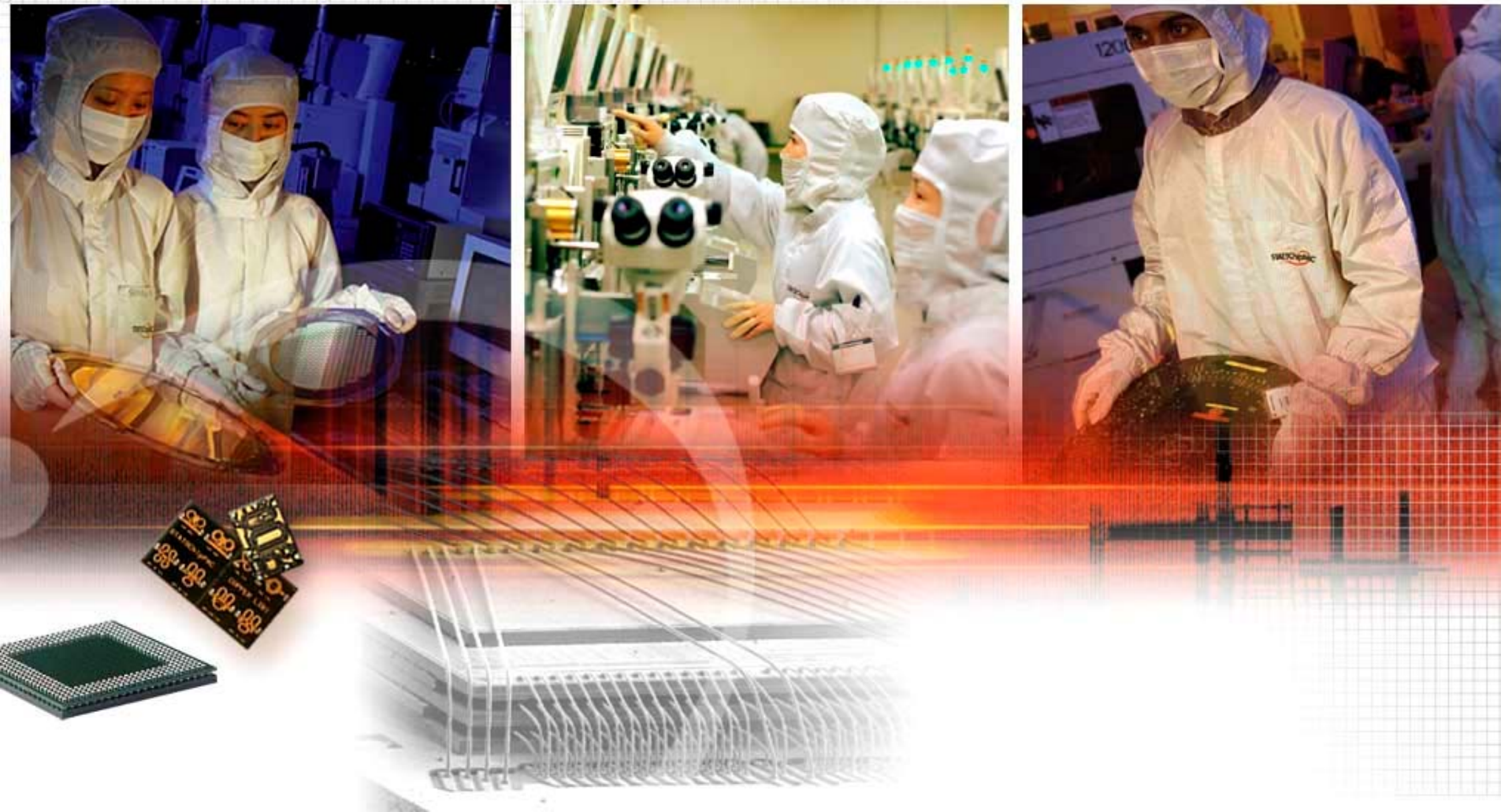


# Standardization for Success: A Test Services Perspective



Presented at CAST

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# Our Global Footprint

Headquartered in Singapore, STATS ChipPAC has design, research and development, manufacturing and customer support offices strategically located across 10 countries

8 Test Locations

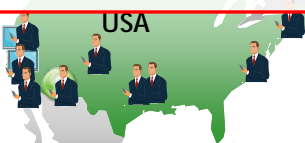
~100 customers

Standardization  
Allows sharing  
of Equipment,  
Knowledge and  
Best Practices



### Fremont and San Diego (SCU)

Engineering Test facilities provide wafer probe and final test services,



### UK The Netherlands



### Pathumthani, Thailand (SCB)

463K ft<sup>2</sup> facility provides test services, wafer sort and probe, traditional and advanced packaging and drop shipment services.

### Shanghai, China (SCC and SCC2)

983K ft<sup>2</sup> facility provides wafer probe, assembly, test memory card assembly and distribution services. A 12K ft<sup>2</sup> facility in Song Jiang provides solder bump services for flip chip assembly.

### Icheon, Korea (SCK and SCK2)

770K ft<sup>2</sup> high-end facility specializes in advanced array packaging such as Flip Chip, Stacked Die, Chip Scale Packaging and BGA. Second 181K ft<sup>2</sup> facility focuses on wafer sort and probe, packaging and final test.

### Kuala Lumpur, Malaysia (SCM)

488K ft<sup>2</sup> facility provides advanced lead frame packages such as leadframe Chip Scale Package and Bumped Chip Carrier and test services.

### Yishun, Singapore (SCS)

595K ft<sup>2</sup> facility with state-of-the-art equipment and class 10K clean room. Provides wafer sort and bump, fabrication of integrated passive devices, packaging, test services and drop shipment.

Taiwan (SCT)  
High performance Probe and Final Test Facility. Flip Chip R&D

Singapore



Headquarters



Manufacturing Facilities



R&D Centres



Customer Support / Sales Offices



Facilities

(1) Customer support only  
(2) Sales Office only

# Where do we Seek Standardization?

- Inventory Control Systems
  - Usually only one system. But IDM customers may require their own system
- Test Automated Control Systems
  - Machinery doesn't respond well to multiple control systems
- Performance Monitoring Systems
- Data Collection Software
  - Challenge with customers having unique requirements; but we must have our standard
- Test Platforms by Application by Factory, by Packaging Technology
  - We struggle with this one but we spend the most time working for definition here
- Handlers for product
  - We have more control here since we own the handling
  - Sockets and Change kits for complex stacked packages
- Post Test Equipment
  - Again we have more control here but different packages and different industries call for increasing complex scanning, and TnR operations

# Challenges Encountered to Standardize

- Different Vendor preference across customers
- Different Vendor preferences across factories
- Attractive Vendor Initiatives/Incentives to change standard practices
- Flexibility can come with costs
- Historical precedence's
  - We don't ever start from scratch. We purchase factories
- Custom requirements particularly Silicon/fab/design flaw screening
- New technologies keep this an ever growing challenge

# Where Can We Standardize?

- Despite the challenges we have entire groups dedicated to standardization
- We would like our Test vendors to Standardize in many ways
  - Backward compatibility of newer instruments
  - Compatibility of Slot alignment and configuration across customers in the same space
- We would like our customers to go with standards in many ways
  - Test Flows, (QA, QA Sampling, Temperature Testing,)
  - Test Platforms
  - Test Interface Designs
  - Post test Reel Specifications
  - Test Load board pitches
  - Test Reduction and Insertion elimination
- We push our factories towards:
  - Tester configuration standardization for flexibility of demand
  - Socket purchasing
  - TnR materials Purchasing
  - Handler Change Kits

# What More Can We Achieve

- Fewer Base Test Platforms
  - We see this happening in # of platforms but the the price difference in Test head Sizes does not encourage that
- We would like to see more on consistency of QA standards implementation
- Expect Vendors to Stress Standardization in Placement of Instruments in Test Heads
- Can creative business deals encourage standardization?
  - Some success in handler side
- Can organizations and forums remain committed to improving the overall cost structure or will the sponsors be biased