



## Facts about Ensign-Bickford Aerospace & Defense Co.

Ensign-Bickford Aerospace & Defense Co is a global provider of reliable, energetic solutions for military demolition, minefield breaching, vehicle protection, tactical weapons, space, and strategic applications.

### Benefits

- Industry-specific solution designed for project-based enterprises
- Support for complex mixed-mode manufacturing
- Support for complex product configuration management
- Support for earned value management (EVM)
- Improved expense tracking
- Streamlined information flow, eliminating duplication and errors
- Flexible step-by-step implementation
- Easy integration with third-party systems
- Open standards-based architecture, making it easier to take advantage of the latest technologies

## Military ordnance manufacturer gains efficiencies with IFS Applications™

The combination of steady business growth and the demanding nature of the defense industry led Ensign-Bickford Aerospace and Defense Co. (EBA&D), Simsbury, Connecticut, and Graham, Kentucky, to implement IFS Applications. EBA&D is using IFS' applications for production planning and control, supply chain management, corporate performance management, engineering, project management, workforce management, quality management, and document management.

A global manufacturer of advanced energetic materials—explosives used in a variety of precision-engineered aerospace, munitions, defense, and specialty applications—had daunting challenges to overcome. EBA&D needed a solution that could unite dozens of buildings—some of which are not serviced with telecommunications and even electricity for obvious safety reasons—on a single IT platform.

“We have been on a growth path for quite a few years, and we have plans to continue our growth by bringing current products to new markets and developing new technologies through significant research and development,” said Bruce Mortimer, Director of Contracts and Management Support Systems. “But in parallel we need to develop our business processes and tools. Part of our decision to pick IFS was their commitment to the aerospace and defense vertical and the plans they had for the software to meet the growing industry's needs.”

### Configured products in complex environment

Although most of Ensign-Bickford's operation consists of engineer-to-order (ETO) and make-to-order (MTO) processes, the company sees significant opportunity to leverage a configure-to-order (CTO) approach on certain key product lines. CTO offers not only potential cost savings but also improved service to the company's most valued customers.

“Right now we are developing our configure-to-order processes using IFS tools,” Mortimer said.

The products EBA&D is targeting for CTO processes share common components but vary in lengths, energetic outputs, initiation timing, physical interfaces, and packaging.

“Some of our products use military non-electrical initiators, which can use a spark or percussion cap to ignite what basically amounts to a tube with a dusting of energetics on the inside,” Mortimer said. “This replaces the traditional electronic technology that is subject to radio frequency interference and electrostatic discharge. It is because of these electronic initiators that you see signs warning you to turn off your radio and electronic devices before entering a blasting area.

“These two products share similar characteristics, but there are variations required by each customer. For instance, the end tips vary depending on output characteristics. There are different lengths and different test regimens the products must go through depending on end use.”

For regulatory and safety reasons, even the way products are packaged differs depending on product configuration, adding to the complexity of EBA&D's CTO environment.

"The packaging of each product comes into play because the packaging is certified," Mortimer said. "The packaging must meet certain certified configuration requirements. So on the military demolition side of our business alone, the product can be configured by initiation method, length, dual versus single tube, detonator side, packaging and spooling configuration, and end-item packaging."

EBA&D also will gain efficiencies on the ETO side of its business because IFS' projects module allows the company to track expenses from engineering through manufacturing.

"The MRP system we were operating on was not designed for a project or an aerospace and defense environment," Mortimer said. "There were three major current initiatives in our business process area. One is configuration management—efficient flow of design information into the manufacturing modules. We want to efficiently document new designs, populate the planning and execution pools within IFS to support production, and then track the configuration of the as-built product."

EBA&D also wants a system that could provide an integrated earned value management (EVM) methodology for its projects, a performance reporting system developed by NASA and, at times, imposed on government contractors. EVM helps the government and contractors manage schedule and program cost goals, providing an objective way to quantify and measure what a contractor or field activity is achieving with program dollars. It also enables the company to predict future performance based on trends

and account for risk management. EBA&D plans to use this methodology to manage all of its projects.

"IFS is helping us develop an EVM tool," Mortimer said. "We had been using a homegrown Microsoft® Access™ database that did not really tie everything together and was limited in its capability to handle the complex interrelationship of the data used in an EVM approach."

**Streamlining processes**

Prior to selecting and implementing IFS, Ensign-Bickford Aerospace & Defense operation was saddled with numerous IT tools that did not talk to each other.

"One of the biggest business challenges we had was streamlining the information flow in our organization," Mortimer said. "We had more than 40 legacy systems ranging from PRMS, Lawson, Marsh—right down to Microsoft® Excel® spreadsheets.

"The consolidation to IFS Applications has streamlined the flow of information through our business, eliminating duplicate entry and errors. And information is in a better format for business analysis. For instance, the timing and accuracy of labor reporting is critical for us because of federal regulatory requirements placed on government contractors and subcontractors. Before, we had to touch time reporting up to six times. Data was entered three times and approved twice, and possibly corrected. Within IFS, that process is reduced to one entry and one approval."

Mortimer said that there are two types of savings that stem from EBA&D's engagement with IFS.

"There are direct savings, resulting from elimination of time and effort we otherwise would have spent managing our business," he said. "And there are indirect savings that we

hope to see as these efficiencies drive key performance metrics. We would like to and expect to see a significant and distinct improvement in some of our key performance metrics."

The open nature of IFS Applications will allow EBA&D to add functionality for further efficiencies—either by adding new IFS components or functionality or by integrating with third-party systems. From automated data entry to integration with handhelds that could be used at locations without electricity, EBA&D will have demanding requirements for the devices used to introduce information into IFS Applications.

One challenge is that between the company's two manufacturing sites there are between 30 and 40 buildings, ranging from small specialty-purpose buildings to 20,000-square-foot warehouses—some with power and some without power or phone service.

"We have two primary facilities, and there are certain restrictions on where we can put wireless and where we can have PCs located," Mortimer said. "This will complicate the process of how we get data into IFS Applications."

Mortimer said the company is also evaluating emerging technologies that may help streamline data entry.

"We expect to focus primarily on bar coding to start and then evaluate other technologies as they emerge or mature, such as RFID," Mortimer said. "We are also considering using some digitized test equipment like digital calipers, either in our receiving inspection or final or process inspection. If we can take measurements on material and could capture that information digitally, it will streamline our receiving flow while improving our ability to leverage statistical process control."