

Mercury Federal Systems, Inc.

ISR Systems and Technology Developer

- Concept of Operations and system architecture definition
- Integrated open architecture-based best-of-breed solutions for single and multi-INT sensor systems and Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED)
- Hardware/Software systems and services integration



Defense Industry Trends

The nation's defense needs have been changing over the last decade to face several global trends including: 1) evolving military doctrine, 2) counterinsurgency and irregular warfare, 3) rapid deployments and operations, 4) information technology explosion, 5) industrial base migrating to unbundled solutions, and 6) unmanned system evolution. To address these global trends, the principal ISR needs are:

- Agile ISR system enterprise composed of systems of systems
- Layered ISR architecture to meet persistence and area coverage requirement using networks of sensor systems with local to wide-area reaches
- Sensing and information processing systems to unravel insurgent and terrorist networks
- Modular sensor and processing system pods to provide the Warfighter with rapid single and multi-INT capability in the field
- Spiral system developments to address new challenges and to avoid technological obsolescence
- Best-of-breed solutions that exploit open system architecture standards
- Small size, weight, and power (SWAP) ISR TCPED technology

Furthermore, sensor data is overwhelming information and knowledge processing capabilities. Current systems are outstanding at detecting objects but are limited in their ability to extract information, knowledge, and intelligence from the massive amounts of data produced by individual and networked sensor systems. Efficient exploitation techniques are necessary to extract actionable intelligence in a timely manner.

There are key business challenges that accompany these trends for Government program managers: reducing risk, lowering cost, and meeting schedule. Mercury Federal Systems is positioned to accommodate these industry trends and to deploy high-performance ISR systems in a rapid, cost-effective manner.

Mercury Federal Systems

The mission of Mercury Federal Systems (MFS), established in 2007 as a wholly owned subsidiary of Mercury Computer Systems, Inc., is to be a trusted business partner for providing ISR system and technology solutions that meet national defense needs. Principal MFS focus areas include:

- CONOPS and architecture definition for systems requiring IMINT, SIGINT, Radar, and HUMINT capabilities
- Open system solutions that integrate sensors, front-end electronics, processors, and communications and enable the rapid insertion of new sensing approaches
- Single-INT systems that incorporate advanced front-end signal processing techniques along with on-board exploitation to overcome communication link bandwidth limitations
- Multi-INT systems that fuse information from different sensing modalities to extract information and knowledge
- Net-centric systems to enhance TCPED thus enabling rapid, effective decisions and actions by the Warfighter

We have world-class domain expertise in these areas that can help the Government and business partners increase their agility to solve complex problems, reduce technological and financial risk, and accelerate system performance. Our current customers include the services, OSD, Intelligence Community, and prime contractors.

MFS has a DCAA auditable business model, is both hardware and software agnostic, engages collaboratively with sponsors and partners, and has the ability to call on the unparalleled competencies of Mercury Computer Systems core advanced computing business.

MFS draws upon Mercury's 25 years of experience as the leading provider of high-performance real-time embedded computing systems for air, land, and sea-based applications. Mercury specializes in open systems technology solutions for high data-rate computing and I/O, 2D and 3D image processing, signal processing and software architectures. This domain expertise includes radar, SIGINT, and IMINT as well application optimization for heterogeneous computing systems that exploit multi-core processors, GPUs, and FPGAs. Mercury also produces front-end electronics including receivers and mixed-signal subsystems (e.g., ADCs and DACs) for RF sensor systems.

MFS Capabilities

With respect to the national ISR needs, MFS provides:

- Adaptable hardware and software operating across multiple sensor platforms
- Multi-INT tasking, fusion, and exploitation techniques
- Flexible sensor and computing systems
- Open system architecture implementations
- Application ready hardware/software systems (based on a family of scalable family of processor and communications boards that support rapid application development and insertion)
- Family of systems at competitive cost

We team with like-minded agile technology providers to develop and deploy best-of-breed solutions from sensor, processor, and algorithm perspectives.

MFS adds further value by reducing government and/or partner risks or costs. We leverage our expertise in accelerating solutions for data-intensive throughput and computation systems. By leveraging our systems engineering and integration expertise, we enable our clients to:

- Improve turn-around time
- Add additional capability
- Reduce cost of solution and ownership
- Reduce risks related to scheduling, cost overruns, and objectives
- Improve interoperability
- Extend service life
- Enhance overall performance

MFS Offerings

MFS offers ISR system architectures and integrated purpose-built solutions that involve data capture, processing, exploitation, and dissemination. Our services include:

- ISR system architecture analysis and design
- Computational analyses
- Real-time processor implementations for on-platform and ground station processing and exploitation
- System integration (e.g., pods, distributed sensors, etc.)
- Product development

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About Mercury Federal Systems

Mercury Federal Systems, Inc., a subsidiary of Mercury Computer Systems, Inc., is an ISR systems and technology provider of open architecture-based best of breed solutions.

Visit us on the web at www.merccfed.com.