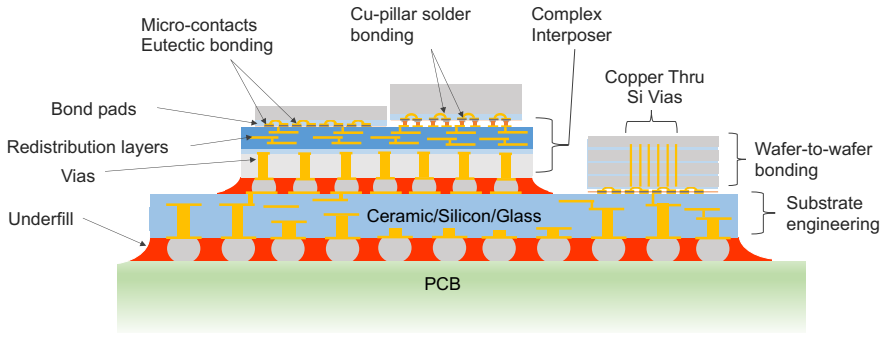
Advanced System Integration

BRIDG capabilities are centered on an advanced system integration platform, which enables the high-density integration of multi-chip systems. BRIDG provides capabilities that support the heterogeneous device integration techniques illustrated in the diagram.

- BRIDG is one of the few 200mm facilities in the world with the ability to implement copper (dual damascene) and gold for electrical signal routing and interconnect.
- Using ultra-high-density silicon interposer capabilities, BRIDG can build and assemble electrical signal interfaces between heterogeneous devices using micro-contact arrays at pitches of 4 microns and smaller.
- Current photolithography capabilities allow for chip features of 0.5 micron vias and 0.35 micron lines and spaces, which enables ultra-dense metal interconnect between chips using silicon interposers and redistribution layers (RDL) of metal for signal routing. Future plans include acquiring additional photolithography tools with capabilities down to 50 nanometers and smaller.



Anti-Tamper & Anti-Reverse Engineering
(Hardware & IP Partners)

Hardware Cybersecurity
(PUF, Crypto IP, IP Partners)

Advanced System Integration & Packaging

Trusted & Assured Manufacturing
(Secure Digital Twin, Verification / Validation)

Size, Weight & Power
(Interposers/RDL, 2.5/3D with Copper & Gold)

Advanced System Integration provides solutions for size, weight and power reduction to address "More than Moore" functional density scaling challenges.

Improved Performance

- Heterogeneous chip integration (Si, III/V, Photonics)
- Ultra-high density (1,000,000+ I/O)
- Power consumption and system response time
- Robust operating temperature range (77K to 673K)

Improved Form Factor

- Transforms traditional IoT sensor techniques enabling improved monitoring with more capabilities at the "edge"
- Enables system miniaturization

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Bridging the Innovation Development Gap

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