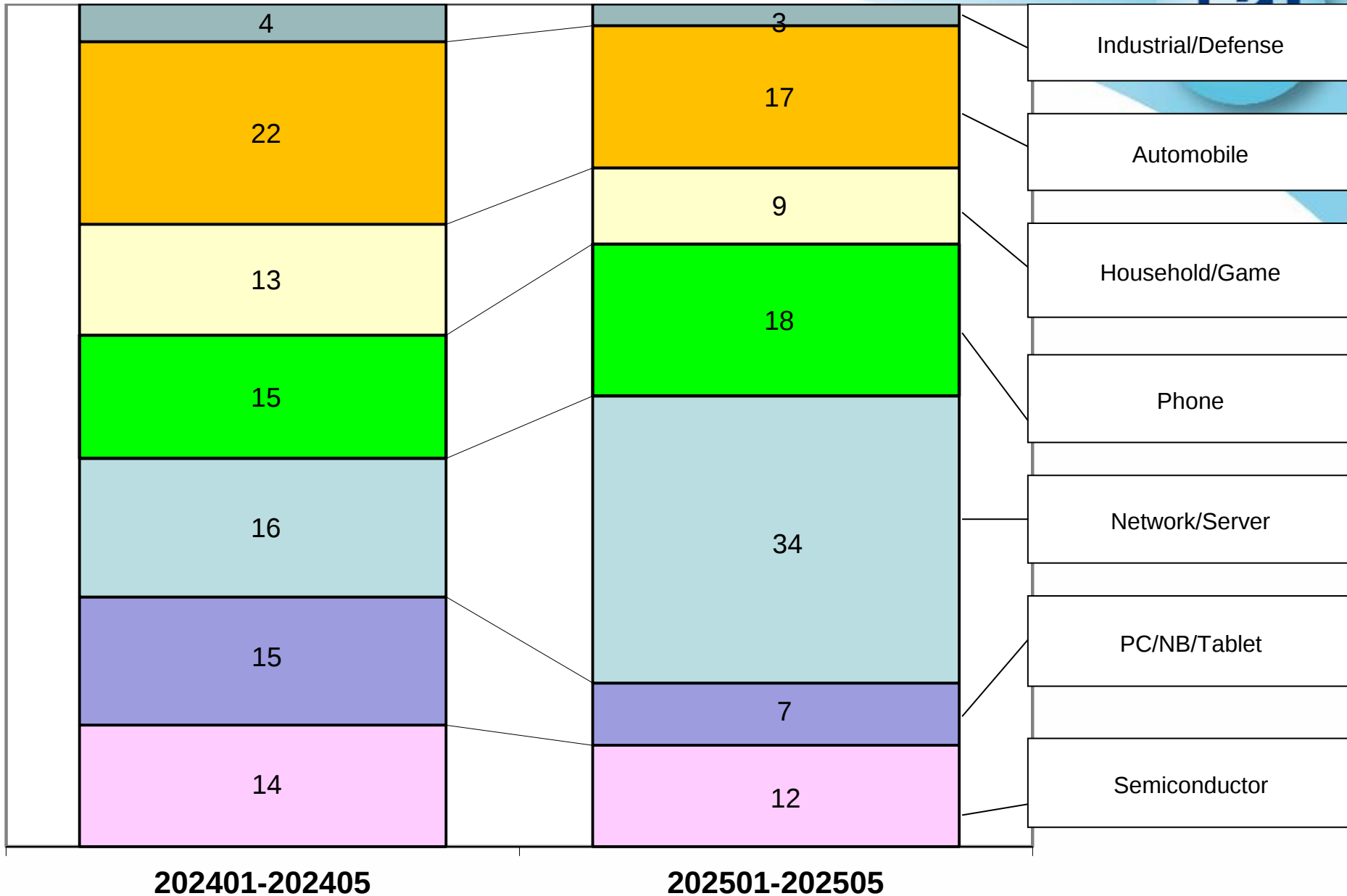


More than 3000 customers have been serviced.
More than 50 distributors and Rep. worldwide.

主要客戶為全球電子產品以及
半導體大廠



Electronic Industry/Revenue Movement



年營收



台幣百萬

10000

9000

8000

7000

6000

5000

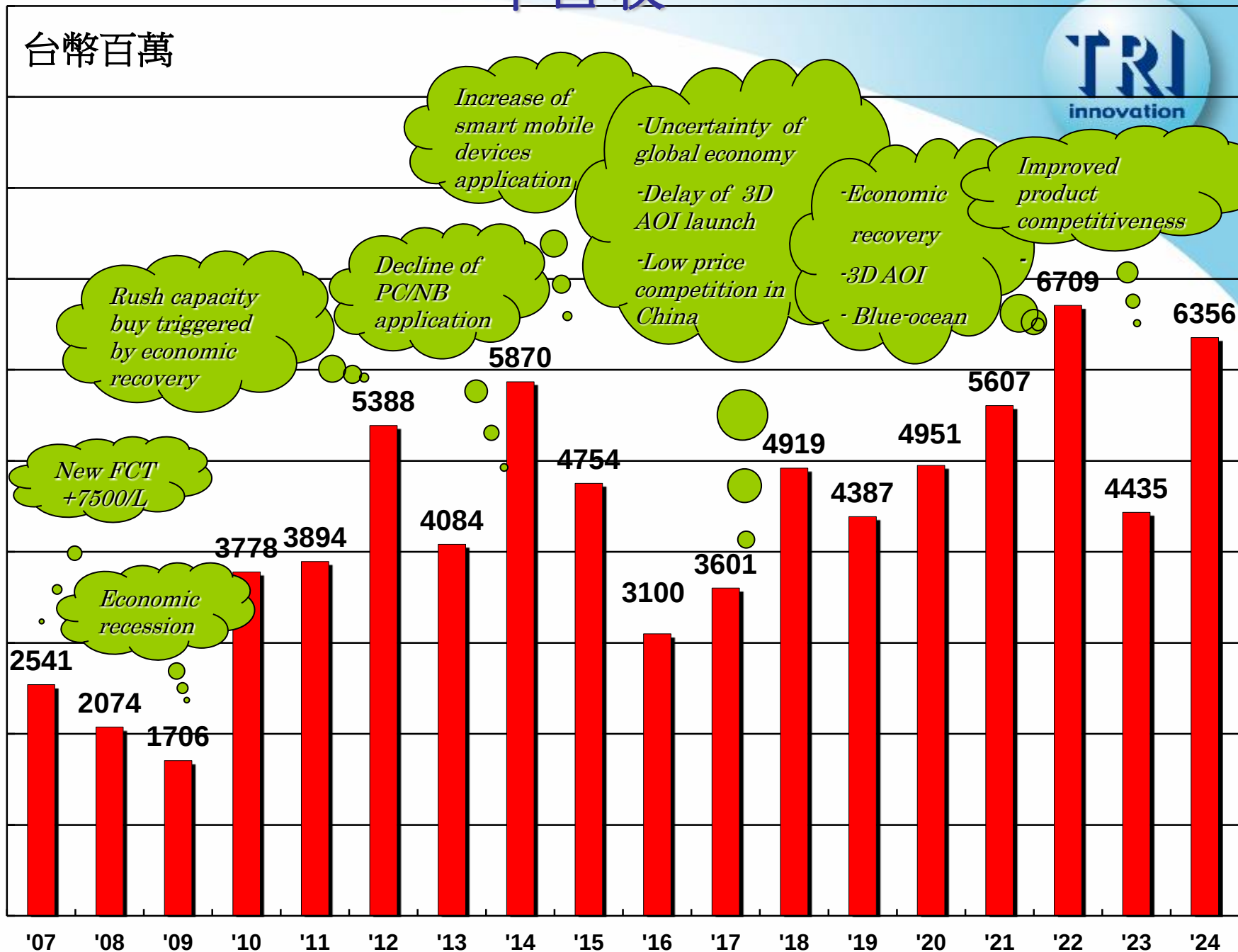
4000

3000

2000

1000

0



New FCT
+7500/L

Economic
recession

Rush capacity
buy triggered
by economic
recovery

Decline of
PC/NB
application

Increase of
smart mobile
devices
application

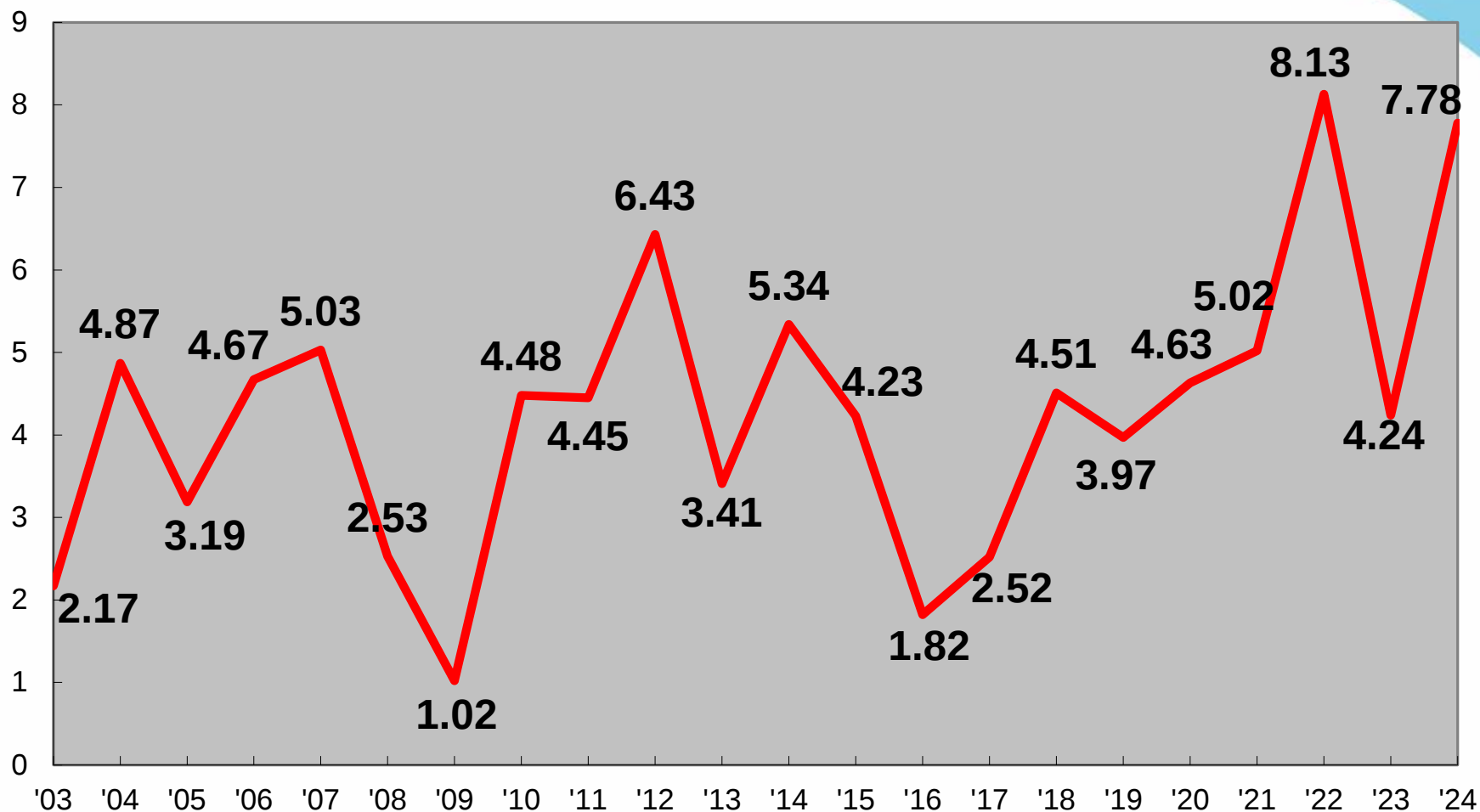
-Uncertainty of
global economy

-Delay of 3D
AOI launch
-Low price
competition in
China

-Economic
recovery
-3D AOI
-Blue-ocean

Improved
product
competitiveness

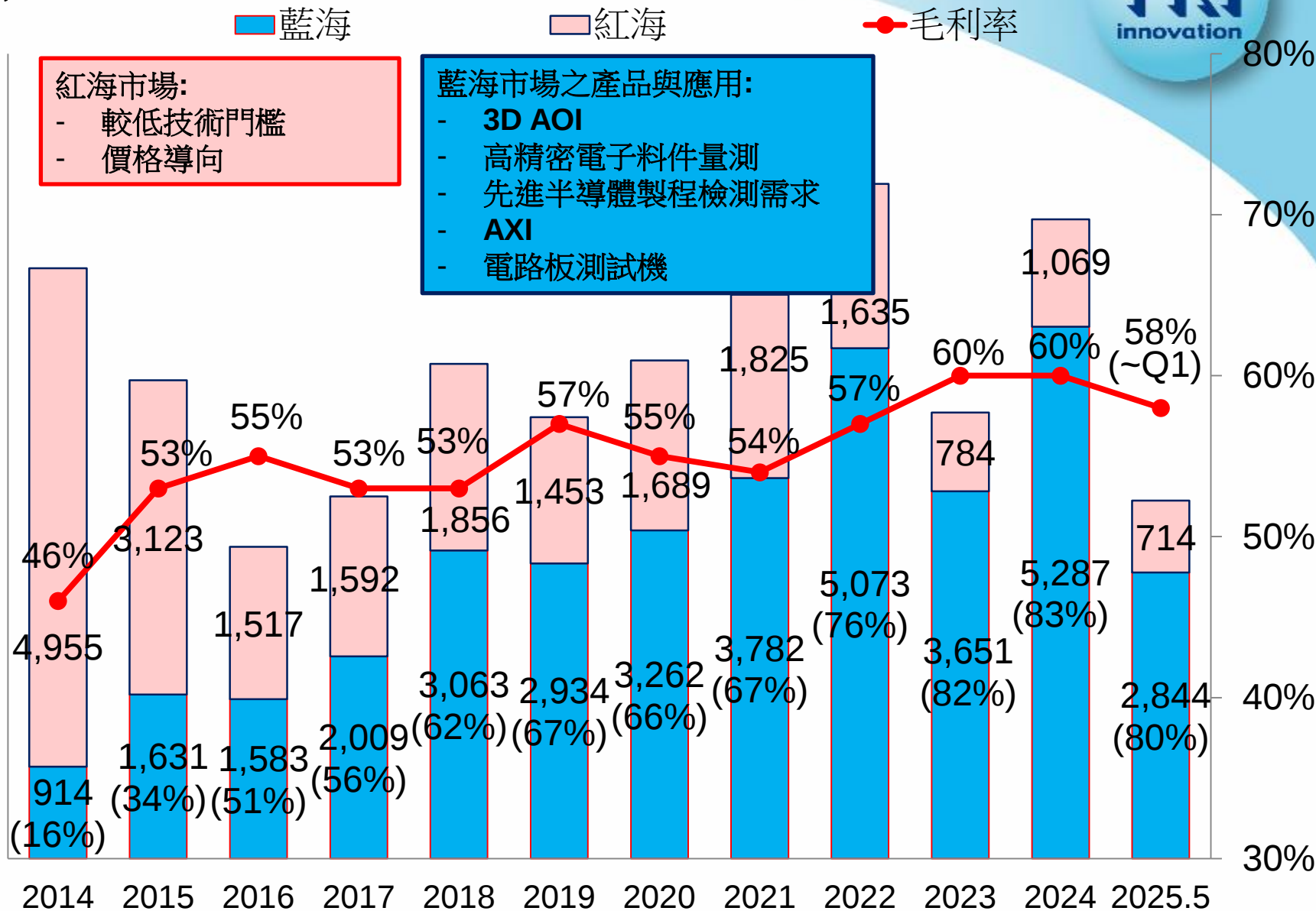
每股盈餘



紅海與藍海市場營收變化



台幣百萬



業界趨勢發展

2024 - 2026



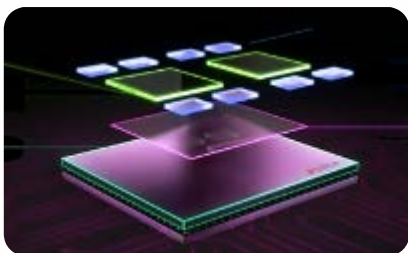
**Data Center
AI Servers**



**Telecom
AI-Ready Servers**



Generative AI



**Semiconductors
CoWos**



**EV
Power Modules**



**Automation
Light-Out Factory**

TRI重點發展新產品



TRI Technology
SEMICON 2023

2024 - 2026



General Application



Automotive - Telecom



SEMI



SPI

SMT

TR7007Q SII, TR7007M SIII

SEMI

TR7007Q SII-S

AOI

SMT

TR7700 SIII Ultra, TR7500 SIII Ultra

SEMI

TR7950Q SII (Wafer AOI)



AXI

SMT

TR7600LL SV, TR7600FB SII, TR7600HP

SEMI

TR7600 SIII Plus, TR7600F3D SII Plus



ICT

TR8100 SII, TR8100L SII INLINE



TRI 3D AOI 優勢



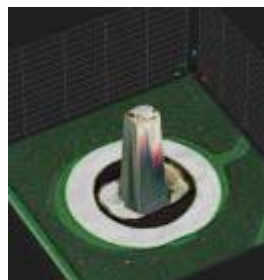
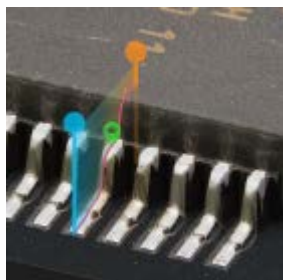
AI-Powered
Algorithms



Metrology
Measurements



Smart
Programming



High Speed Line



TRI AOI 可支援多種 3D 技術



Quad Digital
Fringe Pattern
Technology

General Application



Laser
Module

**Reflective &
Transparent
Part Inspection**



Depth from Focus (DFF)
Module

**Optimal Focus
0.5/1 μ m
High Resolution**

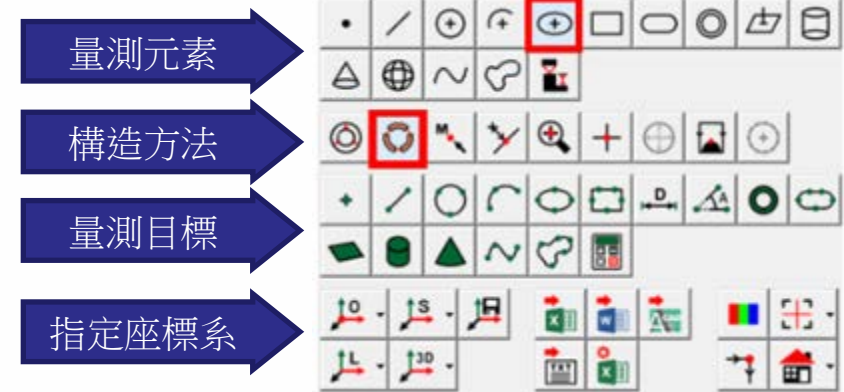
TRI 量測功能 (AOM)



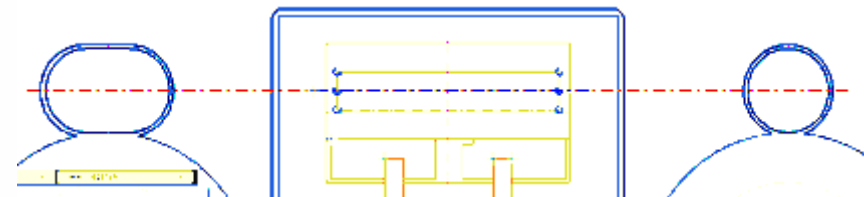
- ❖ UI: New designed and friendly user interface



- ❖ Features: More complete measurement functions will be available



- ❖ High Flexibility: Multi-Layer measurements



Conformal Coating防護塗層檢測AOI

Technology
SINCE 1985

TRI
innovation

Full Coverage Conformal Coating AOI



High Speed Inspection
2D: 120 cm²/s*
3D: 60 cm²/s*



**Easy
Programming**



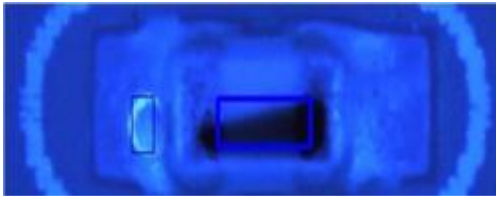
**Coating
Measurements**



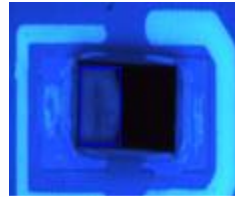
**Thickness
Measurement**



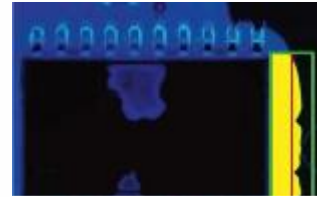
**3D Laser
Module**



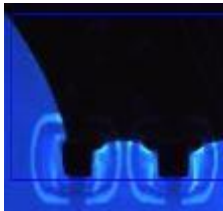
Insufficient Coating



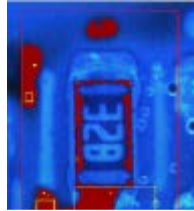
Splash



Caliper Spill



Missing Coating



Crack



Bubble



Height Map



TRI SPI 新應用發展



Technology
SEMINA 12035



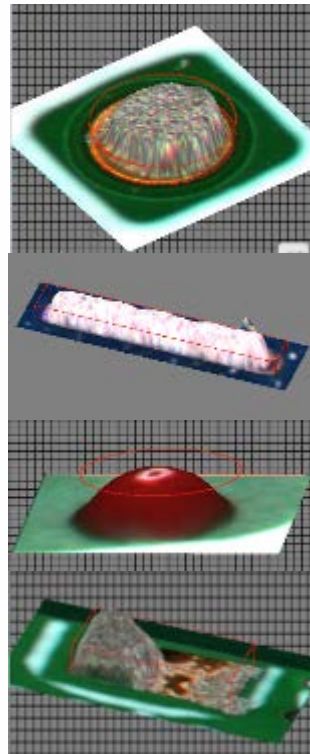
SMT



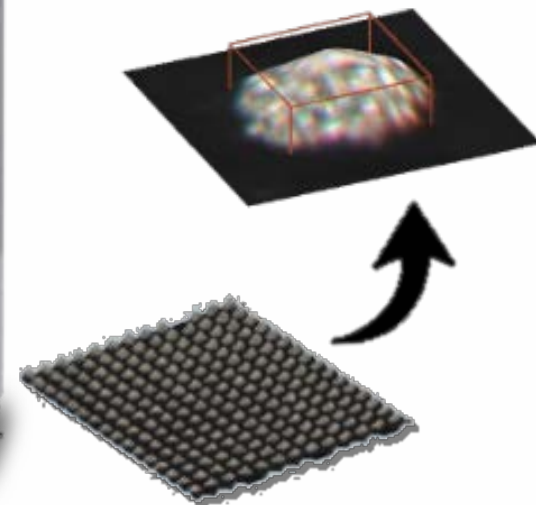
SEMI



**TR7007D/Q SII, TR7007 SIII
TR7007D/Q Plus, TR7007 SII Plus**



**TR7007Q SII-S,
TR7007 SII Ultra**



Solder Paste, Mini-Bumps, Glue, Flux, Mini LED Solder, Bare Board / Pad, Foreign Material

TRI AXI 優勢



High Speed Line



AI Algorithms:

AI Voids Detection,
AI Programming,
AI Repair Station



Big Data Applications

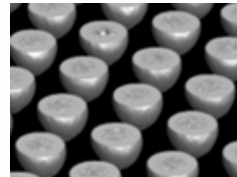
2- 30 μm

Multi-Resolution Multi-Applications

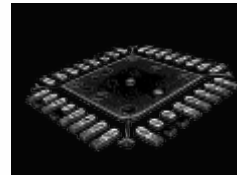


Up to 2100 x 510 mm

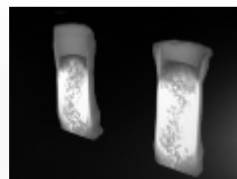
Large Board Inspection



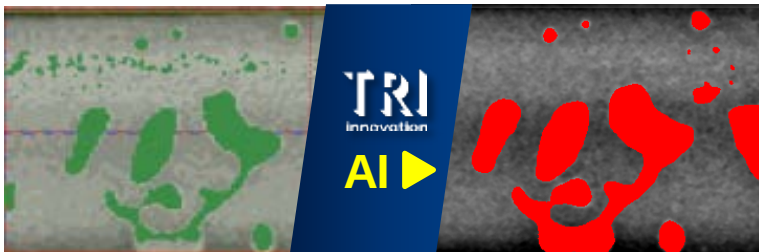
BGA Inspection



QFN 3D AXI



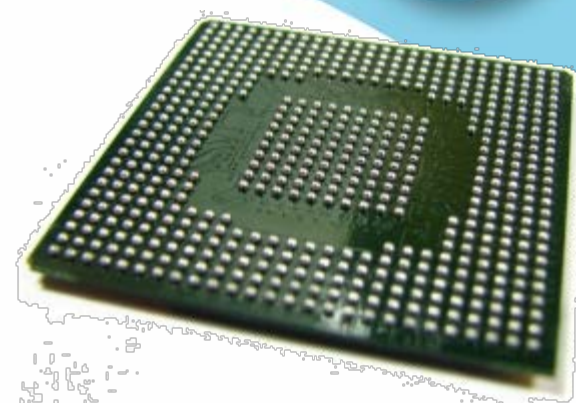
PTH/THT Filling level



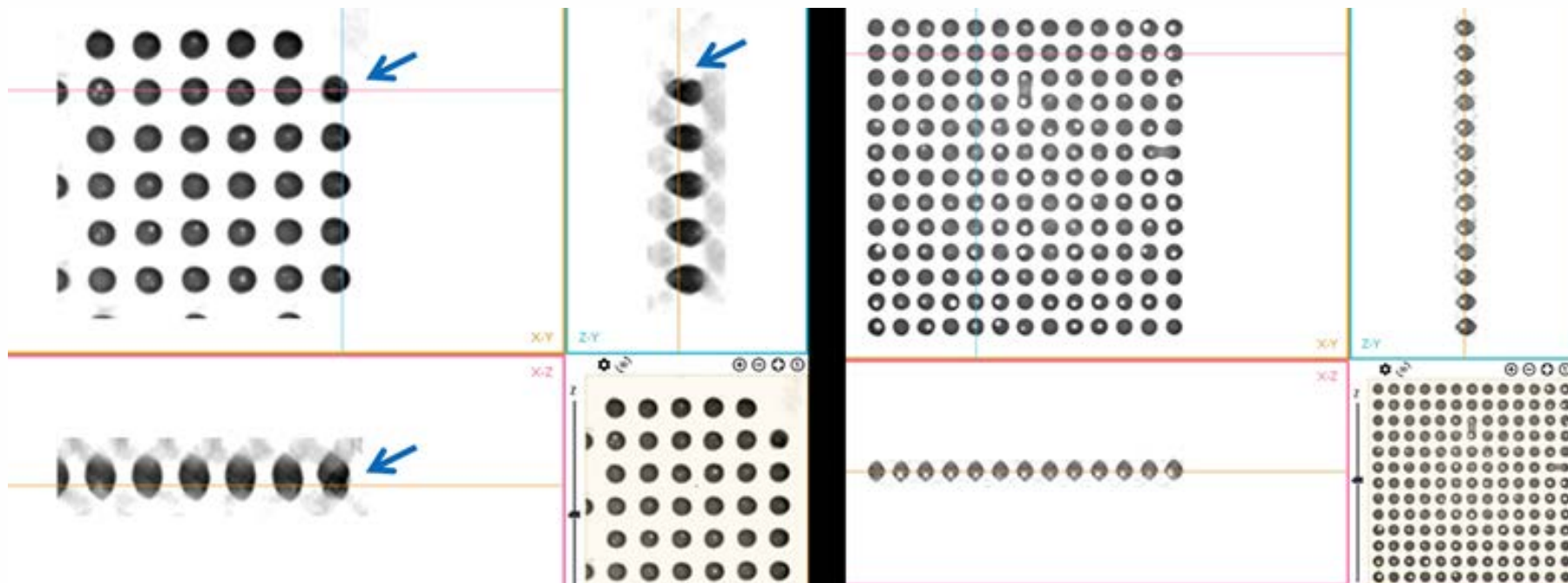
TRI AXI - BGA 檢測應用



Product Type Examples	ADAS, Radar Module, Communication Module
Inspection Criteria	<u>BGA Void, Open</u>
TRI AXI Application	3D CT Inspection



3D CT (電腦斷層掃描)



TRI AXI – 平台特點



TR7600F3D SII

Joints-oriented Inspections



In-depth
High-Resolution

Flat Panel Detector

TR7600LL SV

High Yield-rate Full-Inspection



High-Speed
Inspection

Line Scan Detectors

ICT / Board Tester 完整電測產品線

High Performance Modular ICT



High Pin-Count
Up to 11,088 Testing Points



**Auto Calibration,
Self Diagnostics**



Board Size
Up to 920 mm



TRI AI驅動解決方案



Technology
SOLUTION



AI Defect Detection 缺陷偵測

AOI, AXI, SPI



AI Programming 編程

Faster Inspection Setup



AI Station 工作站

Deploys AI Model



AI Verify Host 校驗主機

AI Repair Station



AI Training Tool 訓練工具

Generates AI Model

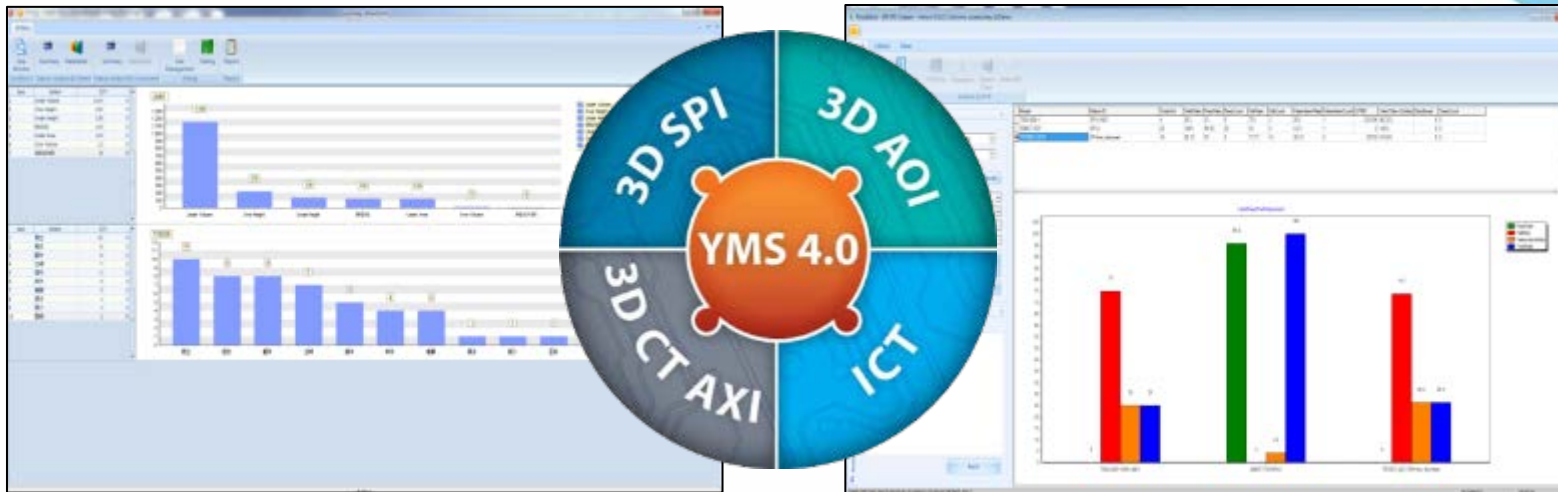


TRI Labeling Tool 標記工具

Annotates Data

TRI YMS 4.0 良率管理系統

協助客戶提升生產力及品質管理



- 實時狀態檢查
- SPC和生產力監控
- 列出排名前10的不良項目和對應圖像
- 依各站別, 線別, 流程找出問題點
- 監控生產問題改善狀況
- PDCA改善循環
- 支持品質優化
- 輸出報告到MES / SFCS

工業4.0解決方案

工業 4.0 應用方案



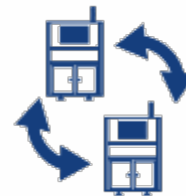
**SMART
FACTORY**



**MES
Connectivity**



**Real Time
SPC Trends**



**Closed Loop
Solution**

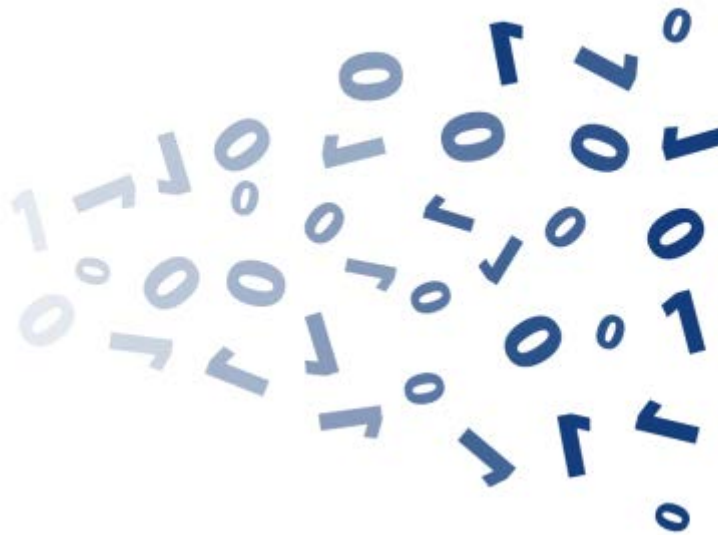


Repair Station

MES 客製化 - 大數據收集



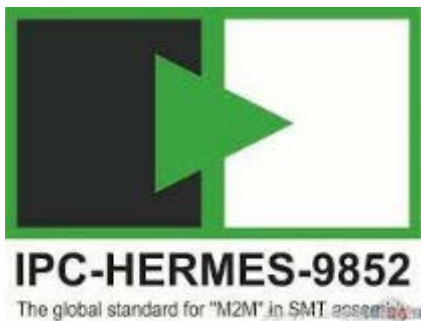
TRI solutions generate  for your MES Applications
To Improve your Production Yield Rate



Data

- PCB ID
- Component ID
- Inspection Image
- Area / Height / Volume
- Position (X,Y,Z)
- Shift (X,Y,Z)
- Void %
- *and more...*

支援 IPC-HERMES-9852 規範



M2M Communication Standard

- Based on TCP/IP and XML
- Automatically Change the Program.
- Automatically adjusts the conveyor belt width.
- Continuous tracing of boards throughout a SMT line.
- Requirement: At least one Bar Code Scanner



支援 IPC-CFX (IPC-2591) 規範



Qualified Products



SPI

TR7007 SII Series
TR7007 SII Ultra
TR7007D Series
TR7007Q Series
TR7007Q Plus Series



AOI

TR7500QE Series
TR7700 SIII Series
TR7700Q SII Series
TR7700QE Series



AXI

TR7600 Series
TR7600F3D Series

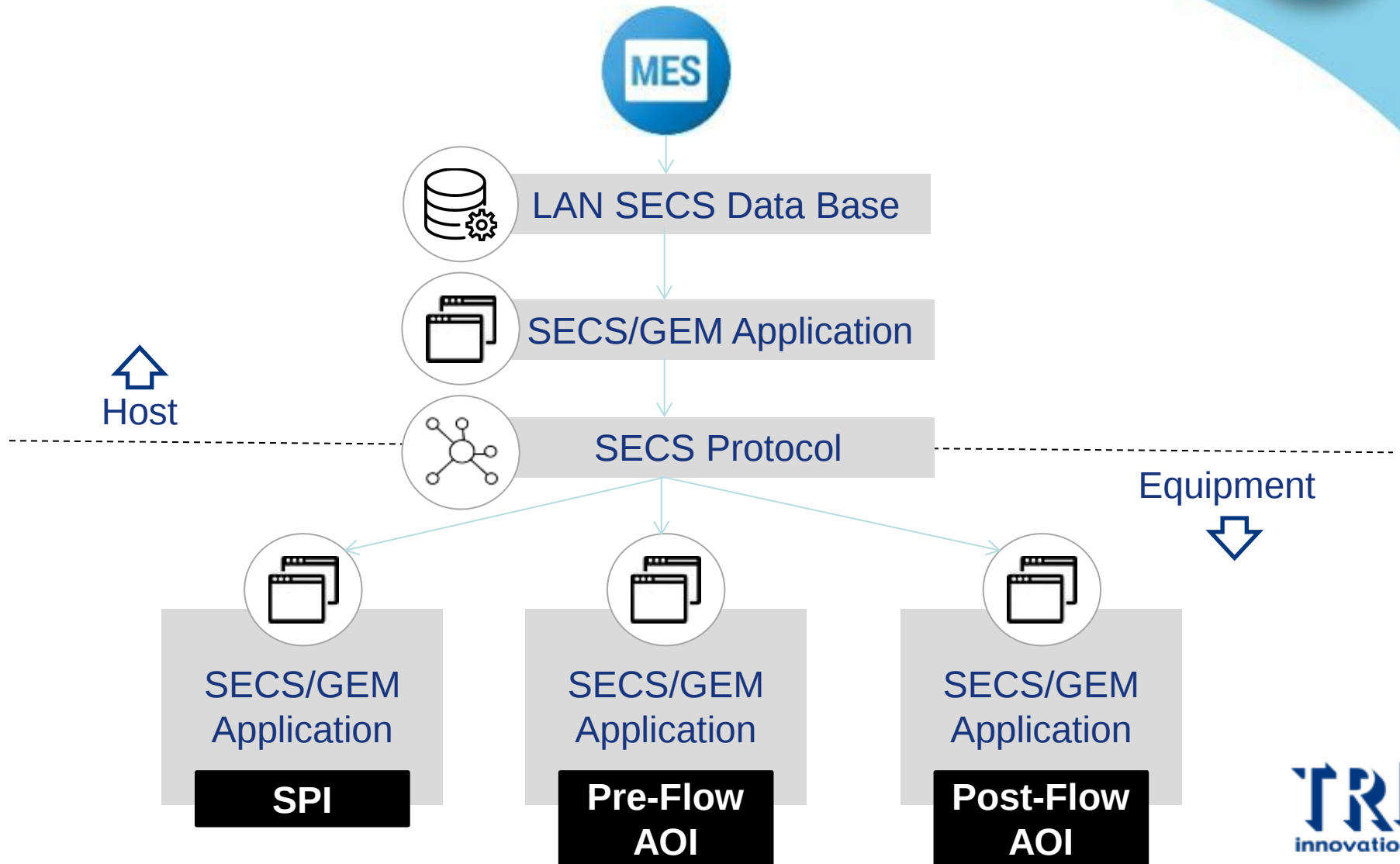


ICT

TR5001 Series

支援SECS/GEM 架構

半導體設備通訊標準



連接

數據共享
工業4.0通訊標準
MES 定制

優化

AI 智能複判主機
AI 智能工作站
共享檢測數據庫
遠端微調功能

監控

遠端通報
遠端控制

視覺化

圖表操作介面
即時SPC趨勢
檢測實況狀態



合作案例: TRI & NVIDIA



TRI, Taiwan's leading AOI equipment maker, has announced it's integrating **NVIDIA Metropolis** for Factories workflow and capabilities into its latest AOI systems and is also planning to use NVIDIA NIM to further optimize system performance.

- NVIDIA

[Article Link](#)



NVIDIA Metropolis is an application framework, set of developer tools, and ecosystem of companies that brings visual data and AI together to improve operational efficiency and safety across a variety of industries. It helps make sense of data created by trillions of sensors for some of the world's most valuable physical transactions.

Industrial and Manufacturing

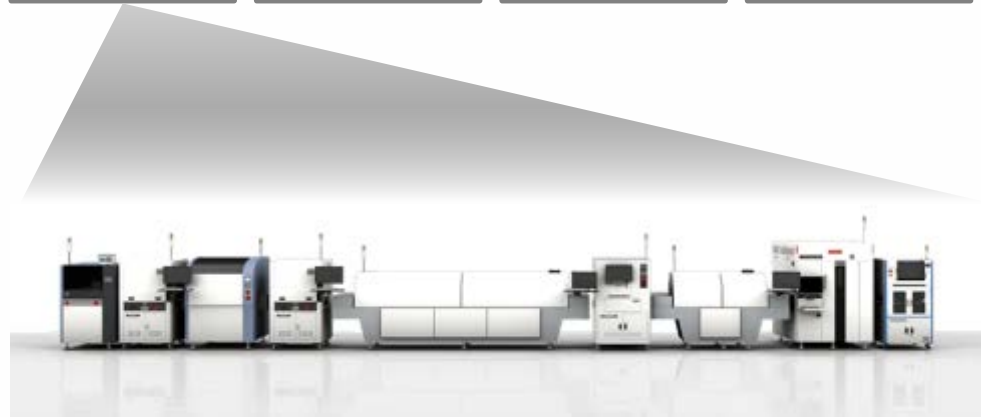
Improve industrial inspection, increase productivity, and reduce waste on manufacturing lines.

Automated
Optical
Inspection

Preventive
Maintenance

Remote
Asset
Monitoring

Safety and
Compliance



內部研發團隊



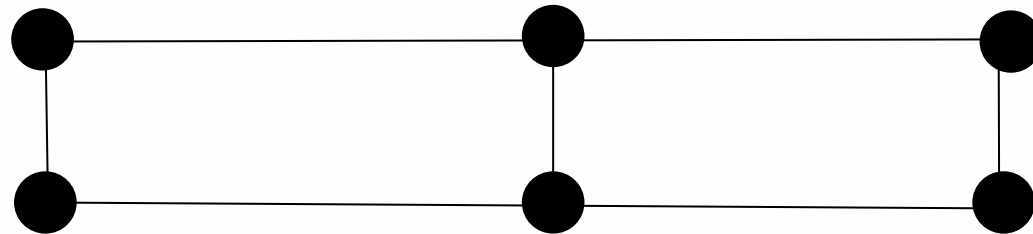
- Optical Dept.
- Mechanical Dept.

- system S/W
YMS, R/S

- PLC control
- Lighting control

光學檢測

電路板測試



230+ RD

外部機構技術支援

Department of Computer science, 台灣大學

- 影像處理 / Understanding

Department of Power Mechanical, 清華大學

- X-ray 3D Reconstruction/Digital Tomosynthesis Algorithm/電腦切層演算法

Center of Measurement Standards, 工研院

- Length/ Camera / 色彩校正

近年獲獎



- 2020 Global Technology Award
- 2021 EM Asia 創新獎
- 2021 Global Technology Award
- 2022 EM Asia 傑出產品獎
- 2023 EM Asia 創新獎及傑出產品獎
- 2024 EM Asia 傑出產品獎及最佳供應商獎
- 2024 日月光投控年度最佳供應商獎
- 2025 Circuits Assembly NPI Award
- 2025 EM Asia 創新獎及傑出產品獎

* TRI's Company Milestones:

<https://www.tri.com.tw/tw/about/about-21-1-2.html>

免責聲明



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Better Testing Better Quality



THANK YOU!

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