



BAE SYSTEMS

Space services

Providing a full scope of design,
assembly, and analysis services

Electronic Systems



Overview

We offer a host of design and assembly services for custom circuit cards and components, Application Specific Integrated Circuits (ASICs), and Field Programmable Gate Arrays (FPGAs). In addition, we also perform flight qualification testing, failure analysis, and destructive physical analysis.

Space circuit card assembly

We have more than 30 years of experience assembling circuit cards for a wide range of complex electronic products. We maintain flexible procurement, qualification, and assembly operations. With more than 900 computers in space, our team has the experience and technological expertise to service almost any assembly need. Our processes and products are qualified to J-STD-001 Space Addendum, NASA-STD-8739.1, and NASA-STD-8793.4.

Space-qualified processes and equipment for circuit card assemblies from component preparation through testing and conformal coating including:

- Lead-forming and enhancement
- Qualified Manufacturers List (QML) compliance
- Programmable Read-Only Memory (PROM) programming
- Automated surface-mount and through-hole soldering capabilities
- Real-time X-ray inspection
- Printed Wiring Board (PWB) to frame bonding
- Automated adhesive dispense for component bonding
- Flying probe, incircuit, and functional testing
- Precision hot-gas rework
- Conformal, acrylic, urethan, and parylene coatings
- Comprehensive assembly, inspection, and test strategy
- Dedicated new-product introduction team
- Rapid prototyping
- Sustaining product support
- Quick response to engineering and design changes

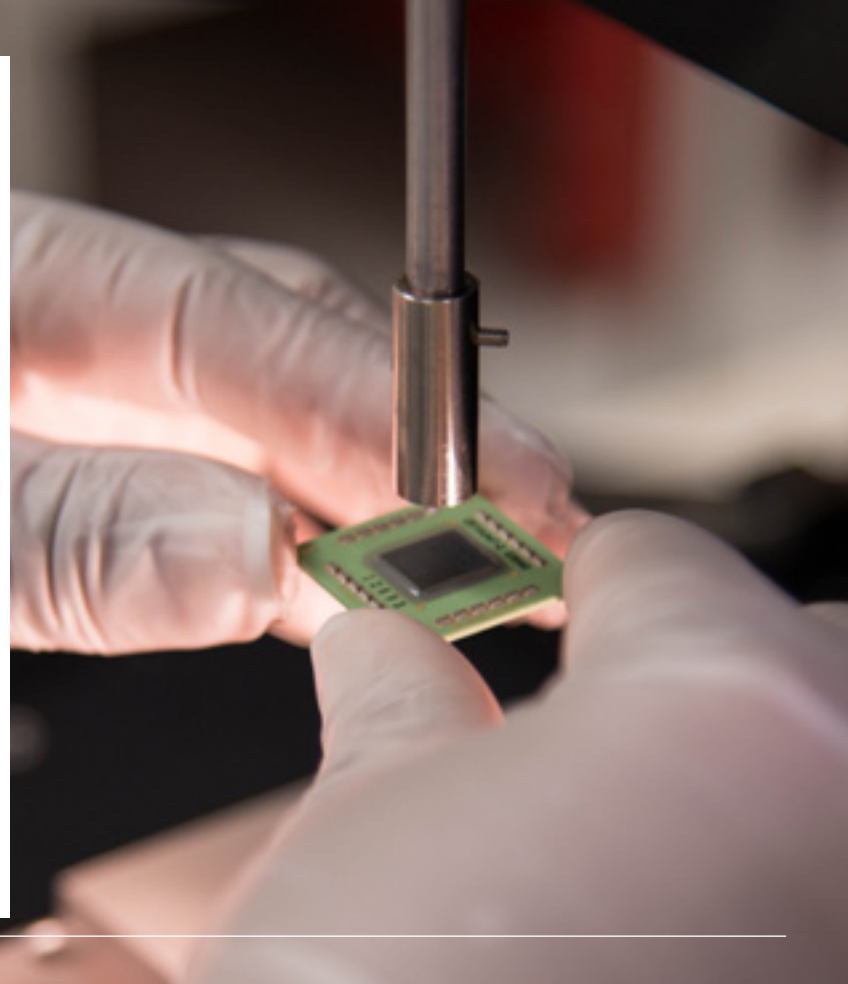


Space material management

Our highly qualified engineers are experienced in determining material screening needs based on mission requirements. We have developed a customized manufacturing execution system, called Solumina, to track manufacturing and screening status, store data, and demonstrate traceability compliance.

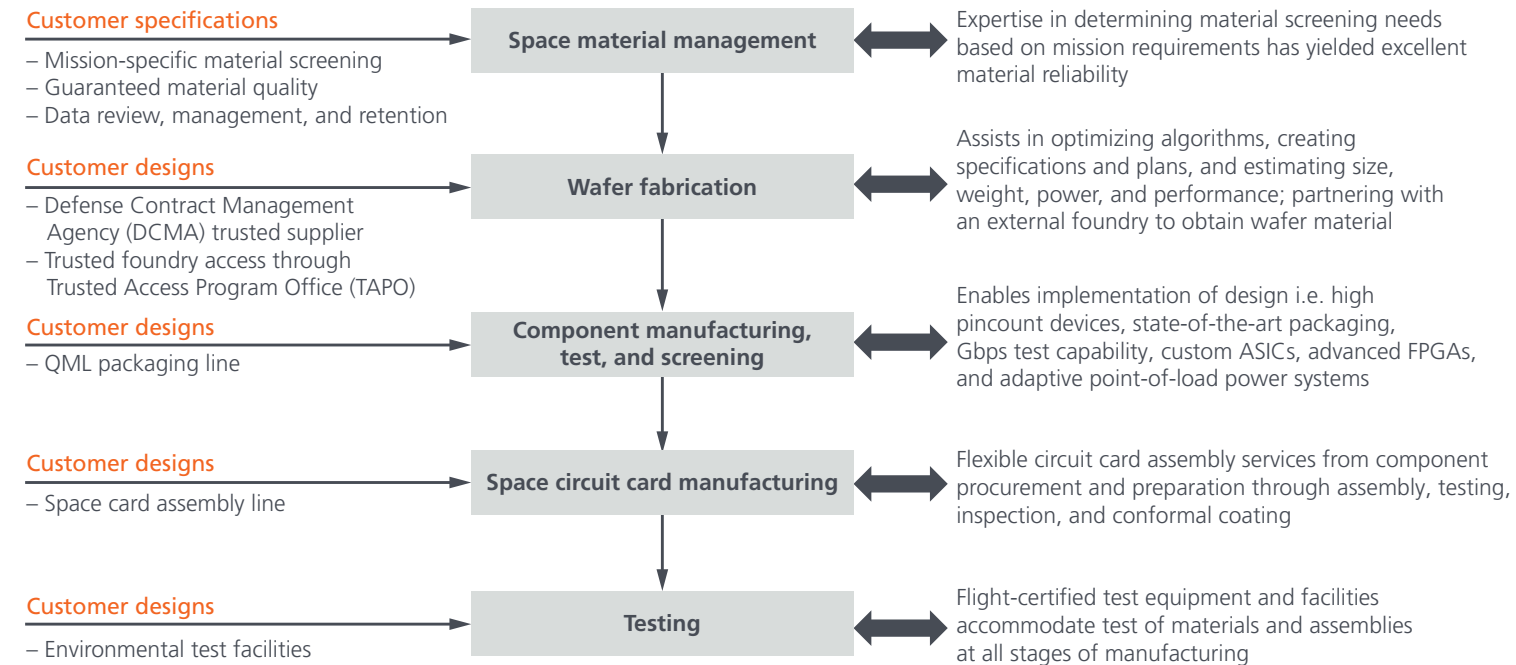
Our material management expertise includes:

- Determining required material screening based on mission requirements
- Executing required material screening including destructive physical analysis
- Guaranteeing material quality
- Data review, management, and retention
- Leveraging relationships with qualified space suppliers
- Failure analysis, including focused ion beam and space experiment modules



Integrated manufacturing cycle

Sample capabilities



Design services

Our integrated design team offers mission design services at any stage, from early architecture to testing. Our team has a history of delivering quality design services, efficiently and within budget. We have the experience, expertise, and facility required to deliver the best solution possible.

We have expertise in:

- Systems architecture
- Signal processing
- ASIC design
- Card and box design
- Mechanical
- Software
- Power
- Analog
- Reliability
- FPGAs

Architecture and algorithm development

- Map algorithm into space-suitable hardware
- Modeling to optimize power
- Trade-offs in implementation for enhanced radiation hardness
- Generation of hardware specifications
- Industry-leading technology roadmaps

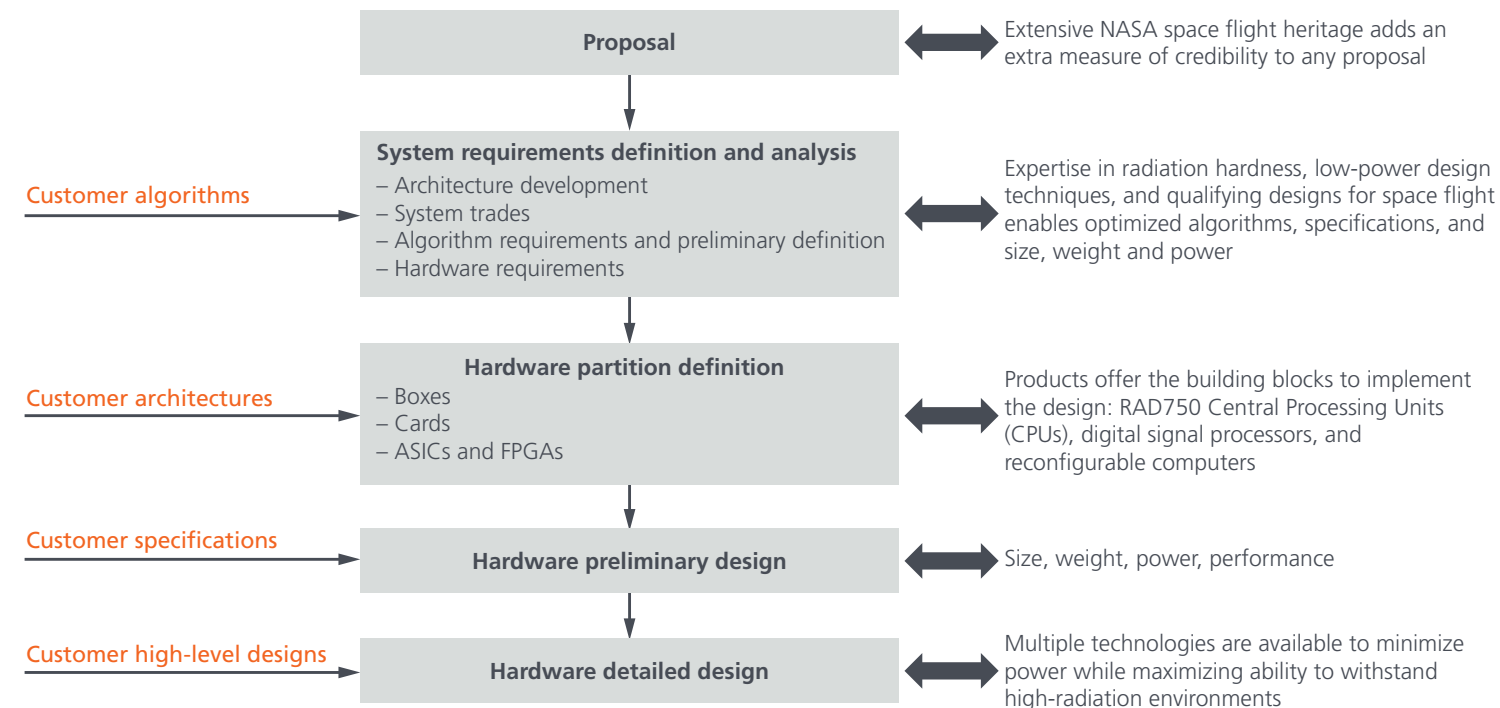
Logic design

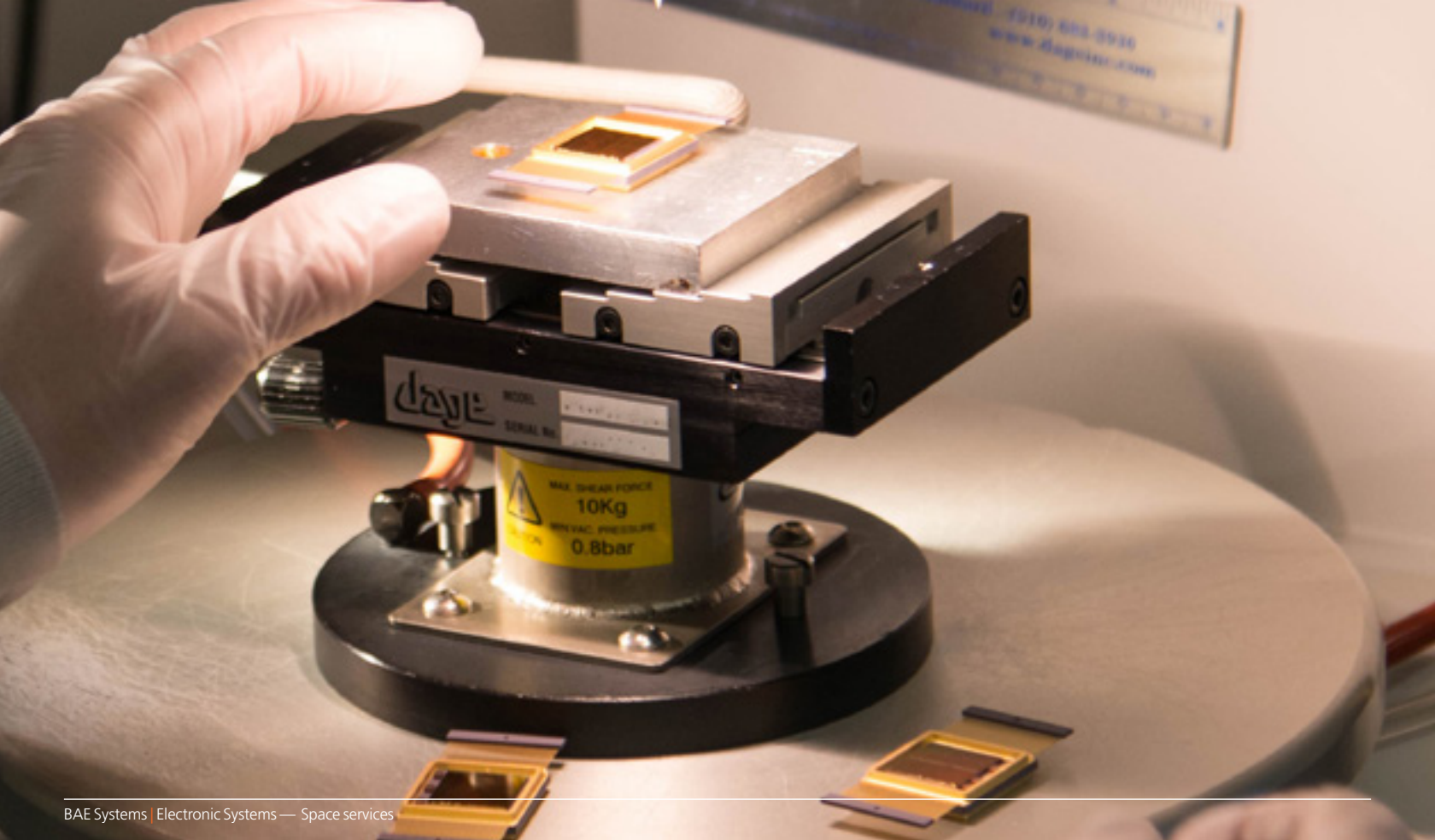
- Box, card, ASIC, and FPGA specification
- Partitioning of design to enhance shielding, power distribution, and fault tolerance
- Verification and design for testability

Physical design

- Proprietary design libraries (low-power, mixed-signal, radiation-hardened highest reliability)
- Mapping hardware description language into appropriate technology and verifying timing, function and power

Integrated development cycle





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