State of the Art Heterogeneous Integrated Computing Enabling Warfare Modernization Capabilities

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Advanced packaging has migrated to the Pacific Rim for decades, introducing substantial risks as the DoD strategically modernizes. The integration of advanced microelectronics into sensors, networks, and weapons is foundational to all domains: land, air, sea, space, and cyberspace. The ability of advancing and reshoring capabilities in state of the art heterogeneous integrated (HI) microelectronics can increase the speed of modernization for United States. HI processing is foundational to DoD's ability to modernize: to rapidly develop & deploy software, to integrate diverse sensors into multifunction systems (ex: cyber, EW, radar, comms), and to deploy trusted autonomous systems. A necessary partnership forms between the development and acquisition communities – to be able to design, fabricate, integrate, package, field, and globally deploy these advanced capabilities. Today, it is necessary to reshore key capabilities to address our critical national security challenges. Mercury Systems supports a trusted and secure design flow and advanced packaging capability for the most challenging missions: broadband multi-function RF systems, integration of novel 2.5D chiplets through modern silicon interposers & substrates, radiation tolerant processors, and secure processing. Our presentation will explore key initiatives we driving with the DoD to reshore advanced packaging capabilities for the defense community.