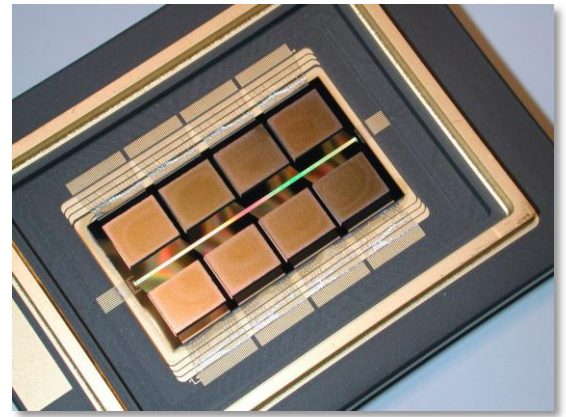




WHITE PAPER

The Aspen Microsystems Development Process

A structured method for bringing complex microelectronic products to market on time and within budget



Aspen Microsystems is focused on helping our customers rapidly bring their microsystems-based products to market. The Aspen Microsystems Development Process was created to manage this process in a swift but disciplined manner. Since Aspen Microsystems does not have any exclusive relationships with any supplier, we remain free to use the optimal technology and implementation methods to ensure that customer and product needs are met in the best manner possible. Aspen Microsystems can engage with the customer at any phase of this development process. The phases of this process are:

Phase #1 - Evaluation: In this phase, working closely with the customer, we document market and product needs from a technical and business perspective. Initial functional and reliability targets are specified for the full life cycle of the product. System partitioning options are evaluated with respect to time and budget, as well as the readiness of the technology and the supply base. Test strategies, risk analysis, compliance requirements and prototyping plans are also created during this phase.

Phase #2 - Design & Prototype: Product and component designs are completed and initial prototype devices are fabricated in Phase 2. Using appropriate modeling and simulation strategies along with the latest design tools, the device schematics, layouts, drawings, specifications and process documents are developed, refined and finalized in a manner that allows regulatory requirements to be met. Initial prototype devices are then fabricated and tested, and designs are verified through functional and initial reliability testing.

Phase #3 - Development, Qualification & Pre-Production: In this phase, larger numbers of devices are assembled and tested and a data-driven development feedback loop is used to make design, process and material changes as needed. Processes are statistically verified for their ability to meet the production criteria. Control and reaction plans along with other quality and production release documents, are completed. If processes are to be transferred to another facility, this effort is initiated during this phase. As appropriate, qualification material is fabricated and submitted for Verification and Validation testing. The deliverable from this phase is qualified as a product, made by a qualified manufacturing process using qualified suppliers.

Phase #4 - Production: This is the phase in which formal production begins and capacity is increased according to the ramp plan. Continuous quality improvements, cost reductions and yield enhancements are emphasized during this on-going production phase. Qualified suppliers are managed closely to ensure that overall program objectives continue to be met. If a strategic second production source is required, process transfers and training are accomplished in a disciplined and efficient manner during this phase.

Aspen Microsystems has decades of experience developing hundreds of MEMS, microsystem, microfluidic and micro-optical products on time and within budget. Let our team of experts assist you.